



North State Transportation for Economic Development Study (NSTEDS)

Full Compendium Report



October 2, 2013

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Table of Acronyms

<i>Acronym</i>	<i>Definition</i>
AADT	Annual Average Daily Traffic
ACV	Arcata/Eureka Airport
ALMIS	America's Labor Market Information System
APC	Lake County Area Planning Council
ARRA	American Recovery and Reinvestment Act
BCAG	Butte County Association of Governments
BEA	Bureau of Economic Analysis
BID	Tourism Business Improvement District
BNSF	Burlington Northern Santa Fe Railroad
BT&H	Business, Transportation and Housing Agency
BTS	Bureau of Transportation Statistics
Cal EMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CBP	County Business Patterns
CDBG	Community Development Block Grant
CEC	Jack Mc Namara Field Airport
CEDS	Comprehensive Economic Development Strategy
CEPCO	Chico Economic Planning Corporation
CFAC	California Freight Advisory Committee
CIC	Chico Municipal Airport
CMIA	Corridor Mobility Improvement Account
COATS	California-Oregon Advanced Transportation System
CPUC	California Public Utilities Commission
CSMP	Corridor System Management Plan
CSU	California State University
CTC	County Transportation Commission
CTIF	Corridor, Trade, Infrastructure and Freight Account
DEIR	Draft Environmental Impact Report
DNLTC	Del Norte Local Transportation Commission
DSMP	District System management Plan
EDRG	Economic Development Research Group
EED	California Economic Development Department
ERC	Nevada County Economic Resource Council
FAA	Federal Aviation Administration
FAF	Freight Analysis Framework
FEMA	Federal Emergency Management Agency
FFP	Freight Flow Processor
FH	Forest Highway
FHWA	Federal Highway Administration



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Acronym	Definition
GCTC	Glenn County Transportation Commission
GIS	Geographic Information System
GRP	Gross Regional Product
HCAOG	Humboldt County Association of Governments
HOT	High Occupancy Toll
IAC	Industrial and Fine Arts Center
IRR	Indian Reservation Roads
ISTEA	Intermodal Surface Transportation Efficiency Act
ITMS	Intermodal Transportation Management System
ITS	Intelligent Transportation Systems
ITSP	Interregional Transportation Strategic Plan
LCTC	Lassen County Transportation Commission
LEAP	Local Economic Assessment Package
LMT	Klamath Falls Airport
LOS	Level of Service
LQ	Location Quotients
LTC	Local Transportation Commission
MAP 21	Moving Ahead with Progress in the 21st Century
MBF	Million Board Feet
MCOG	Mendocino Council of Governments
MCTC	Modoc County Transportation Commission
MFR	Rogue Valley International/Medford Airport
MPO	Metropolitan Planning Organizations
MVM	Million Vehicle Miles
NAAC	Native American Advisory Committee
NAICS	North American Industry Classification System
NCHRP	National Cooperative Highway Research Program
NCTC	Nevada County Transportation Commission
NoRTEC	Northern Rural Training and Employment Consortium
Noyo Center	Noyo Center for Science and Education
NSTED	North State Transportation for Economic Development Study
NWP	Northwestern Pacific Railroad
OAK	Oakland International Airport
OD	Origin-Destination
OEDCO	Oroville Economic Development Corporation
PCTC	Plumas County Transportation Commission
PDPM	Project Development Procedures Manual
PG&E	Pacific Gas and Electric
PID	Project Initiation Document
PIN	Priority Index Number
RDD	Redding Municipal Airport
RFP	Request for Proposals
RNO	Reno/Tahoe International Airport



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Acronym	Definition
RTP	Regional Transportation Plans
RTPA	Regional Transportation Planning Agencies
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SANDAG	San Diego Association of Governments
SBA	Small Business Administration
SCEDC	Siskiyou County Economic Development Council
SCEDD	Superior California Economic Development District
SCTC	Sierra County Transportation Commission
SCTG	Standard Classification of Transported Goods
SEDCorp	Sierra Economic Development Corporation
SEDS	Social and Economic Development Strategies
SFO	San Francisco International Airport
SHA	State Highway Account
Shasta EDC	Economic Development Corporation of Shasta County
SHOPP	State Highway Operation and Protection Program
SHRP 2	Second Strategic Highway Research Program
SHS	State Highway System
SI	Traffic Safety Index
SIC	Standard Industrial Classification
SMF	Sacramento International Airport
SMG	System Metrics Group, Inc.
SR	State Route
SRTA	Shasta Regional Transportation Agency
STAA	Surface Transportation Assistance Act
STCC	Standard Transportation Commodity Code
STIP	State Transportation Improvement Program
STS	Charles M. Schulz- Sonoma County Airport
TAC	Technical Advisory Committee
TCR	Transportation Concept Reports
TCTC	Trinity County Transportation Commission
TCTC	Tehama County Transportation Commission
TIGER	Transportation Investment Generating Economic Recovery
TMS	Transportation Management System
TOT	Transient Occupancy Tax
Tri-Agency	Tri-Agency Development Authority
TSA	Transportation Satellite Accounts
UP	Union Pacific Railroad
USDOT	United States Department of Transportation
V/C	Volume-Capacity Ratio
VHT	Vehicle-Hours Traveled
VMT	Vehicle-Miles Traveled
WRTC	Watershed Research and Training Center



Executive Summary

The North State Transportation for Economic Development Study (NSTEDS) presents the case for ongoing transportation investment in the 16-county North State Super Region. Transportation has the potential to enable economic activity in the North State through connecting people, goods, services, and resources. By proving the opportunity to link transportation improvements with regional economic development initiatives and demonstrating quantifiable performance indicators, this study makes the case for ongoing, strategic investment in transportation infrastructure in the North State.

The NSTEDS highlights regional transportation improvements with the highest economic benefit to help the North State compete for state and federal transportation funding. It also shows the relationship between transportation infrastructure investment and North State economic activity. In improving the alignment between transportation spending as well as economic development planning and implementation efforts, the study provides the foundation for funding proposals, public-private partnerships, and plans to put resulting resources to work stimulating the North State's economy.

A number of recent changes in the California transportation planning and funding environment present opportunities for the North State. The Great Recession has led to a greater emphasis on jobs locally and nationally. As a result, funding agencies are requiring information on job creation and economic growth for transportation planning agencies to compete successfully for funds. In addition, the federal government has reauthorized transportation funding through Moving Ahead with Progress in the 21st Century (MAP-21), which places greater emphasis on performance targets and accountability. The NSTEDS has the potential to help the North State bring about more equitable or balanced performance measurement requirements and funding priorities.

By pursuing the study recommendations, the North State can:

- Build on its competitive advantages and opportunities for enhancing economic development to support emerging industries in the region
- Incorporate regional economic development initiatives into the transportation planning process
- Better compete for finite discretionary transportation funds.

Transportation and Economic Connections

The North State has several limitations in its transportation infrastructure with a direct or indirect impact on the type, location, and scale of economic activity in the North State. The major highway routes in the North State run north-south. There are few options for east-west travel and none have more than two lanes. The four local airports in the North State with passenger service are served by only one carrier with direct flights to few destinations. The North Coast has been without freight rail service for more than a decade. Unlike neighboring regions, the North State has no commercial hub airports or rail intermodal loading facilities.



In many ways, the North State remains an economic frontier. Some regions are isolated with very little interregional traffic. Difficult terrain, weather events, and seismic events often restrict key transportation corridors or render them out of service for extended periods of time. In the North Coast, this isolation is referred to as the “Redwood Curtain.” Other regions, including those in the northeast intermountain area, are similarly inaccessible. The passenger air service needed for business travel is restricted by small regional airports with limited services. Flexible freight options needed for wholesale trade and moving raw goods to market are likewise limited by the lack of intermodal loading facilities and adequate rail and air transport.

One of the North State’s few advantages over large, neighboring metropolitan regions is the comparative low cost of doing business and the absence of traffic congestion. It is critical that the North State maintain this advantage, while seeking to address its many economic constraints. Currently, most of North State highways operate at an adequate level of service. If further steps are not taken, transportation models predict future operating conditions may be worse, particularly along I-5.

According to commodity flow data, the largest commodity groups are agriculture and food products, wood products, and machinery manufacturing. Roughly 15 percent of commodities produced in the North State go to customers within the North State, while about 70 percent is sent to the rest of the United States and 15 percent to the rest of the world. This compares to California as a whole, where roughly 60 percent of commodities are consumed within the state. California consumes a greater proportion of the commodities it produces because it has a larger and more diversified economy than the North State. However, the fact remains that the North State economy depends on imports and exports (domestically and internationally).

Commodity exports rely on reliable and efficient truck and rail transportation. Most of the truck travel occurs on just a few routes due to the dispersed trip generators associated with agriculture, forest, and natural resource extraction. The highest truck volumes occur on I-5, but US 97, SR-32/SR-70/SR-99, US 101, SR-20, SR-299, and US 395 also carry many trucks. The Sacramento Valley is served by two Class I freight railroads – the Union Pacific (UP) and the Burlington Northern Santa Fe (BNSF). Neither railroad serves the North Coast, which has been without rail service for more than a decade.

Further research is needed to determine if current truck and rail volumes justify freight infrastructure improvements. Southern Oregon – a region with much in common with the North State – benefits from such infrastructure in the form of wholesale trade volume. Much of the North State’s commodities are exported in raw form, without processing or other value-added economic multipliers. Capturing these economic opportunities may help the North State meet the critical mass of freight needed to warrant investment in intermodal freight infrastructure.

The North State has a less diverse economy than the state as a whole. Decades of efforts to attract business and diversify the regional economy have been unsuccessful. This leaves the North State with a disproportionately high concentration of workers employed in forestry and logging, wood products manufacturing, and crop production. The North State’s economy is in transition from natural resource based industries to an uncertain future. Many regions have found success in niche industries – from breweries along the North Coast and in Butte County to geographic information services in Shasta



County. The future is likely rooted in a diversity of industries, which include natural resources, but is not dominated by such industries. Many niche industries generate high economic activity without a corresponding dependency on transportation infrastructure.

Crop production, agricultural support, and tourism are three sectors of the economy that have performed well over the last few years. Crop production is growing faster in the North State than in the nation. Agricultural support is also growing. Economic development professionals see room for growth in specialized agricultural products that, if marketed and aggregated for export, have excellent potential. Tehama, Siskiyou, and several other North State regions have initiated branding efforts to capitalize on local food production, distribution, and value-added products.

Tourism is an important industry for the North State. While there is no reliable count of tourism trips, published statistics show that visitors spend roughly \$2.4 billion per year in the North State (about 2.5 percent of the total visitor spending in California) and that spending accounts for nearly 33,000 jobs. By comparison, visitors spend roughly \$2.4 billion in the well-known Napa-Sonoma wine region where spending accounts for just over 28,000 jobs.

Many of the North State's most popular tourist destinations are also the most remote from a transportation perspective. Transportation improvements that reduce travel time (particularly from the Sacramento Region and the San Francisco Bay Area) and that increase reliability and traveler information would help grow tourism. When combined with regional branding and promotional efforts to expand tourism as part of local economic strategies, transportation investments would also improve tourism industry performance, despite the potential seasonal limitations.

In spite of numerous limitations and deficiencies, the North State has many competitive advantages. Compared with the rest of California, the North State has lower costs of doing business, including lower taxes, labor costs, and housing costs. Along with delivery market access to the San Francisco Bay Area and the Sacramento Region, the North State's southern counties, in particular, have great economic potential. Furthermore, Nevada, Humboldt, and Butte counties have relatively high percentages of skilled workers, which provide building blocks for value-added industries.

Among the four neighboring regions examined, Southern Oregon is the closest economic competitor to the North State. While the compositions of the two economies are very similar, the concentration of employment in agriculture, forestry, and fishing is considerably higher in the North State than in Southern Oregon. Southern Oregon has a noticeably larger share of employment engaged in wholesale trade and a slightly higher share engaged in retail trade. Southern Oregon also has an advantage in retail trade due to no state sales taxes and better rail freight service. However, Southern Oregon is more isolated than the North State from major markets as measured by a performance measures tested in the NSTEDS (i.e., three-hour delivery time and 40-minute labor market access).

The North State's access to the San Francisco Bay Area and the Sacramento Region makes its average same-day delivery market much bigger than the Southern Oregon market. The North State may be less competitive than Southern Oregon on cost factors, but it has much better truck delivery access. This suggests a potential opportunity for the North State to take advantage of locations along I-5 for wholesale trade.



Agricultural products, wood products, and some manufactured goods are the primary exports from the North State to its neighboring regions. The largest flows go to the San Francisco Bay Area and the Sacramento Region due to their relative proximity and population. Most of these flows move by truck. On a per worker basis, the largest flows go to the Sacramento Region and Southern Oregon. These flows reflect ties in the agriculture and timber industries, respectively. For example, the North State produces raw wood and forestry products that are finished in Southern Oregon.

The Great Recession, combined with the elimination of redevelopment agencies, has seriously damaged the capacity of local governments in the North State to promote economic development. Several economic development corporations with more than 20-year track records have lost their funding as a result of Assembly Bill X1 26. Most local governments have lost their redevelopment or economic development staff due to funding cuts, leaving city managers and county administrators to fill in as local economic development staff.

Assembly Bill X1 26 has dissolved redevelopment agencies as part of implementing the 2011-12 California State Budget. Senate Bill 1 was introduced to allow local governments to form sustainable community investment authorities to administer economic development and affordable housing programs, but this bill was vetoed by the Governor to allow time for the full dissolution of redevelopment agencies before any replacement entities are established. If reinstated, tax increment financing could support economic development activities in the North State, address some of the staffing issues, and be used to encourage more efficient land use.

Economic development stakeholders in the North State are focused on retaining and expanding existing firms rather than engaging in business attraction efforts that have met with minimal success. With the exception of Shasta County, North State counties no longer direct resources towards business attraction, in favor of an economic gardening approach that focuses on retaining and expanding existing firms. A number of counties are focusing on recreational tourism to develop the local economy. Where such industries are less transportation-intensive, opportunities exist to reduce travel demand. Industries projected for long-term growth, but limited by transportation infrastructure, may need special consideration in Regional Transportation Plans (RTPs).

Transportation and economic development stakeholders have recommended several transportation projects with the potential to improve the North State economy. Many types of projects are represented, including Surface Transportation Assistance Act (STAA) truck access, I-5 freeway improvements, state highway expansion, bridge replacements, and freeway interchange construction. While the current RTPs capture most of these projects, some projects are not yet in the plans.

For the most part, economic development and transportation professionals have suggested similar transportation projects, but in some cases, there are different priorities. For example, economic development professionals in Lake County are interested in traffic calming and improved signage that encourages traffic to stop at local businesses. The transportation community, through the Lake County RTP, emphasizes the need for travel through the county (i.e., on SR-20 or SR-29) for connecting the North Coast with the Sacramento Valley. Clearly, these goals can be reconciled through dialog between the transportation and economic development communities.



Economic Impact Modeling and Performance Measures

Few North State RTPs have performance measures specifically related to the impacts of transportation on the regional economy. The performance measures currently in North State RTPs reflect the guidance found in the *Caltrans Performance Measures for Rural Transportation Systems Guidebook* on selecting measures and collecting data. This guidebook does not provide information on measures related to economic well-being. The North State Super Region should work with Caltrans to include such measures in the guidebook using information developed in the NSTEDS. More specifically, **the North State Super Region should develop and encourage integration of performance measures that more appropriately represent the economic impacts of transportation investment in a small urban or rural setting**, which is characteristic to the North State.

The NSTEDS provides a hierarchy of performance measures and impacts that link transportation to economic development. Most North State counties already measure transportation user benefits in their RTPs and other planning documents. **Transportation professionals should consider adding measures related to intermediate transportation factors and economic growth.** Although the scope of the NSTEDS economic impact modeling was limited to project groupings, Caltrans' acquisition of the Transportation Economic Development Impact System (TREDIS) software could be utilized by regional agencies to measure intermediate transportation factors for individual projects in their respective RTPs.

The NSTEDS economic impact modeling demonstrates how different types of projects identified by transportation planners and economic development stakeholders can affect the North State's economy. It shows that transportation improvements have the potential to help the economy through several mechanisms – supporting tourism, providing access to business, increasing delivery market areas, supporting commerce, opening up business sites, widening the labor market, and providing access to intermodal facilities, such as airports, ports, and rail. While the appropriateness and practicality will vary by region, **all regions in the North State should consider these opportunity areas in their planning processes and support or coordinate with partner regions** within the North State to achieve associated objectives as appropriate.

The economic impact modeling shows all projects result in short-term benefits related to construction. The longer term benefits vary by project type. The predominant benefits of improvements on I-5 and state highways are related to changes in travel time and travel time reliability followed by some shipper and logistics benefits. STAA truck access and bridge replacement projects (that avoid catastrophic bridge closures and long detours) produce a range of benefits related to travel times, vehicle operating costs, safety, shipments and logistics, as well as market access. Tourism and economic development impacts are associated with all project types, while the STAA truck access and state highway expansion projects have the greatest change of increasing access to supplier markets.

Activities for Integrating Transportation and Economic Development

The economic modeling included in the NSTEDS is based on rough assumptions that could be refined with input from transportation planners and economic development professionals. **North State transportation agencies should consider collaborating with Caltrans to conduct more detailed economic impact studies for the projects that matter to the super region.** These studies could be



conducted as part of the typical project development process. For example, Butte County is developing an “economic transportation study” as part of the Project Study Report for SR-70. The economic impact modeling conducted for the NSTEDS can be used as a guide for the type of information that needs to be collected for these studies.

North State policy makers should consider both the transportation and economic development benefits of projects for inclusion in the regional transportation planning process. The economic impacts of transportation projects (e.g., changes in visitor spending, potential for business attraction, and business needs for specific infrastructure to increase market access) can be measured if sufficient funding is available to complete the analysis. This type of local knowledge is critical for performing more detailed analyses of the economic impacts of projects.

Transportation and economic development stakeholders identified mutually supporting projects as well as very different types of projects and opportunities. The NSTEDS lists several projects mentioned during interviews with the economic development community and workshops. **Transportation projects that support economic development plans should be added to RTPs, if these projects also have reasonable transportation justification.** The NSTEDS also provides documentation of current economic development initiatives that should be considered when developing concepts and selecting transportation projects.

Economic development stakeholders should work with transportation planners to determine what, if any, transportation improvements (e.g., road widening, operational improvements, and signage) **are needed to improve tourism.** This is an important component of economic development initiatives already underway in Lake, Mendocino, Humboldt, Del Norte, Trinity, Lassen, Shasta, Tehama and Butte counties. **Transportation planners should work with economic development stakeholders to consider the types of improvements** (e.g., local site access, construction of intermodal freight terminals, and improved freight rail and air service) **needed to attract wholesale trade to the North State.**

Transportation improvement projects that open up new land for development should be prioritized if they can help create new business areas in communities with a shortage of available land with access to infrastructure. Attracting new businesses to this land may require collateral activities, such as the provision of tax incentives, infrastructure (e.g., sewers and utilities), and workforce training.

The NSTEDS was unable to explore the impact of unanticipated closures on critical roads to the North State economy. **The North State Super Region should consider a special study of the economic implications of emergency closures given the limited roadway infrastructure** in the North State. A prospective funding source could be a Caltrans Transportation Planning Grant Program under the Partnership Planning category.

The North State Super Region should also study the market feasibility of locating a rail freight loading facility in the North State and coordinate action and investment, as appropriate. Shasta County has considered studying the potential for a rail freight loading facility. Southern Oregon has such a facility, which may help attract wholesale trade. The City of Anderson in Shasta County is currently in the process of annexing several hundred acres of heavy industrial lands with rail access. The Deschutes Road and I-5 interchange, scheduled for completion in late 2013, will greatly enhance site access for



trucks. Furthermore, the City of Redding's Stillwater Business Park and the Redding Municipal Airport are just five miles north of the site. The Shasta Economic Development Corporation has supported and been actively involved in moving this effort forward.

The Nevada County RTP notes that the Union Pacific Railroad owns and operates tracks, which follow I-80 along the southern border of Nevada County. Although the tracks run through a portion of eastern Nevada County, there are currently no freight rail loading facilities in the county. As congestion increases on I-80, freight rail loading facilities may need to be considered in eastern Nevada County.

The North State Super Region should continue to cultivate relationships with economic development stakeholders, including local and regional economic development corporations or districts (e.g., Upstate California Economic Development Council and local economic development corporations), university or college-based economic programs (e.g., Shasta College Business and Entrepreneurship Center, and the Center for Economic Development at California State University, Chico), and state level entities (e.g., the Governor's Office of Business and Economic Development and California Forward) with the goal of coordinating, collaborating, aligning, planning, and leveraging fiscal resources.

The NSTEDS made a targeted effort to include tribal needs in the study. The tribes in the North State were made aware of the study through individual letters to each tribal leader and a presentation to the Native American Advisory Committee (NAAC). The tribes were also provided access to the study, but the NSTEDS was unable to get the level of engagement necessary to include a meaningful assessment of tribal needs. **The North State Super Region should continue to inform and encourage participation from Native American tribal governments in economic development and transportation planning projects.**

Near-Term Opportunities for Policy Development

The Federal Highway Administration (FHWA) is designating a National Freight Network to assist states in "strategically directing resources" to improved freight movement. I-5 may qualify, but **the North State should consider advocating for the designation of key transportation routes as "rural freight corridors."** These must be principal arterials carrying at least 25 percent trucks, which is a high threshold compared to typical truck percentages on North State routes.

In collaboration with the Business, Transportation and Housing Agency, Caltrans established the California Freight Advisory Committee (CFAC) to serve as a forum for discussing freight related priorities, issues, projects, and funding needs. The committee is also helping to inform the new state freight plan. A draft of the plan is expected by the end of 2013 with a draft final in June 2014, so the California Freight Plan can provide input into the National Freight Plan due in October 2014. **The North State should update the CFAC on the NSTEDS and make sure that its findings are reflected in the California Freight Plan.**

The North State Super Region should use results from the NSTEDS to provide input into the selection of rural performance measures for Moving Ahead for Progress in the 21st Century (MAP-21). The latest national highway bill emphasizes projects of national significance. The freight performance measures have not yet been defined, but they are likely to focus on the producers and users of freight as

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well as the jobs and income being generated. Although rules have not been published, it is likely that the Federal government will want projects with national significance. If the North State Super Region can demonstrate that certain projects (e.g., the improvement of interchanges and bridges on I-5) enable export products, the national significance argument could be made and federal freight funding justified.

The San Diego Association of Governments (SANDAG) recently led a Performance Monitoring Indicators Technical Group that proposed two “economic vitality” performance measures – transit accessibility and travel time to jobs. The initial set of proposed measures was focused on urban areas and did not consider all of the links between transportation user benefits and economic growth. However, the North State was able to provide input from the NSTEDS on potential economic measures that capture intermediate transportation factors (e.g., market access and connectivity measures) and economic growth (e.g., jobs, income, and economic output). These indicators were included for future consideration. **The North State should encourage the inclusion of market access and connectivity measures should the Performance Monitoring Indicators Technical Group reconvene to update or refine their recommendations.**

Stakeholders in the North State may wish to consider support for the east-west railroad concept between the Port of Humboldt Bay and northern Sacramento Valley. Several elected officials and North State stakeholders have provided letters of support. In addition, Upstate California has adopted the east-west railroad concept. Whereas current efforts focus on initiating a technical and engineering feasibility of the project, **the North State may want to study the potential market for the east-west railroad prior to or in tandem with the technical study.**

Caltrans has an Interregional Transportation Strategic Plan (ITSP) to guide the development of the interregional transportation system. The first plan was written in 1998. The plan was not updated for more than a decade until a draft of the latest plan was released in December 2012. The draft plan includes a number of focus routes in the North State, including US 101, SR-99 (and SR-70), US 395, SR-20, and SR-299. Since the ITSP is not updated frequently, **the North State should use the NSTEDS as an opportunity to provide input into the ITSP.**

The Caltrans Project Development Procedures Manual (PDPM) currently does not include economic development as a deficiency to be addressed by a transportation project. Benefit-cost analysis and economic impact implications are not considered during the project development stage. **The North State should work with Caltrans transportation economists to include economic considerations in the PDPM.** This would help allow the North State to justify project using economic arguments.

The North State needs to address barriers related to travel demand reduction strategies, such as access to broadband internet. In this area, the North State can take advantage of efforts, such as the California Emerging Technology Fund and the California Advanced Services Fund. These funds are providing seed money to advance broadband deployment and adoption throughout rural California. The goal is to promote economic competitiveness, access to essential services, and improve quality of life. In the North State, four broadband consortia are receiving seed money from these funds.

The North State regions should update plans and priorities related to intelligent transportation systems (ITS) in combination or coordination with infrastructure improvements. The provision of



accurate and timely traveler information (e.g., travel times and roadway restrictions) will assist the traveling public. ITS infrastructure will also help businesses efficiently move goods and provide much-needed predictability that impacts logistics and warehousing decisions (e.g., just-in-time delivery and the appropriate size of safety stock).

Efforts to reinvent redevelopment agencies in recent years have turned from the historical focus on removing blight to realizing more efficient land-use patterns. Should reinvention occur or metropolitan planning organizations (i.e., Butte County Association of Governments and Shasta Regional Transportation Agency) gain access to new funding sources designated for implementation of Senate Bill 375, **local and regional agencies should join with the private sector to grow the economy within industries that reduce or minimize travel demand.** Such efforts would serve to reduce local trips on the North State's interregional network, thus affording more widespread benefits.

Development of a Strategic Action Plan

The analysis of transportation needs and likely economic development impacts provides a basis for developing a strategic plan to integrate future transportation and economic development initiatives. There are five components to this strategy:

1. **Classifying projects by their transportation significance and area of greatest economic importance.** This will support MAP-21 initiatives and will also help Caltrans recognize the significance of North State projects. For instance:
 - a) *National significance* – The I-5 corridor supports commerce and freight movement from California to Oregon and Washington State as well as Canada and Mexico. It is a vital component of interstate and international commerce on the West Coast. While this gives the corridor national significance, it also serves as a backbone for regional access. In addition, any disruption to I-5 bridges and structures could have dramatic negative consequences on the region's quality of life and economy, due to the necessarily circuitous nature of detour routes available through the region.
 - b) *Regional/State significance* – The region's economic base depends on activities that bring in business revenues from visitor spending and the sale of goods (e.g., timber and wood products, agricultural and food products) to customers outside the region. There are several tourism routes and truck routes that enable these activities (including US 101, US 395, US 97, US 199, SR-70/SR-99, and SR-20/SR-29), which gives them state or regional significance. Other highway routes (e.g., SR-299) could become important for regional economic growth if they are upgraded to enable large trucks and buses. Enhancement of rail and marine services for freight movement as well as highway routes that affect regional labor market access also fall into this category.
 - c) *Local or regional significance* – There are various proposals for access roads and interchanges that could help enable new commercial and industrial activities to supplement tourism and the export of raw materials and agricultural products (i.e., the current economic base). By enabling economic activity at specific locations, individual



communities, and in some cases the entire region, can benefit. However, care must be taken to ensure that funds be focused on improving access in locations with good prospects for success (e.g., attracting or retaining business) and no other limitations that prevent business siting.

2. **Identifying the confluence of necessary transportation and economic development factors that must be brought together as a “total package” to facilitate business expansion and attraction.** This normally includes: (a) access to labor markets, customer markets, and in some cases, intermodal facilities, (b) job skill development to expand the labor market’s skill base, (c) availability of other business location site requirements (e.g., water, electricity, and broadband availability), and (d) a supportive local business climate to help navigate local factors that can affect business competitiveness. The specific requirements will differ depending on the nature of the business activity - agriculture, other land resources (e.g., timber), industrial, or professional/technical services. In general, state investments to support economic development are more likely to occur if there is evidence of an ongoing concerted effort involving local actions and support.
3. **Targeting priority opportunities – situations where a transportation investment can intervene to be a “game changer” in terms of business location feasibility.** For instance, upgrading a specific route to enable large truck and bus movement could in some cases: (a) dramatically reduce the cost of operating some businesses in an area (since one large truck can substitute for several small trucks), or (b) dramatically enlarge the customer area that can be served from a given business location (for same-day customer visits and same-day truck deliveries). In a similar fashion, upgrading a specific route might enable a community to be within a reasonable travel time range of a larger city (e.g., Sacramento or San Francisco) and effectively become part of its labor market area. For a project classified by state engineers as a justified operational enhancement, there might be higher priority if there is evidence that it can also provide new forms of worker or customer access to enable further economic development.
4. **Taking proactive action to prevent economic disasters, as could occur if certain roads, bridges and other structures are allowed to degrade, leading to route delays, closures, detours, diversions, or further weight limitations.** The most dramatic example of this is the degradation of the bridges along I-5. But, on a more routine basis, there is the maintenance of bridges on State Highways (particularly in the eastern portion of the North State) and the potential for emergency closures (particularly along the North Coast). In some cases, the disruption to normal economic activities of businesses in the North State could be severe. For this reason, there should be active support for emergency rehabilitation of roads and bridges, particularly where the risk of facility failure and its repercussions are greatest. Longer term, the State needs funding to take a more cost-effective approach, such as maintaining and preserving existing infrastructure to prevent the need for emergency rehabilitation. Part of the effort to support these projects should be to make the case that the negative economic ramifications may be far greater than the mere inconvenience to drivers. In few cases are there no alternative routes to



emergency closures, but the alternative routes may be inconvenient, unsuitable for trucks, and unknown to tourists.

5. **Exploring the need for new goods movement infrastructure.** The North State is served by only one port that has historically focused on the wood products and commercial fishing industries. The proposed feasibility study of constructing an east-west railroad to connect the Port of Humboldt Bay to the Class I railroad network should include an analysis of the market demand and economic feasibility in addition to the engineering and environmental feasibility of the proposed project. A minimal market study should identify how large a potential market could be based on products that move by rail and what share the North State may expect to attract given market and spatial considerations. The proposed study should also analyze the market feasibility of locating in the North State a rail freight loading facility that could serve the railroad and port.



Introduction

The North State Transportation for Economic Development Study (NSTEDS) presents the case for ongoing transportation investment in the 16-county North State Super Region. Transportation has the potential to enable economic activity by connecting people, goods, services, and resources. By aligning transportation planning with economic development efforts, the individual regions, the North State, and the State of California will collectively benefit.

California's rural regions have traditionally relied on inter-regional State Transportation Improvement Program (STIP) and State Highway Operation and Protection Program (SHOPP) funding to meet their transportation needs. For an area as large as the North State, with many road miles per capita and often challenging natural environments, these sources do not provide agencies with enough funding to support comprehensive transportation network maintenance and expansion. For tribal governments, California has a small and shrinking percentage of the Indian Reservation Roads (IRR) funding allocation.

By proving the opportunity to connect transportation improvement projects with regional comprehensive economic development initiatives and by demonstrating quantifiable performance indicators, the NSTEDS makes the case for ongoing, strategic investment in transportation infrastructure in the North State. Area tribes should also be able to make the case for funding to support economic activities using data collected as part of the NSTEDS.

A number of recent changes in the California transportation planning and funding environment present opportunities for the North State. The Great Recession has led to a greater emphasis on jobs locally and nationally. As a result, funding agencies are requiring transportation planning agencies to provide information on job creation and economic growth to compete successfully for funds. In addition, the federal government has reauthorized transportation funding through Moving Ahead with Progress in the 21st Century (MAP-21), which places greater emphasis on performance targets and accountability. The NSTEDS has the potential to bring about more equitable or balanced performance measurement requirements and funding priorities.

The NSTEDS highlights regional transportation improvements with the highest economic benefit to help the region compete for state and federal transportation funding. It also shows the relationship between transportation infrastructure investment and North State economic activity. By improving the alignment between transportation spending and economic development planning and implementation efforts, the study provides the foundation for funding proposals, public-private partnerships, and plans to put resulting resources to work stimulating the North State's economy.

The rest of this report provides details on findings and recommendations from the study. These are organized into the following four chapters:

- Transportation Landscape
- Economic Landscape
- Transportation and Economic Development Interactions
- Study Recommendations.

In addition, detailed data collected and analyzed during the study are found in several appendices.

System Metrics Group, Inc.



Transportation Landscape

The transportation landscape provides a general overview of transportation in the North State, describes current and future levels of service (LOS) on the North State highway system, characterizes the general movement of commodities, and describes planned transportation system enhancements found in Regional Transportation Plans (RTPs). The transportation landscape is organized into the following sections:

- North State Transportation System
- Highway Level of Service
- Commodity Flows
- Planned Transportation System Enhancements.

North State Transportation System

This section provides a brief overview of the current transportation system in the North State. This includes a general description of the highway, aviation, and freight transportation systems.

The North State comprises the 16 most northern counties in California. The area covers varied and rugged terrain including the Sierra Nevada and Cascade mountain ranges, the Sacramento Valley, the Coastal Range, and the Trinity Alps. This difficult terrain and largely rural area results in a sparse transportation system consisting of mostly two-lane highways with limited east-west options.

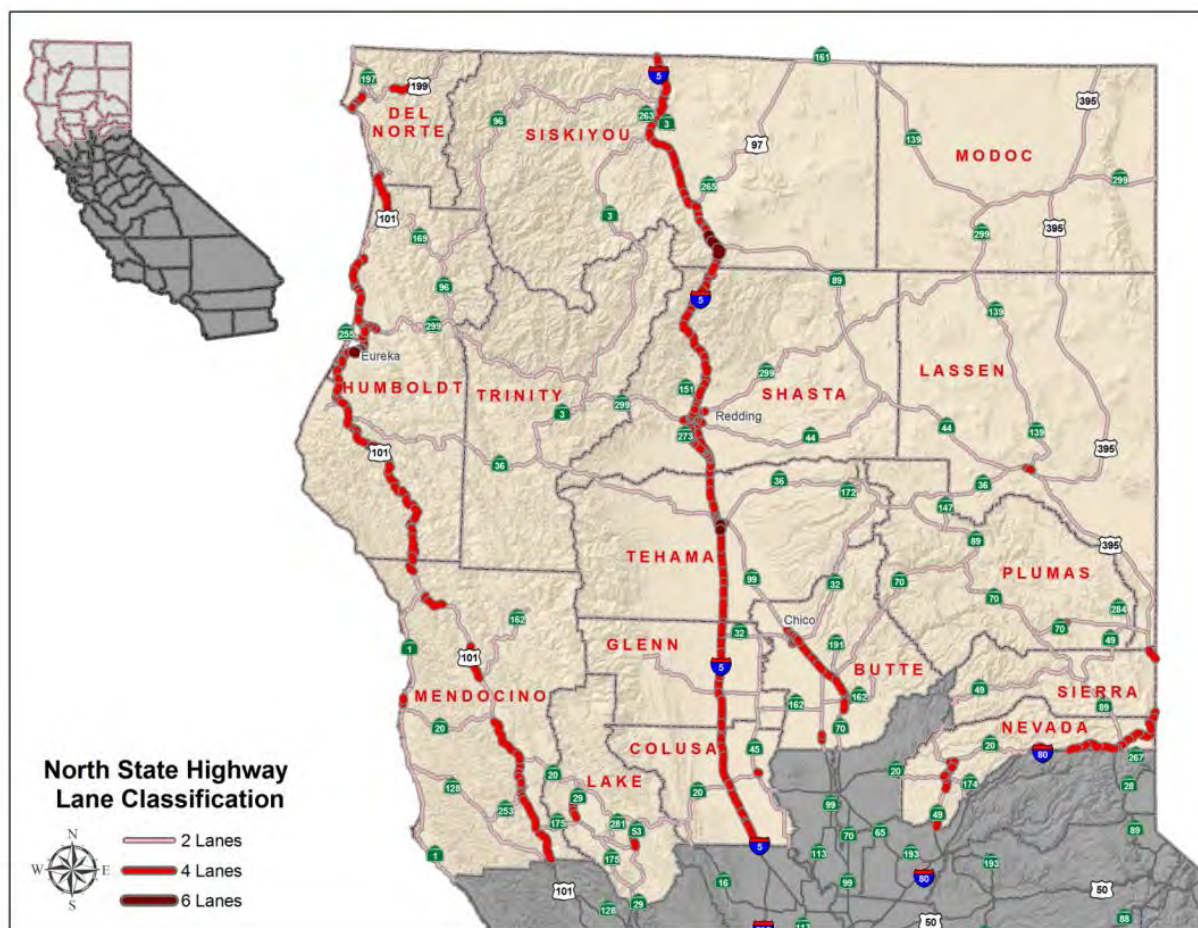
The North State's transportation system needs to serve a variety of export industries important to the state economy including agricultural production, manufacturing, timber and forest products, as well as retail and service industries. In addition to the highway system, the North State has four commercial airports, which provide limited aviation service. The North State is also served by two Class I railroads – the Union Pacific (UP) and the Burlington Northern Santa Fe (BNSF). The North State has a designated port of entry, the deep-water Port of Humboldt Bay in the Eureka/Arcata area.

Highway System

The North State has 3,353 centerline miles of State Highways. The vast majority of this mileage is in rural areas (about 95 percent). As shown in Exhibit 1, the majority of these routes (about 83 percent) are two-lane roads. The North State is served by one interstate, I-5, which provides connections to the rest of California, Oregon, and Washington State. I-5 is also designated as a High Priority Corridor that supports national and international trade on the National Highway System.



Exhibit 1: Number of Lanes on North State Highways



A portion of I-80 runs along the southeastern edge of the North State in Nevada County. I-80 serves primarily the San Francisco Bay Area, the Sacramento metropolitan area, and the Lake Tahoe region. The route does not serve most travelers within the North State. Like other highways neighboring the North State, area vehicles can use I-80 for long-distance travel outside the area, but the route is not highlighted in the NSTEDS given its limited impact on most travel in the North State.

The major North State highway routes run north-south along three primary travel corridors. I-5 serves the Sacramento Valley and Siskiyou County in the middle of the North State. US 101 serves the North Coast along the western portion of the North State. US 395 serves the Great Basin along the edge of the Sierra Nevada mountain range in the eastern portion of the North State.

Other important north-south routes include:

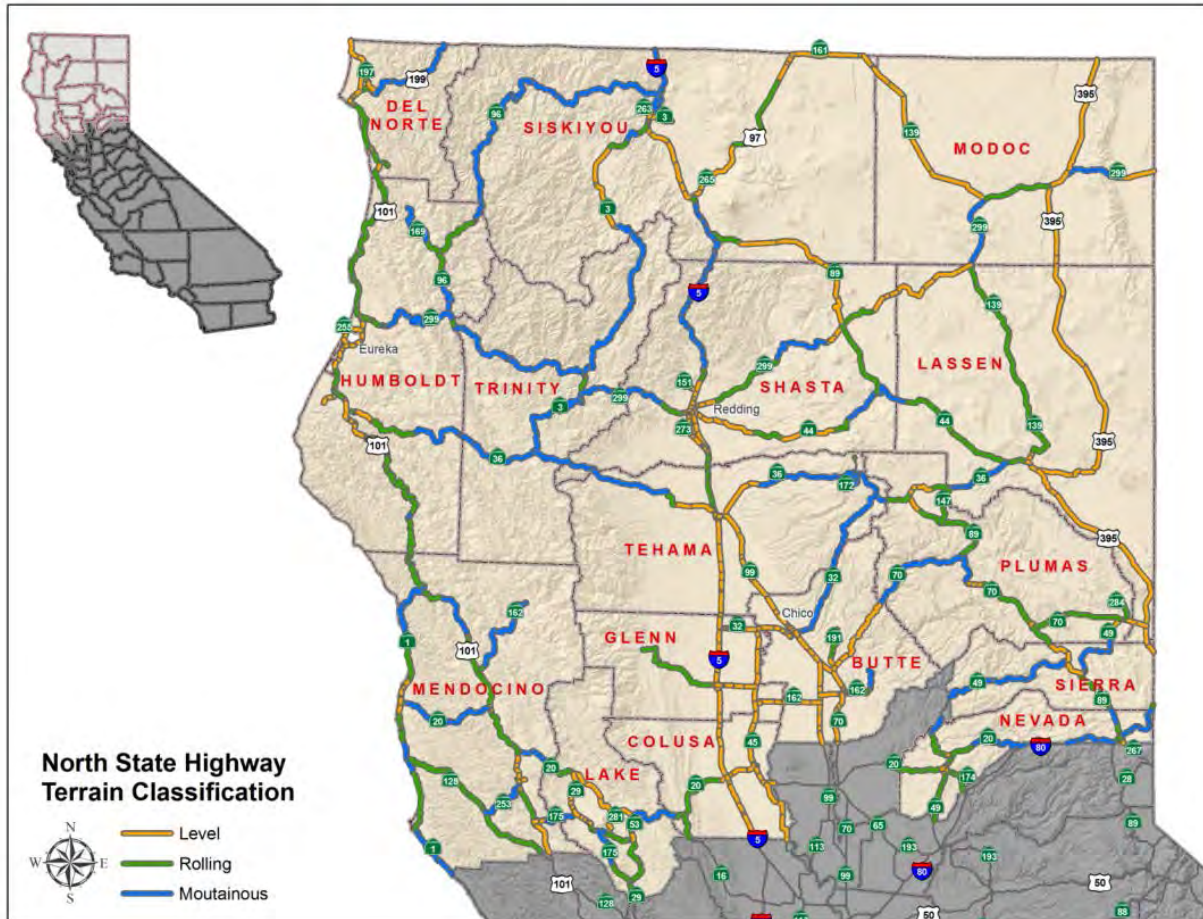
- SR-70 and SR-99, which parallel I-5 to provide access to Chico, Oroville, and the rest of Butte County
- SR-199, which provides access to Del Norte County from Grants Pass, Oregon
- US 97, which serves as an alternative to I-5 for trucks, particularly in the winter.



There are relatively few options for east-west travel, especially from the North Coast to the Sacramento Valley. None have more than two lanes. The routes typically traverse mountainous terrain with many curves and are susceptible to snow, ice, and landslides. The lack of access and isolation leads to the North Coast being occasionally called “behind the Redwood Curtain.”

As shown in Exhibit 2, there is a relatively equal percentage of mileage in level, rolling and mountainous terrain in the North State.

Exhibit 2: North State Terrain



Four routes connect US 101 to I-5: US 199, SR-299, SR-36, and SR-20. US 199 connects Del Norte County with I-5 at Grants Pass in Oregon. It is being upgraded to provide better truck access. SR-299 is also being upgraded in stages to provide better truck access between the North Coast and Redding. SR-36 is a rugged route that connects Humboldt County with I-5 in Tehama County. In the southern portion of the US 101 corridor, SR-20 is the major connector from Mendocino and Lake counties to the Sacramento Valley. Connections from US 101 to I-5 are hampered by a number of issues including water, seismic activities, landslides, and geometrics.

The portion of the North State east of I-5 has more east-west roads. However, these roads are also two-lane rural routes with curves through the mountains. In the winter, weather can become a major issue.



The primary east-west routes east of I-5 are SR-299, SR-36, SR-44, and SR-70. In addition, SR-32 provides east-west access to Chico from I-5.

Passenger Aviation

The availability of passenger aviation can provide access and spur economic activity. The North State has four commercial aviation airports:

- Arcata/Eureka (ACV), with service to Crescent City, Sacramento, and San Francisco
- Chico Municipal (CIC), with service to San Francisco
- Del Norte County Regional Airport, Jack Mc Namara Field (CEC), with service to Arcata/Eureka and San Francisco
- Redding Municipal (RDD), with service to San Francisco.

As shown in Exhibit 3, the airports are located along the North Coast and in the Sacramento Valley. All four airports are non-hub airports that offer limited, essential service to nearby hub airports, such as San Francisco International Airport (SFO) and Sacramento International Airport (SMF). Each airport is served by only one carrier – SkyWest operating as United Express. Local weather (affecting visibility) often leads to flight cancelation, so passenger service is inconsistent.

Exhibit 3: Location of North State and Nearby Airports





Ground access to the airports is limited, as only the Redding Municipal Airport is located near an Interstate, I-5. Both Arcata/Eureka Airport and Jack Mc Namara Field are situated along US 101, but accessible only to North Coast communities. The Chico Municipal Airport is along SR-99 in the City of Chico, but about 20 miles from I-5 via SR-32.

In addition to these four airports, there are four small airports located just outside the North State. Each of these offers slightly expanded service compared to the North State airports:

- Charles M. Schulz- Sonoma County Airport (STS) in Santa Rosa, with Horizon Air operating as Alaska Airlines to Los Angeles, Portland, San Diego, and Seattle/Tacoma
- Klamath Falls (LMT), with SkyWest operating as United Express to Portland and San Francisco
- Rogue Valley International/Medford (MFR), with Horizon Air operating as Alaska Airlines, SkyWest operating as Delta Connection, SkyWest operating as United Express, and Allegiant Air with service to Denver, Las Vegas, Los Angeles, Phoenix/Mesa, Portland, Salt Lake City, San Francisco, and Seattle/Tacoma
- Eugene Airport, Mahlon Sweet Field (EUG), with Horizon Air operating as Alaska Airlines, SkyWest operating as Delta Connection, SkyWest operating as United Express, SkyWest operating as American Airlines, Frontier Airlines, and Allegiant Air with service to Denver, Las Vegas, Palm Springs, Los Angeles, Phoenix/Mesa, Portland, Salt Lake City, San Francisco, Oakland, Portland, and Seattle/Tacoma.

Some North State residents use these airports, because they are located near the northern and southern edges of the Super Region and offer more air service than the airports in the North State. However, for comprehensive air service, North State travelers must use one of four medium to large hub airports located near the North State:

- Oakland International (OAK)
- Reno/Tahoe International (RNO)
- Sacramento International (SMF)
- San Francisco International (SFO).

San Francisco International Airport, in particular, offers extensive air service and connections to domestic and international destinations. As shown in Exhibit 4, the San Francisco International Airport ranks seventh nationally in terms of enplanements (i.e., number of people making a one-way trip through the airport in a year). Sacramento International and Oakland International are medium-sized hubs that rank in the top 40 airports nationally in terms of enplanements. Reno/Tahoe International is a smaller hub located near Sierra and Nevada counties. By contrast, the North State airports have few enplanements. Only the Arcata/Eureka airport ranks within the top 250 nationally.



Exhibit 4: Enplanements at North State and Nearby Airports

Rank	State	Location ID	City	Airport Name	Hub Size	2010 Enplanements	2011 Enplanements	Percent Change
North State Airports								
247	CA	ACV	Arcata	Arcata/Eureka	Non-Hub	93,402	70,455	-24.57%
342	CA	CIC	Chico	Chico Municipal	Non-Hub	23,272	20,881	-10.27%
368	CA	CEC	Crescent City	Jack Mc Namara Field	Non-Hub	14,341	14,887	3.81%
291	CA	RDD	Redding	Redding Municipal	Non-Hub	54,420	38,290	-29.64%
Smaller Airports Outside Super Region								
221	CA	STS	Santa Rosa	Charles M. Schulz - Sonoma County	Non-Hub	92,778	102,414	10.39%
366	OR	LMT	Klamath Falls	Klamath Falls	Non-Hub	21,353	15,856	-25.74%
154	OR	MFR	Medford	Rogue Valley International - Medford	Non-Hub	310,824	301,742	-2.92%
134	OR	EUG	Eugene	Mahlon Sweet Field	Small	369,397	393,504	6.5%
Medium/Large Hub Airports Outside Super Region								
36	CA	OAK	Oakland	Metropolitan Oakland International	Medium	4,673,417	4,550,526	-2.63%
64	NV	RNO	Reno	Reno/Tahoe International	Medium	1,857,488	1,821,051	-1.96%
40	CA	SMF	Sacramento	Sacramento International	Medium	4,424,279	4,370,895	-1.21%
7	CA	SFO	San Francisco	San Francisco International	Large	19,359,003	20,056,568	3.60%

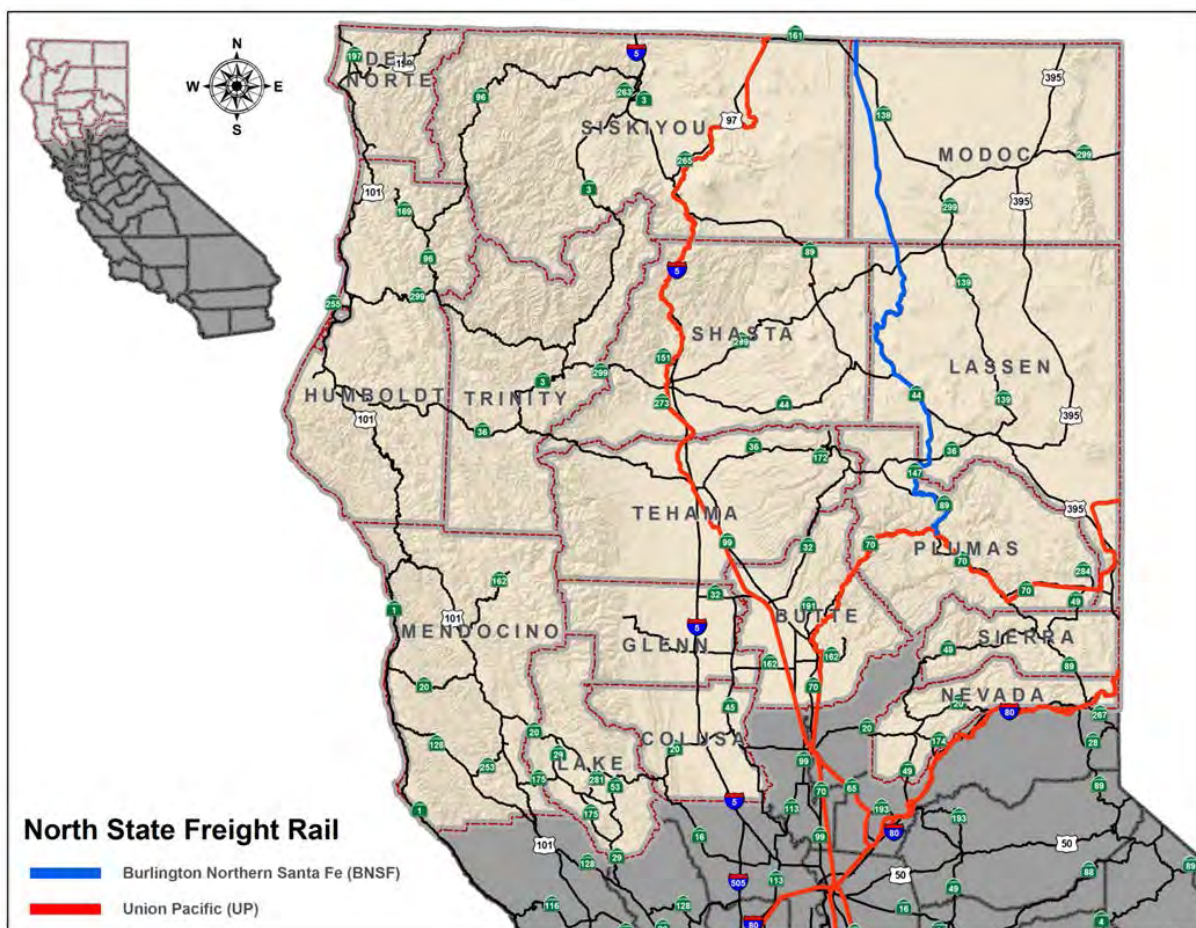
Source: Federal Aviation Administration (FAA)

Non-Highway Freight System

The North State is served by two Class I railroads – the Burlington Northern Santa Fe (BNSF) and the Union Pacific (UP). As illustrated in Exhibit 5, these railroads serve the Sacramento Valley and the eastern portion of the North State. UP provides service along SR-99, I-5 and US 97 through the Sacramento Valley and the southern Cascade Range to Oregon. UP also provides service through Butte and Plumas County along SR-70 to Nevada. BNSF provides service through Plumas, Lassen, and Modoc counties. These railroads operate out of the ports of Stockton, West Sacramento, Oakland, Richmond, and Redwood City.



Exhibit 5: Class I Freight Railroads in North State



In all, the railroads travel through eight of the 16 North State counties. The North Coast, including Del Norte, Humboldt, and Mendocino counties have not had comprehensive freight rail service since the demise of the Northwestern Pacific Railroad (NWP). In addition, UP discontinued rail service in the eastern portion of the North State. Rail service no longer operates between Alturas in Modoc County to Susanville in Lassen County, while the remaining line between Klamath Falls, Oregon to Alturas, California is operated every other day by Modoc Northern, a subsidiary of Utah Central Railway.

The North Coast is home to the only protected deep-water port in the North State. The Port of Humboldt Bay is located in Eureka roughly 225 nautical miles north of the San Francisco Bay Area and 155 nautical miles south of Coos Bay, Oregon. Historically, the port has served the timber and forest products industry (e.g., logs, lumber, and wood chips) as well as commercial fishing. A recent business plan is focused on pursuing local cargo (e.g., bulk, project cargo and barge), coastal short sea shipping service, and cruise shipping). Other waterborne cargo must travel through ports in neighboring regions, such as the Port of Oakland.



Key findings about the North State transportation system are:

- The North State has about 3,350 centerline miles of State Highway System (SHS). The vast majority of this mileage is in rural areas (95 percent) and consists of only two-lane roads (about 83 percent).
- The major highway routes run north-south (e.g., US 101, I-5, and US 395). There are few options for east-west travel and none have more than two lanes. These routes typically traverse mountainous terrain with many curves and are susceptible to snow, ice, and landslides.
- There are only four commercial airports in the North State. All are small airports served by one air carrier, SkyWest operating as United Express, which provides essential passenger service. Local weather often causes flight cancelations, leading to inconsistent service. There are also four small airports just outside the North State, which provide more extensive service.
- More distant air travel requires using one of four medium or large hub airports outside the region: Oakland International (OAK), Reno/Tahoe International (RNO), Sacramento International (SMF), and San Francisco International (SFO).
- The Sacramento Valley is served by two Class I freight railroads – Union Pacific (UP) and Burlington Northern Santa Fe (BNSF). Neither railroad provides service along the North Coast, which has been without rail service for more than a decade.
- The North State is served by only one port, the Port of Humboldt Bay, which has historically focused on the wood products and commercial fishing industries.

Highway Level of Service

This section describes the current and future level of service (LOS) on North State highways. The LOS estimates are derived from the most recent traffic counts available and travel demand model runs, merged to develop a consistent set of planning LOS estimates across the North State.

The project team contacted representatives from all 16 North State counties as well as Caltrans Districts 1, 2 and 3 to collect available data and forecasts. The county representatives were permitted to add non-State Highways in the analysis if they might show significant economic benefits when improved (e.g., high volume truck routes, connections to major generators, etc.). Most counties responded that they expected economic development benefits to occur primarily through improvements on State Highways. However, a few asked for the analysis to include other selected roadways.

To assess the level of service (LOS) provided by North State highways, the project team developed a database of highway characteristics, traffic volumes, and traffic forecasts. The traffic database covers all 3,353 centerline miles of the State Highway System (SHS) in the North State plus the aforementioned selected roadways.

Current Level of Service

The project team collected traffic volume data, forecasts, and LOS estimates available in Regional Transportation Plans (RTPs) and associated databases. Exhibit 6 (on the next page) summarizes the data available from the latest North State RTPs. Since the RTP data covers only a portion of the State



Highways in the North State, the project team collected Caltrans traffic count information to prepare consistent planning LOS estimates for the entire SHS.

Exhibit 6: Summary of Available Traffic Volume and LOS Estimates from RTPs

County (Agency)	Latest RTP	Sources of Volume and LOS Estimates
Butte (BCAG)	2008	2010 and 2035 model volumes provided from model used for draft 2012 RTP
Colusa (LTC)	2008	2008 and 2030 volumes and LOS on selected roadway segments in RTP
Del Norte (LTC)	2011	2008/2009 volumes and LOS, on State highways in RTP, historic growth (1999 to 2009), no forecasts
Glenn (GCTC)	2009/10	2007 and 2030 volumes and LOS on selected roadway segments in RTP
Humboldt (HCAOG)	2008	Existing congested roadways identified, no volume data in RTP
Lake (APC)	2010	Volumes and LOS not provided in RTP, growth factors for State Highways provided by Caltrans District 1
Lassen (LCTC)	2005/06	2005 and 2025 volumes and LOS in RTP
Mendocino (MCOG)	2010	Volumes and LOS not provided in RTP, growth factors for State Highways provided by Caltrans District 1
Modoc (MCTC)	2005	2005 and 2025 volumes on selected roadways in RTP
Nevada (NCTC)	2010	Volumes and LOS not provided in RTP
Plumas (PCTC)	2010	2005 and 2030 peak hour volumes and LOS on selected roadways
Shasta (SRTA)	2010	2010 and 2030 volumes and LOS on selected roadway segments in RTP
Sierra (SCTC)	2010	2010 and 2030 volumes (no LOS) on selected roadway segments in RTP
Siskiyou	2010	2010 and 2035 volume and LOS on selected roadways in RTP
Tehama (TCTC)	2006	2005 and 2030 volume and LOS on selected roadways in RTP
Trinity	2011	2009 and 2040 volume and LOS on selected roadways in RTP

Source: Regional Transportation Plans and model documentation

The method for estimating the planning LOS is similar to the method used by a number of California counties, including some in the North State, for preparing estimates for general plans and RTPs. The method relies on categorizing roadways according to several factors identified using online aerial photographs, terrain maps, and information available from Caltrans districts:

- Area type (i.e., urban, small urban or rural)
- Number of travel lanes
- Level of access control (i.e., low, medium or high)
- Terrain (i.e., level, rolling or mountainous)
- Truck percentage (i.e., low, medium, high or very high).

The LOS method estimates daily roadway segment capacities for LOS A through LOS E and compares daily volumes to these capacities. Segments with volumes exceeding the LOS E capacity are considered to be LOS F. Daily volumes are used in the calculation because most counties do not estimate hourly



capacities. However, the daily capacities and resulting LOS estimates are intended to reflect operating conditions during peak hours.

Traffic volumes on some rural highways in the North State can be significantly higher during summer months. The traffic database has average daily volumes during peak months which can be applied to define the LOS on an average day in the peak month. Where RTP LOS estimates were available, the project team compared the planning LOS estimates to the RTP LOS estimates and found similar LOS assignments in most cases. Appendix A provides more details on the data collected and method used to estimate the planning LOS.

Exhibit 7 summarizes the LOS estimated for North State using the latest traffic data (2010) as a proxy for current conditions. On an average day, only about 1 percent (or 30 miles) of the centerline miles on State Highways operates at LOS F in the North State. About 11 percent (350 miles) operates at LOS D or worse. Detailed LOS estimates by segment are found in Appendix B.

Exhibit 7: Current (2010) Level of Service on North State Highways

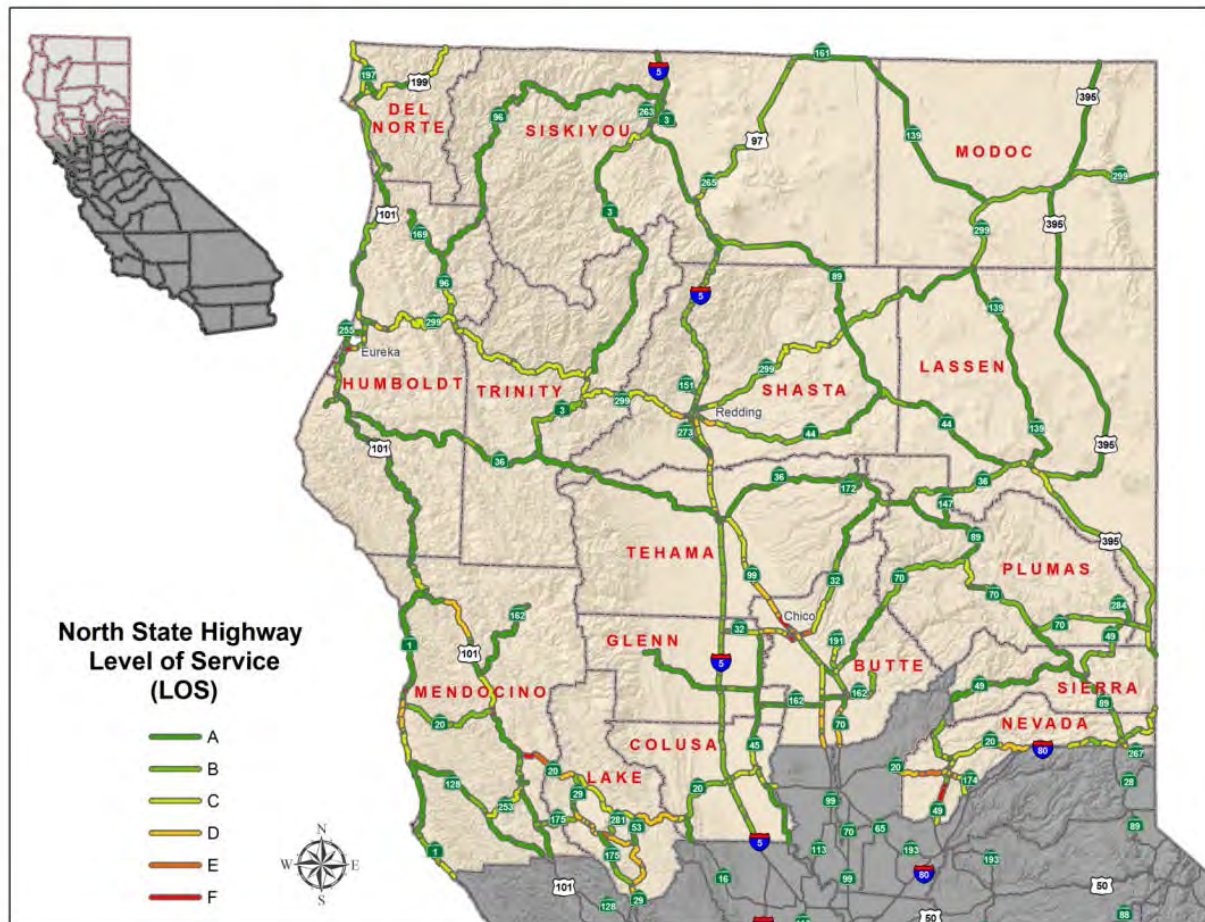




Exhibit 8 provides a summary of 2010 level of service by county. The North State counties with the highest percentage of SHS centerline miles operating at LOS D or worse are:

- Lake County – 62 percent
- Nevada County – 35 percent
- Butte County – 31 percent.

Exhibit 8: Highway Centerline Mileage by 2010 LOS Category

District	County	2010 Level Of Service						Total
		A	B	C	D	E	F	
1	Del Norte	22.5	14.1	54.8	2.1	-	-	93.5
	Humboldt	227.8	67.9	34.2	23.3	0.9	1.8	355.8
	Lake	10.7	17.7	24.6	67.3	18.0	-	138.3
	Mendocino	190.2	52.8	105.2	13.4	17.5	14.1	393.2
2	Lassen	198.7	46.8	58.0	-	-	-	303.6
	Modoc	114.5	62.5	1.8	-	-	-	178.9
	Plumas	76.0	83.8	10.0	12.4	-	-	182.3
	Shasta	89.8	129.5	58.3	32.4	6.2	-	316.2
	Siskiyou	212.3	113.6	20.0	1.7	3.5	-	351.0
	Tehama	107.1	61.7	32.5	6.2	-	-	207.6
	Trinity	69.5	48.8	55.9	22.6	1.7	-	198.5
3	Butte	46.6	47.7	28.5	40.1	10.9	5.1	178.9
	Colusa	36.7	35.4	40.6	0.6	1.3	0.4	115.1
	Glenn	67.6	31.3	9.7	1.3	-	-	109.9
	Nevada	2.4	27.8	56.5	26.9	10.2	8.5	132.3
	Sierra	63.5	34.7	-	-	-	-	98.3
North State Total		1,536.0	876.2	590.6	250.2	70.1	30.1	3,353.2

Future Level of Service

The project team also estimated future LOS conditions on State Highways in the North State. As shown in Exhibit 9, only nine of 16 North State counties are covered by travel demand models. Among these counties, some have models that have not been updated for many years or are being updated, so the model data are unavailable. Another complicating factor is that the RTP forecast years range from 2025 to 2040.



Exhibit 9: Summary of Available Traffic Forecasts

County	Number of Segments			Forecast Year	Travel Demand Model	Source and Method Forecasts
	Total	Available Forecasts	Percent			
Caltrans District 1						
Del Norte	28	28	100%	2030		2010 times 20 year growth factors by roadway segments from Caltrans District 1
Humboldt	130	130	100%		3-step county model	
Lake	40	40	100%		Wine Country 4-county model	
Mendocino	89	89	100%		3-step county model and Wine Country 4-county model	
Caltrans District 2						
Lassen	34	28	82%	2025	4-Step county model	2005/06 RTP
Modoc	19	8	42%	2025		2005 RTP
Plumas	36	11	31%	2030		Percent growth in peak hour volume applied to 2010 daily volume from 2010 RTP
Shasta	117	117	100%	2030	4-step and activity-based models	Draft 2030 forecast from new activity-based travel demand model
Siskiyou	74	12	16%	2035		2010 RTP
Tehama	49	16	33%	2030		2030 forecasts for I-5 only from 2006 RTP
Trinity	25	17	68%	2040	3-step county model	2011 RTP
Caltrans District 3						
Butte	86	86	100%	2035	3-step county model	BCAG Model (post-processed by DKS)
Colusa	32	13	41%	2030	3-step county model	2008 RTP (9) and General Plan EIR (4)
Glenn	38	13	34%	2030		2009/10 RTP
Nevada	59	59	100%		3-step county model	Volume data not in RTP
Sierra	17	10	59%	2030		Peak month forecasts in 2010 RTP (growth rate applied to average day)
Total	873	618	78%			

To provide a consistent set of forecasts, the project team prepared LOS estimates for five-year intervals from 2015 to 2030 using the planning LOS methodology described earlier. Growth in traffic was estimated using growth rates from travel demand models (where available), Caltrans growth rates, and rates from adjacent segments. Appendix A provides more details on the forecasting methodology.



By 2030, about 4 percent (or 142 miles) of the centerline miles on the SHS will operate at LOS F on an average day in the North State. About 27 percent (918 miles) will operate at LOS D or worse. As shown in Exhibit 10, some of the most important routes in the North State are expected to have poor operating conditions. Most of I-5 will operate at LOS D or worse, with sections in Shasta and Tehama counties at LOS F. Other critical routes expected to have degraded operating conditions in 2030 include:

- SR-299 through Humboldt, Trinity, and Shasta counties
- SR-99, SR-70, and SR-32 through Butte and Tehama counties
- I-80 and SR-49 in Nevada County
- SR-20 through Lake and Mendocino counties
- SR-199 in Del Norte County.
- US 395 and SR-36 in Lassen County.

In addition, a small section of US 101 north of Laytonville is forecasted to experience LOS E. While the planning level of service estimated for the NSTEDS is not a detailed forecast, these areas represent potential locations for improvements that would affect regional and inter-regional traffic flows.

Exhibit 10: Future (2030) Level of Service on North State Highways

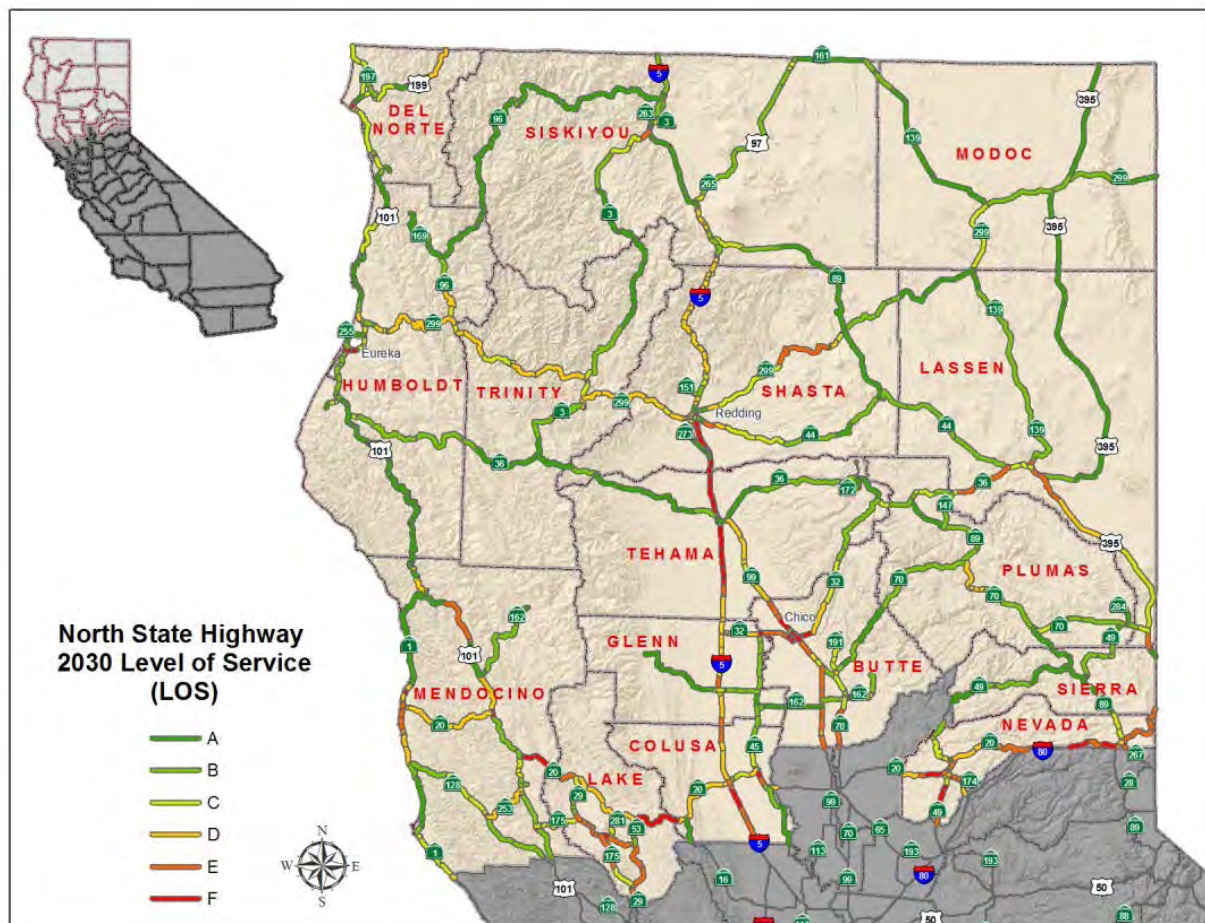




Exhibit 11 provides a summary of 2030 level of service by county. The following North State counties are expected to have the highest increase in the percent of the highway system (by centerline mileage) operating at LOS D or worse:

	<u>2010</u>	<u>2035</u>
• Colusa County	2 percent	58 percent
• Glenn County	1 percent	35 percent
• Nevada County	35 percent	78 percent.

Exhibit 11: Highway Centerline Mileage by 2030 LOS Category

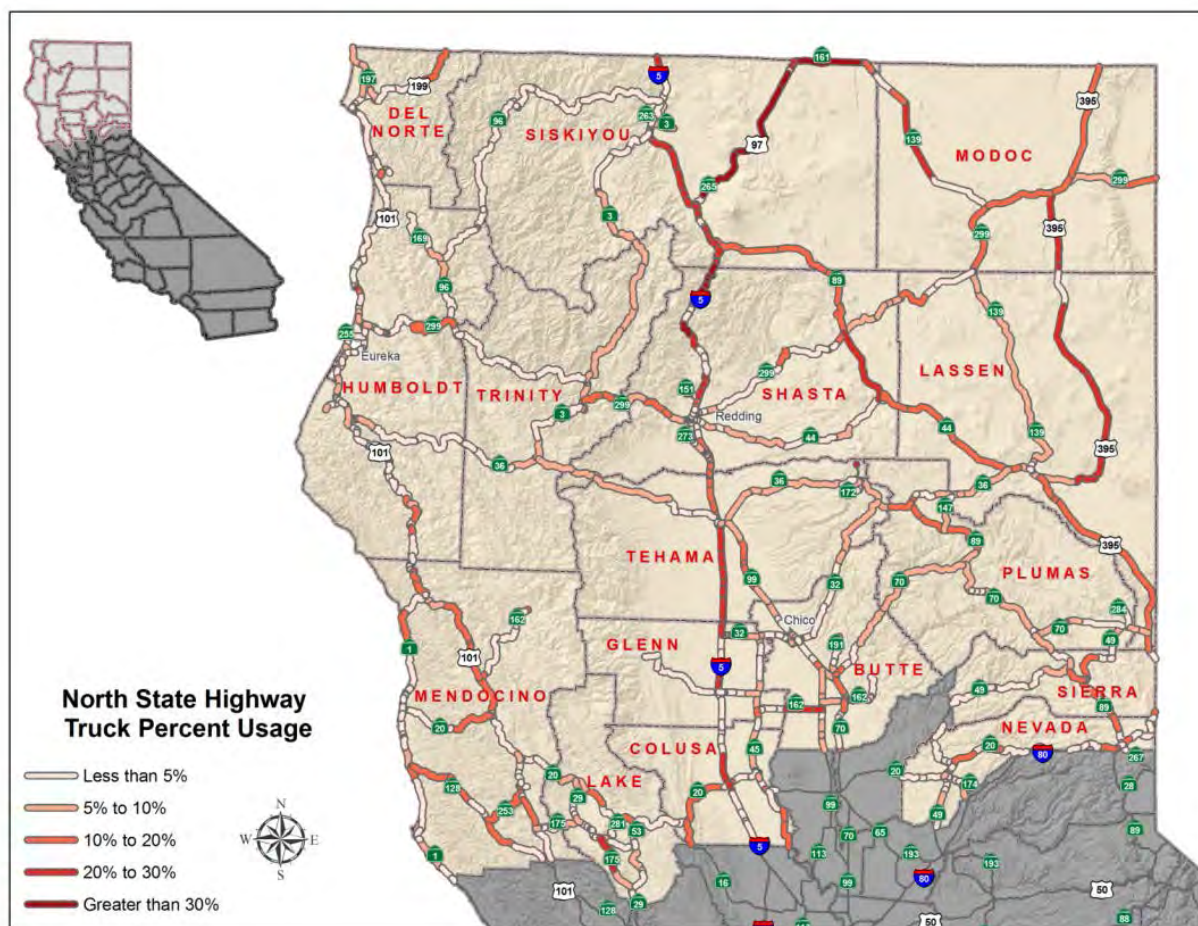
District	County	2030 Level Of Service						Total
		A	B	C	D	E	F	
1	Del Norte	18.1	10.9	45.4	18.0	0.5	0.6	93.5
	Humboldt	187.9	80.3	34.6	47.7	0.9	4.4	355.8
	Lake	2.7	8.0	22.4	25.2	62.0	18.0	138.3
	Mendocino	106.1	104.9	51.6	89.9	23.4	17.3	393.2
2	Lassen	100.3	107.5	39.0	22.0	34.8	-	303.6
	Modoc	108.4	46.0	24.5	-	-	-	178.9
	Plumas	38.4	115.6	15.9	12.4	-	-	182.3
	Shasta	70.0	75.8	54.1	73.2	25.6	17.5	316.2
	Siskiyou	191.0	109.0	38.5	7.4	5.2	-	351.0
	Tehama	71.9	64.4	12.6	24.0	3.2	31.5	207.6
	Trinity	69.5	48.8	25.1	54.5	0.6	-	198.5
3	Butte	26.3	28.4	36.1	18.2	53.6	16.3	178.9
	Colusa	20.1	17.7	10.0	37.8	22.3	7.3	115.1
	Glenn	36.6	32.4	2.8	31.3	5.5	1.3	109.9
	Nevada	2.0	6.3	20.7	31.5	44.1	27.7	132.3
	Sierra	63.1	33.6	-	-	1.6	-	98.3
North State Total		1,536.0	1,112.3	889.3	433.1	493.3	283.3	141.9

Truck Traffic

The presence of trucks on North State highways has the potential to affect the level of service experienced by travelers. In addition, heavy truck flows indicate routes important for commodity flows and goods movement. On about 38 percent of the centerline miles in the North State, trucks represent more than 12 percent of traffic. Furthermore, approximately 13 percent of the centerline miles has a truck percentage greater than 20 percent. Exhibit 12 shows the truck percentage for all State Highways in the North State. A table summarizing these truck percentages by county is presented in Exhibit A6 in Appendix A.



Exhibit 12: Truck Percentage on North State Highways

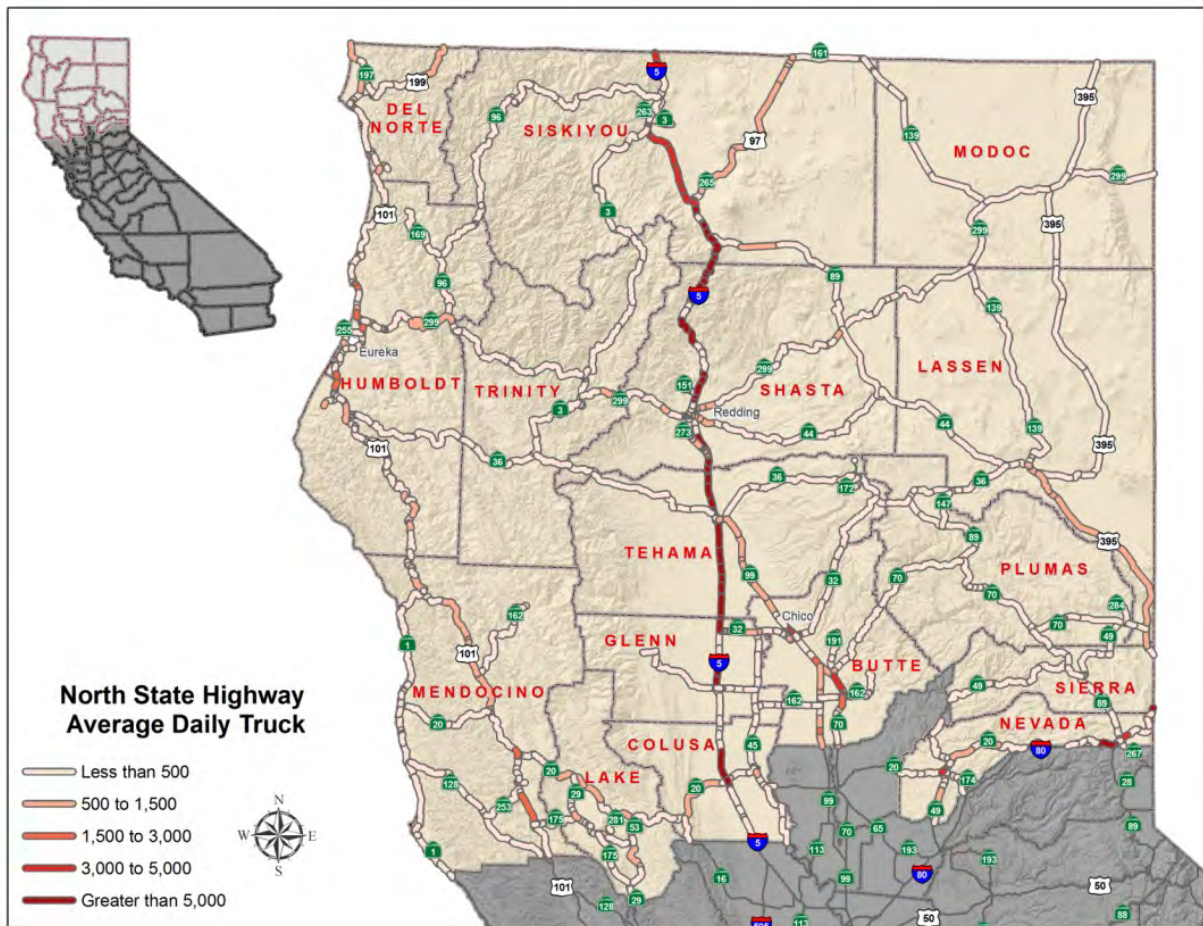


While many North State highways have high truck percentages, most of the truck movements are found on only a few routes. This is indicative of a couple of factors. First, the economy in many parts of the North State is dependent on agriculture or forest and wood products. Both industries require seasonal harvesting over a large land area, so agriculture and logging trucks need multiple access roads to producing fields and forests. These roads often experience intense periods of truck traffic during harvesting. Second, State Highways also serve truck traffic heading through the North State from outside origins.

As shown in Exhibit 13, the highest truck volumes occur on I-5, which carries more than 5,000 trucks per day on some sections. Other routes with heavy truck traffic include US 97 (which reflects its status as an alternative to I-5 in the winter), SR-32/SR-70/SR-99 (which provide access to Chico as well as Butte and Yuba counties), US 101 (which serves at the primary access along the North Coast), and US 395 (which is the major north-south route along the eastern portion of the North State).



Exhibit 13: Truck Traffic on North State Highways



A comparison of Exhibits 12 and 13 shows that many highways in the eastern mountain areas of the North State have high truck percentages, but low truck volumes. These routes carry little traffic overall, but are important to truck travel. Since much of this region harvests wood products, these traffic volumes reflect logging truck traffic.

Truck traffic is relatively light on the routes over the Coastal Ranges and Trinity Alps (i.e., SR-299 and SR-36). This is indicative of the lack of Surface Transportation Assistance Act (STAA) truck access (i.e., ability to use 53-foot trucks) along these routes. The lack of STAA designation means that highway segments are narrow with tight curves, so larger trucks are unable to navigate the route. Both Exhibits 12 and 13 illustrate the relative isolation of Humboldt and Del Norte counties in truck access. However, there is a slightly higher truck volume and percentage along SR-299 between Eureka and the Hoopa Valley Indian Reservation near SR-96.

Key findings about travel demand models, LOS, and truck traffic on North State highways are:

- There is limited data available from North State travel demand models. Only nine of the sixteen counties are covered by travel demand models. Some models have not been updated for several years or are currently being updated.



- The project team developed planning LOS forecasts for 2010, 2015, 2020, 2025, and 2030 for the entire State Highway System in the North State.
- Currently, most of the North State highway network operates at an adequate level of service. Only about 11 percent (350 miles) operates at LOS D or worse. The counties with the highest percentage of SHS centerline miles operating at LOS D or worse are: Lake (62 percent), Nevada (35 percent) and Butte (31 percent).
- In the future, travel operating conditions will be much worse on North State highways. By 2030, about 27 percent (or 918 miles) of the centerline miles on the SHS will operate at LOS D or worse.
- Most of I-5 will operate at LOS D or worse in 2030. Some sections in Shasta and Tehama counties will operate at LOS F. Other routes with degraded LOS include SR-299, SR-32/SR-70/SR-99, I-80/SR-49, SR-20, SR-199, and SR-36/US 395.
- The largest increases in the percent of highway miles operating at LOS D or worse are expected to occur in Colusa, Glenn, and Nevada Counties.
- On about 38 percent of centerline miles in the North State, trucks represent more than 12 percent of traffic. Furthermore, approximately 13 percent of the centerline miles has a truck percentage greater than 20 percent.
- Most of the truck travel occurs on a few routes. The highest truck volumes occur on I-5, which carries more than 5,000 trucks per day on some sections. Other routes with heavy truck traffic include US 97, SR-32/SR-70/SR-99, US 101, and US 395.
- Many highways in the eastern mountain areas of the North State have high truck percentages, but low truck volumes. These routes carry little traffic overall, but are important to truck travel since much of this region harvests wood products.
- Truck traffic is relatively light on the routes over the Coastal Range and the Trinity Alps to the North Coast. This is likely indicative of the lack of STAA truck access.

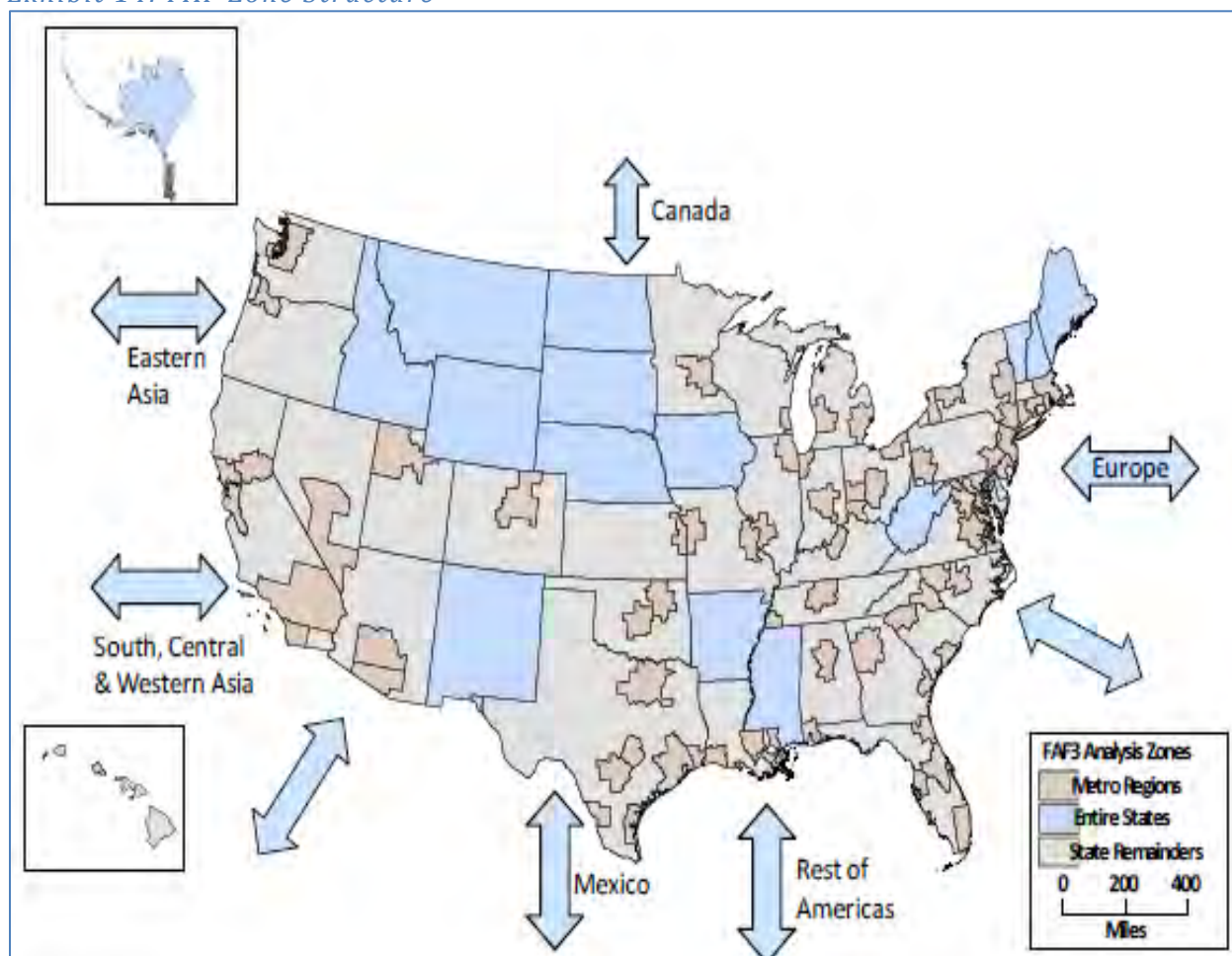
Commodity Flows

This section provides an overview of commodity flows in the North State. Information on commodity flows is derived from a combination of Caltrans Intermodal Transportation Management System (ITMS) data, the federal Freight Analysis Framework (FAF), and the IMPLAN regional economic analysis model

The project team reviewed potential sources to find the best information available on commodity flows in the North State. The most recent source is a 2007 Federal database called the Freight Analysis Framework (FAF) that shows national freight flows by commodity. While relatively current, this database is focused primarily on flows to and from major metropolitan areas. The North State is lumped with the Central Coast, the San Joaquin Valley, the Central Sierras, and Imperial County in a single reporting zone called "Remainder of California." Exhibit 14 shows the national FAF zone structure. In addition, Nevada County is included as part of the Sacramento metropolitan region. The most recent FAF data was collected for 2007. As a result, it does not capture any changes to commodity flows caused by the Great Recession.



Exhibit 14: FAF Zone Structure



Source: FHWA, Freight Analysis Framework Version 3 (FAF3) Technical Documentation

The project team tried to disaggregate FAF data into county-level commodity flows using information on the production and use of commodities from a regional economic model called IMPLAN. This analysis approximated flows to and from individual North State counties, but the process required assumptions about the commodities that could be made and used by multiple industries. The resulting trends did not reflect actual flows in the North State. Consequently, the combination of FAF and IMPLAN data are used to describe the general value of commodities produced in the North State, but not the county-level commodity flows.

An older database provides information on county-level commodity flows. In the mid-1990s, Caltrans developed the Intermodal Transportation Management System (ITMS), which contains information on commodity flows among other data. The ITMS was last updated in 2003 to provide actual data for 1996 as well as forecasts for 2006, 2016, and 2026. Although this information predates the Great Recession, it is collected from shipping waybills and supplemented by local California information (e.g., agricultural data). It has also been vetted by an advisory committee of planners throughout California.



The ITMS contains extensive information, which can be used to describe commodity flows:

- Origins and destinations in the North State by Bureau of Economic Analysis (BEA) zone, county, city, and ZIP code
- Commodity by 6-digit North American Industry Classification System (NAICS) code for: rail, intermodal container, heavy truck (private and less-than-truckload), air, and water modes
- Heavy truck estimates for trucks and heavy truck equivalents for other modes
- Average shipping distance for rail and truck modes.

The ITMS destination information shows that commodities arriving in the North State are generally delivered to population centers. The most common commodities are related to retail consumption. As a result the more useful commodity information is the origin data. The origin data describes what is produced in the North State and helps to identify potential needs on the transportation network.

Overview of North State Commodity Production

The FAF data combined with information in IMPLAN can provide an overview of the commodities produced in the North State. Exhibit 15 (on the next page) shows the value of commodities produced in the North State. These data were calculated by comparing the input-output industry requirements in the IMPLAN model for each county with the regional totals in the FAF. The flows for individual commodities are aggregated into groups to highlight overall trends. Appendix D provides details on which commodity codes belong in each group.

Exhibit 15 (on the next page) shows the 2010 estimated value of commodities produced in the North State as a whole, by aggregated commodity group, and for each county. According to the combined FAF and IMPLAN data, the North State produced roughly \$12 billion of commodities in 2010. IMPLAN estimates that approximately 15 percent of the commodities produced in the North State are consumed there. About 70 percent is exported to other parts of the United States (including the rest of California), while roughly 15 percent is exported to other countries. This compares to California as a whole, where roughly 60 percent of commodities are consumed within the state, roughly 30 percent is exported to other parts of the United States, and roughly 10 percent is exported to other countries. California retains more commodities than the North State because it is a larger and more diversified economy.

By value, the IMPLAN data estimate that agriculture accounts for a large proportion of the commodities produced in the North State. Nearly \$7 billion of commodities (or 57 percent of total production value) are agricultural or food products. Wood products account for another \$1.5 billion (or 12 percent), while \$1.5 billion (or 12 percent) is generated by machinery and metal product manufacturing.

Together, these three commodity groups represent over 81 percent of all commodities produced in the North State. Agriculture is overrepresented relative to wood products in this analysis, because the data were disaggregated from the “Rest of California” FAF zone, which includes the large agricultural production areas in the Central Valley and Imperial County. The chapter on the economic landscape presents actual (rather than estimated) data on production for individual industries collected from State of California sources. Regardless, these three commodity groups are the largest in the North State even if the actual, relative proportions differ. Later exhibits highlight the origins of the commodity groups using ITMS data.



Exhibit 15: Approximate Value of Commodities Produced in the North State in 2010 (\$ millions)

County	Agriculture and Food Products	Machinery & Metal Products	Wood Products	Misc Manuf Products	Mixed Freight/Cargo	Chemicals & Pharmaceutic	Petroleum, Coal & Products	Stone, Gravel, Sand, Minerals, Ores, & Related	Animal & Fish Products	County Totals
Butte	\$ 1,659	\$ 321	\$ 131	\$ 233	\$ 208	\$ 39	\$ 19	\$ 11	\$ 0	\$ 2,621
Colusa	\$ 1,135	\$ 19	\$ 5	\$ 15	\$ 3	\$ 1	\$ 2	\$ 1	\$ 0	\$ 1,181
Del Norte	\$ 71	\$ 28	\$ 6	\$ 2	\$ 4	\$ 1	\$ 3	\$ 2	\$ 48	\$ 165
Glenn	\$ 643	\$ 39	\$ 8	\$ 6	\$ 15	\$ 0	\$ 8	\$ 88	\$ 0	\$ 808
Humboldt	\$ 468	\$ 59	\$ 331	\$ 157	\$ 39	\$ 101	\$ 18	\$ 15	\$ 11	\$ 1,199
Lake	\$ 213	\$ 18	\$ 2	\$ 13	\$ 3	\$ 6	\$ 18	\$ 7	\$ 0	\$ 281
Lassen	\$ 102	\$ 1	\$ 18	\$ 3	\$ 2	\$ 0	\$ 21	\$ 3	\$ 0	\$ 149
Mendocino	\$ 1,059	\$ 138	\$ 223	\$ 64	\$ 12	\$ 42	\$ 13	\$ 3	\$ 13	\$ 1,566
Modoc	\$ 132	\$ 0	\$ 12	\$ 1	\$ 3	\$ -	\$ 2	\$ 5	\$ 0	\$ 156
Nevada	\$ 90	\$ 530	\$ 23	\$ 134	\$ 32	\$ 13	\$ 32	\$ 14	\$ 0	\$ 867
Plumas	\$ 26	\$ 62	\$ 81	\$ 6	\$ 28	\$ 20	\$ 3	\$ 1	\$ 0	\$ 228
Shasta	\$ 236	\$ 129	\$ 319	\$ 91	\$ 35	\$ 156	\$ 151	\$ 123	\$ 6	\$ 1,245
Sierra	\$ 7	\$ 0	\$ 1	\$ 0	\$ 0	\$ 9	\$ 2	\$ -	\$ 0	\$ 19
Siskiyou	\$ 364	\$ 52	\$ 102	\$ 17	\$ 24	\$ 0	\$ 25	\$ 4	\$ 1	\$ 589
Tehama	\$ 715	\$ 130	\$ 186	\$ 22	\$ 78	\$ 2	\$ 15	\$ 5	\$ 0	\$ 1,154
Trinity	\$ 59	\$ 2	\$ 32	\$ 12	\$ 1	\$ 0	\$ 2	\$ 2	\$ 0	\$ 110
North State	\$ 6,977	\$ 1,530	\$ 1,481	\$ 775	\$ 487	\$ 391	\$ 334	\$ 284	\$ 80	\$ 12,338

Source: Combination of FAF and IMPLAN data in LEAP tool



Butte County accounts for much of the economic activity by producing \$2.6 billion or 21 percent of the total commodity value in the North State. This high percentage is due to agricultural and food commodities. High-value beer, tree nuts, and canning account for the majority of the agricultural and food production in the Butte County. Mendocino County provides an additional \$1.6 billion or 13 percent to the North State total. Wine and fruit account for much of the commodities produced in Mendocino County. Colusa, Humboldt, and Shasta counties each add another 10 percent. As a group, these five counties account for nearly two-thirds of the commodity value produced in the North State.

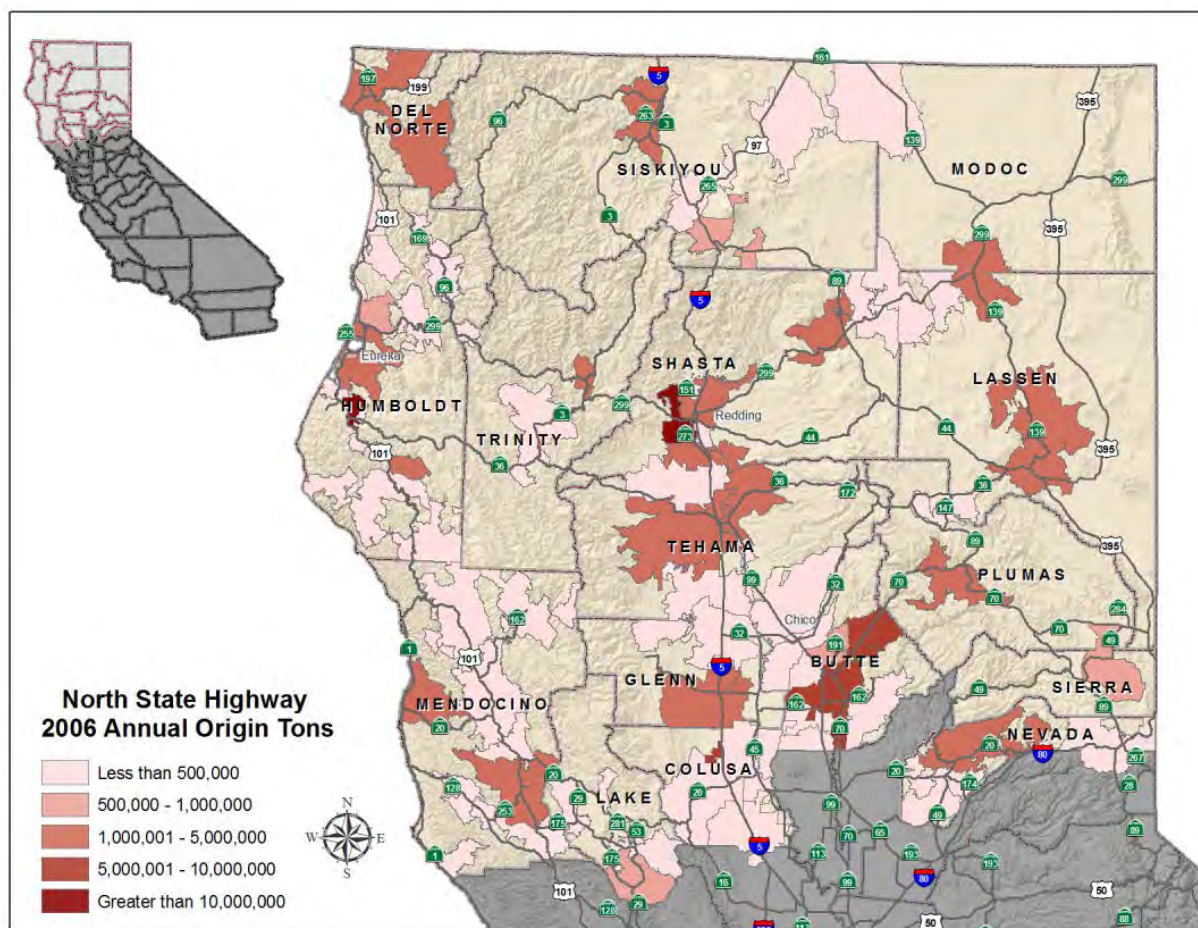
Agriculture and food products are the leading commodities by value in 12 North State counties. Only in Nevada, Plumas, Sierra, and Shasta counties are they not the top commodities. The first three counties are mountainous and do not have extensive agricultural land. Shasta County has mixed terrain. Here, agriculture and food products are second to wood products in commodity value. Wood products are the leading commodities produced in Plumas County. Machinery and metal products are the leading commodities produced in Nevada County. Sierra County produces very few commodities, so the trends shown in Exhibit 15 are not accurate for this county.

Of all North State counties, Shasta County is the most diverse in terms of commodities produced. No commodity accounts for more than 26 percent (wood products) of goods produced in the county. The least diverse county is Colusa with 96 percent (or \$1.1 billion) in agriculture or food products.

While the FAF and IMPLAN data can provide a county-level view of commodity production by value, the ITMS data can identify where commodities are likely to originate in the North State. Exhibit 16 shows the origins of North State commodities by tons (rather than value). The data are mapped by ZIP code, which approximates the actual production location. ZIP codes do not correspond directly to agricultural land or forests.



Exhibit 16: Origins of North State Commodities in 2006



Source: Caltrans ITMS data

As expected, the highest tonnages are produced in locations with:

- Larger populations (e.g., Redding, Chico, and Eureka/Arcata)
- Agricultural land (e.g., Colusa, Glenn, Butte, Tehama, and Mendocino counties)
- Timber production (e.g., Humboldt, Siskiyou, Mendocino, Plumas, Shasta, and Tehama counties).

The next three sections use the ITMS data to discuss the top three commodity groups and their relationship to the transportation network.

Agricultural and Food Products

Agricultural and food products account for \$7.0 billion in value to the North State, representing nearly 57 percent of all commodity values in the region. This group includes several types of commodities:

- Tree nuts
- Canned, pickled, and dried fruits and vegetables



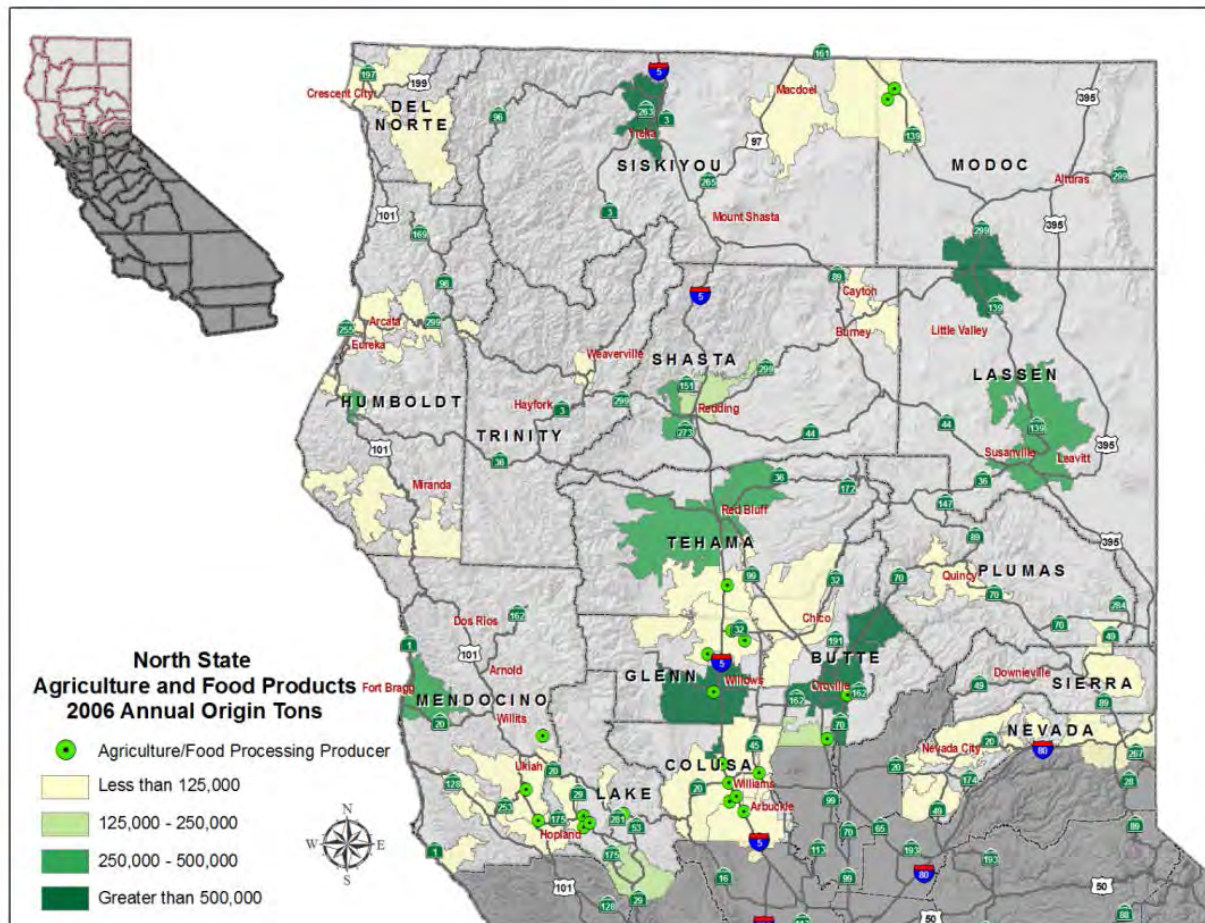
North State Transportation for Economic Development Study (NSTEDS)
Full Compendium Report

- Flour and malt
- Beer, wine, and other alcoholic products
- Grains
- Fruit
- Other crop farming products.

The fertile Sacramento Valley counties of Colusa, Butte, and Glenn produce over half of the region's agriculture and food product tonnages. At higher elevations in the far north of the North State, Modoc and Siskiyou counties are also major contributors, accounting for nearly 20 percent of the tons produced in the North State.

Exhibit 17 shows the origins of agricultural tons in the North State by mapping the 2006 ITMS data to ZIP codes. In the North State, ZIP code areas can be large and do not correspond exactly to the agricultural regions. However, this information is useful for highlighting general areas where production occurs. The descriptions below take into account a visual review of satellite imagery from Google Earth to account for irregularities in ZIP code boundaries.

Exhibit 17: 2006 Estimate Agricultural and Food Product Tons Produced by ZIP Code



Source: Caltrans ITMS data



The project team also collected information on major employers by county from the California Economic Development Department (EDD). Exhibit 17 shows the location of major agriculture and food producers listed in the EDD database of employers. There are many smaller North State employers that are not shown on the map. Appendix D describes the EDD data in more detail.

Colusa County leads the North State in agricultural tonnage produced. The county accounts for nearly 23 percent of all tons produced in the region. Most of this production comes from the eastern half of the county along I-5. ZIP codes extend into the Mayacamas Mountains, which do not have significant agriculture. Colusa County leads the North State as a producer of tree nuts, fruits and related food products, and grains.

Butte County has a similar production profile. The county produces more than 20 percent of all agriculture and food products, particularly in the Sacramento Valley areas west of Oroville and SR-99. Chico is home to a major microbrewery, which contributes significantly to the county's economic output in this sector.

Glenn County produces tree nuts and grains, primarily in the southeastern portion of the county along the I-5 corridor. Modoc and Siskiyou counties produce various farm products including alfalfa, onions, and potatoes as well as wheat and barley. The production areas in Modoc County are adjacent to Alturas (along the SR-299 and SR-395 corridors) and Tulelake (SR-139). In Siskiyou County, production occurs primarily in the Shasta Valley east of Yreka near the I-5 corridor.

In addition, there are several specialty crops and agricultural niche markets in the North State. For instance, Del Norte County and the adjacent area in Southern Oregon produce lily bulbs. This flower industry is one of the major employers in Del Norte County and fills an agricultural niche market nationally.

Several state highways (i.e., SR-99/SR-70, I-5, SR-299, SR-395, and SR-139) are critical to agricultural production. In addition, agricultural production relies on a series of local farm roads to connect fields to state highways.

Wood Products

Wood products account for \$1.5 billion in North State production which, along with machinery and metal products, is second to the nearly \$7 billion produced by agriculture and related industries. This commodity group includes the following products:

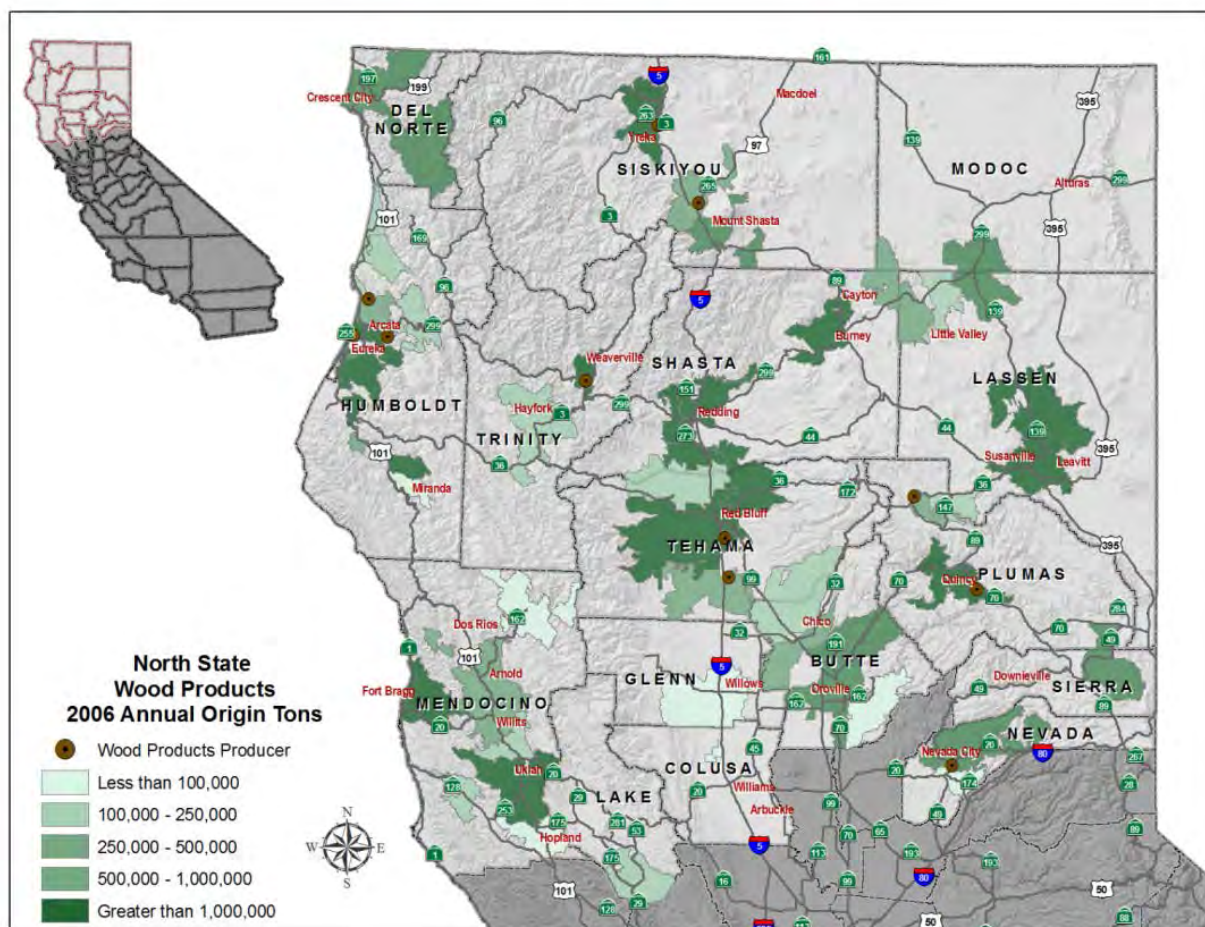
- Dimension lumber and preserved wood products
- Logs and roundwood
- Wood windows, doors, and millwork
- Forest, timber, and forest nursery products
- Paperboard containers
- Miscellaneous wood products.



Humboldt and Shasta counties each contribute over 20 percent of the North State's wood product value according to the combined FAF and IMPLAN data. Mendocino County contributes an additional 15 percent. Siskiyou, Lassen, Tehama, and Trinity counties add a combined 20 percent.

Exhibit 18 shows the origins of wood product tonnages in the North State from the 2006 ITMS. Although the ZIP code boundaries do not necessarily fit the actual locations of logging and the production of wood products, they indicate general production areas. To complement the ZIP code estimates, Exhibit 18 includes the locations of major sawmills and other known wood product companies (e.g., lumber hauling companies) to identify clusters of wood product activities. This information was collected from the EDD data on major employers.

Exhibit 18: 2006 Estimated Wood Products Produced by ZIP Code



Source: Caltrans ITMS data

In terms of tonnages, Humboldt and Shasta lead the North State. These counties account for 60 percent of all wood product tons produced in the area (and nearly 44 percent of total dollar value as described earlier). No other county produces more than 10 percent of the regional tonnage according to the ITMS data. However, as described in the economic landscape chapter, California Department of Forestry data indicates that Siskiyou is also a major producer of wood products.



Timber harvesting and the production of wood products require trucks to travel on a variety of routes. Exhibit 18 shows the dispersal of production locations in the North State. In Humboldt County, the primary highways used by the timber industry are US 101 and SR-299. US 101 is also a critical route in Mendocino County. These roads are used for other purposes, such as travel by residents and recreational travel, so they can become congested, particularly in the summer tourist season. Other critical wood products routes include SR-96 in Siskiyou County, SR-299 in Shasta County, and SR-20 in Mendocino County.

Many secondary state routes are also used to transport wood products. For example, in Humboldt County, the timber industry uses SR-36, SR-169, SR-200, SR-211, SR-254, SR-255, SR-271 and SR-283. SR-263 and SR-265 provide access and circulation for logging trucks in Siskiyou County. Additional routes are important in the other counties that generate wood products.

Timber and wood products travel on roads owned by multiple jurisdictions. For example, the US Forest Service, the National Park Service, California State Parks, and the Bureau of Land Management all provide roads that can be used by logging trucks and other vehicles hauling wood products. While certain routes, such as US 101, SR-299, SR-96, and SR-20, are critical to movement of timber and wood products, the commodities require a rich network of state highways and logging roads.

Machinery and Metal Products

Machinery and metal products in the North State account for roughly \$1.5 billion annually, tied with wood products as the second largest commodity group. Around 35 percent of this total (or more than \$530 million annually) is produced in Nevada County. An additional \$321 million (21 percent) is produced in Butte County. Although the next highest producers, Mendocino, Shasta, and Tehama counties each produce less than 10 percent of the machinery and metal products made in the North State.

The machinery and metal products group is very broad and includes several types of commodities:

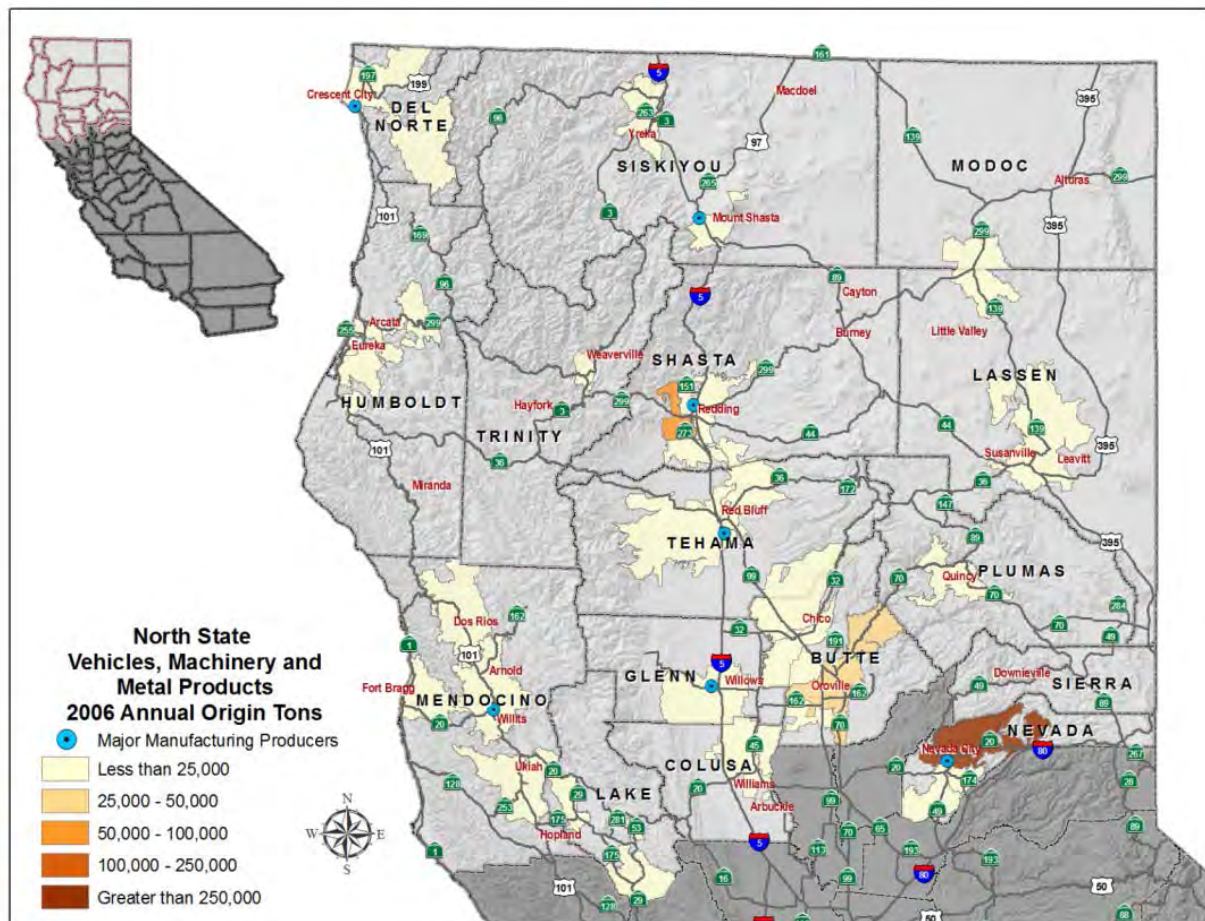
- Broadcast and wireless communications equipment
- Electromedical and electrotherapeutic apparatus
- Motorcycles, bicycles, and parts
- Farm machinery and equipment
- Plates and fabricated structural products
- Construction machinery
- Heavy gauge metal tanks
- Communication and energy wires and cables
- Industrial process furnaces and ovens
- Motor vehicle parts
- Totalizing fluid meters and counting devices
- Crowned and stamped metals
- Other fabricated metals.



Nearly one-half of Nevada County's total production value comes from broadcast and wireless communications equipment manufacturing by companies such as a media processing and storage manufacturer with operations in Nevada City. Other electrical component manufacturing also contributes to this sector for Nevada County. Butte County relies more on farm machinery, construction, and other equipment manufacturing for its manufacturing base. A company that specializes in producing scrapers, carryalls, and levelers for orchard and construction needs is an example of a heavy equipment manufacturer in Butte County.

Exhibit 19 shows the origins of manufacturing tonnages in the North State from the 2006 ITMS. The exhibit also shows the location of major manufacturers according to the EDD database of employers. Nevada County is estimated to have produced nearly 400,000 tons of manufactured commodities in 2006. Butte and Shasta counties follow with between 40,000 to 50,000 tons each. These tonnages are significantly smaller than the tonnages produced for both the agricultural and wood product sectors.

Exhibit 19: 2006 Estimated Vehicles, Machinery and Metal Products Produced by ZIP Code



Source: Caltrans ITMS data



The largest portion of machinery and metal products are produced in Nevada County. As a result, the movement of these products relies on the major access routes in the county – SR-20 and SR-49. I-80 also plays a role by providing interstate connections. As in Nevada County, the industries associated with machinery and metal products in Shasta and Butte counties rely on primary connection routes, including I-5, SR-99, and SR-70.

Key findings about North State commodity flows are:

- According to FAF and IMPLAN estimates, the North State produced over \$12 billion in commodities in 2010.
- Approximately 15 percent of commodities produced in the North State are consumed in the North State. About 70 percent is exported to other parts of the United States, while roughly 15 percent is exported to other countries. California as a whole exports a lower percentage of commodities, but this is partially due to the fact that California has a larger and more diversified economy than the North State.
- The largest commodity group by value is agriculture and food products. Wood products and machinery manufacturing (e.g., farm equipment and broadcast communications equipment) also account for a large proportion of the commodity value produced in the North State.
- Agricultural and food products are generally produced along the I-5, SR-70/SR-99, SR-299 and SR-395 corridors.
- The majority of machinery produced in the North State is connected to the high technology industry in Nevada County or farm equipment. The commodities move along major routes, such as I-80 and I-5, and access routes within Nevada County (i.e., SR-20 and SR-49).
- The timber industry requires a wide transportation network for logging trucks to reach forested areas with timber harvest. In addition, these routes are owned by multiple jurisdictions including Caltrans, the US Forest Service, the National Park Service, California State Parks, and the Bureau of Land Management.

Planned Transportation System Enhancements

This section describes planned enhancements to the North State transportation system. A list of enhancements is compiled from Regional Transportation Plans (RTPs), the State Transportation Improvement Program (STIP), and the State Highway Operations and Protection Program (SHOPP).

California requires Regional Transportation Planning Agencies (RTPAs) to adopt Regional Transportation Plans (RTPs) every five years to identify fiscally constrained projects and plans for future transportation enhancements. In the North State, each county has its own RTPA for state planning purposes. As a result, there are sixteen separate RTPs describing transportation needs and planned improvements in the North State.

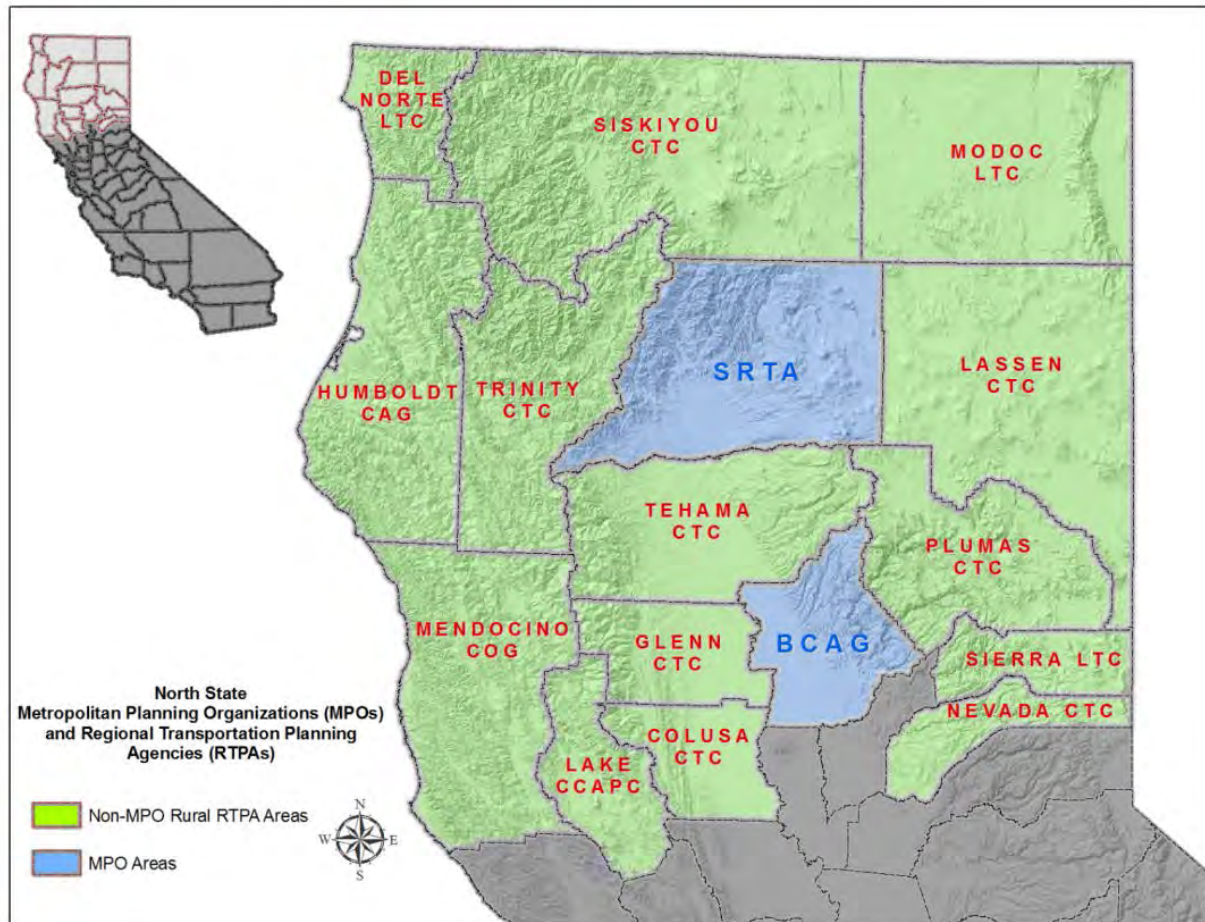


In addition, two of the RTPAs are designated as Metropolitan Planning Organizations (MPOs) for federal planning purposes:

- Butte County Association of Governments (BCAG)
- Shasta Regional Transportation Agency (SRTA).

Exhibit 20 shows the planning jurisdiction for each of these organizations.

Exhibit 20: North State Regional Transportation Planning Agencies



The project team developed a list of planned transportation enhancements based on the most recent RTP from each RTPA. While the lists are fiscally constrained, the RTPs often identify additional projects or system enhancements that cannot be programmed with existing transportation funding. Exhibit 21 lists the RTPs reviewed and the planning period covered by each RTP.

In the North State, maintenance and rehabilitation projects can have a big impact on system performance. For example, repairing storm damage and slip-outs as well as building retaining walls and widening shoulders are critical to maintaining access on state routes in Humboldt County. The rehabilitation and replacement of aging bridges is also an issue. In parts of the North State, detours to alternative routes can require many additional miles of travel. Operational projects, such as auxiliary



lanes and safety improvements, can enhance transportation performance. As a result, the project team reviewed the 2012 State Highway Operation and Protection Program (SHOPP), which contains operations, roadway maintenance, and preservation projects for fiscal years 2012/13 through 2015/16.

Many State Highway improvements in the North State are funded through inter-regional sources. The project team reviewed projects in the 2012 State Transportation Improvement Program (STIP) to identify these projects. In many cases, the RTPs incorporate inter-regional STIP and SHOPP projects, because limited transportation funding in the North State requires the use of multiple sources.

In reviewing the RTPs, STIP, and SHOPP, the project team found over 1400 planned system enhancements including:

- Capacity enhancements to the State Highways, county highways, and local arterials and streets
- Enhancements to airport and transit facilities
- Operational improvements, safety improvements, and bridge replacements.

The project team developed a database to collect information on the projects listed in the RTPs, STIP, and SHOPP. The intention was to collect information on every project. However, as the list grew, the project team focused on collecting information from projects likely to be regionally significant or impact economic development. The database includes information on over 1300 projects and details on Caltrans district, county, project name, project description, highway location, and funding.



Exhibit 21: Latest North State Regional Transportation Plans (RTPs)

Regional Transportation Planning Agency (RTPA)	Regional Transportation Plan (RTP)	Planning Period
Butte County Association of Governments (BCAG)	Butte County 2008 Regional Transportation Plan	2008 to 2035
Colusa County Local Transportation Commission (LTC)	2008/09 Colusa County Regional Transportation Plan Update	2010 to 2030
Del Norte Local Transportation Commission (DNLTC)	Del Norte 2011 Regional Transportation Plan Final Report	2011 to 2030
Glenn County Transportation Commission (CTC)	2009/10 Glenn County Regional Transportation Plan Update	2010 to 2030
Humboldt County Association of Governments (HCAOG)	2008 Humboldt County Regional Transportation Plan	2008 to 2028
Lake County Area Planning Council (APC)	2010 Lake County Regional Transportation Plan	2010 to 2030
Lassen County Transportation Commission (CTC)	2012 Lassen County Regional Transportation Plan	2005 to 2025
Mendocino Council of Governments (MCOG)	2010 Mendocino County Regional Transportation Plan	2010 to 2030
Modoc County Transportation Commission (MCTC)	Modoc County 2005 Regional Transportation Plan	2005 to 2025
Nevada County Transportation Commission (NCTC)	2010 Nevada County Regional Transportation Plan	2010 to 2030
Plumas County Transportation Commission (PCTC)	Plumas County Regional Transportation Plan - 2010	2010 to 2030
Shasta Regional Transportation Agency (SRTA)	2010 Regional Transportation Plan for Shasta County	2010 to 2030
Sierra County Transportation Commission (SCTC)	Sierra County 2010 Regional Transportation Plan	2010 to 2030
Siskiyou County Local Transportation Commission (LTC)	2010 Regional Transportation Plan	2010 to 2035
Tehama County Transportation Commission (TCTC)	2006 Tehama County Regional Transportation Plan (RTP)	2006 to 2025
Trinity County Transportation Commission (TCTC)	Final 2010 Trinity County Transportation Plan	2005 to 2030

RTP Priority Projects

Many of the North State RTPs identify regional priorities or critical projects. These may consist of projects with or without identified funding. The project team reviewed each RTP and narrowed the project list to those that might have an impact on the regional economy. The team also consolidated projects that provide performance improvements in the same area. For example, auxiliary lane and interchange improvements can collectively be called “corridor improvements.”



The next several sections summarize the priority projects listed in North State RTPs with a focus on those that can affect the regional economy.

Butte County

The Butte County Association of Government (BCAG) identified several regional priorities that may impact regional economic development:

- SR-32 widening
- SR-149 Project – construct new two-lane expressway (completed in 2008)
- SR-70 improvements – freeway conversion and passing lanes
- SR-70 Georgia Pacific Interchange
- SR-99 improvements – auxiliary lanes, interchange improvements, and passing lanes
- Forest Highway (FH) 171 Skyway – reconstruction.

Colusa County

Colusa County's current RTP update focuses on system preservation including local road rehabilitation and reconstruction and does not involve adding significant regional connections. Two projects that may impact economic development include:

- SR-20 operational improvements, including passing lanes and a two-way left turn lane
- Highway 45 access improvements (Colusa Indian Community Council).

Del Norte County

In the short term, the primary focus for Del Norte County is to construct the SR-197/US 199 STAA access project to address goods movement and safety issues. The Del Norte RTP notes that there are no projects proposed to construct new roadways to increase accessibility for vehicular traffic. However, it emphasizes accessibility to trails and trail development is a high priority given the County's efforts to benefit economically from hosting significant public lands including the Redwood National and State Park. Projects that may impact regional economic development include:

- US 199/SR-197 STAA access, including Patrick Creek Narrows bridge replacement
- Klamath transportation enhancement project – traffic calming and gateway to Yurok Tribe
- US 101 – traffic calming and gateway improvements in Crescent City.

Glenn County

Glenn County has identified several short-range highway rehabilitation or reconstruction projects. In addition, there are a few long-range, unfunded projects that have some economic development potential. These include the realignment and widening along SR-32, SR-45, and SR-162.

Humboldt County

The Humboldt County RTP has identified some short-term projects with regional significance, but most projects are unconstrained, long-term county or local street rehabilitation and reconstruction projects. Projects that may positively affect economic development include:



- Eureka-Arcata Corridor Improvements
- US 101/SR-36 improvements – interchanges and frontage road
- SHOPP improvements (storm damage, slip-out repair, retaining walls, shoulder widening) on US 101, SR-169 (access to Yurok and Hoopa), SR-299, SR-36
- Arcata-Eureka airport passenger terminal expansion
- Improved intermodal connectivity to the Port of Humboldt Bay (e.g., SR-299 improvements and re-establish freight rail service).

Lake County

Lake County has a financially constrained project to construct a portion of SR-29 as an eight-mile expressway. In the long term, the county needs funding for completing the remainder of the eight-mile Lake 29 Expressway project. This and other potential economic impact projects are listed below:

- Lake 29 Expressway
- SR-20 Traffic Calming and Beautification Plan to enhance North Shore community economic development
- Highway 53 Corridor Study improvements.

Lassen County

Lassen County's projects involve mostly bridge slab replacements and pavement preservation. The Skyline Extension project and the US 395 passing lanes and widening projects are the most regionally significant projects. Lassen County places primary importance on State highway system improvements, with a secondary strategy of improving county roads. Some key regional projects include:

- US 395 improvements – passing lanes, expressway conversion (described above)
- SR-36 improvements – widening and passing lanes, expressway conversion
- Skyline Corridor.

Mendocino County

Mendocino County has two top priorities for US-101 as follows:

- US 101 Willits Bypass
- US 101 improvements in Ukiah and North Hopland.

Modoc County

Modoc County has identified many State Highway roadway rehabilitation projects in its RTP. The following projects may also impact economic development:

- Transportation Management System (TMS) field elements to improve Intelligent Transportation Systems (ITS)
- SR-139/SR-299 widening and intersection reconstruction project
- Bridge replacements along SR-299.



Nevada County

Nevada County has identified several key projects that may impact economic development:

- SR-49 improvements – realignment, widening, signalization, frontage roads
- SR-20 widening project
- SR-89 grade separation (the “Mousehole”)
- Dorsey Drive Interchange
- Union Pacific freight loading facilities in Nevada County.

Plumas County

The Plumas County RTP identifies several short-term constrained projects, including roadway rehabilitation projects and airport rehabilitation/repair projects. Longer term projects include many bridge scour prevention and repair projects, followed by pavement reconstruction and Caltrans operational and capacity enhancing projects, such as intersection improvements, passing lanes, and widening.

Shasta County

The Shasta County High Priority Program includes several interchange construction and realignment projects as well as bridge rehabilitation and curve correction projects. The project team identified the following projects as potentially impacting economic development:

- I-5 improvements – capacity and interchanges
- Rural COATS (California-Oregon Advanced Transportation System) Project
- SR-299 realignment between Trinity and Shasta counties, including Buckhorn Grade
- I-5 Pit River Bridge replacement
- SR-273 Sacramento River Bridge replacement (completed)
- Intermodal freight container transfer facility.

Sierra County

For short-term projects, the Sierra County 2010 RTP has an emphasis on needed maintenance of existing roadway, transit, non-motorized, and airport facilities. Projects that may influence the economy include:

- SR-49 and SR-89 STAA truck terminal access (completed in 2004)
- Passing lanes on SR-49 and SR-89 (to promote recreational traffic).

Siskiyou County

The Siskiyou County RTP emphasizes roadway rehabilitation or reconstruction projects. Some significant projects that may impact economic development in the longer term include:

- US 97 operational improvements
- I-5 capacity and operational improvements
- SR-89 expressway conversion (alternative route to I-5 between Redding and Mt. Shasta).



Tehama County

Tehama County's RTP projects focus on safety issues including the "Fix 5" effort. Some major projects that may impact economic development include:

- I-5 capacity improvements ("Fix 5")
- McCoy Road improvements (to serve as I-5 alternative)
- South Avenue conversion to State Highway
- I-5 frontage road construction
- New SR-36 alignment in Red Bluff
- I-5 South Red Bluff interchange.

Trinity County

The Trinity County RTP has several projects on SR-299 that are regionally significant, but require funding. Two major realignment projects that may affect the economy include:

- SR-299 - Buckhorn Grade improvements, passing lanes
- SR-299 traffic signals and traffic calming.

Projects Identified in Workshops

In May 2012, the project team held three regional meetings with North State transportation and economic development professionals. Thirty-five (35) people attended, representing stakeholders in seven of the 16 counties in the North State. Several items were discussed including the local economy and contributing factors, economic development initiatives, as well as transportation bottlenecks and projects. The workshops are described in more detail in the economic landscape chapter.

As part of the workshops, attendees identify more than 40 transportation system enhancements that might support economic development (see Exhibit 22). These improvements mirror the priority projects that the project team identified in the RTPs. However, there are additional ideas, such as an east-west railroad in Humboldt and Trinity counties and improved airport access in Butte County.



Exhibit 22: Projects Identified in NSTEDS Workshops

Eureka Workshop (May 8, 2012)	Oroville Workshop (May 11, 2012)	Redding Workshop (May 7, 2012)
- Richardson Grove (last STAA bottleneck south of Eureka along US 101) - Big Lagoon (STAA bottleneck north of Eureka along US 101) - Confusion Hill (recently constructed with economic argument) - STAA bottlenecks in Del Norte on US 199 and SR-197 (being addressed by Caltrans) - SR-299 (STAA access, curves, reliability due to slides, weather, fires) – STAA access should be achieved by 2017 - Chronic slide locations (only about half addressed) - Affordable and reliable air service (only one carrier in Eureka/Arcata) - Downtown Eureka and US 101/Broadway Corridor - SR-299 drainage - Jelly's Ferry Bridge (seismic replacement) - I-5 South Avenue interchange in Tehama (Phase 2) - Bowman Road interchange - Indianola Interchange (US 101 between Eureka and Arcata) - East-west railroad - North-south railroad (North Coast Railroad) - Bike trails between Arcata and Eureka along US 101 - More passing lanes on SR-299 - Orick revitalization (gateway project) - Better transit transfer location for Hoopa and SR-299 corridor buses	- Transform I-5 from four lanes into six lanes - Interchange improvement along I-5 in Tehama County - Transform SR-70 or SR-99 from two lanes to four lanes between SR-162 and Sacramento - Improve rail connections - Fix the "mouse hole" in Truckee (access to Squaw Valley ski area) - Improve SR-49 from Auburn to Grass Valley - Improve SR-20 from Grass Valley to Yuba City - Lassen grade separation - Slow traffic through Susanville and beautification enhancements - Truck stop parking area in Susanville - Develop Feather River Boulevard in Oroville - Meyer Road improvements in southern Oroville - Chico airport area access improvements and improve air service (expand airport) - Third bridge over the Feather River - Improve Chico's access to I-5 - Widening SR-32 near Chico - Providing a "downtown coupling" in Chico - Improve link from SR-99 to airport in Chico - Maintain locally owned roads that serve agriculture and provide access to I-5 - Improve SR-99 from Chico to Red Bluff	- SR-299 at Buckhorn (to the west), will be STAA compliant in 2017 - SR-299 at Hatchet Road (to the east) - SR-99 widening north of Chico - I-5 and SR-299 interchange in Redding - Lack of STAA-compliant east-west routes between I-80 and SR-299 - SR-299 drainage, widening, pedestrian, and shoulder improvements west of Alturas - Jellys Ferry Bridge - seismic bridge replacement, serves as alternate for I-5 - SR-99 improvements in Los Molinos area, safety improvements, rumble strips - I-5 South Avenue interchange in Tehama County - Bowman Road interchange (near retirement center, commercial, and residential development) - Multiple interchanges on I-5 in Tehama and Shasta counties - Bridge repair and improvements in Shasta County (e.g., Pit River and Antler) - Belt line road improving access around the City of Red Bluff - General improvements along the east-west corridor - Better connectivity between the Red Bluff airport, Shasta College and the industrial park



Key findings about planned transportation system enhancements in the North State are:

- There are over 1400 projects listed in North State RTPs, the 2012 STIP, and the 2012 SHOPP. Many projects involve maintenance or operational improvements on state highways, local road improvements, or transit improvements without the potential for regional economic impacts.
- An important consideration is whether rehabilitation of existing facilities (e.g., bridge replacement) should be considered as transportation system enhancements.
- North State RTPs describe several funded and unfunded priorities that might impact the regional economy. Several types of projects are represented, including highway capacity enhancements, interchange construction, operational improvements to allow STAA truck access, maintenance and rehabilitation to ensure roadway availability, bridge replacements, bypasses, and freight loading facilities.
- Participants at three North State workshops identified additional projects that might impact the regional economy. Many of these projects are reflected in RTPs, while others are concepts to be considered.



Economic Landscape

The economic landscape provides a general overview of the North State economy, discusses key demographic trends, and describes the influence of regional markets. It also summarizes economic development strategies, recent economic initiatives, and economic development targets in the North State. The economic landscape is organized into the following sections:

- North State Demographics
- North State Economy
- Influence of Neighboring Markets
- Economic Development Strategies.

North State Demographics

This section provides an overview of demographics in the North State. It highlights population, labor force, and income trends as well as changes in home prices. In addition, information is provided on production in terms of taxable sales, agriculture and natural resource extraction, and tourism/visitor spending. The section that follows considers the industrial composition of the North State economy and opportunities for growth.

The North State is a very large and diverse region. An effort to describe the demographics and overall economy runs the risk of missing subtle differences that occur throughout the 16 counties. Exhibit 23 shows a very simplistic attempt to classify the subareas that occur in the North State. This classification distinguishes the agricultural production that occurs in the Central Valley, the timber production that occurs in the mountainous east plus Siskiyou County, and the fishing and timber production that occurs along the North Coast. However, such a grouping omits the farm machinery manufacturing that occurs in Butte County, the regional service center in Redding, the high technology development in Nevada County, the prison industry in Lassen County, the beer production in Butte, Mendocino, and Humboldt counties, lily bulb growing in Del Norte County, and other local economic advantages throughout the North State.



Exhibit 23: Example of Subareas in the North State



In general, the North State is more dependent than California as a whole on resource-based industries, such as agriculture, timber, fishing, and nature-related tourism. This reliance on resource-based industries suppresses the income levels of the region because the dominant industries are not highly value-added. However, some higher value-added industries, such as agricultural processing in the Sacramento Valley and high technology in Nevada County, are present.

Often, the manufacturing and production activities that add value to the products produced in the North State take place outside the area. As a result, North State residents are denied access to higher paying production jobs. Due to a combination of overharvesting and restrictions on production, counties that rely on the timber and fishing industries need to attract new industries to reverse declines in incomes and increases in poverty rates. The reliance on the extraction of natural resources is not a viable economic development strategy, but value-added agriculture is a viable option in some counties.

Overall, the North State shows demographic trends similar to those in the Great Plains, Appalachia, and the rural south. The population is older than the rest of the state and the age gap is growing. The population is growing slower and has stagnated since 2006. These demographic trends hamper any



efforts to attract retail or service businesses that depend on consumer spending, which accounts for 70 percent of the economy in the United States.

The most remote areas of the North State have experienced declines in overall population in recent years, due in part to declines in the timber industry that had historically provided jobs in these counties. These jobs are not likely to return. The lack of access and remoteness of several counties hinder efforts to attract jobs requiring reliable transportation for the movement of people and goods. Attracting jobs that rely on imported materials or the export of products to other regions is difficult without better access.

In addition, a lower proportion of college degrees among the North State's population make efforts to attract new industries that rely on technical skills more difficult. Lower education levels translate into lower wage jobs and less disposable income, which suppresses opportunities to attract additional retail and services that provide jobs for the lower-skilled workers and goods and services for higher wage earners.

Areas with universities, such as Butte and Humboldt counties, have fared better than other North State counties. These counties are better positioned to attract new, diverse industries because they can provide training opportunities through the universities, as well as a better educated workforce for technical, professional and managerial positions. University towns also often offer a wider array of cultural and quality of life amenities that can help to attract residents and new industry. Continued growth in Chico provides an example of such development.

Tourism continues to be a viable economic development strategy for many North State counties, despite potential seasonal limitations. Visitors spend roughly \$2.4 billion per year in the North State and support nearly 33,000 jobs. Tourism-based employment has declined recently, but it had fared better in the North State than the rest of California prior to the Great Recession.

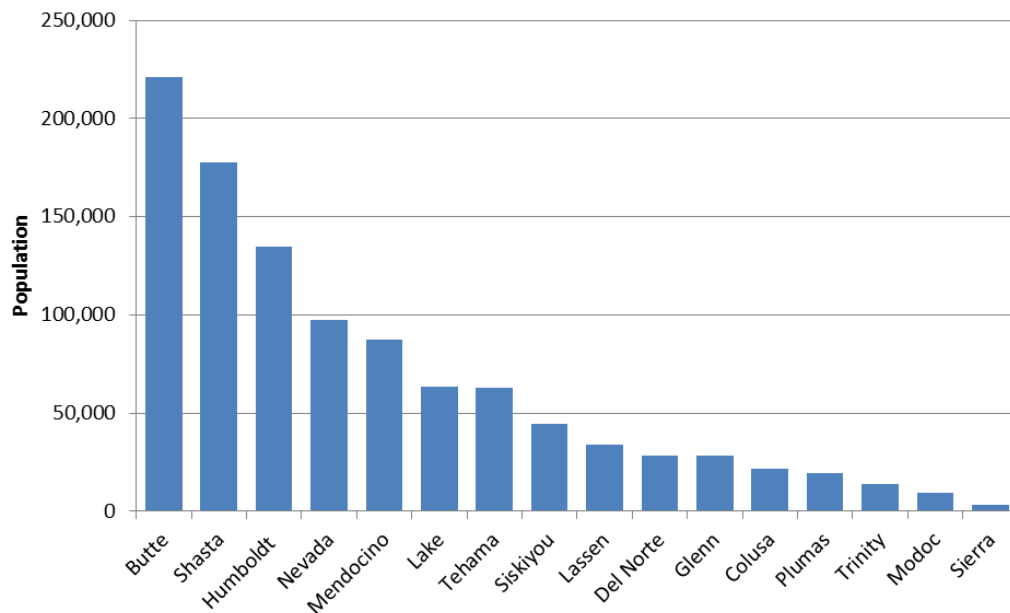
The next few sections describe trends in the North State's demographics. Appendix E provides tables with detailed information for each North State county. The tables are organized to show trends before 2006 and after 2006, to highlight the economic impacts of the Great Recession.

Population

Population varies considerably among the North State's counties. As shown in Exhibit 24, Butte, Shasta, and Humboldt are the largest counties based on population. Together, these three counties house more than half of the North State's population. If the population of the next three most populous counties is added, the six counties account for about three-fourths of the North State's population.



Exhibit 24: Population of North State Counties, 2012



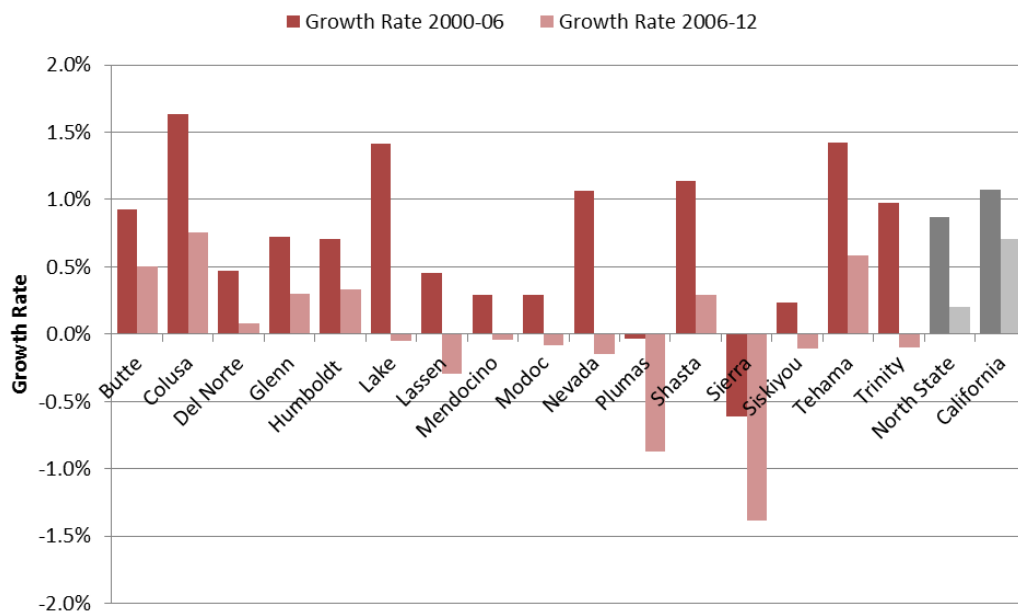
Sources: California Department of Finance

Between 1990 and 2000, the North State's population expanded at a 1.0 percent annual rate. This was slightly less than California's 1.3 percent annual growth rate over the same period. As shown in Exhibit 25, growth rates slowed between 2000 and 2006 with the North State expanding at a 0.9 percent annual growth rate and California expanding at a 1.1 percent annual growth rate. Since 2006, population growth has slowed in the North State to a 0.2 percent annual rate (compared to 0.7 percent statewide). Seven counties experienced negative growth rates, while the populations of Lake and Mendocino counties stayed roughly the same.

With the exception of Nevada County, the seven counties with negative growth rates (i.e., Lassen, Modoc, Plumas, Sierra, Siskiyou, and Trinity) are among the most remote counties in the North State. Six of the seven border Oregon or Nevada and share economic ties to these states. Del Norte, the only other county bordering another state, has had a population increase of only 0.1 percent since 2006. Of these counties, Lassen, Nevada and Del Norte, were the fastest growing counties in the North State between 1990 and 2000 – each exceeded the growth rate of the state.



Exhibit 25: Population Growth Rates in California and the North State, 2000 to 2012



Sources: California Department of Finance and the US Census

Colusa and Lake counties both exceeded the state growth rate during the 1990 to 2000 period and again between 2000 and 2006. Colusa was the only county to exceed the state population growth rate between 2006 and 2012. Population growth in these counties reflect their proximity to the San Francisco Bay Area and the Sacramento Region, as workers from the Bay Area and Sacramento seek lower cost housing, and telecommuting expanded as an alternative to daily commuting.

Colusa, Shasta, Glenn and Butte each consistently experienced population growth that exceeded the average for the North State. Three of these counties are served by I-5. The fourth, Butte County, is home to California State University, Chico (Chico State). Butte and Shasta also have the largest populations in the North State, anchored by the cities of Chico and Redding, respectively.

Births, deaths and migration patterns provide further insight into the North State's demographic shifts. The overall population growth experienced in Butte and Shasta counties is due primarily to high rates of domestic in-migration. Colusa and Glenn counties have natural population growth higher than the North State average and international in-migration, both of which are responsible for the above-average population growth in these counties.

The North State's population growth was fueled by in-migration during a period of relatively strong growth (2000-2006), although only Colusa County had a rate of in-migration equal to the state rate. Domestic migration accounted for nearly 80 percent of the growth in the North State, with Butte, Shasta, Nevada, and Lake counties each realizing domestic in-migration of more than five thousand people over the period.

Seven counties experienced more deaths than births. With the exception of Lassen County, all of the counties that lost population between 2006 and 2011 had more deaths than births between 2000 and

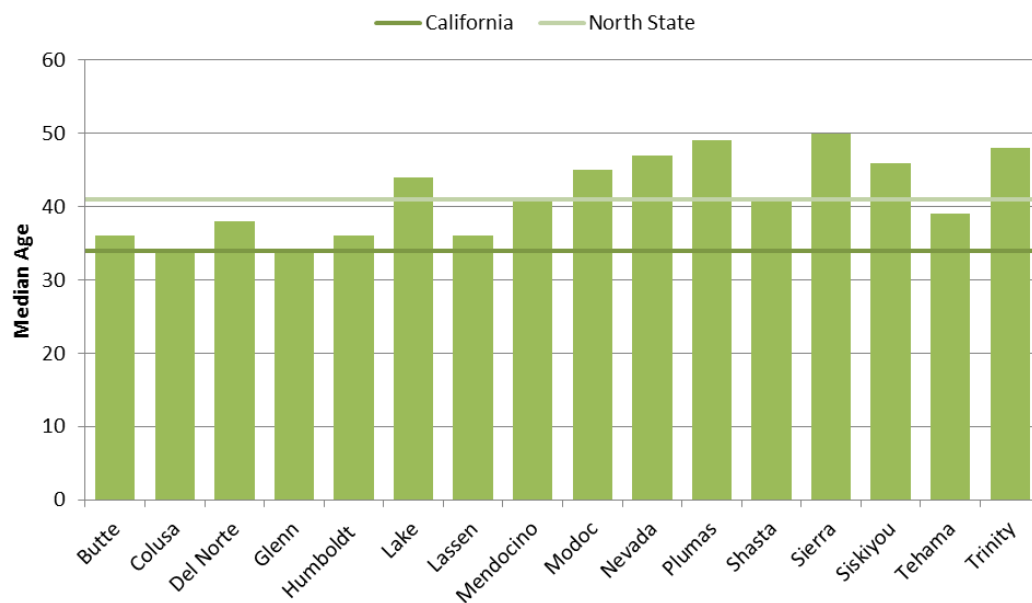


2006, a foreshadowing of future population declines. Lake County also experienced more deaths than births over this period, and all seven of these counties continued this trend between 2006 and 2011.

Population growth rates within the North State stagnated after 2006 due to people migrating out of the region. Eleven of the 16 North State counties experienced an out-migration of people. This was a reversal of the trend for the previous six years, when only three counties (i.e., Sierra, Mendocino, and Glenn) experienced domestic outmigration. Over both periods, all North State counties experienced international in-migration. International sources accounted for 13 percent of the North State's in-migration between 2006 and 2011, although only Colusa County experienced an annual international in-migration rate greater than 0.2 percent. It was also the only North State county to exceed the state rate of international in-migration. Butte, Tehama, Humboldt and Shasta experienced natural growth in population as well as in-migration over the 2000-2006 and the 2006-2011 periods.

As shown in Exhibit 26, the North State population is generally older than the statewide median. In 2010, the median age in the North State was 41 years old compared to 34 years old in the state overall. Between 2000 and 2010, the North State aged faster than California. Over this period, California's median age increased from 33 to 34 years old, while the median age in the North State increased from 38 to 41 years old.

Exhibit 26: Median Age in California and the North State, 2010



Sources: US Census 2010

Although Butte (no change in median age) and Humboldt (1-year decline in median age) counties had population growth rates below the statewide average, both counties had a median age of 36, which is two years above the state average. These counties are home to several institutes of higher education, including two state universities, which contribute to why they have not seen an increase in the average age of the population. Six North State counties have a median age of 45 years or older. Sierra County's

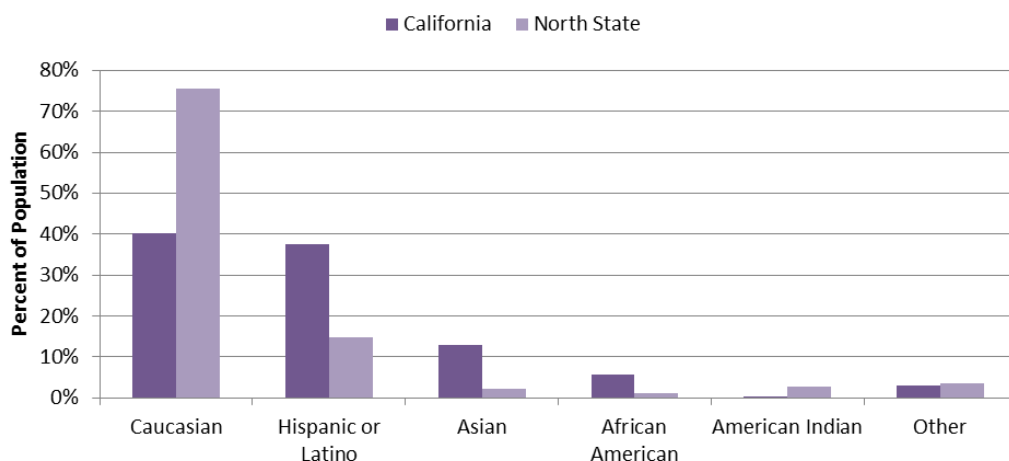


median age is 50 years old. Counties aging the fastest include Plumas (5-year increase), Colusa, Shasta and Nevada (each with 4-year increase).

Ethnicity

North State demographics are dominated by Caucasians, who account for 75.1 percent of the population. This compares with Caucasians representing only 40.1 percent of California's population (see Exhibit 27). Eighty-nine (89) percent of the population speaks English as their primary language compared to 57 percent of the state population. Hispanics comprise 14.7 percent of the North State's population compared to 37.6 percent of California's demographic mix. With a Hispanic/Latino population of 55.1 percent, Colusa County is the only North State county where the percentage of this group exceeds the state average.

Exhibit 27: Ethnicity in California and the North State, 2010



Source: US Census 2010

The cluster of three Sacramento Valley counties - Colusa, Glenn and Tehama – plus Mendocino County have the highest percentage of Hispanic/Latino people in the North State. This reflects the concentration of agriculture and viticulture in these counties, two industries dominated by Hispanic and Latino workers. These counties also have the highest percentage of Spanish speakers. With Caucasians and Hispanic/Latinos comprising the majority of the population, it follows that only 3 percent of the population has a primary language other than English or Spanish, compared to 14 percent in the state.

Other demographic groups collectively make up less than 10 percent of the North State's population mix compared to 22.2 percent of California's population mix (see Exhibit 27). Native Americans, who comprise 2.7 percent of the North State population, are the only demographic category for which the North State has a higher percentage than the state (0.4 percent). The concentration of Native Americans is attributed to the presence of several Native American tribal lands. Mendocino County has nine tribal lands (the fourth most of any county in the United States), and Humboldt has eight. Only Lassen County has a higher percentage of African Americans (8 percent) than the state average (5.8 percent), but population statistics in Lassen County are skewed by the inmate population in the two



state prisons located in the county. African Americans account for only 2.7 percent of the North State population as a whole.

The North State is experiencing a significant ethnic demographic shift with no growth in the Caucasian population over the past decade. This compares to a statewide annual decline of 0.6 percent. The Caucasian population shrank in nine North State counties, with the declines in Sierra, Plumas, and Mendocino outpacing the state. In contrast, the Hispanic population expanded at a 3.9 percent annual rate over the last decade. This exceeded California's 2.5 percent annual growth rate among Hispanics. Only Modoc and Sierra counties had growth rates below the state average in this demographic. Other ethnic groups (e.g., Asians, African Americans, and Native Americans) expanded within the North State at a 1.6 percent annual growth rate, consistent with California growth rates. Counties that outpaced the state growth rate among other ethnic groups include Butte, Lake, Nevada, Plumas, and Tehama.

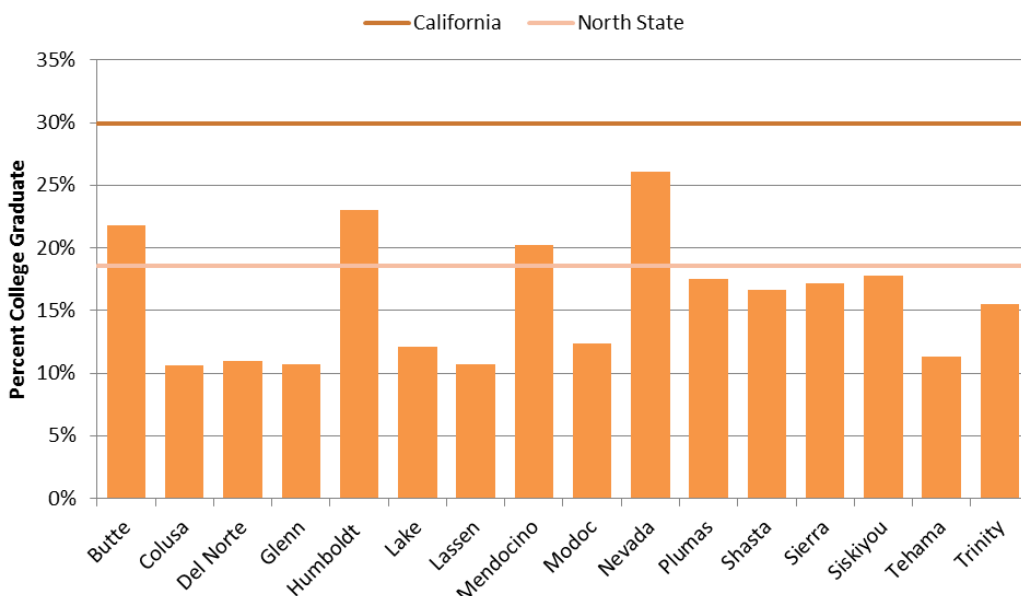
Education

The North State is home to two state universities - Chico State (over 15,000 students) and Humboldt State (over 8,000 students). The area is also served by a network of eight community colleges and two independent colleges. The two largest community colleges, Butte College (over 13,000 students) and Shasta College (over 10,000 students), have enrollments that rival the state universities.

Despite the presence of these institutions, education attainment is lower in the North State than in California overall. As shown in Exhibit 28, only 19 percent of North State adults have earned a college or advanced degree compared to 30 percent of California adults. While not shown in the exhibit, the percent of North State adults not completing high school (20 percent) is comparable to the state overall. This apparent inconsistency is explained by the fact that more North State residents (63 percent) have completed only high school or attended some college compared to California residents overall (51 percent). The North State's education gap occurs in getting residents to attend and complete college. Details on these statistics are provided in Appendix E.



Exhibit 28: College Education in California and the North State, 2012



Sources: Claritas and the US Census American Community Survey

Three agricultural counties in the Sacramento Valley, Colusa (36 percent), Glenn (32 percent), and Tehama (24 percent), have markedly higher numbers of people over 25 who have not graduated from high school. Each of these counties ranks among the lowest for the percentage of the population with a bachelor's degree or higher. The concentration of low paying, unskilled jobs in agriculture helps to explain the higher levels of the population with at most a high school education in this area. Del Norte County also has a high percentage (28 percent) of population that has not completed high school.

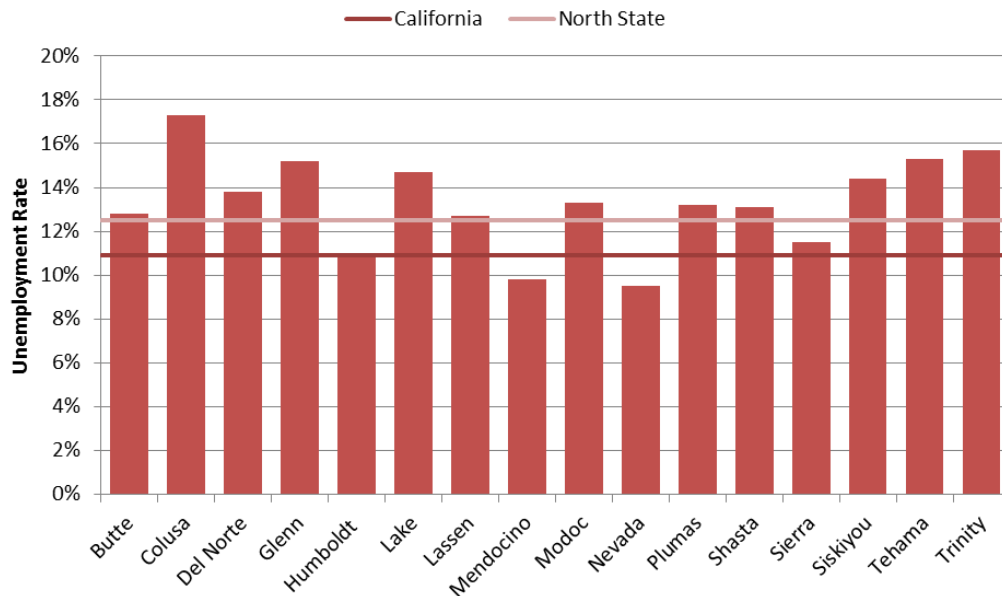
There are no North State counties where the percentage of the population with a bachelor's degree or higher reaches the state level. The counties with the highest percentage of the population with at least a college education are Nevada (26 percent), Humboldt (23 percent), Butte (22 percent), and Mendocino (20 percent). Humboldt, Butte and Mendocino counties are all home to at least one college or university, which is reflected in the higher percentage of population with education. In Nevada County, a number of telecommunication and software development companies employ higher educated professionals drawn to the area's natural beauty, amenities, and Interstate access to the San Francisco Bay Area and Lake Tahoe region.

Labor Force

As shown in Exhibit 29, the most recent employment data indicates that the North State has a 12.5 percent unemployment rate, which exceeds California's 10.9 percent rate. Nearly 60,000 people in the North State are unemployed and seeking work. Only three counties have unemployment rates lower than the state average, including Humboldt (10.8 percent), Mendocino (9.8 percent), and Nevada (9.5 percent). Not surprisingly, these three counties are among those with the most highly educated workforce in the North State. Four counties have unemployment rates over 15 percent, including all three counties in the Colusa-Glenn-Tehama cluster and Trinity County.



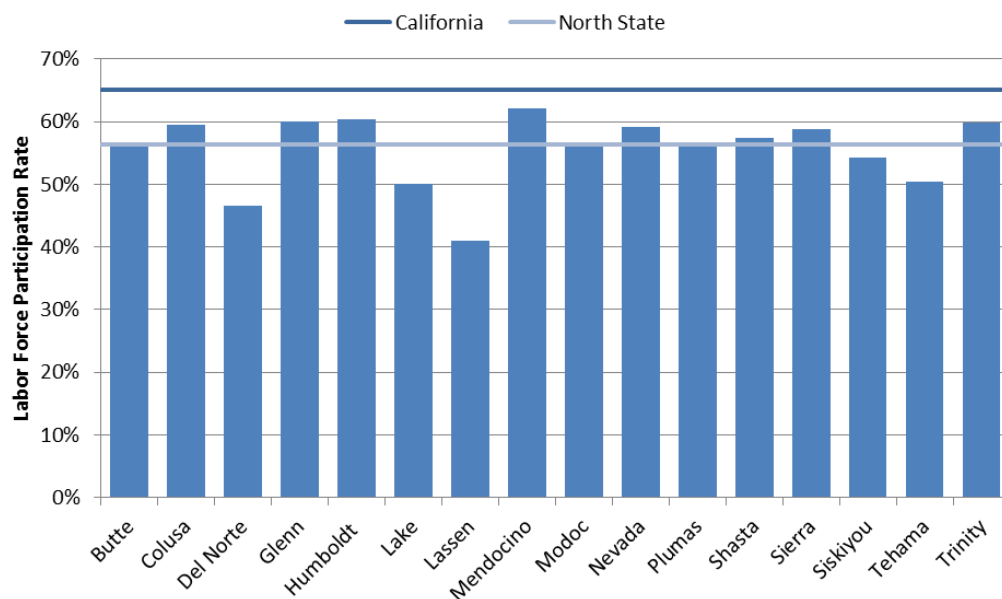
Exhibit 29: Unemployment Rates in California and the North State, 2012



Sources: California Employment Development Department and Claritas

More significantly, the North State has a 56-percent labor market participation rate, which lags far behind California's 65-percent rate (see Exhibit 30). In fact, no county in the North State has a labor force participation rate as high as the state rate. This means that a larger percentage of people in the North State are students, homemakers, retired, disabled, incarcerated or discouraged workers than in the state as a whole. Only Glenn (60 percent), Humboldt (60 percent), Trinity (60 percent) and Mendocino (62 percent) counties have labor force participation rates of at least 60 percent.

Exhibit 30: Labor Force Participation Rates in California and the North State, 2012





Sources: California Employment Development Department and Claritas

Del Norte (46 percent) and Lassen (41 percent) counties have rates lower than 50 percent. Del Norte County is home to Pelican Bay State Prison, and High Desert State Prison and California Correctional Center are located in Lassen County. The prison populations suppress the labor force participation rates in both counties because the incarcerated population is included in the labor force statistics and the prison populations are large compared to the general population. Lake and Tehama counties each have labor force participation rates of just 50 percent.

Only 61 percent of North State workers receive wage and salary earnings, which is a far lower figure than California's labor force, 75 percent of whom receive income from wage and salary earnings. Self-employment accounts for ten percent of earnings among North State's labor force compared to California's eight percent. More significantly, 14 percent of North State's potential workforce relies on government transfer payments, such as social security, disability, public assistance and other transfer payments for their source of income, compared to 7 percent in the state.

Trinity County has the lowest percentage of its labor force (47 percent) receiving wages and salaries for income and the highest percentage of its population (18 percent) receiving government transfer payments. The relatively large percentage of people collecting government transfer payments reflects the North State's low labor force participation rates. Individual counties that are very dependent on government transfer payments include Trinity at 18 percent as well as Del Norte, Modoc and Siskiyou at 16 percent.

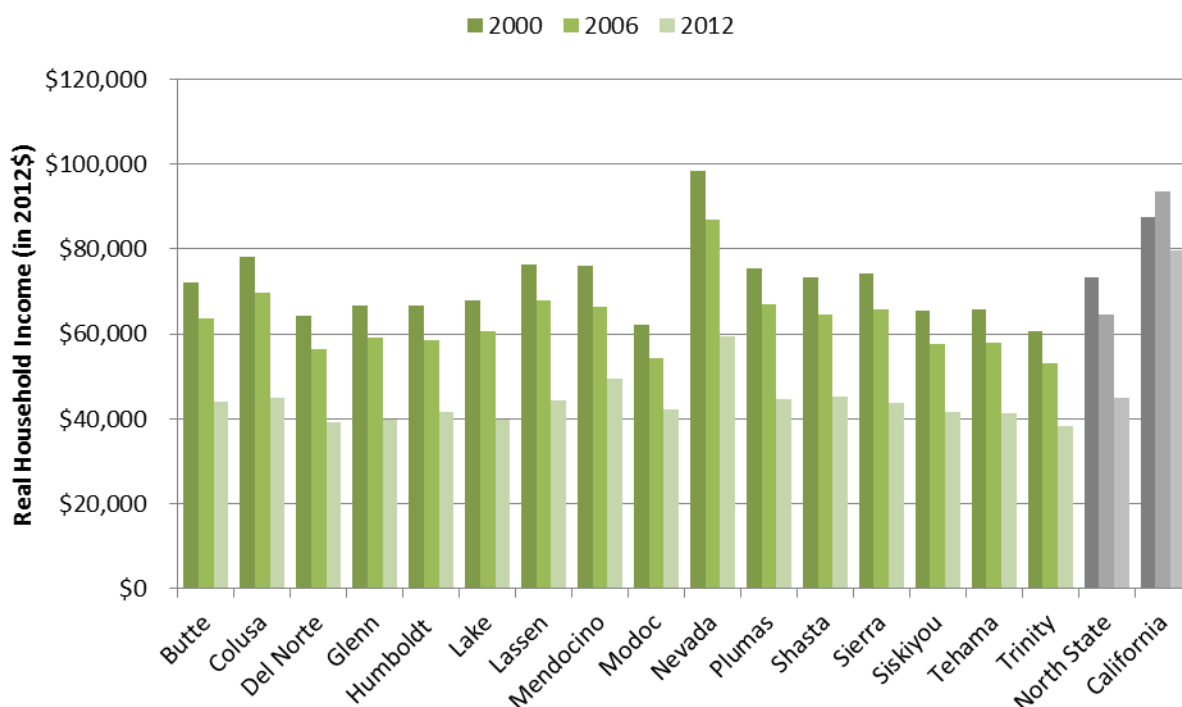
Only Glenn County has a smaller percentage of people receiving retirement income than the state as a whole. The higher percentage of people receiving retirement income is consistent with the higher average age of people in the North State. One interesting and perhaps unexpected finding is that, with the exception of Glenn, Lassen and Shasta counties, a greater percentage of people receive income from interest, dividends and rents in the North State than in the state as a whole.

Income

Every county in the North State has experienced a decrease in inflation-adjusted income since 2000 (see Exhibit 31). No county has an average household income as high as the state average. Inflation-adjusted household incomes in the North State declined from \$73,200 to \$64,600 between 2000 and 2006, compared to a \$5,900 expansion in California during the same period. North State incomes have sharply declined since 2006, falling 8.6 percent annually to \$45,000 per household by 2012. California incomes have also declined at an annual rate of 3.9 percent between 2006 and 2012 to \$79,500 per household. Even so, the California average household income was 77 percent higher than the North State's average in 2012.



Exhibit 31: Real Household Income in California and the North State, 2000 to 2012



Sources: Claritas and the US Census American Community Survey

Only Colusa and Lassen counties experienced reductions in inflation-adjusted income of less than 2 percent between 2000 and 2006. This compares to a statewide average decline of 1.1 percent over the same period. Despite their apparent strength relative to the rest of the North State, both Colusa and Lassen saw greater declines in income between 2006 and 2012 than any other county in the area. Incomes in Colusa County decreased by an annual average of 10.4 percent. This is the fastest decline in the North State. Over the same 2006-2012 period, all North State counties saw declines of at least 6.1 percent. Modoc County had the smallest decline. Average incomes declined at a slower rate statewide (3.9 percent annually). This indicates that households in the North State were hit particularly hard by the recession. The limited economic base contributes to this by offering few opportunities to change jobs between sectors. Within the region, there does not appear to be any pattern to the decrease in income based on geographic location, educational attainment, or other factors.

In 2012, the highest North State average incomes were found in Nevada (\$59,400), Mendocino (\$49,500), Shasta (\$45,200), and Colusa (\$45,000) counties. In all four counties, incomes equal or surpass the regional average. Del Norte (\$39,100), Glenn (\$39,800), Trinity (\$38,400) and Lake (\$39,800) counties had average household incomes of less than \$40,000 in 2012.

Income distribution data provides additional insight into the decline of incomes within the North State. Approximately 44 percent of North State households earned less than \$35,000 per year in 2000, which was considerably higher than the percentage of California households. However, households that earn less than \$35,000 expanded to 52 percent of all North State households by 2012. Over the same period,



the percentage of low-income households declined in California from 34 percent in 2000 to 28 percent in 2012. In addition, North State households earning more than \$100,000 declined from 12 percent in 2000 to 7 percent by 2012. These changes account for the dramatically lower average household income in the North State compared to California in 2012 (as shown in Exhibit 31).

The most notable change in income distribution occurred in Nevada County. In 2000, Nevada County had a much lower percentage than the state of its households in the lowest income bracket (30 percent compared to 37 percent), and a much higher percentage than the state of its households in the highest income bracket (12 percent compared to 7 percent). By 2012, these relationships had reversed with 37 percent of Nevada County's households falling within the lowest income bracket compared to 28 percent of the state's households, and only 5 percent of Nevada County's households in the highest income bracket compared to 20 percent in the state overall. This reversal of fortune in Nevada County may reflect declines in the area's high technology industries that expanded before the onset of the Great Recession.

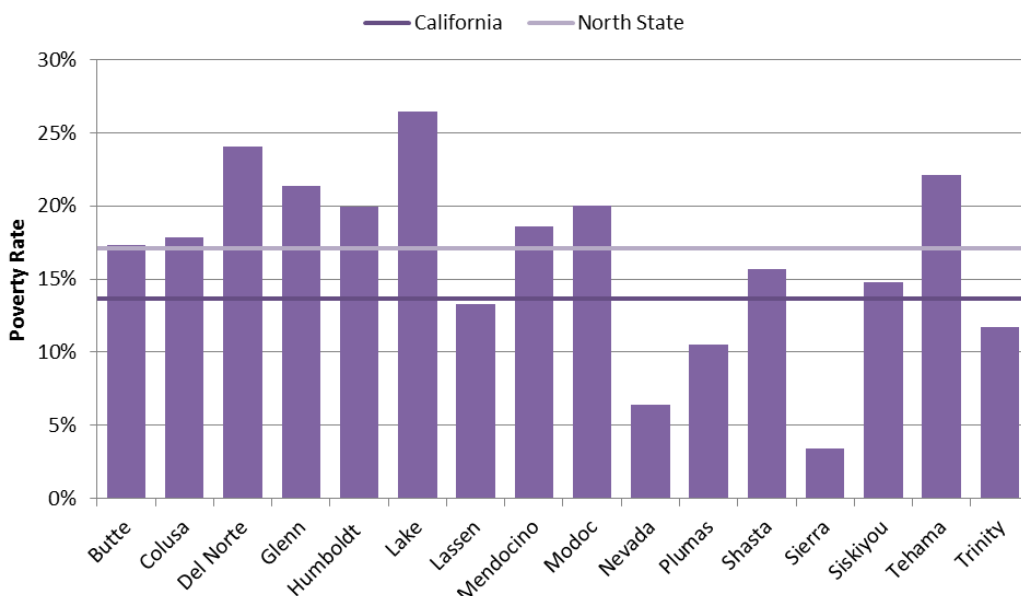
In all other North State counties, the percentage of households in the lowest income bracket grew and the percentage in the highest declined. In both periods, these counties had a larger percentage of lower income households and a smaller percentage of higher income households than did the state as a whole. The North State's income distribution is due, in part, to its dependence on resource-based, agricultural and tourism jobs, which generally pay less than manufacturing and professional jobs.

Some of the decrease in percent households in the higher income categories reflects the outmigration of the 2000 population and the in-migration of immigrants over the ten-year period. The shift toward lower income households is reflected in the decrease in purchasing power due to inflation.

Approximately 17 percent of North State households fall below federal poverty standards, compared to 14 percent of California households (see Exhibit 32). Poverty rates expanded from 13 percent of households in 2000 to 17 percent of households in 2012. In the counties of Lake, Glenn, Mendocino, Tehama and Humboldt, poverty rates expanded more rapidly than the region's 4 percent average. In contrast, poverty rates declined in Sierra, Trinity and Siskiyou counties between 2000 and 2010, while poverty rates remained stable in Nevada and Modoc counties.



Exhibit 32: Poverty Rates in California and the North State, 2010



Sources: Claritas, US Census American Community Survey, and California Department of Finance

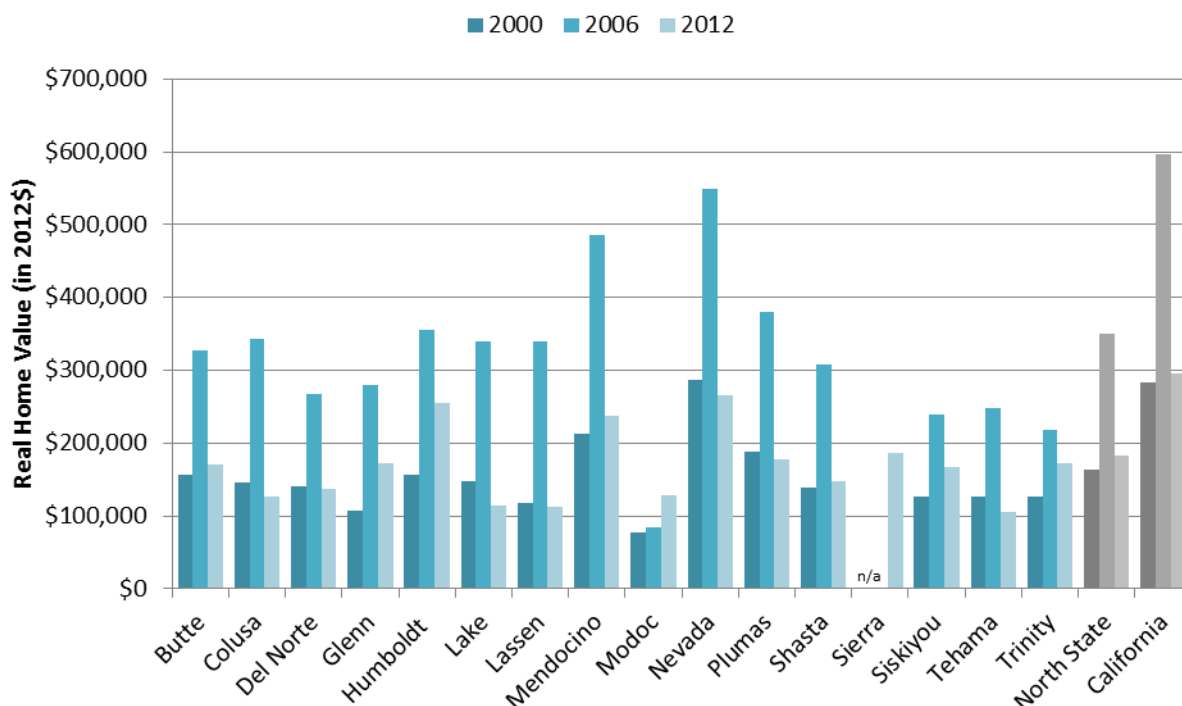
As shown in Exhibit 32, Nevada, Sierra, Plumas, Trinity and Lassen counties have poverty rates below the statewide average. The poverty rates in Nevada (6 percent) and Sierra (3 percent) are well below the state average. Nevada County's lower rate may be due to the concentration of high technology firms in the region, while the lower rate in Sierra County may be due to the high concentration of retirees with stable incomes. Conversely, six counties have poverty rates of 20 percent or more, with the highest levels of poverty found in Lake (26 percent), Del Norte (24 percent), Tehama (22 percent) and Glenn (21 percent) counties. Within the North State, poverty is most dominant in the Lake-Mendocino area and the Colusa-Glenn-Tehama area. These two areas depend on lower paying agricultural jobs. These high poverty rates correspond to lower household incomes and lower education levels.

Housing Prices

Housing prices are also an indicator of the North State's economic conditions. As shown in Exhibit 33, housing values more than doubled in the North State between 2000 and 2006. Conversely, housing prices fell by 50 percent between 2006 and 2012, which left many homeowners with debts greater than their property values. This phenomenon had a huge impact on consumer spending and retail sales. North State housing values have since held steady at about 60 percent of California's housing values.



Exhibit 33: Inflation-Adjusted Home Values in California and the North State, 2000 to 2012



Sources: Zillow.com

The North State realized a slightly higher percentage increase in housing prices than the state between 2000 and 2006 and a slightly smaller decrease in the average price of a home between 2006 and 2012. However, there was wide variation in changes in the housing market among North State counties. Seven of the North State's counties (i.e., Colusa, Glenn, Humboldt, Lake, Lassen, Mendocino and Shasta) experienced a percentage increase in home price greater than that of the state between 2000 and 2006. Of these, Colusa, Lake, Lassen, Tehama, Del Norte, Plumas, and Nevada all saw values fall below 2000 values by 2012. The counties losing the greatest percentage of their housing values between 2006 and 2012 were Lake, Lassen and Colusa, each of which lost more than 60 percent of value over the period.

Conversely, Modoc County had increases in housing values between 2000 and 2006 and again between 2006 and 2012. Values increased by 53 percent over the latter period, bucking a nationwide trend. Modoc had the lowest average housing value in the region in both 2000 and 2006, but overtook Lake and Lassen counties by 2012. Counties that fared best in terms of retaining some of the value gained between 2000 and 2006 include Glenn, Humboldt, Trinity, Modoc and Siskiyou counties.

The North State counties with the highest home values in 2012 include Nevada, Humboldt, and Mendocino, where values remain above \$200,000. These higher housing prices occur in counties with higher education levels and lower unemployment rates. Nevada and Mendocino also have the highest 2012 average household income in the North State.

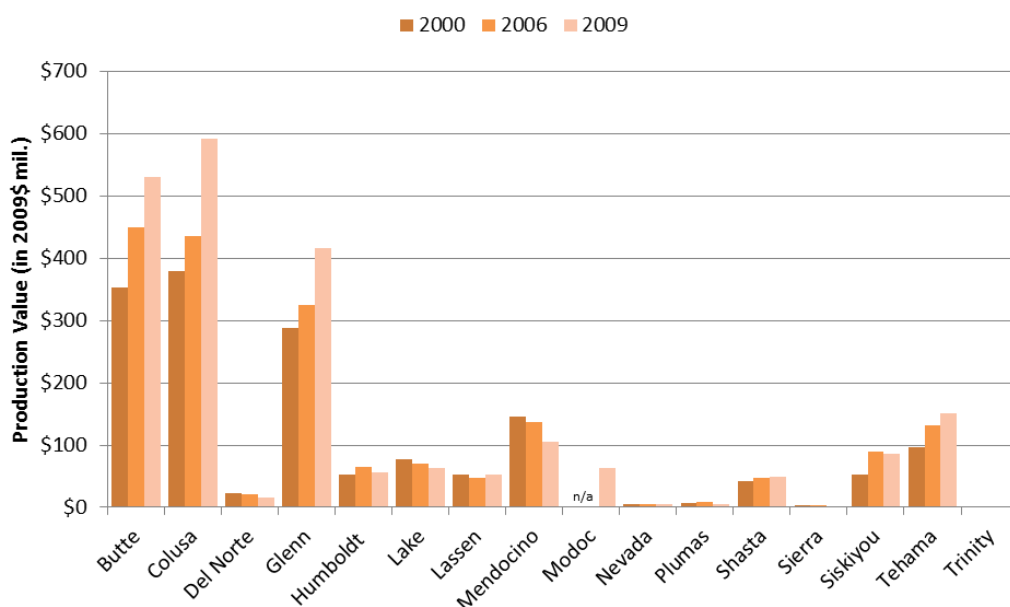


Agriculture and Natural Resources

The growth in the value of agricultural crops produced in the North State has exceeded that of California overall. Fruits, vegetables, and other ground crops expanded at a 2.6 percent annual growth rate between 2000 and 2006. The growth in production value accelerated to a 6.0 percent annual growth rate between 2006 and 2012.

Exhibit 34 shows the change in value (adjusted for inflation) for fruits, vegetables, and field crops by county. Of the eight North State counties with the lowest production values, six (i.e., Del Norte, Lake, Mendocino, Plumas, Sierra, and Trinity) realized 2009 production values lower than 2000 values. The other two, Humboldt and Nevada, saw values drop or remain constant between 2006 and 2009. This is partially due to a shift away from growing in areas not well-suited to field crop production.

Exhibit 34: Inflation-Adjusted Value of Fruits, Vegetables, and Field Crops in the North State, 2000 to 2009



Sources: Department of Agriculture Crop Report, 2000, 2006 and 2009

The four counties with the largest production values for field crops (i.e., Butte, Colusa, Glenn and Tehama) realized steady increases in production values at least double that of the statewide average. Rates for Colusa (10.7 percent) and Glenn (8.7 percent) were more than four times the state growth rate. Trends for these four North State counties are important since they depend heavily on agricultural production for their economic vitality. Mendocino and Lake counties are home to growing wine and vineyard industries, but the overall production value of fruits, vegetables, and field crops declined over the last decade. Among the other counties, only Lassen and Shasta had growth in the value of field crop production between 2006 and 2009.

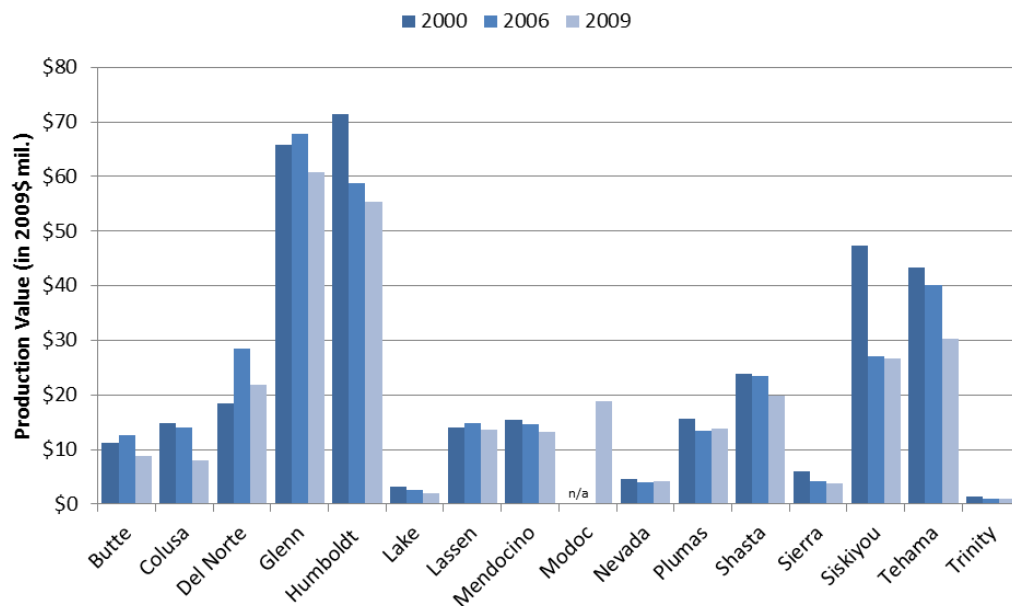
The value of livestock produced in the North State declined by an annual rate of 1.4 percent between 2000 and 2006. The decline accelerated to 2.6 percent between 2006 and 2009. The declines in



livestock production values were larger in the North State, but similar to California's trends, which also experienced declines.

As shown in Exhibit 35, all North State counties other than Del Norte had a lower value of livestock and poultry production in 2009 than they did in 2000. Nevada and Plumas counties experienced slight gains between 2006 and 2009, but these were not enough to offset earlier losses. Among the three counties (i.e., Glenn, Humboldt, and Tehama) with the highest value of livestock and poultry production in these years, Tehama and Humboldt experienced large declines in value. The losses in Tehama County accelerated significantly between 2006 and 2009. Del Norte County, which ranks fifth in the North State in value of livestock and poultry production, realized a higher overall value in 2009 than in 2000. Values in Del Norte County gained between 2000 and 2006 and then fell sharply between 2006 and 2009.

Exhibit 35: Inflation-Adjusted Value of Livestock and Poultry Products in the North State, 2000 to 2009



Sources: Department of Agriculture Crop Report, 2000, 2006 and 2009

The timber harvest continued to decline within the North State over the past decade. The 2000 production level of 1.6 million board feet declined to 1.1 million board feet by 2011. The inflation-adjusted value of the timber harvests declined even more rapidly, from \$995 million in 2000 to \$229 million by 2011. Essentially, the combined decline of timber production has contributed to the region's loss of jobs and the declining household incomes.

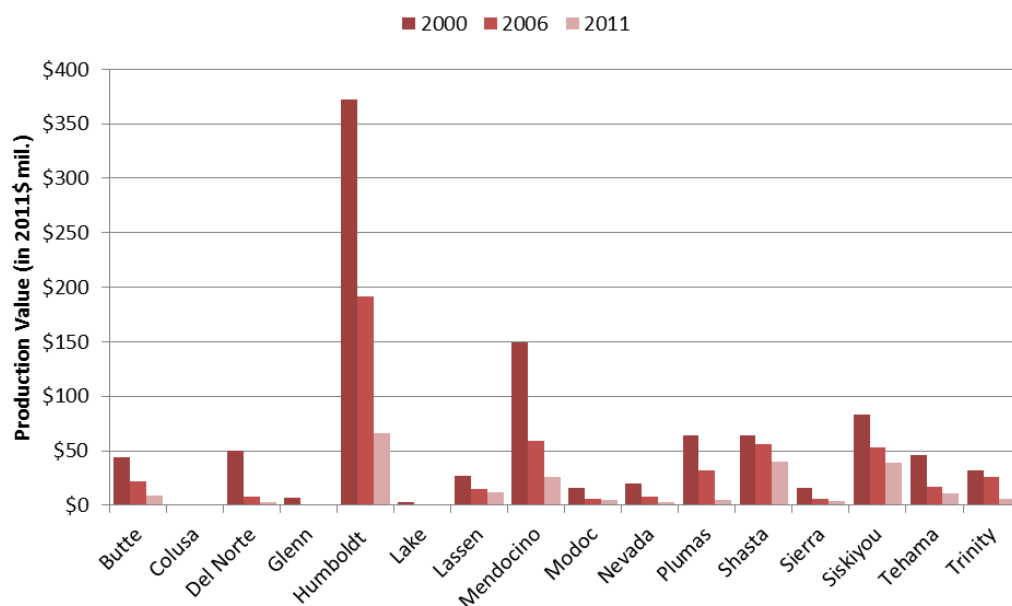
The North State accounts for 84 percent of California's timber harvest with production centered in the counties of Humboldt, Siskiyou and Shasta. In 2000, Humboldt County produced 388,886 million board feet of timber, considerably more than any other county. The other top five producers in 2000 were Siskiyou, Plumas, Shasta, and Tehama. While Humboldt remained the largest producer in 2011, its total harvest had fallen to 216,272 million board feet. Production levels also fell in Plumas and Tehama, which were displaced among the top producers by Mendocino and Lassen. Between 2000 and 2011,



timber harvest fell in all but four counties – Colusa (with no production until the 2006-2011 period), Lassen, Shasta, and Siskiyou. Both Shasta and Siskiyou have experienced small decreases in production since 2006.

As shown in Exhibit 36, the value of the timber harvest fell substantially in all of the North State's significant timber-producing counties. The counties with the highest values for timber production in 2000 included Humboldt, Mendocino, Siskiyou, Plumas, Shasta, and Del Norte. By 2011, Mendocino and Del Norte were displaced by Lassen and Tehama among the top five counties in value of timber harvest. The reduction in value is in part due to reduction in the harvesting of redwood, which traditionally has a higher value than other softwoods.

Exhibit 36: Inflation-Adjusted Value of Timber Harvest in the North State, 2000 to 2011



Source: California Department of Forestry

In 2011, Humboldt, Shasta and Siskiyou counties harvested 46.4 percent of the state's total board feet of timber, accounting for 53.3 percent of the state's overall value of the timber harvest. The sharp reductions in the timber harvest throughout the North State translate into the sharp declines in income levels and the shifts toward a lower income distribution, as discussed earlier.

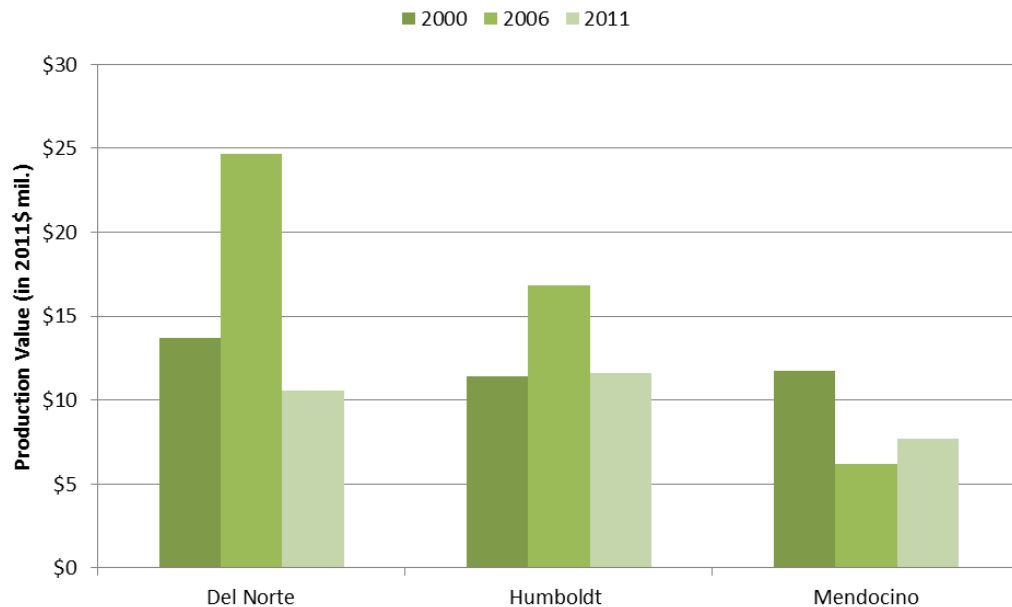
The value of the North State's commercial fish catch expanded by a 4.4 percent annual growth rate between 2000 and 2006, while the annual value of California's fish catch declined by 3.8 percent. The pattern reversed between 2006 and 2011, as the California fish catch value expanded at an annual rate of 4.8 percent and the North State fish catch value declined at an annual rate of 9.0 percent. Moreover, fish landings declined from 43.8 million pounds caught in 2006 to 32.2 million pounds by 2011. North State ports account for 16.7 percent of California's fish landings.

Commercial fishing is only a component of the Del Norte, Humboldt, and Mendocino economies (see Exhibit 37). Between 2000 and 2006, the increase in both fish landings and the value of the North State



catch was due to increases in both Humboldt and Del Norte counties. Mendocino County saw a decline over this period. Conversely, both Humboldt and Del Norte experienced declines in both the volume and value of the fish catch between 2006 and 2011, while Mendocino County mirrored the growth that the state experienced.

Exhibit 37: Inflation-Adjusted Value of Fish Catch in the North State, 2000 to 2011



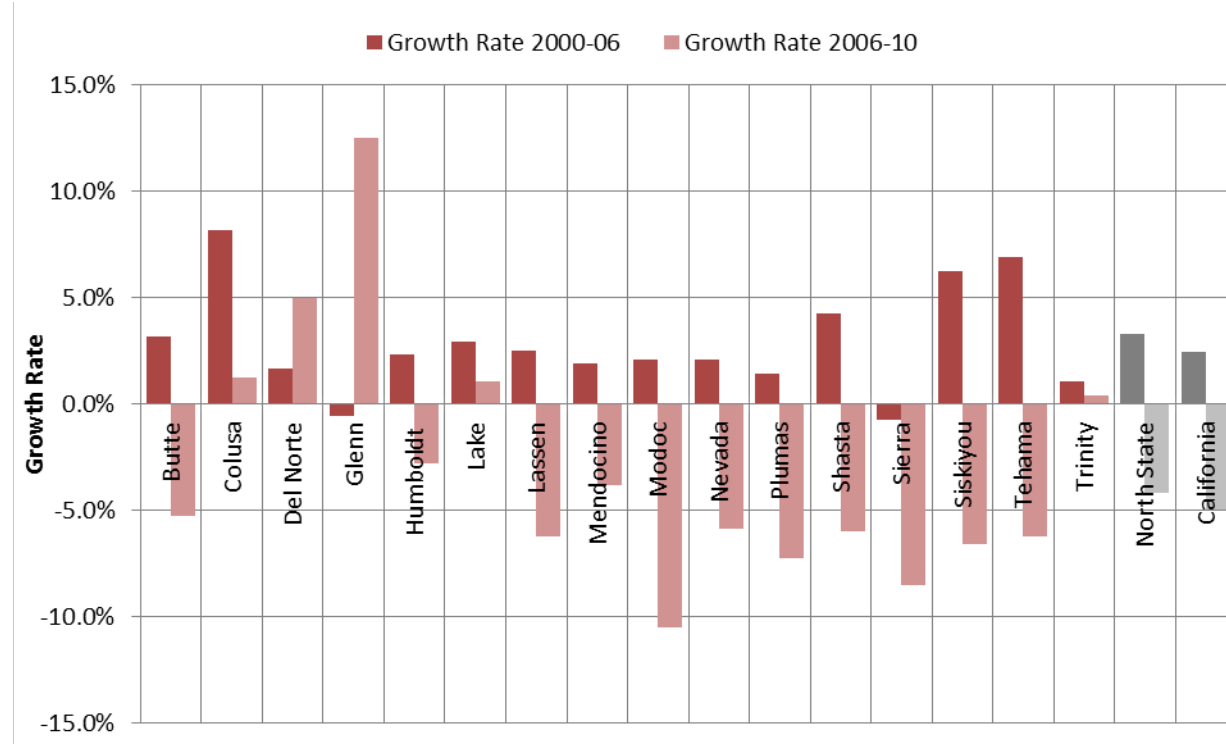
Source: California Department of Fish and Game

Taxable Sales

From 2000 to 2006, taxable sales receipts in the North State grew at a faster annual rate (3.3 percent) than taxable sales in the state as a whole (2.5 percent) – see Exhibit 38. Taxable sales receipts in both California and the North State declined significantly following the onset of the Great Recession. California’s inflation-adjusted taxable sales receipts declined at an average annual rate of 4.9 percent from \$420.8 billion in 2006 to \$326.8 billion in 2010. Taxable retail sales receipts declined more slowly in the North State, with a 4.2 percent annual rate of decline between 2006 and 2010.



Exhibit 38: Change in Inflation-Adjusted Taxable Retail Sales in California and the North State, 2000 to 2010



Source: California Board of Equalization

It is not surprising that the North State saw smaller declines in taxable sales than the state during the recession. The average income of the North State is lower than that of the state, meaning that households are likely to have less discretionary income. A greater portion of North State incomes is spent on necessities, leaving fewer options for cutting spending. Taxable sales reflect not only what households spend, but also visitor spending. While the North State has an active tourism sector, tourism spending is higher in the rest of the state. The recession has led to a decrease in visitor spending, which skews the overall taxable sales decline in the state more than in the North State.

Areas especially hard hit by the economic downturn include the counties of Modoc, Sierra, Plumas, Lassen, Siskiyou, Tehama, Shasta, Nevada, and Butte. These counties saw annual declines in taxable sales of over 5 percent between 2006 and 2010. Except for Shasta, Tehama, and Butte, these counties also had population declines over the same period, which helps to explain the greater decrease in taxable sales. In contrast, Glenn, Del Norte, Colusa, Lake, and Trinity counties expanded their taxable retail sales over the same period. Taxable sales in Glenn County experienced the largest growth over the period with a 12.5 percent annual growth rate.

Tourism/Visitor Spending

The employment generated by visitor spending accounts for nearly 900,000 jobs in California and nearly 33,300 jobs in the North State. Mendocino, Humboldt, and Shasta counties had the highest levels of employment generated by visitor spending, total direct visitor spending, and industry earnings



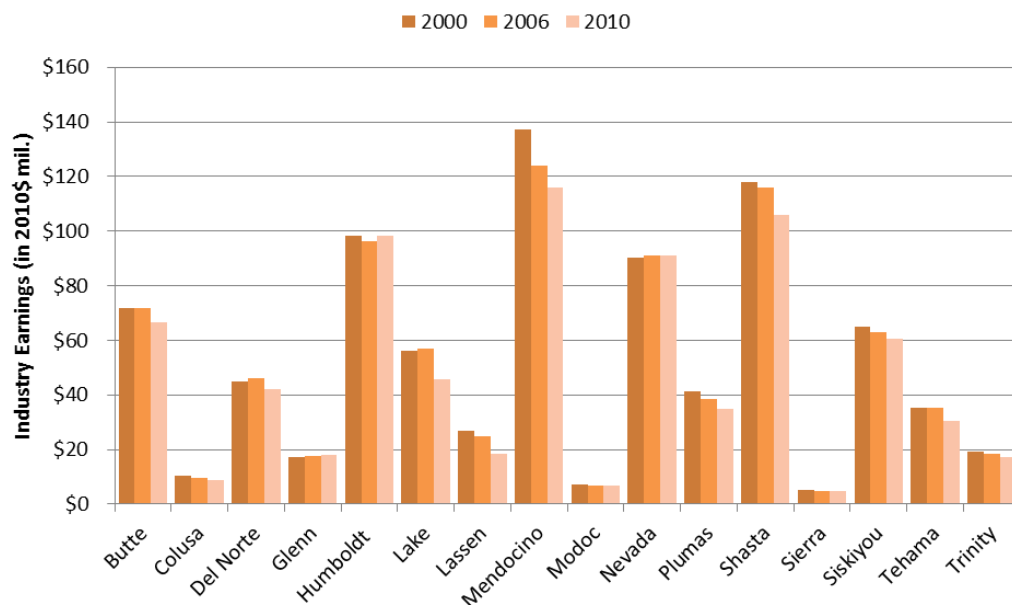
generated by visitor spending in all years reported. Sierra and Modoc counties had the lowest levels of activity related by tourism.

Unlike in California as a whole, the employment generated by visitor spending within the North State held steady between 2000 and 2006. The state lost nearly 20,000 jobs related to visitor spending, an annual decline of 1.1 percent. Between 2006 and 2010, the North State lost nearly 4,000 visitor-serving jobs, which translates into a 2.7 percent annual rate of decline. Lassen County had the most significant decline, losing jobs at an annual rate of 10.3 percent. In contrast, Glenn, Humboldt, and Sierra counties saw modest gains in employment generated by visitor spending over the same period. The recession has had a smaller impact on California's tourism industry with only a 1.1 percent annual rate of employment decline over the same period.

Total visitor spending suffered a \$200 million decline (2.0 percent annual average decline) in the North State between 2006 and 2010. This decline occurred in every county except Del Norte. Del Norte County reversed the trend of the previous six years and experienced an average annual growth in visitor spending of 1.6 percent. Lake and Lassen counties had declines in average annual tourism spending of over 4 percent.

North State businesses lost \$55 million in industry earnings generated by visitor spending between 2006 and 2010. As shown in Exhibit 39, the decline occurred in 12 of the 16 individual counties. The most dramatic declines occurred in Lassen and Lake counties. Only Glenn, Humboldt, and Modoc counties showed increases in industry earnings due to visitor spending. Earnings held steady in Nevada County.

Exhibit 39: Industry Earnings Generated by Visitor Spending in the North State, 2000 to 2010



Source: California Travel Impacts, 1992 - 2010



Key findings about North State demographics are:

- The North State shows demographic trends similar to those in the Great Plains, Appalachia, and the rural south. The population is older than in California as a whole (median age of 41 compared to 34) and the age gap is growing. The population is growing slower than in the state and has stagnated since 2006.
- These demographic trends create headwinds for any efforts to attract retail or service businesses that depend on consumer spending, which accounts for 70 percent of the economy in the United States.
- Inflation-adjusted household incomes have declined rapidly over the past decade (from \$73,200 in 2000 to \$64,600 in 2006 and \$45,000 in 2012). More households rely on government transfer payments than in the rest of the state and poverty rates are higher.
- While unemployment rate is slightly higher in the North State than in California as a whole, the labor participation rate is much lower. These figures reflect the presence of prisons, universities, and a large number of retirees that have moved to the North State to take advantage of a lower cost of living.
- A smaller percentage of North State adults have earned college degrees compared to the state. This trend also occurs in Humboldt and Butte counties, which have state universities. Fewer college degrees make efforts to attract new industries that rely on technical skills more difficult.
- Lower education levels also translate into lower wage jobs and less disposable income, which suppresses opportunities to attract additional retail and service jobs. However, the area's universities and colleges should serve as bases for encouraging business development.
- The value of fruits, vegetables, nuts, and other agricultural commodities have increased, while the value of livestock and poultry, the timber harvest, and the fish catch have declined. The reliance on the extraction of natural resources is not a viable economic development strategy, but value-added agriculture (e.g., food processing) is a viable option in some counties.
- Visitors spend roughly \$2.4 billion per year in the North State and account for nearly 33,000 jobs. Tourism-based employment has declined recently, but prior to the Great Recession, it had fared better in the North State than the rest of California. Tourism is a viable economic development strategy for many North State counties, despite potential seasonal limitations.

North State Economy

This section describes the industrial composition of the North State economy. It highlights economic patterns and opportunities, barriers to growth, and emerging or target economic activities in the North State. Issues such as industry concentration, cost factors, and economic diversity are highlighted.

The project team conducted an analysis of the North State economy using the Local Economic Assessment Package (LEAP), an analytical tool developed by one of our team members. LEAP is a web-based tool for regional economic development analysis. The tool draws data from a variety of published sources to help diagnose the North State's competitive position, identify target industry opportunities,



and inform strategies for addressing barriers to development. A LEAP analysis was conducted for all 16 counties in the North State. This section provides summary data for the North State as a whole. A description of LEAP and detailed results by county are available in Appendix G.

As the analysis shows, the North State has experienced employment losses in many existing industries, such as wood products, construction, and retail trade. These findings are consistent with trends in the timber harvest, housing prices, and retail sales described in the demographic section. However, the analysis also highlights several burgeoning sectors that show promise at the state and national level. For example, crop production is growing faster in the North State than in the nation and agricultural support is also growing. Higher-added agricultural production, such as canning, processing, and brewing, is an opportunity area for the North State. There are other opportunities, such as providing accommodations and eating and drinking establishments to support tourism. These types of businesses have been growing nationally, but declining in the North State recently. Transportation, wholesale, and retail trade represent additional opportunities for the North State economy.

Total employment in the North State grew at a rate similar to that of California in the five years leading up to the Great Recession. However, these gains were erased from 2006 to 2011 as employment fell in nearly all of the 16 counties. In the future, the North State can increase employment if it capitalizes on its economic opportunities.

Regional Employment Growth

Prior to the start of the Great Recession, employment in the North State grew roughly on par with California as a whole. As shown in Exhibit 40, North State employment grew by an adjusted annual rate of 0.6 percent from employment of 342,000 in 2001 to 351,930 in 2006. California grew by a comparable 0.7 percent rate. While eleven counties experienced growth over this period, employment fell in Humboldt, Mendocino, Sierra, Siskiyou, and Trinity counties. This decline reflects the contraction of the timber industry over the period. The fastest growing counties in the North State were Colusa County followed by Del Norte and Shasta counties.

As the recession set in and employment levels fell across California, overall employment in the North State declined by 1.9 percent annually from 351,930 in 2006 to 319,010 in 2011. Employment fell in every North State county except Colusa and Lassen during this time. Plumas and Trinity counties experienced the fastest declines in employment during the recession, while Shasta County experienced the largest absolute loss. Although it comprises a small share of the North State's total employment, Sierra County was the only county that had lost jobs prior to the recession, but lost jobs at a slower rate during the recession.

Exhibit 40 highlights employment trends reported by the California Economic Development Department (EDD). Reported employment levels can vary greatly by data source and the types of economic activities included in each data source. The LEAP analysis presented in the next few sections relies on employment data from the IMPLAN regional economic model rather than the EDD.



Exhibit 40: Employment Trends in California and the North State, 2001 to 2011

Geographic Area	2001 Employment	2006 Employment	2011 Employment	Adj. Annual Growth Rate 2001-2006	Adj. Annual Growth Rate 2006-2011
California	14,981,500	15,435,500	14,445,700	0.7%	-0.4%
North State	342,000	351,930	319,010	0.6%	-1.9%
Counties					
Butte	74,200	78,100	70,000	1.1%	-2.1%
Colusa	7,330	8,120	8,370	2.2%	0.6%
Del Norte	7,770	8,310	7,850	1.4%	-1.1%
Glenn	7,560	7,850	7,780	0.8%	-0.2%
Humboldt	50,500	50,100	45,700	-0.2%	-1.8%
Lake	14,240	14,490	13,370	0.4%	-1.5%
Lassen	9,840	10,260	10,250	0.9%	0.0%
Mendocino	33,440	32,590	28,850	-0.5%	-2.3%
Modoc	2,930	2,970	2,570	0.3%	-2.7%
Nevada	28,890	30,350	28,080	1.0%	-1.5%
Plumas	7,330	7,410	6,240	0.2%	-3.2%
Shasta	62,300	66,200	58,300	1.3%	-2.4%
Sierra	870	780	760	-2.1%	-0.5%
Siskiyou	14,180	13,850	12,820	-0.5%	-1.5%
Tehama	17,250	17,440	15,370	0.2%	-2.4%
Trinity	3,370	3,110	2,700	-1.5%	-2.6%

Source: California Employment Development Department (EDD)

As shown in Exhibit 41, IMPLAN consistently shows higher employment than the EDD for California and the North State in 2010 (the most recent year available in IMPLAN). For comparison purposes, the exhibit also presents employment data from County Business Patterns (CBP) and the Bureau of Economic Analysis (BEA). Both IMPLAN and BEA show higher employment numbers than the EDD and CBP, because they include data for more sectors of the economy (measured or estimated). IMPLAN provides slightly higher employment figures than BEA as a result of IMPLAN estimating non-disclosed values for sectors that BEA does not cover. This estimation provides a more complete dataset but can introduce estimations errors at detailed industry levels (e.g., three-digit North American Industrial Classification System, or NAICS, code).



Exhibit 41: Employment Trends in California and the North State, 2001 to 2011

Geographic Area	CBP	California EDD	BEA	LEAP (IMPLAN)
California	12,536,402	14,278,000	19,770,765	19,821,476
North State	233,533	323,060	491,293	508,539
Counties				
Butte	53,911	71,600	100,271	106,167
Colusa	3,892	8,590	11,445	12,028
Del Norte	4,238	8,090	10,987	11,501
Glenn	4,292	7,840	11,924	12,780
Humboldt	33,505	46,500	69,381	70,317
Lake	8,907	13,120	21,286	21,812
Lassen	3,476	10,490	14,276	15,535
Mendocino	21,882	29,260	47,286	46,834
Modoc	1,351	2,720	4,530	4,458
Nevada	26,153	27,860	54,815	56,293
Plumas	3,683	6,350	9,767	10,348
Shasta	46,780	58,700	85,550	89,071
Sierra	313	710	1,350	1,168
Siskiyou	8,531	13,060	20,951	21,478
Tehama	11,089	15,470	22,769	23,786
Trinity	1,530	2,700	4,705	4,963

The most important differences in the four data sources shown in Exhibit 41 are:

- County Business Patterns (CBP) data exclude most government employees as well as the self-employed, employees of private households, railroad employees, and agricultural production employees.
- California Employment Development Department (EDD) data include agricultural production and government employees, but exclude members of the armed forces, the self-employed, domestic workers, unpaid family workers, and railroad workers.
- Bureau of Economic Analysis (BEA) data, while lacking NAICS detail compared to other sources, accounts for all categories of workers excluded from both the CBP and California EDD data.
- IMPLAN combines US Bureau of Labor Statistics Covered Employment and Wages data, BEA Regional Economic Accounts data, and CBP data to create a database that represents all employment activities.

After reviewing these differences, the project team selected the IMPLAN data as the most appropriate for analyzing the industrial composition of the North State economy.



Industry Growth Trends

According to the IMPLAN data available in LEAP, total employment in the North State fell during the Great Recession, but several sectors experienced employment gains. The finance, real estate, and professional services sectors added at least 5,000 workers from 2006 to 2010, while the transportation, amusement and recreation, crop production, health care, and government sectors added at least 2,500 workers. These gains helped compensate for significant job losses in the construction (-5,331), wood products (-3,298), and retail trade (-2,933) sectors during this period.

Financial services were one of the few areas that grew in California as a whole during the Great Recession. They also grew in the North State and at a rate similar to the state. Other prominent sectors that added jobs or held constant in the North State from 2006 to 2010 include government, health care, amusement and recreation, religious and civic organizations, and educational services. While constituting a nominal share (0.45 percent) of the North State's employment base, the internet and data processing services sector experienced double-digit growth both in the North State and statewide during the recession, highlighting a potential growth area where broadband access is available. In the North State, this sector is concentrated in Nevada County.

Most other industries shed jobs in the North State and California during this time period. Appendix G provides full employment data by aggregated industry sector for each county, the North State, and California in 2001, 2006, and 2010. The industry sectors are defined by two-digit NAICS codes.

Exhibit 42 provides an analysis of how industry growth trends and industry concentrations in the North State compare to national trends since the Great Recession began. Only industries that represent at least one percent of the North State workforce (approximately 5,000 employees in 2010) are included in the analysis. As measured by total employment from 2006 to 2010, the crop production, real estate, and amusement and recreation sectors all grew faster in the North State than the nation. The growth in crop production is indicative of the relative agricultural advantages in the Sacramento Valley (i.e., Butte, Colusa, and Glenn counties). Exhibit 42 also shows that the North State is more dependent on (has a higher concentration in) crop production than the nation as a whole.

While relatively underrepresented in the North State, professional scientific and technical services grew faster in the North State than they did nationally from 2006 to 2010. This growth reflects the high technology development that has occurred primarily in Nevada County. However, it also indicates an opportunity for the North State to build on its strengths Chico State, Humboldt State, and other educational institutions in the North State.

Exhibit 42 indicates that there is also an opportunity in the repair, maintenance, and personal services as well as the accommodations, eating, and drinking sectors. These sectors employ a significant share of the North State workforce. However, employment in these sectors declined from 2006 to 2010, while employment in the same sectors increased at the national level. The North State could increase demand in the accommodations, eating, and drinking sector by promoting tourism.



Exhibit 42: North State Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	Crop Production	- Real Estate - Amusement & Recreation	Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally		- Repair, Maint. & Personal Serv. - Accommodations, Eating & Drinking		
Industry growing locally <i>slower</i> than nationally*		Health Care & Social Services		
Industry growing at a rate <i>similar</i> to national*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	Support for Agriculture & Forestry	- Transportation - Mail, Package Delivery & Warehousing	- Insurance Carriers & Related - Admin. & Support Services - Wholesale Trade	
Industry declining locally <i>slower</i> than nationally*		- Construction - Retail Trade		
Industry declining locally <i>faster</i> than nationally*				
Industry declining locally at a rate <i>similar</i> to national*				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.

The health care and social services sector (representing 11.6 percent of the North State's employment) has grown at a slower rate in the North State than the nation. This may be a healthy sign given the area's larger dependence on social services and transfer payments than the rest of California. However, the concentration of health care services in Redding is an opportunity for growth. While underrepresented relative to the nation, the monetary, financial, and credit activity sector (representing 3.5 percent of the North State's employment) has grown at a rate similar to national trends.

Exhibit 42 also highlights the North State's continued dependence on agriculture and forestry products. Both sectors declined nationally from 2006 to 2010. While they continued to grow in the North State, the national decline represents a potential threat. Certainly, a declining timber industry has been an ongoing theme for the North State. Yet, higher-value added agricultural production (e.g., olive canning) is an opportunity for the North State to capitalize on its agricultural assets. For example, the North State has quite a few breweries, particularly in Butte, Mendocino, and Humboldt counties. In addition, there are a number of niche agricultural areas, such as lily bulb growing and olive canning.



Other industry sectors that grew in the North State, but declined nationally include transportation, mail package delivery and warehousing, insurance, administrative, and wholesale trade. In contrast, the North State's employment in the construction and retail trade industries has declined since the onset of the Great Recession, but slower than in the nation as a whole. The declines in the last two industries are no surprise given the declines in discretionary household spending and home construction.

Relative Industry Concentration

Employment in the North State is concentrated in several industry sectors that are comparatively underrepresented in the state and national economies. For instance, support for agriculture and forestry accounted for 1.4 percent (7,081) of the North State's employment in 2010, but only 0.3 percent of the national employment. As the largest agricultural producing state, California also has a large concentration of agricultural employment (1 percent), but not as high as the North State.

This points to the North State's history of natural resource and agricultural production, a heritage that is also reflected in its disproportionately high concentration (or location quotient) of workers employed in crop production (3.6), wood products manufacturing (4.0), and forestry and logging (7.9). In these examples, the location quotient (number in the parentheses) represents the share of area employment in the industry sector relative to the share of national employment in the same sector. While the North State produces only 8 percent of California's fruits, vegetables, and field crops, and 4 percent of the state's livestock and poultry products, it produces over 80 percent of California's timber harvest (see Appendix E). This accounts for the North State's particularly high location quotient (nearly eight times the national average) in forestry and logging.

In 2010, the government sector employed the largest number of workers (89,258) in the North State, followed by the health care (58,735), retail trade (56,299), accommodations, eating and drinking establishments (34,540), and construction (29,989) sectors. These are similar trends to those found in California and the nation. In California and the nation, government was the largest employer in 2010, followed by health care, retail, professional services, and accommodations. While prominent nationally, professional services do not play as significant a role in the North State economy.

Of the 16 counties in the North State, Colusa County is the most dependent on crop production and support for agriculture as sources of employment. In 2010, these two industry groups employed 21 percent and 8 percent of the workforce, respectively. Colusa is the only county, other than Glenn, where the government or health care sector is not the largest source of employment. In Glenn County, the crop production sector employs 19 percent of the total workforce. Mendocino County is the most dependent on the forestry and logging sector, but as shown in Appendix E, this industry has seen significant declines in production. In 2010, 1.8 percent of the county's employed population (854 people) worked in forestry and logging. The sector also represented over 1 percent of total employment in Tehama County, a significant share considering that it accounts for less than 0.8 percent nationally.

Economic Diversity

The overall diversity of a regional economy can be measured using the Shannon-Weaver Index. Using this index, a value of 0 indicates an economy that is completely dependent on a single industry, while a

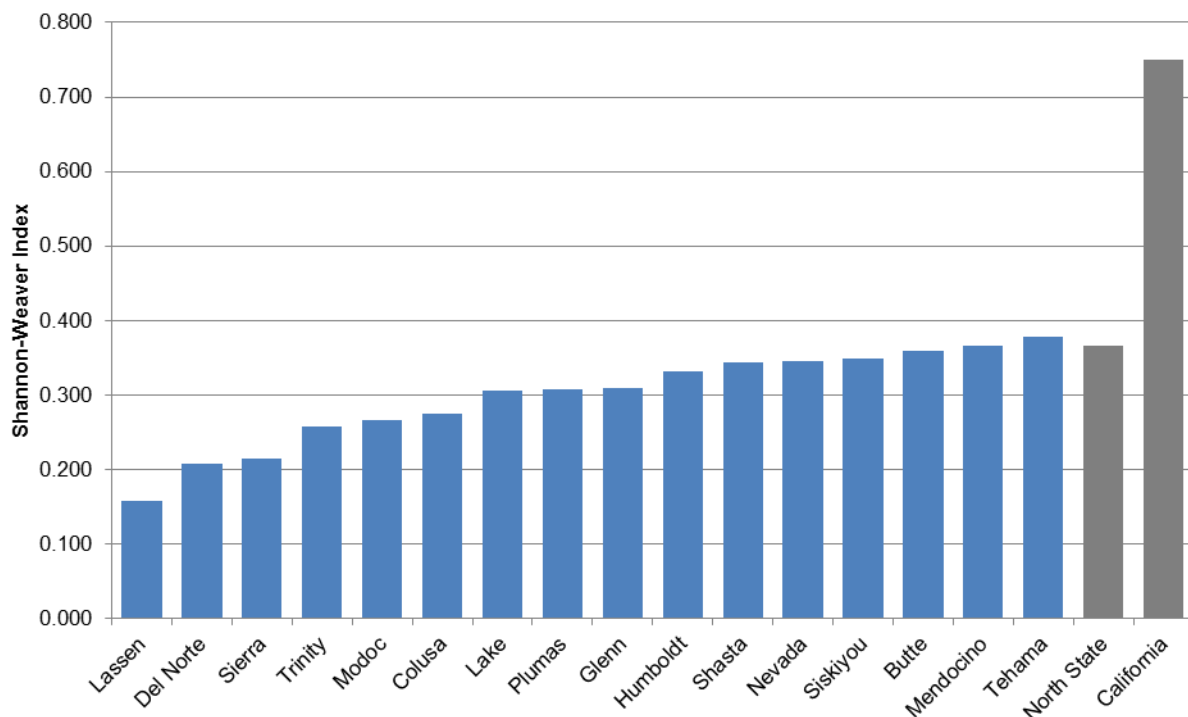


value of 1 indicates an economy where each industry has an equal share of employment. The Shannon-Weaver Index is described further in Appendix G. Too little industrial diversification can leave an economy vulnerable to shocks to a single industry or sector, as the North State has experienced with the timber industry. On the other hand, concentration in just a few dominant sectors can be beneficial when economic growth is enhanced by the presence of agglomeration economies (e.g., farming, manufacturing of agricultural equipment, and canning).

The North State has a diversity index of 0.37 compared to a diversity index of 0.75 in both California and the nation. Most of the counties have diversity indices lower than the North State as a whole. The greater variation in the industrial mix across the North State and greater concentration in individual counties indicates that North State counties specialize in different industries, leading to a more diverse overall economy.

According to the diversity index, the level of economic diversity in the North State is met or exceeded by Tehama, Mendocino, and Butte counties. Tehama County has the most varied economy. Lassen is the least diversified county. This reflects the presence of two prisons – the High Desert State Prison and the California Correctional Center – that have replaced timber as the primary employment sector. Sierra Pacific Industries closed the last lumber mill in Susanville in 2007. Other counties that are relatively undiversified (i.e., with an index below 0.3) include Colusa, Modoc, Trinity, Sierra, and Del Norte counties (see Exhibit 43). Appendix G contains diversity index values for each county in the North State.

Exhibit 43: Economic Diversity in California and the North State, 2010



Source: LEAP analysis using BEA/IMPLAN data

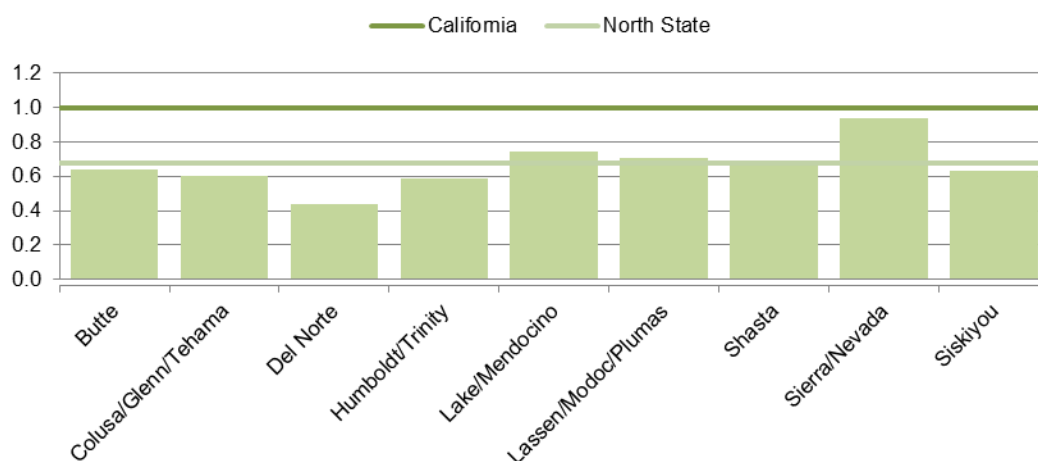


Relative Industry Cost Factors

The demographic and economic variation of the North State's counties is associated in part with differences in the cost of doing business. The relative cost of doing business can be measured by the average tax burden and the average costs of electricity, labor, and housing. To allow for more manageable comparisons of these relative cost factors, the North State's 16 counties were combined into nine groups based on geographic similarities and input from area stakeholders. The cost factors for multiple counties were averaged using a population weighting. Exhibit G5 in Appendix G provides relative cost factors for individual counties. These relative cost factors are important considerations for attracting or retaining businesses in the North State as many are direct production inputs for businesses.

As shown in Exhibit 44, the relative tax burden in the North State is less than the California average. Only the Sierra/Nevada county grouping has a tax burden almost as high as the statewide average. The relative tax burden is calculated as the total revenue collected through local taxes (excluding state and federal taxes) within a county divided by the total county population. The tax revenues include property taxes, sales taxes, public utility taxes, and other special district taxes. The lower tax burden in North State counties reflects several factors – fewer special districts in the North State, lower county sales tax rates, and lower property values than in the rest of California. The higher property values in Nevada County help to explain the higher tax burden in the Sierra/Nevada county grouping.

Exhibit 44: Relative Tax Burden Factor by County Grouping, 2007

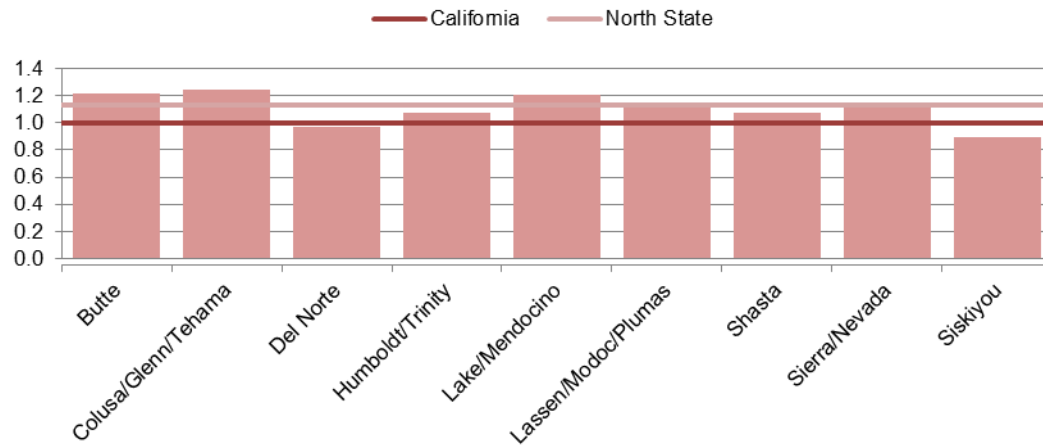


Source: LEAP analysis using US Census of Governments data

Electricity prices can significantly impact the cost of doing business. As shown in Exhibit 45, energy prices are higher in the North State than in California as a whole, but they vary considerably across the county groupings. Compared to a statewide weighted average of \$0.08/kWh (index of 1.0), electricity costs are highest in the Colusa/Glenn/Tehama county grouping. Both Siskiyou and Del Norte counties have electricity costs below the California average. A later comparison with neighboring regions shows that relative energy costs in the North State are on par with energy costs in the San Francisco Bay Area, the Sacramento Region, and Reno.



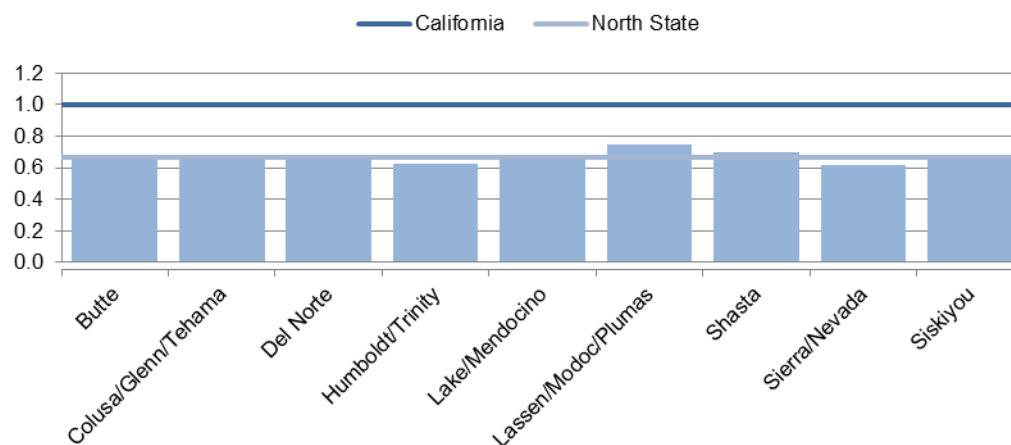
Exhibit 45: Relative Energy Cost Factor by County Grouping, 2007



Source: LEAP analysis using data from the Energy Information Agency and Energy User News

The average compensation paid within a county can be used to compare relative labor costs. However, the average can be influenced by the occupational composition of each county (i.e., counties with higher paying industries have higher average wages). By this measure, labor costs in the North State are significantly lower than the state average of \$58,881. As shown in Exhibit 46, labor costs vary little among North State counties. They are highest in the Lassen/Modoc/Plumas county grouping, which has an average income paid of \$43,802. All other county groupings have average labor costs within 5 percent of the North State average.

Exhibit 46: Relative Labor Cost Factor by County Grouping, 2010



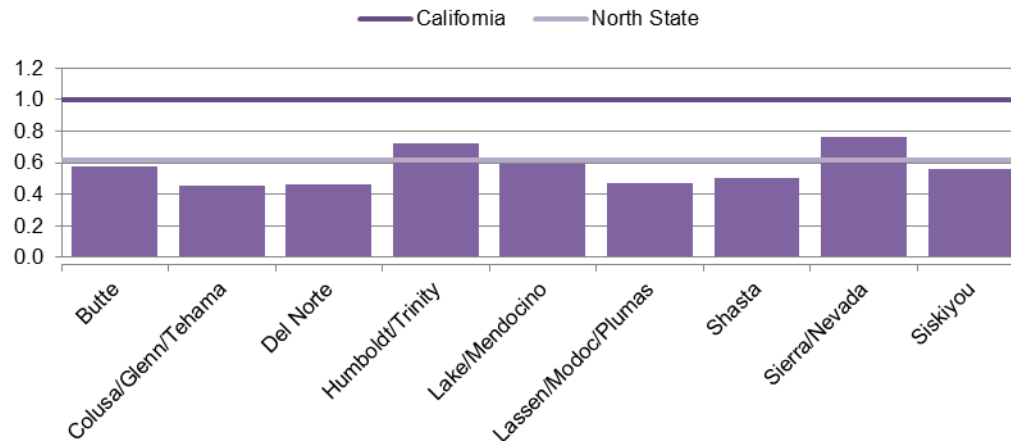
Source: LEAP analysis using BEA/IMPLAN data

The LEAP analysis uses housing cost information provided by Zillow.com. According to these data, the Sierra/Nevada county grouping is home to the highest relative housing costs in the North State (see Exhibit 47). With an average housing value of \$226,300 in 2012, it costs at least 15 percent more for housing in Sierra/Nevada than the North State average. By contrast, the Colusa/Glenn/Tehama and Del



North county groupings have the lowest relative housing costs in the North State. In these counties, owning a home costs at least 16 percent less than the North State average. The North State has much lower average housing costs than California does. In 2012, the average housing value in the North State (\$182,600) was 38 percent below the state average.

Exhibit 47: Relative Housing Cost Factor by County Grouping, 2012



Source: LEAP analysis using Zillow.com data

Relative Market Access Factors

LEAP also provides an analysis of the relative access of North State counties to potential supplier, consumer, and labor markets. The analysis provides a general baseline - specific supplier, consumer, and labor markets are not identified. However, later in the NSTEDS, the impact of potential transportation improvements will be measured against the baseline established in this analysis.

For the purposes of the LEAP analysis, a *labor market* is defined as the population within a 40-minute drive of the population-weighted centroid of each North State county. The actual labor market depends on many factors (e.g., people may be willing to drive more than 40 minutes), but the analysis provides a common baseline across North State counties. LEAP calculates labor market accessibility using US Census data and the ESRI ArcView Geographic Information System (GIS) with highway drive times calculated based on NAVTEQ national and local highway network data. By using GIS and NAVTEQ data, LEAP is able to account for regional differences in topography and drive time. Appendix H provides labor market accessibility maps estimated for each county.

The same methodology is used to calculate access to *skilled labor* in each North State county. For this analysis, the potential labor pool is limited to people over 25 with at least a college degree living within the 40-minute labor market. As can be expected from the demographic trends (i.e., fewer college degrees in the North State), the skilled labor market is smaller than in California as a whole. This means that North State businesses have less access to skilled labor.

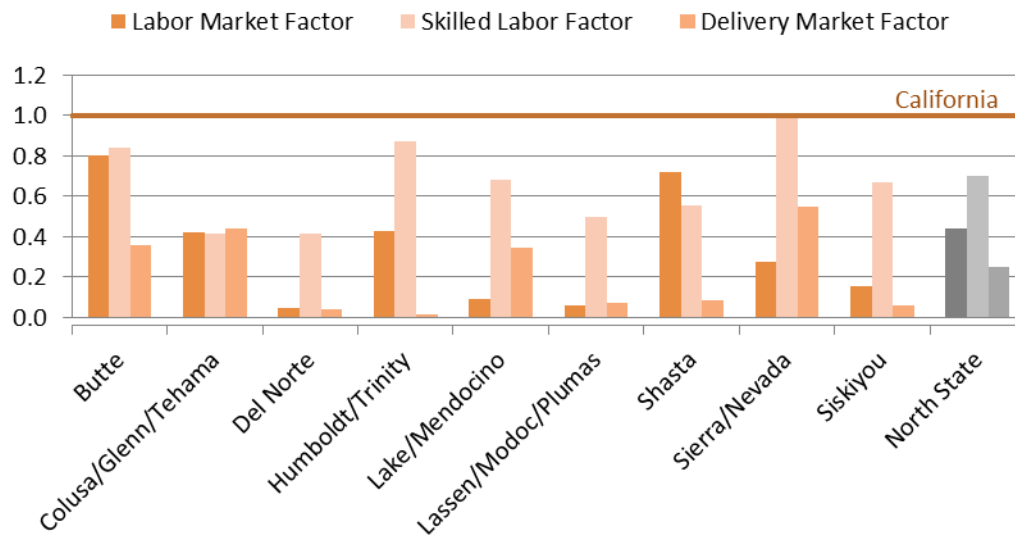
LEAP analyzes access to consumer and supplier markets in a manner similar to labor markets. LEAP uses the number of employees within a 180-minute drive of each county's population-weighted centroid to



represent the *same-day truck delivery market*. Employees serve as proxies for business locations and size. While the delivery markets in some counties and for specific products is considerably longer (e.g., lily bulbs produced in Del Norte delivered to the rest of the country), this approach provides a consistent relative accessibility measure for each county. The same-day truck delivery market maps for each county are found in Appendix H after the labor market accessibility maps.

Exhibit 48 summarizes the relative market access factors estimated for each county grouping in the North State. More detailed data are available in Appendix E (see Exhibit E6), which contains relative market access factor values for individual North State counties. As Exhibit 48 shows, the two counties with the largest populations have the greatest labor market access. Butte County, which is located in the Sacramento Valley at the southern end of the North State, has access to the largest labor market (68,198 residents within 40 minutes). Shasta County, which serves as a regional service center for much of the North State, also has a relatively large labor market (61,198). Outside of Humboldt County, the North Coast, eastern North State counties (i.e., Lassen/Modoc/Plumas), and Siskiyou County have access to relatively limited labor markets.

Exhibit 48: Relative Market Access Factors by County Grouping, 2010



Source: LEAP analysis using US Census, Current Population Survey, ESRI, and NAVTEQ data

While its labor market is smaller than in the Sacramento Valley or Humboldt County, the Sierra/Nevada county grouping has the highest-skilled labor force (percent of workforce with at least a college degree) of the North State's counties. The share of skilled workers in Sierra/Nevada County is higher than the regional average and is almost equivalent to the average share in California (29 percent). This relatively higher skilled labor force is reflected in the broadcast and wireless communications equipment manufacturing companies found in Nevada County.

The Sierra/Humboldt county grouping is followed by the two areas with state universities: Humboldt/Trinity and Butte counties. In these counties, the shares are lower than the California



average at 24 percent (Humboldt/Trinity) and 20 percent (Butte) but higher than the North State average. The presence of this skilled labor force represents an opportunity for the North State. In Colusa/Glenn/Tehama, Del Norte, Lassen/Modoc/Plumas, and Shasta counties, the share of workers with college degrees is at least 20 percent below the regional average, while in Lake/Mendocino and Siskiyou counties the share is about the same as the regional average.

As shown in Exhibit 48, Butte, Colusa/Glenn/Tehama, Lake/Mendocino, and Sierra/Nevada have the greatest delivery market access. Each county grouping has over three million employees within an estimated 180-minute drive of the population-weighted centroid. These statistics clearly reflect the proximity of the San Francisco Bay Area and the Sacramento Region. The counties in the Sacramento Valley and Sierra/Nevada counties have increased accessibility due to I-5 and I-80, respectively. Counties with a delivery market smaller than the regional average include Del Norte, Humboldt/Trinity, Lassen/Modoc/Plumas, Shasta, and Siskiyou. Despite the presence of I-5 in Shasta and Siskiyou counties, these counties are distant from the two major metropolitan areas in Northern California.

Transportation Hubs

The presence of major transportation hubs is a key determinant of market access for most businesses, particularly in areas with low population densities. As described in the transportation landscape chapter, the North State has four commercial aviation airports:

- Arcata/Eureka (ACV) with service to Crescent City, Sacramento, and San Francisco
- Chico Municipal (CIC) with service to San Francisco
- Del Norte County Regional Airport, Jack Mc Namara Field (CEC) with service to Arcata/Eureka and San Francisco
- Redding Municipal (RDD) with service to San Francisco.

As shown in Exhibit 49, these airports are located along the North Coast and in the Sacramento Valley. All four are non-hub airports that offer limited, essential service to nearby hubs. There are also four small airports located just outside the North State. Each of these offers slightly expanded service compared to the North State airports, but their service is limited compared to larger hub airports:

- Charles M. Schulz - Sonoma County Airport (STS) with service to Los Angeles, Portland, San Diego, and Seattle/Tacoma
- Klamath Falls (LMT) with service to Portland and San Francisco
- Rogue Valley International/Medford (MFR) with service to Denver, Las Vegas, Los Angeles, Phoenix/Mesa, Portland, Salt Lake City, San Francisco, and Seattle/Tacoma
- Eugene Airport, Mahlon Sweet Field (EUG), with service to Denver, Las Vegas, Palm Springs, Los Angeles, Phoenix/Mesa, Portland, Salt Lake City, San Francisco, Oakland, Portland, and Seattle/Tacoma.



Exhibit 49: Location of North State and Nearby Airports



Some North State residents may use these other airports, since they are located near the northern and southern edges of the region and offer more air service than the North State airports. However, for comprehensive air service, travelers must use one of four medium to large hubs:

- Oakland International (OAK)
- Reno/Tahoe International (RNO)
- Sacramento International (SMF)
- San Francisco International (SFO).

Exhibit 50 shows the relative accessibility of North State counties to the nearest commercial airport, regardless of its size or the air services provided. In some cases, the nearest airport is not the one North State residents actually use. For example, Sacramento International is the closest airport by drive time to Mendocino County, but given the topography and service available, Mendocino residents may be just as likely to drive to airports in the San Francisco Bay Area.

Relative to other North State counties, Del Norte and Shasta counties benefit from the shortest drive times to a commercial airport. Butte and Humboldt counties have longer average drive times due to more dispersed



populations that affect the location of the population-weighted centroid (e.g., Oroville in Butte County and Fortuna in Humboldt County). Residents in Mendocino, Plumas, and Modoc counties have the greatest distances to drive to commercial airports. It is important to note, however, that North State airports generally have very few commercial flights. For instance, Chico Municipal Airport is the closest commercial airport to the population-weighted centroid of Butte, Glenn, and Plumas counties, but it had only 1,624 takeoffs and landings in 2010. Counties with convenient access to one of the four hub airports (i.e., Oakland, Reno/Tahoe, Sacramento, or San Francisco) are much better positioned in terms of air service.

Exhibit 50: Relative Airport Access by County

County	Nearest Commercial Airport	2010 Takeoffs and Landings	Avg. Drive Time to Airport (minutes)	Driving Distance to Airport	Avg. Speed (mph) to Airport
Butte	Chico Municipal (CIC)	1,624	57	26.6	28
Colusa	Sacramento Int'l. (SMF)	71,687	61	54.5	53.6
Del Norte	Jack Mc Namara Field (CEC)	2,064	14	5.7	24.4
Glenn	Chico Municipal (CIC)	1,624	64	36.5	34.2
Humboldt	Arcata/Eureka (ACV)	12,000	44	24.3	33.1
Lake	Sacramento Int'l. (SMF)	71,687	149	108.8	43.8
Lassen	Reno/Tahoe Int'l. (RNO)	90,210	116	98.1	50.7
Mendocino	Sacramento Int'l. (SMF)	71,687	170	159.0	56.1
Modoc	Klamath Falls (LMT)	26,810	173	98.9	34.3
Nevada	Sacramento Int'l. (SMF)	71,687	83	70.0	50.6
Plumas	Chico Municipal (CIC)	1,624	176	98.7	33.6
Shasta	Redding Municipal (RDD)	8,163	14	6.8	29.1
Sierra	Reno/Tahoe Int'l. (RNO)	90,210	83	63.9	46.2
Siskiyou	Klamath Falls (LMT)	26,810	103	88.6	51.6
Tehama	Redding Municipal (RDD)	8,163	39	36.2	55.7
Trinity	Redding Municipal (RDD)	8,163	123	72.2	35.2

Source: LEAP analysis using data from Federal Aviation Administration, Research and Innovative Technology Administration, US Department of Transportation, US Geological Survey, US Department of the Interior

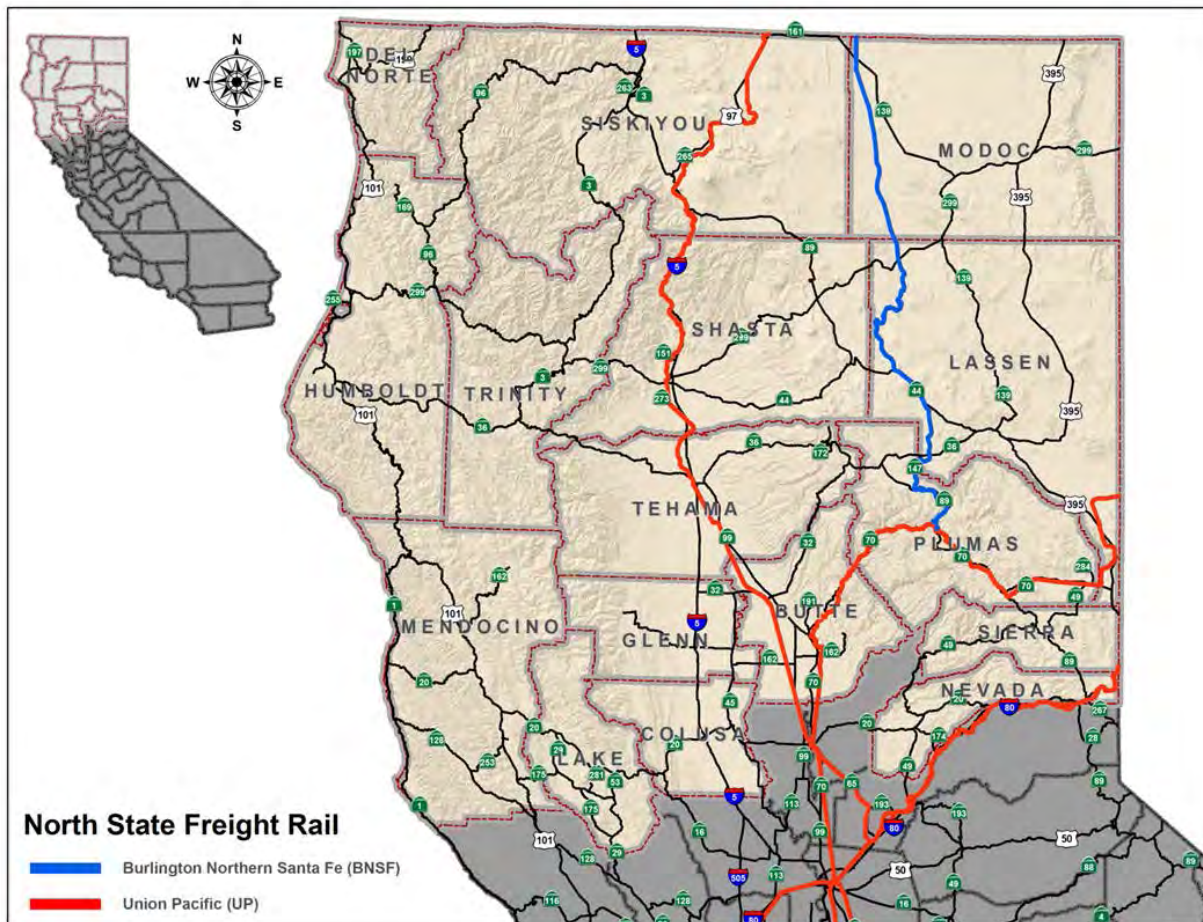
Exhibit 50 also illustrates the effects of the North State's extreme topography and reliance on two-lane state highways for airport access. Many counties have relatively low average speeds for travel to commercial airports. Colusa, Siskiyou, and Tehama counties have direct access to I-5 and have higher average travel speeds as a result. Siskiyou residents can use US 97, which has only two lanes but provides fairly level access to Klamath Falls. Likewise, residents in Nevada and Sierra counties can access Reno/Tahoe International via I-80 and Lassen County residents can access Reno/Tahoe International via US 395.



Average driving times to other transportation gateways (e.g., marine ports and intermodal terminals) are provided in Appendix G. Colusa and Nevada counties have the quickest access to a major marine port (i.e., the ports of Richmond and Stockton, respectively). The Port of Humboldt Bay specializes in serving the timber and forest products industries and is not included in the accessibility analysis. If it were, Humboldt County would have the best marine access. The Port of Humboldt has recently been dredged and a new business plan targets pursuing local cargo. Land-locked Modoc County is the furthest from a marine gateway (i.e., Coos Bay, Oregon).

In terms of rail access, the North State is served by two Class I railroads: Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UP). As shown in Exhibit 51, these railroads serve the Sacramento Valley and the eastern portion of the North State. UP provides service along SR-99, I-5, and US 97 through the Sacramento Valley and the southern Cascade Range to Oregon. UP also provides service through Butte and Plumas counties along SR-70 to Nevada. BNSF's Northwest subdivision passes through the eastern border of the North State (i.e., Plumas, Lassen, and Modoc counties). The freight railroads operate out of the ports of Richmond, Stockton, Sacramento, Oakland, and Redwood City.

Exhibit 51: Class I Freight Railroads in North State





In all, the freight railroads travel through eight of the 16 North State counties. However, neither Class I railroad has a freight intermodal facility in the North State. According to the LEAP analysis, businesses in Nevada County have the quickest access to rail intermodal facilities among North State counties, while the North Coast counties of Del Norte and Humboldt have the longest time to access rail. The transportation landscape chapter describes freight rail and the discontinuation of service for the North State in more detail.

The LEAP analysis also considers drive times to international land borders and international air freight gateways to determine access to international markets. The proximity of individual counties to international land borders varies little among counties given the North State's position roughly halfway between Canada and Mexico. However, counties located along I-5 have much faster access to these international markets.

Access to an international air gateway is determined by a county's proximity to the Sacramento and San Francisco airports. By this measure, Mendocino County is the nearest to an international air gateway, while Modoc County is the furthest. Details are provided in Appendix G.

Key findings about the North State economy are:

- The North State economy is less diverse than the state, while the economies of individual counties are even less diverse. The greater variation in the North State's industrial mix compared to the individual counties indicates that North State counties specialize in different industries, leading to a more diverse economy overall.
- The North State has experienced employment losses in many existing industries, such as wood products, construction, and retail trade. These findings are consistent with trends in the timber harvest, housing prices, and retail sales.
- Despite the recent declines in the timber harvest, the North State continues to have a disproportionately high concentration of workers employed in forestry and logging, wood products manufacturing, and crop production.
- There are several burgeoning sectors that show promise. For example, crop production is growing faster in the North State than in the nation and agricultural support is growing. Higher value-added agricultural production, such as canning, processing and brewing, also provides an opportunity for the North State to capitalize on its agricultural assets.
- Accommodations and eating and drinking sectors have been growing nationally, but recently declining in the North State. Growth in these sectors would support tourism. Transportation, wholesale, and retail trade represent other opportunities for the North State economy.
- Compared to the rest of California, the North State generally has lower industry costs. The North State has lower taxes, labor costs, and housing costs. Only energy costs are higher in the North State.
- Labor market access is highest in the Sacramento Valley, especially in Butte and Shasta counties. The highest share of skilled workers occurs in Nevada County, which is home to broadcast and wireless communications equipment manufacturing companies.
- Humboldt and Butte counties also have relatively high shares of skilled workers due to the presence of state universities. The presence of this skilled labor force represents an opportunity



for the North State if the universities can form a nucleus for growth.

- The counties in the southern part of the North State have the greatest delivery market access due to their proximity to the San Francisco Bay Area and the Sacramento Region.
- The North State does not have any commercial hub airports or rail intermodal loading facilities. The Port of Humboldt Bay is the only protected deep water port in the North State, and it has focused historically on wood products and commercial fishing. The North State must rely on access to intermodal freight facilities in neighboring regions.

Influence of Neighboring Regional Markets

This section describes the economic influences of the San Francisco Bay Area, the Sacramento metropolitan area, the Reno metropolitan area, and Southern Oregon. It provides a comparison of the North State to these regions and summarizes the commodity flows to and from these regions.

This section considers the influence of four neighboring regional markets on the North State economy:

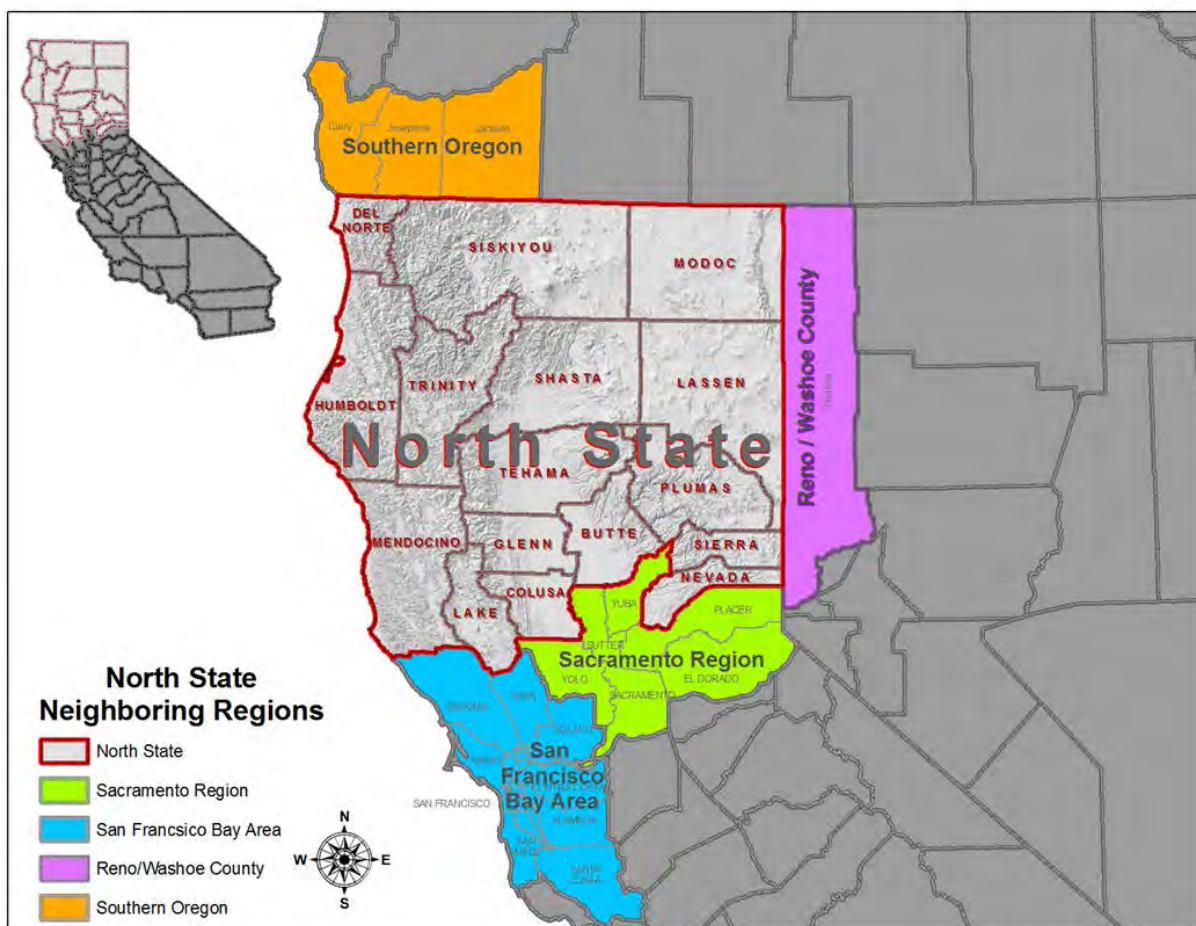
- *San Francisco Bay Area*, including Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties
- *Sacramento Region*, including El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties.
- *Reno*, including Washoe County
- *Southern Oregon*, including Curry, Jackson, and Josephine counties.

Exhibit 52 shows the location of these markets relative to the North State. As can be seen in the map, all four markets border the North State and share labor and delivery markets with neighboring North State counties. I-5 provides a direct connection from the Sacramento Valley to the San Francisco Bay Area, the Sacramento Region, and Southern Oregon. These regions are also accessible from other parts of the North State via several state and US highways (e.g., US 97, US 101, US 199, and SR-20). In addition, I-80 and SR-395 provide access to the Reno area.

Klamath County has not been included in Southern Oregon regional market for the comparative analysis, although the county has ties to the North State via US 97. The State of Oregon has adopted a collaborative approach to community and economic development called “Regional Solutions.” Oregon places Klamath County in the Central Oregon Regional Solutions Center, while Curry, Jackson, and Josephine counties (among others) are included in the Southern Oregon Regional Solutions Center. The comparative analysis follows the State of Oregon regional definitions and excludes Klamath County from Southern Oregon.



Exhibit 52: Neighboring Regional Markets



The project team conducted a LEAP analysis to consider how the regional markets compare with the North State in terms of regional employment, economic diversity, regional cost factors, and regional market access factors. Based on these measures, Southern Oregon is the closest competitor to the North State. The other regions are much larger. They are more likely to have supply chain rather than competitive relationships with the North State. To consider these linkages, the project team examined major commodity flows to and from the North State. This analysis showed that the largest trade occurs with the San Francisco Bay Area and the Sacramento Region. These two regions account for roughly 15 to 20 percent of the North State's commodity flow. The North State generally ships agriculture and timber products to its neighboring regions and receives machinery, pharmaceutical products, equipment, and fuel.

Regional Employment

The San Francisco Bay Area and the Sacramento Region are the nearest major employment centers to the North State. The San Francisco Bay Area alone employs over nine times the North State's total employment. The Sacramento Region has more than double the employment of the North State. Reno and Southern Oregon have much smaller employment bases.



As shown in Exhibit 53, employment in the San Francisco Bay Area declined slightly from 2001 to 2006 after the collapse of the dot-com bubble. In contrast, employment grew in the North State and the three other neighboring regions over the same period. Since the Great Recession (after 2006), employment has fallen in the North State and each of its neighboring regions. However, the economy in the San Francisco Bay Area has proven to be more robust. The decline in this region was minimal.

Exhibit 53: Employment Trends in the North State and Neighboring Regional Markets, 2001 to 2011

Region	2001	2006	2011	Adj. Annual Growth Rate 2001-2006	Adj. Annual Growth Rate 2006-2011
North State	497,154	520,978	485,874	0.96%	-1.35%
San Francisco Bay Area	4,546,186	4,401,358	4,392,173	-0.64%	-0.04%
Sacramento Region	1,163,223	1,278,585	1,209,882	1.98%	-1.07%
Reno	236,408	278,914	244,848	3.60%	-2.44%
Southern Oregon	149,616	168,745	156,267	2.56%	-1.48%

Source: LEAP analysis using BEA Regional Economic Accounts

Exhibit 54 compares employment in the North State with its neighboring regions by industry sector and concentration measured using location quotients (LQ). As shown in the exhibit, the North State has a very high concentration in agriculture, forestry, and fishing. While agricultural employment is expected to be low in the three neighboring urban regions, the North State agricultural employment is also more concentrated than in Southern Oregon. This means that agriculture is a more important aspect of the North State economy. Forestry and fishing are also more concentrated in the North State, but they are important sectors of the Southern Oregon economy.

The utilities sector is a more prominent employer in the North State than in nearby areas. This sector is particularly predominant in Lake, Plumas, and Humboldt counties. The Plumas-Sierra Rural Electric Cooperative, a provider of electricity and telecommunication services, is headquartered in Portola—the only incorporated city in Plumas County. In Humboldt County, the Humboldt Bay Power Plant, a former nuclear reactor turned natural gas power generating station, is located just south of the City of Eureka.



Exhibit 54: Employment (E) & Concentration (LQ) by Industry Sector in the North State and Neighboring Regional Markets, 2010

Industry Sector	North State		San Francisco Bay Area		Sacramento Region		Reno		Southern Oregon	
	E	LQ	E	LQ	E	LQ	E	LQ	E	LQ
Agric., Forestry, Fishing & Hunting	31,688	3.2	23,918	0.3	19,337	0.8	452	0.1	5,829	1.8
Mining	2,964	0.7	16,376	0.5	2,219	0.2	2,711	1.4	293	0.2
Utilities	2,945	1.7	12,304	0.8	2,071	0.5	553	0.7	546	1.0
Construction	29,989	1.1	196,444	0.9	66,019	1.0	11,786	0.9	9,467	1.1
Manufacturing	19,860	0.6	319,080	1.1	37,573	0.4	11,230	0.7	10,136	0.9
Wholesale Trade	10,139	0.6	136,190	0.9	32,482	0.8	9,540	1.1	6,690	1.2
Retail Trade	56,299	1.1	377,515	0.9	118,587	1.0	25,718	1.0	21,245	1.3
Transportation & Warehousing	20,556	1.2	141,183	0.9	32,176	0.8	12,106	1.4	5,005	0.9
Information	5,306	0.6	130,112	1.6	19,296	0.9	3,257	0.7	2,642	0.9
Finance & Insurance	6,225	0.7	68,730	0.9	30,211	1.4	7,632	1.7	2,069	0.7
Real Estate	23,993	1.1	218,648	1.2	53,804	1.0	14,390	1.4	8,706	1.3
Professional, Scientific & Tech. Services	28,760	0.7	611,230	1.7	106,682	1.1	20,107	1.0	9,399	0.7
Admin., Support & Waste Mgmt. Services	19,858	0.7	249,478	1.0	65,524	0.9	15,309	1.1	6,944	0.8
Educational Services	4,970	0.5	113,093	1.2	19,895	0.7	2,882	0.5	1,616	0.5
Health Care & Social Assist.	58,735	1.1	406,103	0.9	117,695	0.9	23,117	0.9	21,570	1.2
Arts, Entertainment & Recreation	11,161	1.0	113,725	1.2	24,288	0.9	9,492	1.8	4,405	1.3
Accommodations & Food Services	34,540	1.0	300,551	1.0	78,141	0.9	26,195	1.5	11,636	1.1
Other Services	33,745	1.2	239,583	1.0	68,320	1.0	12,102	0.9	9,990	1.1
Public Admin.	89,258	1.2	459,313	0.7	288,085	1.7	26,761	0.8	15,636	0.7

Source: LEAP analysis using BEA and IMPLAN data

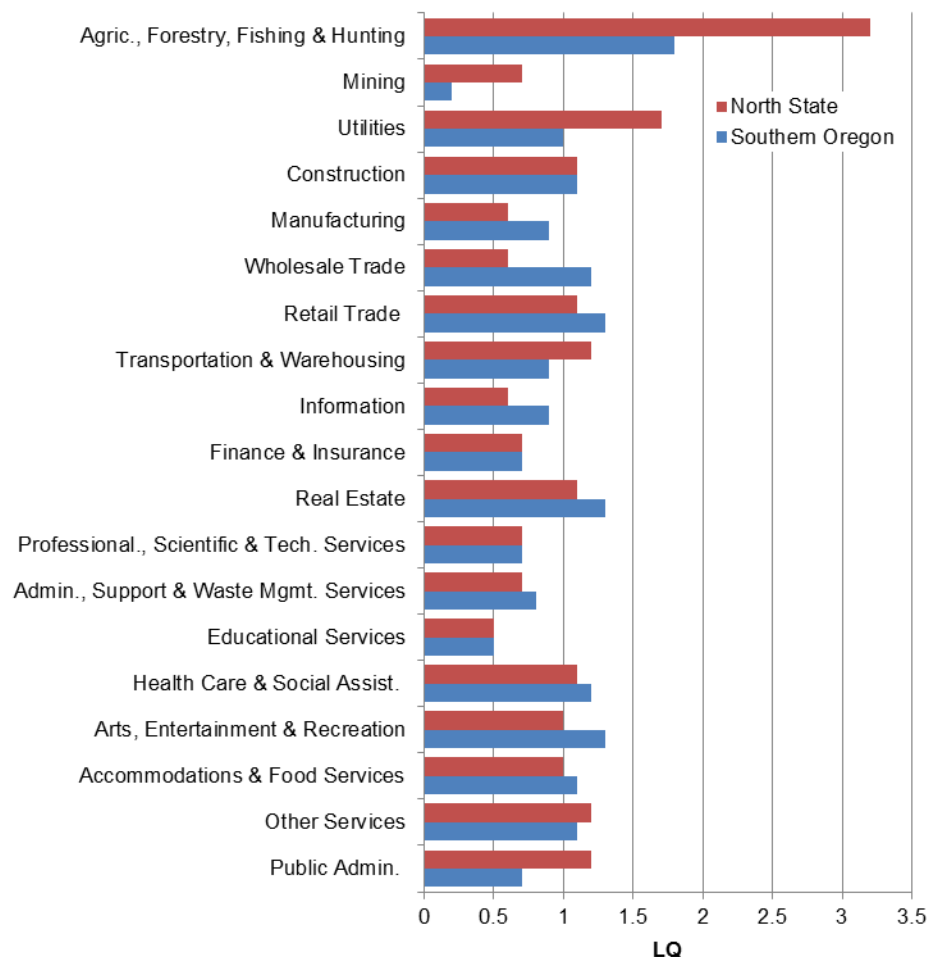
While Southern Oregon shares many aspects of the North State's economy, the industry compositions of the other neighboring regions differ considerably. The San Francisco Bay Area has a high concentration of workers in the information and professional, scientific (LQ = 1.7), and technical service sectors (LQ = 1.6), which is explained by the presence of leaders in high technology and many specialized professional services firms. The Reno area is home to a number of large resorts, casinos, and outdoor recreation companies, leading to a concentration of employment in the arts, entertainment, and recreation sector (LQ = 1.8). Reno also has a concentration in finance and insurance (LQ = 1.7). Like the North State, the Sacramento Region has a high share of employees in public administration. However, as the state capitol, Sacramento has a much higher share (LQ = 1.7) than the North State (LQ = 1.2).

Exhibit 55 offers a direct comparison of the North State and Southern Oregon economies. While the composition of the two economies is very similar, the concentration of employment in agriculture, forestry, and fishing is considerably higher in the North State than in Southern Oregon. In 2010, only 3.7



percent of the Southern Oregon workforce was employed in this sector compared to over 6 percent in the North State. Utilities are also more predominant in the North State economy.

Exhibit 55: Employment Concentration (LQ) in the North State and Southern Oregon, 2010



Source: LEAP analysis using BEA and IMPLAN data

Southern Oregon has a noticeably larger share of employment engaged in wholesale trade. Over 4 percent of the Southern Oregon workforce was employed in wholesale trade compared to only 2 percent in the North State. This suggests a potential opportunity for the North State to take advantage of locations along I-5 for wholesale trade.

Compared to the national economy, both the North State and Southern Oregon have a disproportionately low concentration of workers in finance and insurance, professional, scientific, and technical services, and educational services.

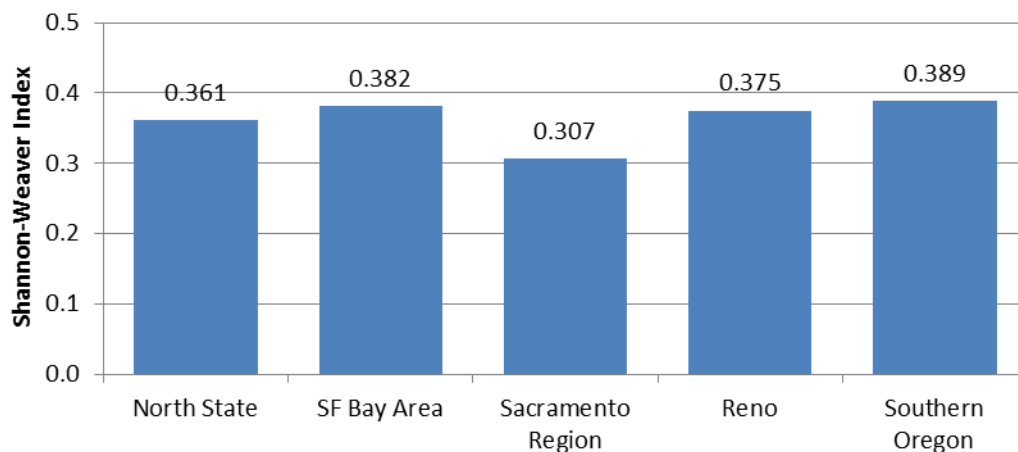
Economic Diversity

The diversity of the neighboring regional economies can be compared to the North State economy using the Shannon-Weaver Index. While the North State economy is less diverse than California as a whole



(see Exhibit 43), it is more diverse than the Sacramento Region (see Exhibit 56), which is dominated by the state government. However, the North State has a lower diversity index than the San Francisco Bay Area, Reno, and Southern Oregon.

Exhibit 56: Industry Sector Diversity in the North State and Neighboring Regional Markets, 2010



Source: LEAP analysis using BEA and IMPLAN data

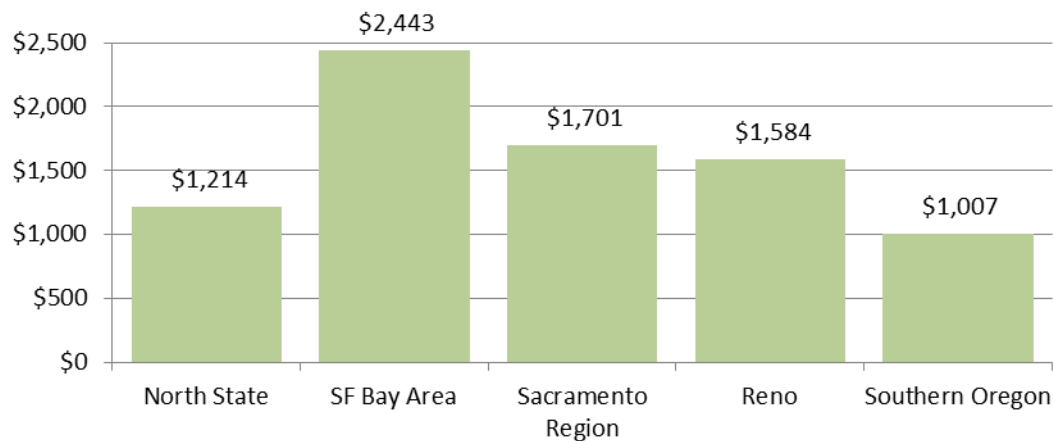
The Sacramento Region's relatively low diversity rating is due to the large number of workers employed in the public administration, the health care and social assistance, and the professional, scientific, and technical services sectors (see Exhibit 54). The North State also has large public sector employment. After the Sacramento Region, the North State has the next largest share of workers employed in public administration (18 percent) among the five regions. With the exception of the San Francisco Bay Area, all of the regions employ at least one in ten workers in retail trade. Likewise, the North State, the Sacramento Region, and Southern Oregon employ at least one in ten workers in the health care and social services sectors.

Regional Cost Factors

Exhibit 57 compares the average local tax burden in the North State with the neighboring regional markets. The tax burden was calculated as described earlier using revenue figures from the US Census Bureau. Using this measure, the San Francisco Bay Area has the highest tax burden, which is roughly twice that of the North State. The North State has a low tax burden compared to the other regions. The tax burden is lower only in Southern Oregon. In terms of taxes, the North State offers a more attractive location than its neighbors, except for Southern Oregon.



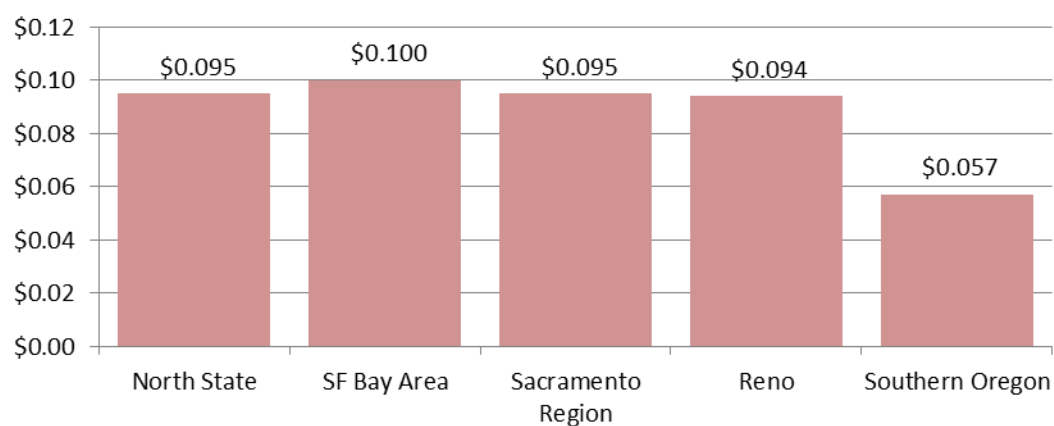
Exhibit 57: Average Local Tax Burden in the North State and Neighboring Regional Markets, 2007



Source: LEAP analysis using US Census of Governments data

As shown in Exhibit 58, Southern Oregon also has the lowest average electricity cost. According to the Institute for Energy Research, the relatively low cost of electricity across all of Oregon (23 percent below the national average in 2010) is due to the fact that hydropower accounts for nearly 60 percent of total generation. While the North State has energy costs below the California average (see Exhibit 45), the North State has energy costs on par with the other neighboring region. This means that energy costs are a differentiating factor compared only with Southern Oregon, which has lower costs.

Exhibit 58: Average Energy Cost in the North State and Neighboring Regional Markets, 2007

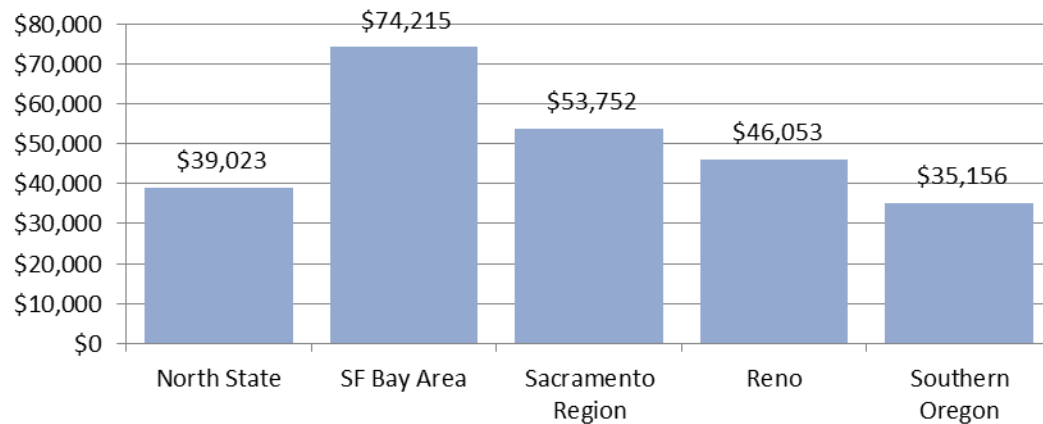


Source: LEAP analysis using data from Energy Information Agency and Energy User News

The North State has low labor costs, but Southern Oregon's costs are the lowest (see Exhibit 59).



Exhibit 59: Average Labor Cost in the North State and Neighboring Regional Markets, 2010



Source: LEAP analysis using BEA and IMPLAN data

Market Access Factors

The project team used LEAP to conduct an analysis of labor market and delivery market access to compare the North State to the four neighboring regions. The analysis used the same 40-minute and 180-minute access definitions and combined the same US Census, ESRI ArcView GIS, and NAVTEQ highway drive time data as described earlier for the analysis of access in North State counties.

The San Francisco Bay Area has much higher labor market access than the North State or any neighboring region (see Exhibit 60). This should be expected since the San Francisco Bay Area has a much larger population than any other region. The average labor market access in the North State is smaller than any of the comparison regions. This access represents the average across all North State counties. The access in Butte and Tehama counties is much higher than the North State average. The average labor market in the North State is roughly two-thirds that of Southern Oregon.

Exhibit 60: Labor and Delivery Market Access in the North State and Neighboring Regional Markets, 2010

Region	Labor Market ¹	% of Workforce with Bachelor's Degree or Higher	Same-Day Truck Delivery Market ²
North State	37,747	20.3%	2,364,354
San Francisco Bay Area	1,278,528	40.4%	7,285,711
Sacramento Region	476,901	28.7%	7,053,786
Reno	190,617	26.7%	2,323,983
Southern Oregon	62,574	21.9%	543,115

Source: LEAP analysis using US Census, Current Population Survey, ESRI, and NAVTEQ data

¹ Population within a 40-minute drive time

² Employees within a 180-minute drive time



The percentage of workforce with college degrees is highest in the San Francisco Bay Area and lowest in the North State. The North State percentage is roughly comparable to that of Southern Oregon. However, when the percentage is multiplied by the size of the labor market, the average county in Southern Oregon has better access to skilled labor than does the average county in the North State.

Exhibit 60 also compares the same-day truck delivery markets. The San Francisco Bay Area and the Sacramento Region have roughly the same size truck delivery markets. This is because they are within a 180-minute drive of each other. The North State's access to these two regions makes its average delivery market much bigger than Southern Oregon's market. The North State is less competitive than Southern Oregon on cost factors, but has much better truck delivery access.

The same-day delivery market for the North State is roughly the same size as the market for Reno. This statistic represents the average across all North State counties. The counties in the southern portion of the North State have larger same-day delivery markets due to their proximity to the San Francisco Bay Area and the Sacramento Region.

Exhibit 61 summarizes the intermodal access available in the North State and the neighboring regional markets. As described earlier, the San Francisco Bay Area, the Sacramento Region, and Reno have hub airports, while the airports in the North State are non-hubs with limited service. Southern Oregon also has non-hub airports, but they offer more service than those in the North State.

Exhibit 61: Intermodal Access in the North State and Neighboring Regional Markets, 2010

Region	Nearest Commercial Airports	Nearest Freight Marine Ports	Nearest Rail Intermodal Loadings
North State	Arcata/Eureka (ACV) Chico Municipal (CIC) Jack Mc Namara Field (CEC) Klamath Fall (LMT) Redding Municipal (RDD) Reno/Tahoe Int'l. (RNO) Sacramento Int'l. (SFO)	Eureka, CA (Humboldt Bay) Coos Bay, OR Sacramento, CA Richmond, CA Stockton, CA	BNSF Richmond City of Prineville Railway SP Roseville UP Reno
San Francisco Bay Area	Metropolitan Oakland Int'l. (OAK) Mineta San Jose Int'l. (SJC) San Francisco Int'l. (SFO) Sacramento Int'l. (SMF)	Oakland, CA Redwood City, CA Richmond, CA Sacramento, CA Sacramento, CA	BNSF Richmond N. Container Terminal: San Francisco Ninth Avenue Terminal: Oakland S. Container Terminal: San Francisco SP Roseville
Sacramento Region		Stockton, CA Oakland, CA	
Reno	Reno/Tahoe Int'l. (RNO)	Sacramento, CA Stockton, CA	SP Sparks
Southern Oregon	Jack Mc Namara Field (CEC) Rogue Valley Int'l. – Medford (MFR)	Coos Bay, OR Eureka, CA (Humboldt Bay)	City of Prineville Railway

Source: LEAP Analysis using data from Federal Aviation Administration, Federal Maritime Administration, Office of Intermodal Transportation, US Department of Transportation, ESRI, NAVTEQ, US Census Bureau



The San Francisco Bay Area and the Sacramento Region are home to the largest freight marine ports. The North State has several “nearest” ports listed in Exhibit 61. With the exception of the Port of Humboldt Bay, these are outside the North State and quite far from most counties. The marine access in Southern Oregon and Reno is no better than in the North State.

Unlike the North State, all four neighboring regions have rail intermodal loading facilities within their borders. The North State must use loading facilities in one of these neighboring regions.

Commodity Flow Relationships

The commodity flow data reveal some of the economic ties between the North State and its four neighboring regional markets. To examine these flows, the project team used data from the 2007 Freight Analysis Framework (FAF). The FAF data are the most recent commodity information available, but they focus primarily on flows to and from major metropolitan areas. To examine the relationship between the North State and its neighboring markets, the project team disaggregated the FAF data into county-level flows using information from the IMPLAN regional economic model. These county-level flows were grouped into the five regional markets. The transportation landscape chapter describes the commodity flow data in more detail.

Exhibit 62 shows the value of commodity shipments from the North State to its neighboring regional markets. By value, the largest shipments go to the San Francisco Bay Area and the Sacramento Region. The San Francisco Bay Area receives slightly more, but it is a much larger economy. However, the value of shipments per worker in the Sacramento Region is considerably larger than those in the San Francisco Bay Area. This reflects better access via I-5 and the agricultural ties between the North State and the Sacramento Region.

The flows to Southern Oregon are much smaller. However, on a per worker basis these flows are even larger than those the San Francisco Bay Area. The ties to a neighboring region are likely to be much stronger among the North State counties bordering the region.

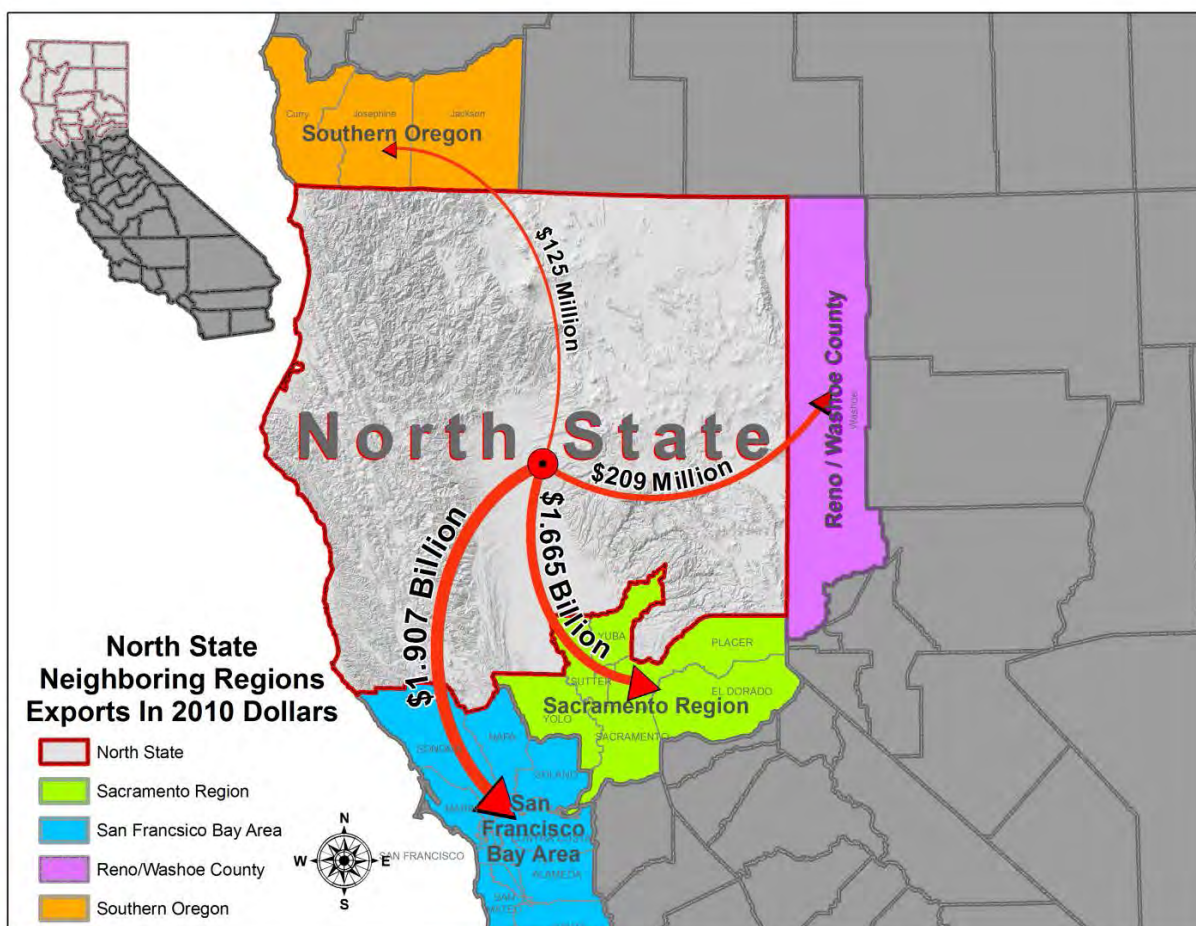
Together, the total commodities flowing to the four neighboring regional markets account for about a quarter of the commodities produced in the North State. Another quarter is consumed in the North State, while the remaining commodities (roughly half) flow to the rest of the United States and the world. By value, the largest North State products for each of the neighboring regional markets are:

- San Francisco Bay Area – Cereal grains and other agricultural products, mixed freight, wood products, miscellaneous manufactured products, and alcoholic beverages
- Sacramento Region – Cereal grains and other agricultural products, mixed freight, machinery, and wood products
- Reno – Mixed freight, miscellaneous manufactured products, and wood products
- Southern Oregon – Wood products, miscellaneous manufactured products, and mixed freight.

These shipments correspond to the commodity flow patterns identified in the transportation landscape chapter. Agricultural products, wood products and some manufactured goods are the primary exports from the North State to its neighboring regions.



Exhibit 62: Value of Commodity Shipments from the North State to Neighboring Regional Markets, 2010



Source: Combination of FAF and IMPLAN data in LEAP tool

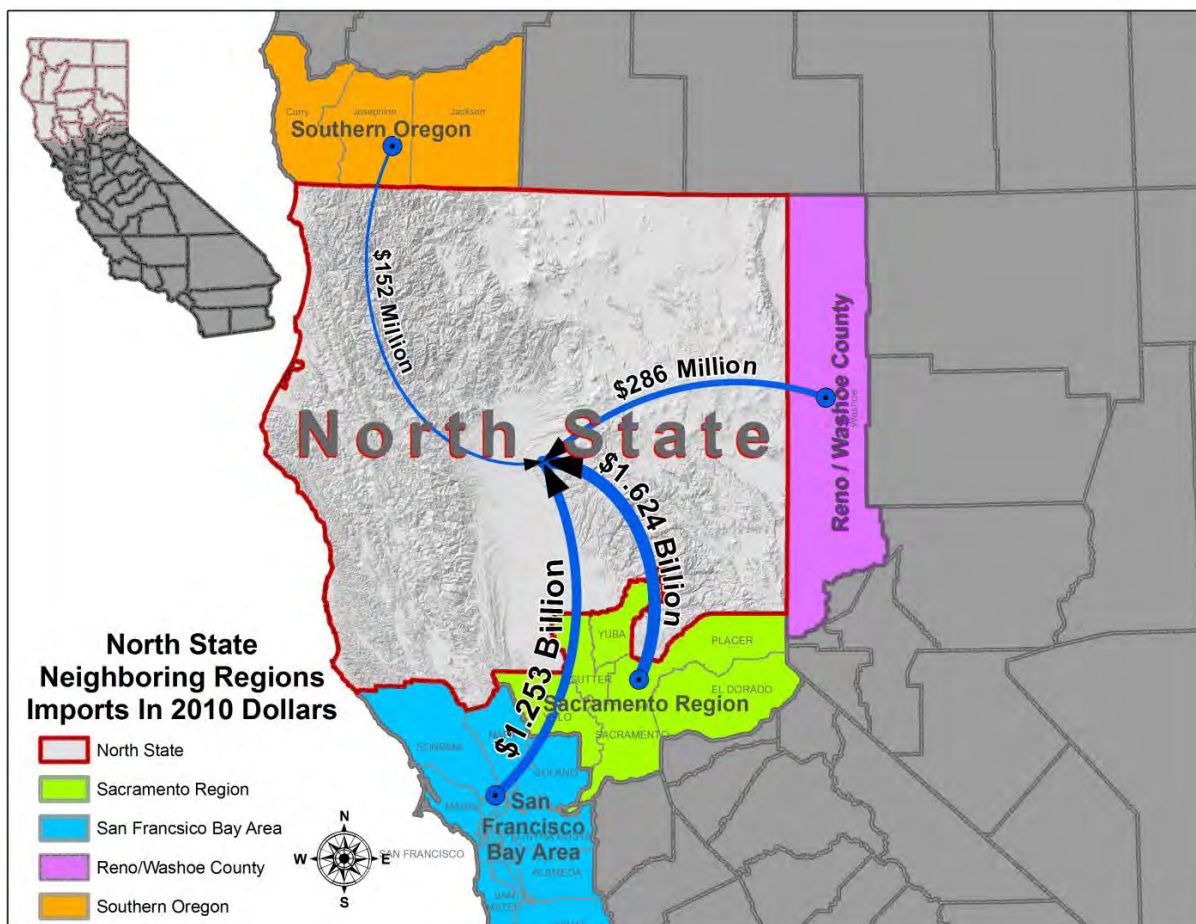
Exhibit 63 shows the value of commodity shipments from neighboring regions to the North State. As with the commodities shipped out, the North State receives the largest shipments by value from the San Francisco Bay Area and the Sacramento Region. The shipments from the Sacramento Region are roughly one third bigger than those from the San Francisco Bay Area. This suggests that the North State's ties with the Sacramento Region are slightly stronger than with the San Francisco Bay Area. This finding is consistent with the trends seen in per worker shipments from the North State. In fact, on a per worker basis, the flows from the San Francisco Bay Area are the smallest.

The total commodities flowing from the four neighboring regional markets account for about one-sixth of the commodities destined to the North State. As a result, the North State is less dependent on receiving products from its neighboring regions than it is shipping to them. The North State receives a variety of goods from the San Francisco Bay Area, the Sacramento Region, and Reno. Electronic equipment, petroleum and fuels, and pharmaceutical products make up a larger proportion of the flows



because they are higher-value commodities, but the commodities received are mixed. Southern Oregon provides products related to the timber and agricultural industries.

Exhibit 63: Value of Commodity Shipments from Neighboring Regional Markets to the North State, 2010



Source: Combination of FAF and IMPLAN data in LEAP tool

By value, the largest commodities imported by the North State from neighboring regions are:

- San Francisco Bay Area – Electronic and office equipment, petroleum and fuels, machinery, pharmaceutical products, agricultural products, and a wide variety of other mixed products
- Sacramento Region – Pharmaceutical products, mixed freight, machinery, and agricultural products
- Reno – Mixed freight
- Southern Oregon – Wood products, mixed freight, and live animals.

Roughly one fifth of the commodities consumed in the North State are produced there. The North State purchases the remaining two-thirds of its commodities from other parts of the United States and the rest of the world.



Key findings about the influence of neighboring regional markets are:

- While the North State economy is less diverse than California as a whole, it is more diverse than the Sacramento Region, which is dominated by the state government.
- The North State has a lower tax burden and labor costs compared to other the regions except for Southern Oregon.
- The North State's access to the San Francisco Bay Area and the Sacramento Region makes its average same-day delivery market much bigger than Southern Oregon's market. The North State is less competitive than Southern Oregon on cost factors, but has much better truck delivery access.
- The average same-day delivery market in the North State is roughly the same size as the market for Reno.
- Among the four neighboring regions, Southern Oregon is the closest competitor to the North State. While the composition of the two economies is very similar, the concentration of employment in agriculture, forestry, and fishing is considerably higher in the North State than in Southern Oregon.
- Southern Oregon has a noticeably larger share of employment engaged in wholesale trade. This suggests a potential opportunity for the North State to take advantage of locations along I-5 for wholesale trade.
- All four of the neighboring regional markets have rail intermodal loading facilities within their regions. The North State does not and must use facilities in the neighboring regions.
- Three of the four neighboring regions are anchored by commercial hub airports. Like the North State, Southern Oregon has non-hub airports, but they provide more service than those in the North State.
- Agricultural products, wood products and some manufactured goods are the primary exports from the North State to its neighboring regions. The largest flows go to the San Francisco Bay Area and the Sacramento Region due to their proximity and population.
- On a per worker basis, the largest flows go to the Sacramento Region and Southern Oregon. This reflects ties in the agriculture and timber industries.
- The North State receives a variety of goods from the San Francisco Bay Area, the Sacramento Region, and Reno. Southern Oregon provides commodities related to the timber and agricultural industries.

Economic Development Strategies

This section provides an overview of written economic development strategies, economic development projects and initiatives, and local government implementation capacity. In addition, the section identifies transportation needs related to target activities. Findings are drawn from workshops, published economic development plans, conversations and email exchanges with county administrators, city managers and economic development staff throughout the North State.



In May 2012, the project team held three regional meetings with North State transportation and economic development professionals. Thirty-five (35) people attended the meetings. They represented multiple North State stakeholders and seven of the 16 North State counties. Several items were discussed including the local economy and contributing factors, economic development initiatives, as well as transportation bottlenecks and projects.

During the workshops, North State stakeholders identified several regional issues:

- Long distances between communities
- Poor air and rail service
- Lack of broadband service for rural residents
- High utility costs
- Poor quality of roads and difficulty maintaining them
- Low educational attainment
- Brain drain – difficulty retaining college graduates
- Outmigration of long-term residents
- Lack of entrepreneurial base
- Need for east-west road connections
- Truck access constrained by narrow roads.

Attendees also identified primary bottlenecks that impede traffic and more than 40 transportation system enhancements that might support economic development. Detailed notes from the workshops can be found in Appendix F.

To supplement this information, the project team collected and reviewed available economic development plans. These were identified through internet searches and by workshop participants. The project team also contacted every county administrator, city manager, and economic development staff member in the North State. This step was necessary because of the local government fiscal crises that have defunded economic development departments and non-profit economic development organizations. In addition, there has been significant staff turnover among the remaining government agencies and economic development organizations.

Eleven of the 16 North State counties and numerous cities have up-to-date written economic development strategies. However, most written documents are filled with generalized goals and objectives and lists of potential projects that may be initiated. Moreover, local economies are changing. The latest plans may not reflect the real priorities and projects that can be accomplished given the loss of staff and implementation capacity. As a result, the project team asked local government leaders to describe their current economic development projects and the initiatives they hope to accomplish.

The project team tailored the questions for each county depending on the availability of existing economic development plans and the project team's knowledge of the area. Most individuals were asked the following questions:



- Which office is the primary point of contact for business prospects and potential investors?
- Does your jurisdiction have a business retention effort? Please explain.
- Is your area actively engaged in business attraction efforts? Please explain.
- Other than geography, what are the primary constraints to expanding the local economy?
- Describe the lead tourism promotion agency in your area and how it is funded. Does your jurisdiction contribute funds to promote tourism? Please explain.
- What other economic development initiatives or projects are planned or underway that may impact your local economy?
- What transportation improvement projects would help your area expand and diversify its economy? Please list projects regardless of funding limitations.

The responses to these questions help to document what is occurring “on the ground” in each county from an economic development perspective. Individuals also supplemented the information collected in the three workshops and helped to identify a list of transportation improvement projects they thought would support economic development efforts.

Exhibits 64 to 67 summarize findings from the workshops, document reviews, and interviews with county administrators, city managers, and economic development staff. The findings are listed by county. Since only four counties fit on each exhibit, the counties are grouped geographically, roughly from north to south. The exhibits contain the following information:

- Economic setting
- Written economic development plans and strategies
- Economic development initiatives
- Implementation capacity
- Transportation improvement projects that may facilitate economic development.

Detailed findings for each county and a description of their economic development plans are provided in Appendix I.



*Exhibit 64: Economic Development Capacity and Initiatives within the North State
Humboldt, Del Norte, Trinity, and Siskiyou Counties*

Category	Humboldt County	Del Norte County	Trinity County	Siskiyou County
ECONOMIC SETTING	Job base is in decline since 2000. Household incomes are down significantly and 20 percent of households live in poverty. County is experiencing a demographic shift. Caucasians are moving out and Hispanics are moving in. Timber production, fishing, and agriculture are all in decline. Presence of Humboldt State University and the College of the Redwoods generates a more highly educated workforce and helps keep the population relatively young. After adjusting for inflation, incomes declined by \$25,000 per household since 2000.	County is experiencing a demographic shift. Caucasians are moving out and Hispanics are moving in. Large percentage of residents has not completed High School (28%). Few residents are college graduates (8%). Timber production has virtually stopped. After adjusting for inflation, incomes declined by \$25,000 per household since 2000.	Population is in decline. Deaths exceed births counter-balanced by some domestic in-migration of new residents. Population has aged in the past decade. Median age is 48 compared to the 2000 median age of 45. Nearly 700 jobs were lost since 2001. The 2011 value of timber production amounts to only 17% of the 2000 timber production value. The value of fruits, nuts, and vegetables still amounts to only 18% of the value of timber production. After adjusting for inflation, incomes declined by \$22,000 per household since 2000.	Population growth is stagnant since 2000, with deaths exceeding births counter balanced by an in-migration of Spanish-speaking immigrants. Population has aged in the past decade. Median age is 46 compared to the 2000 median age of 43. Nearly 1,400 jobs were lost since 2001. Approximately 40% of the fruits, nuts, and vegetables produced in the North State come from Siskiyou County. After adjusting for inflation, incomes declined by \$24,000 per household since 2000.
WRITTEN ECONOMIC DEVELOPMENT PLANS AND STRATEGIES	Prosperity 2012 identifies 7 economic development strategies or actions along with 8 to 16 implementation steps per action. Arcata's 2009 Economic Development Strategic Plan Identifies many goals and includes nearly 20 pages of implementation measures. Eureka's three-page economic development strategy posted on the City's website identifies 7 goals.	An updated Comprehensive Economic Development Strategy (CEDS) was prepared in 2011 that identified 5 economic development goals, along with 3 to 15 implementation action steps for each goal.	No written economic development plan or strategy is in place. However, a multi-county regional CEDS is being prepared by the Redding-based Superior California Economic Development. An Economic and Demographic Profile (2009-10) was prepared by the Center for Economic Development.	No written economic development plan or strategy is in place. However, a multi-county regional CEDS is being prepared by the Redding-based Superior California Economic Development. An Economic and Demographic Profile (2009-10) was prepared by the Center for Economic Development.



*Exhibit 64: Economic Development Capacity and Initiatives within the North State
Humboldt, Del Norte, Trinity, and Siskiyou Counties (cont'd)*

Category	Humboldt County	Del Norte County	Trinity County	Siskiyou County
ECONOMIC DEVELOPMENT INITIATIVES	County and Cities focus on business retention, expansion, and entrepreneurship. County and Cities collaborate with 11 agencies that comprise the North Coast Prosperity Network. County and Cities do not engage in business attraction marketing efforts.	Federal and State disaster relief focused on rebuilding the Crescent City harbor that was destroyed by the 2011 tsunami. Tri-Agency was awarded a US Forest Service Grant to determine the feasibility of establishing an ethanol production plant in the region. Crescent City recently completed a new sewer treatment plant, which will support expanded residential and business activity. Funding has been acquired for SR-197/US 199 to comply with STAA requirements. Improvements scheduled for completion in 2015. The region is unable to engage in business retention, expansion or attraction efforts due to lack of staff at Tri-Agency and the local government agencies.	The Watershed Research and Training Center (WRTC) was established to rebuild the Hayfork area economy by re-training woods workers and collaborate to develop and implement landscape-scale restoration strategies. A manufacturing and business incubator was established in Hayfork, but the facility has only one business tenant. No ongoing effort to attract new business or retain existing business due to lack of staff and infrastructure constraints.	The Siskiyou County Economic Development Council (SCEDC) is leading several efforts: • Focusing on business retention and expansion • Marketing Enterprise Zone tax credits • Securing EPA funding to clean up brownfield sites • Branding Siskiyou County as a regional food hub In addition, there are several city-led business recruitment efforts: • The City of Weed has recruited Crystal Geyser and is actively recruiting retail stores. • Mt. Shasta is recruiting Crystal Geyser to expand and reopen a closed water bottling facility. There are several tourism initiatives: • A "Visit Siskiyou" website was established • The region is trying to secure a grant to plan a hiking trail around Mt. Shasta. • An agreement was signed to purchase an 80-mile recreation trail between Burney and McCloud. • An ongoing effort is in place to attract bicycle tourism. • The City of Dunsmuir would like to attract a whitewater park



*Exhibit 64: Economic Development Capacity and Initiatives within the North State
Humboldt, Del Norte, Trinity, and Siskiyou Counties (cont'd)*

Category	Humboldt County	Del Norte County	Trinity County	Siskiyou County
IMPLEMENTATION CAPACITY	Redwood Region Economic Development Commission, North Coast Small Business Development Center, and the Arcata EDC offer small business loans and technical assistance services. Headwaters Fund allocates economic development grants and offers small business loans. County has economic development staff to implement Prosperity 2012. The cities of Eureka and Arcata also have economic development staff. The Humboldt County Convention & Visitors Bureau leads the tourism promotion efforts in partnership with the County, cities, and local chambers of commerce.	Tri-Agency Economic Development Authority leads the regional initiatives. However, the Agency is in transition and without staff. Del Norte Economic Development Corporation and North Coast Small Business Development Center offer small business loans and technical assistance services. Del Norte County/Crescent City Chamber leads tourism promotion efforts.	Trinity County has no economic development staff and minimal ability to implement projects or initiatives. Trinity County Economic Development Corporation relies on volunteer board members who have full time jobs or manage businesses. Individual board members have little time to implement projects or initiatives. The Trinity County Chamber of Commerce leads the tourism promotion efforts. The Shasta Cascade Wonderland Association promotes tourism in 7 counties including Trinity. The Superior California Economic Development District (SCED), based in Redding, can assist Trinity County property owners and businesses with start-up technical assistance, loans, and strategic advice.	The Siskiyou County Economic Development Council is staffed to market the Enterprise Zone, administer brownfields clean up grants, and initiate economic development projects. The Cities of Yreka, Mt. Shasta, Dunsmuir, and Weed have no economic development staff and rely on their city managers to initiate and implement economic development projects and initiatives. Tourism promotion is fractured among the various cities, but steps are being made to coordinate countywide efforts through a Chamber Alliance. Small business technical assistance and loans are available from the Great Northern Corporation and SCEDC. The City of Dunsmuir offers small business assistance and loans under the CDBG program.



*Exhibit 64: Economic Development Capacity and Initiatives within the North State
Humboldt, Del Norte, Trinity, and Siskiyou Counties (cont'd)*

Category	Humboldt County	Del Norte County	Trinity County	Siskiyou County
TRANSPORTATION IMPROVEMENT PROJECTS THAT MAY FACILITATE ECONOMIC DEVELOPMENT	Advocate and encourage improved STAA truck access on US 101, SR-299, and US 199. Improve commuter air and freight service. Study the feasibility of building an east-west rail system. Study how the transportation systems can more closely work together to reduce costs. Develop multi-use trails and paths for commuting and recreation connecting the cities and rural areas.	Provide STAA access on SR-197 and US 199 to allow larger industry standard trucks access to the North Coast. Repair US 101 at Last Chance Grade, which nearly slid into the Pacific Ocean. Calm traffic along US 101 traveling through Crescent City.	Remove STAA trucking constraints to Hayfork. Support the maintenance and rehabilitation of local roads. Support the construction of the east-west rail through Hayfork	Preserve and expand STIP and federal funding for local roads. Improve freeway interchanges. Integrate the multimodal air and rail transport systems. Upgrade local airports to handle corporate level traffic. Reconstruct Vista Drive and the I-5 interchange in South Weed. Support signage and streetscape improvements to encourage visitors to travel along the back roads of Siskiyou County.



*Exhibit 65: Economic Development Capacity and Initiatives within the North State
Modoc, Lassen, Shasta, and Tehama Counties*

Category	Modoc County	Lassen County	Shasta County	Tehama County
ECONOMIC SETTING	Fewer than 10,000 people live in Modoc County and population growth is stagnant. Median age is 45 compared to a median age of 42 in 2000. Large percentage of residents has not completed high school (23%). Small percentage of residents is college graduates (9%). Fewer than 2,600 jobs exist, and 400 jobs were lost since 2006. Nearly 60% of Modoc County's residents earn less than \$35,000 per year. About 20% of households live below the federal poverty level.	Population growth is stagnant. There are more births than deaths, but this is counterbalanced by domestic outmigration. Population is among the youngest in the North State. Median age of 36 is nearly the same as California's median age of 34. Job growth is stagnant. After adjusting for inflation, incomes declined by \$32,000 per household since 2000.	Population expanded by more than 3,000 people between 2006 and 2012. Growth was fueled by natural growth and domestic in-migration. Population has aged in the past decade. Median age is 41 compared to a median age of 37 in 2000. Nearly 8,000 jobs were lost since the recession. After adjusting for inflation, incomes declined by \$28,000 per household since 2000.	Population growth was very strong and exceeded California's growth rate. Growth was attributed to natural growth (births exceeding deaths) and domestic in-migration. Nearly 2,000 jobs were lost since the recession. Large percentage of residents has not completed high school (24%). Small percentage of residents is college graduates (8%). After adjusting for inflation, incomes declined by \$24,500 per household since 2000. 48% of households earn less than \$35,000 per year. Large producer of fruits, nuts, and vegetables crops that generate more than \$150 million in sales per year. Value of crops has increased steadily since 2000.
WRITTEN ECONOMIC DEVELOPMENT PLANS AND STRATEGIES	There is no economic development plan or strategy, but a multi-county regional CEDS is being prepared by SCED. Modoc County Economic Development Corporation prepared Economic Vitality Plan 2006 that addressed roles, responsibilities, and some economic development initiatives. An Economic and Demographic Profile (2009-2010) was prepared by the Center for Economic Development	Comprehensive Economic Development Strategy was updated in 2012 by a private consultant. A previous CEDS was completed in 2004. Susanville lacks an economic development strategy. However, the City participated in the recently completed countywide CEDS.	Shasta Economic Development Corporation (EDC) has an up-to-date Strategic Plan, Business Retention and Expansion Plan, and a Business Recruitment and Marketing Plan The City of Redding's 2000 General Plan Economic Development Element remains the guiding policy document. The cities of Shasta Lake and Anderson and unincorporated areas lack written economic development strategies.	Tehama County Action Road Map was prepared in 2009. County Tourism Assessment was prepared in 2010. The Tehama Branding Project documents the ongoing efforts to create a Tehama County brand. An Economic and Demographic Profile was prepared in 2009



*Exhibit 65: Economic Development Capacity and Initiatives within the North State
Modoc, Lassen, Shasta, and Tehama Counties (cont'd)*

Category	Modoc County	Lassen County	Shasta County	Tehama County
ECONOMIC DEVELOPMENT INITIATIVES	No information is available about Modoc County's current economic development initiatives.	No information available about Lassen County's current economic development initiatives.	The Shasta EDC is currently focused on nurturing entrepreneurs and generating business growth from within Shasta County. The EDC no longer attends trade shows. The EDC also markets Enterprise Zone tax credits as a business retention and attraction incentive. The City of Shasta Lake established a business incubator facility with suites for office and light manufacturing firms. The Shasta Gateway Industrial Park (Shasta Lake) has 6 acres of available shovel-ready industrial sites and additional land available for expansion. The City of Redding has partnered with brokers to market the Airport and Stillwater Business Park. The City of Redding has an active business retention program that utilizes surveys to collect data about firms that may reduce workforce, close, or relocate. Staff at the City of Anderson plans to attend the ICSC convention this year to market available commercial and industrial sites. Anderson is also constructing a new I-5 off-ramp and roundabout and will add new commercial and industrial lots.	A citizen-driven effort has created a sustained movement to develop tourism and destination marketing through the Tehama Branding Project. Tehama County supports the feasibility study of a freight line that connects the area to Humboldt Bay. The emphasis on agricultural tourism has yielded positive impacts on farms with concentrated olive and wine industry establishments. The push for green technologies encouraged Wal-Mart to install windmills at their distribution center, and schools to install solar power.



*Exhibit 65: Economic Development Capacity and Initiatives within the North State
Modoc, Lassen, Shasta, and Tehama Counties (cont'd)*

Category	Modoc County	Lassen County	Shasta County	Tehama County
IMPLEMENTATION CAPACITY	Modoc County has no economic development staff. The County Chief Administrative Officer (CAO) is responsible for economic development but has minimal time to initiate and implement economic development initiatives.	Both Lassen County and the City of Susanville lack dedicated economic development staff. County Planning and Development Services is responsible for economic development in the unincorporated areas. The City Manager is responsible for economic development in Susanville.	The Shasta EDC has three staff members available to implement economic development initiatives.	Tehama County has no economic development staff. Efforts to implement economic development projects or initiatives rely on the County Administrator and a few county supervisors.
	Modoc Economic Development Corporation has no staff and relies on volunteer board members who have full-time jobs or manage businesses. Individual board members have little time to implement projects or initiatives.	Lassen County Economic Development Corporation has no staff and relies on volunteer board members who have full-time jobs or manage businesses. Individual board members have little time to implement projects or initiatives.	The cities of Redding, Shasta Lake, and Anderson have economic development staff that can plan and implement projects and initiatives.	Tehama Economic Development Corporation has no staff and relies on volunteer board members who have full-time jobs or manage businesses. Individual board members have little time to implement projects or initiatives.
	No organized effort is in place to promote Modoc County as a visitor destination, but a new tourism group was formed to promote outdoor recreation.	The Lassen County website has a tourism information page. The Cascade Wonderland Association promotes 7 counties including Lassen.	Shasta Cascade Wonderland Association markets tourism in Shasta County.	The cities of Red Bluff and Corning rely on city managers to initiate and implement economic development projects.
	Small business and startups not eligible for conventional loans can access technical assistance and loans from the Modoc Economic Development Corporation, the Small Business Development Center at Shasta College and the Superior California Economic Development District.			The Tehama Branding project relies on volunteer board members and lacks staff capacity to implement tourism initiatives.



*Exhibit 65: Economic Development Capacity and Initiatives within the North State
Modoc, Lassen, Shasta, and Tehama Counties (cont'd)*

Category	Modoc County	Lassen County	Shasta County	Tehama County
TRANSPORTATION IMPROVEMENT PROJECTS THAT MAY FACILITATE ECONOMIC DEVELOPMENT	Preserve and increase funding for local roads. Fund deferred maintenance and support the Lake County Railroad, which transports mining materials and lumber between Lakeview, Oregon and Alturas. Establish broadband service to Alturas and the rural areas of Modoc County.	No information available about transportation improvement projects suggested by the County CAO or the City Manager.	Construct roadway and infrastructure improvements to remove congestion through downtown Redding. Rebuild the Oasis Road interchange in north Redding to accommodate additional commercial development around Costco. Improve Cascade Boulevard in Shasta Lake. Maintain and improve landscaping along SR-273 through Anderson. Construct a bicycle trail from Anderson to Redding. Construct an overpass at SR-273 in Anderson. Provide a park-and-ride facility in Anderson.	Widen the I-5 overpass at South Avenue in Corning. This should include conduits for sewer and water utilities, which would facilitate commercial development on the west side of the interstate. Develop parallel routes to I-5. Improve I-5 interchanges throughout the county. Support the east-west rail line between Tehama and Humboldt Bay.



*Exhibit 66: Economic Development Capacity and Initiatives within the North State
Butte, Plumas, Sierra, Nevada Counties*

Category	Butte County	Plumas County	Sierra County	Nevada County
ECONOMIC SETTING	Strong population growth rates that exceed the North State average. Growth was fueled by more births than deaths plus domestic and international in-migration. Median age of 36 is one of the youngest in the North State. CSU injects a young demographic into the regional economy. Approximately 8,000 jobs were lost since the recession. After adjusting for inflation, incomes declined by \$28,000 per household since 2000. Large producer of fruit, nut, and vegetable crops that generate more than \$530 million of sales per year. This amounts to 25% of production by North State counties.	Population is in decline due to negative natural growth combined with an outmigration of existing residents. The median age of 49 is 8 years older than the North State average. Approximately 1,200 jobs were lost since the recession. After adjusting for inflation, incomes declined by \$35,000 per household since 2000. The timber industry has collapsed. There are no natural resource replacements.	Only 3,200 people live in Sierra County, and the population is in decline. The oldest population in the North State with a median age of 50 years old. Only 760 jobs in the county with 100 jobs lost since 2001. After adjusting for inflation, incomes declined by \$30,000 per household since 2000.	Substantial population increase between 1990 and 2006, followed by a loss of 1,000 people during the recession. Population decline was caused by deaths exceeding births with a median age of 47. Approximately 2,300 jobs were lost since the recession. Nevada County has the most educated population in the North State. 17% graduated from college and only 10% failed to complete high school. Unemployment is relatively low and labor force participation is relatively high. After adjusting for inflation, incomes declined by \$40,000 per household since 2000. Nevada is the most affluent county in the North State with an average household income of \$59,400.
WRITTEN ECONOMIC DEVELOPMENT PLANS AND STRATEGIES	The Butte County Economic Development Strategy was adopted in 2011. The General Plan Economic Development Element that established goals and policies was adopted in 2010. Oroville prepared an Economic Development Strategy in 2009. Biggs completed a General Plan Economic Development Element. Chico, Paradise, and Gridley do not have economic development strategies or plans.	No economic development strategy or plan has been prepared or approved for ten years.	A regional CEDS was prepared by SEDCorp to cover the counties of Sierra, Nevada, El Dorado, and Placer.	A regional CEDS was prepared by SEDCorp to cover the counties of Nevada, Sierra, El Dorado, and Placer. Truckee has a 2009 Economic Development Element and Economic Development Strategy.



*Exhibit 66: Economic Development Capacity and Initiatives within the North State
Butte, Plumas, Sierra, Nevada Counties (cont'd)*

Category	Butte County	Plumas County	Sierra County	Nevada County
ECONOMIC DEVELOPMENT INITIATIVES	County is preparing an industrial lands database and website. A list of business resources will be incorporated into the County's web page. County is preparing a regional tourism plan that should be completed early in 2013. A business retention and attraction team is being organized to implement the County's business retention priority. A Business Incubator Program was established in 2007 to assist entrepreneurs located anywhere in Butte County. The Butte EDC organized two "Speed Dating" events to connect agricultural and construction industry producers with markets. Oroville initiatives are listed below: • Hired a consultant to engage in retail recruitment • Collaborated with the FAA to create new industrial land at the airport • Attempting to attract an Olympic training whitewater center.	Plumas County no longer has an economic development or tourism mission. Area economy relies entirely on decisions by private investors and business.	Market 13 industrial zoned parcels in the Loyalton Business Park. Promote the Kentucky Mine Historical Park as a visitor destination. Upgrade the Loyalton wastewater treatment system.	Current focus is on business retention and expansion. Business attraction efforts were expanded a few years ago. Grass Valley and Nevada City are engaged in wastewater treatment expansion projects. A 240-acre retirement community known as Rincon Del Rico was approved and may be implemented soon. Loma Rica Ranch would add new residential and business space, but its future is uncertain due to Nevada County's changing economic and demographic trends. The City of Grass Valley is recruiting new retailers, but they are constrained by the lack of good development sites. Truckee prepares and follows an annual economic development work plan.



*Exhibit 66: Economic Development Capacity and Initiatives within the North State
Butte, Plumas, Sierra, Nevada Counties (cont'd)*

Category	Butte County	Plumas County	Sierra County	Nevada County
IMPLEMENTATION CAPACITY	Butte County Economic Development staff has been given ombudsman authority to respond to business prospects and proactively recruit new firms. The Butte County EDC has staff that can collaborate with the County and individuals to implement economic development initiatives. The City of Chico has economic development staff that can implement economic development initiatives. The Chico Economic Planning Corporation is a non-profit board of stakeholders that can guide and collaborate with City staff to implement projects. The City of Oroville has economic development staff that can implement economic development initiatives. The Oroville Economic Development Corporation is a non-profit board of stakeholders that can guide and collaborate with City staff to implement projects. The cities of Paradise, Gridley and Biggs do not have economic development staff, and rely on city managers for economic development staff support. The city managers have many duties and little time to implement projects or initiatives.	Budget cuts have hit Plumas County very hard. There is no County Administrative Officer and no community or economic development staff. The County retains a Planning Department. Remaining County staff has no capacity to initiate or implement economic development projects. The Plumas Corporation used to have an economic development and tourism promotion mission, but the mission has been shifted to watershed restoration. The privately funded Plumas County Tourism, Recreation and Hospitality Council was formed to promote visitor services.	Sierra County has minimal capacity to implement economic development initiatives. The County lacks a Chief Administrative Officer (CAO) to lead project implementation initiatives.	Nevada County Economic Resource Council (ERC) is the lead economic development agency, but the organization is in transition between executive directors. The City of Grass Valley and the Town of Truckee have economic development staff available to initiate and implement projects. The Nevada ERC entered into a contract with Nevada County to lead the tourism promotional efforts. The ERC contracted with private marketing managers to attend trade shows, build websites, and attend visitor promotion events.



*Exhibit 66: Economic Development Capacity and Initiatives within the North State
Butte, Plumas, Sierra, Nevada Counties (cont'd)*

Category	Butte County	Plumas County	Sierra County	Nevada County
TRANSPORTATION IMPROVEMENT PROJECTS THAT MAY FACILITATE ECONOMIC DEVELOPMENT	Widen SR-70 and SR-99 into four lanes extending into the Sacramento metropolitan area. Upgrade SR-162 between SR-99 and I-5. Extend freeway onramps and off-ramps throughout Butte County. Improve the SR-99 and Skyway Road interchange in Chico to open up new lands for commercial development. Improve the SR-32 Eaton Road extension, which would allow the City of Chico to take over and improve 8th, 9th, and Walnut streets. Traffic flow through downtown Chico would be improved.	No information is available about prioritized Plumas County transportation improvement projects.	No information is available about transportation improvement projects that facilitate economic development.	Widen SR-49 between Nevada City and Auburn to improve travel time and reduce shipping costs. Improve the Crestview Interchange to open up new lands near South Hill Village for commercial and industrial development. Improve the roads that serve Grass Valley's Loma Rica Industrial Park.



*Exhibit 67: Economic Development Capacity and Initiatives within the North State
Glenn, Colusa, Lake, and Mendocino Counties*

Category	Glenn County	Colusa County	Lake County	Mendocino County
ECONOMIC SETTING	Expanding population during recession is result of births exceeding deaths and outmigration of existing residents. Youngest population in the North State. Average age of 34 is consistent with California average. Job growth is stagnant, but there was no severe loss of jobs during recession. More than one-third of the population is Hispanic, which is the result of a significant demographic shift. One-third of Glenn County adults have not finished high school, which is double the California average. Average household incomes are less than \$40,000 and among the lowest in the North State. Nearly 20% of fruits and vegetables produced in the North State come from Glenn County.	Colusa population growth rates are the highest in the North State and exceed California average. Growth was fueled by an in-migration of Hispanics. Spanish is the primary language for 40% of households. Youngest population in the North State. Average age of 34 is consistent with California average. County added 1,000 jobs since 2001 and is fastest growing in the North State. 36% of Colusa County adults have not finished high school (double State average). After adjusting for inflation, incomes declined by \$32,000 per household since 2000, but incomes are consistent with the North State average. Largest producer of fruits and vegetables account for 27% of the North State's total production.	Population growth is stagnant. Deaths exceeding births and residents leaving Lake County are counterbalanced by in-migration. Hispanics comprise 70% of new residents moving into the area. More than 1,000 jobs were lost during the recession. High percentage of adults did not finish high school (23%). A low percentage has completed college (8%). Only 50% of adults are participating in the labor force, which is well below the North State average. After adjusting for inflation, incomes declined by \$28,000 per household since 2000.	Population growth is stagnant since 2000. Natural population growth is counterbalanced by an outmigration of existing residents. Demographic shift includes a net in-migration of Hispanics and a net out-migration of Caucasians. Hispanics comprise 22% of the population. Spanish is the first language for 13% of households. More than 4,500 jobs were lost since 2001. Value of fruits, nuts, and vegetables produced is four times the timber crop value. The logging and timber production industry has collapsed. Unemployment rate is the lowest in the North State, and labor force participation is the highest.
WRITTEN ECONOMIC DEVELOPMENT PLANS AND STRATEGIES	An updated Economic Development Strategy is being prepared. Until report is completed, Glenn County can utilize the three-county regional CEDS for the counties of Glenn, Butte and Tehama.	An Economic Development Strategy was prepared for the County and the cities of Williams and Colusa in 2009. The County General Plan was updated in 2011. An economic element was included. The City of Colusa recently prepared a downtown revitalization plan. The City of Williams will soon have a downtown revitalization strategy.	Lake County has a tourism marketing strategy from 2011. The cities of Clearlake and Lakeport lack an economic development strategy or plan. Lake County prepared a new tourism guide in 2012, which provides updated information on lodgings and activities.	County Economic Development Strategy prepared in 2010 by Workforce Investment Board. Fort Bragg prepared an Economic Development Strategy in 2007. This document still guides City policies and initiatives. Ukiah and Willits lack written economic development strategies.



*Exhibit 67: Economic Development Capacity and Initiatives within the North State
Glenn, Colusa, Lake, and Mendocino Counties (cont'd)*

Category	Glenn County	Colusa County	Lake County	Mendocino County
ECONOMIC DEVELOPMENT INITIATIVES	Glenn County and the cities of Orland and Willows have started a collaborative effort to actively market the region and create a universal permit process.	County submitted a \$5 million grant to assist with the expansion of the Premier Mushroom Plant at Colusa Industrial Park. \$1 million grant was obtained to expand the Maxwell wastewater treatment plant. County is trying to attract a \$100 million biomass plant to the Colusa Industrial Park, which is waiting final approval from PG&E. The City of Colusa is building a boat ramp and a public dock on the Sacramento River at the edge of a state park. The City of Williams is trying to create a new business and industrial park on the east side of I-5. A new education village is being constructed in Williams.	County's Development Opportunity Initiative waves planning fees, and defers water and wastewater expansion fees. Marymount College will establish a new campus at a former historic hotel in Lucerne. County operates a Visitor Center in partnership with the County Chamber of Commerce, the Wine Grape Commission and the Winery Association. The City of Lakeport plans to undertake a branding initiative and improve its website Economic Development information.	The County is focused on business retention and expansion. County initiated an effort to revitalize Noyo Harbor. Area plans are being updated for the Ukiah Valley and the Village of Mendocino. The Broadband Alliance established a \$40,000 grant to expand broadband services. The City of Ukiah is engaged in a downtown business improvement, the extension of Airport Park Boulevard, and the completion of business expansion projects. The City of Fort Bragg is planning to reuse the former Georgia Pacific mill site, establish the Noyo Center for Science and Education, and study the feasibility of establishing an Industrial and Fine Arts Center.



*Exhibit 67: Economic Development Capacity and Initiatives within the North State
Glenn, Colusa, Lake, and Mendocino Counties (cont'd)*

Category	Glenn County	Colusa County	Lake County	Mendocino County
IMPLEMENTATION CAPACITY	Glenn County has no economic development staff. The Planning and Public Works Director functions as the lead economic development staff person. The cities of Orland and Willows have no economic development staff and rely on their city managers to initiate and implement economic development projects and initiatives. Glenn County operates a visitor website. The County website includes a page on agriculture tourism and a link to the UC Davis agricultural-tourism website.	Colusa County has no economic development staff. The Planning Director functions as the lead economic development staff. The cities of Colusa and Williams have no economic development staff and rely on their city managers to initiate and implement economic development projects and initiatives. Colusa County operates a visitor's webpage. A private sector visitor's promotional website does not exist.	Lake County no longer has an economic development staff person. The Deputy County Administrative Officer is the economic development point of contact. The City of Lakeport has an economic development consultant that is the point of contact to initiate and implement economic development projects. The City of Clearlake lacks an economic development staff and relies on its city manager to implement projects and initiatives.	Mendocino County has no economic development staff. The County is shifting the economic development functions from the CAO's office to the Community Development Department. The cities of Ukiah, Willits, and Fort Bragg have no economic development staff and rely on their city managers to initiate and implement economic development projects and initiatives. Tourism promotion is led by Visit Mendocino.



*Exhibit 67: Economic Development Capacity and Initiatives within the North State
Glenn, Colusa, Lake, and Mendocino Counties (cont'd)*

Category	Glenn County	Colusa County	Lake County	Mendocino County
TRANSPORTATION IMPROVEMENT PROJECTS THAT MAY FACILITATE ECONOMIC DEVELOPMENT	Repair and maintain existing roads.	Maintain and repair existing roads to address deferred maintenance.	Fund ongoing maintenance of existing streets to address deferred maintenance.	Widen State Street at the south end of Ukiah.
	Beautify I-5 interchange to encourage travelers to exit the interstate.	Widen SR-20 to accommodate fruit stands.	Implement traffic calming measures and design elements in Middletown.	Improve Bush Street (contiguous to Ukiah), which would open up new land for commercial development.
	A SR-162/Wood Street median strip improvement project to attract commerce into Willows.	Improve the I-5 and SR-20 interchange in Williams to facilitate the development of a new business and industrial park.	Designate business highways on routes through Kelseyville and Lakeport.	Implement in Hopland streetscape and urban design improvements modeled after successful improvements in Laytonville.
		Improve I-5 signage directing traffic to the City of Colusa.	Fund a roundabout on Lakeport's Main Street to improve traffic flow. Improve signage on Business 29 in Lakeport to encourage traffic to stop at local businesses.	Implement streetscape and urban design improvements in Calpella.



Key findings about economic development and transportation are:

- The economic development community is realizing that efforts need to focus on retaining and expanding existing firms rather than attracting new ones.
- Efforts to attract manufacturing have been less successful. A number of communities have tried to reuse old mill sites with varying success.
- A number of counties are focusing on recreational tourism to develop the local economy.
- The capacity of local governments to implement economic development initiatives in the North State has been hampered by fiscal crises and budget cuts.
- Economic development professionals have identified a number of transportation projects that support their economic development initiatives. The nature of the projects varies considerably within the North State.
- The projects identified can be bundled into regional strategies that can be tested for their impact on transportation and the North State economy.



Transportation and Economic Development Interactions

This chapter weaves the transportation and economic landscapes into a joint narrative using qualitative insights (i.e., based on local knowledge and observations from the data inventory) and technical analysis (i.e., based on economic modeling and performance metrics). It starts with a review of findings from the transportation and economic landscapes. Then, it provides an overview of the performance measures found in the most recent North State RTPs. From this, a hierarchical approach for tying transportation to economic development is developed and illustrated.

The chapter is organized into the following sections:

- Transportation and Economic Connections
- Current Performance Measures
- Framework for Economic Performance Measures
- Economic Impact Modeling.

Transportation and Economic Connections

This section integrates findings from the transportation and economic landscapes. It highlights the connections between transportation and economic development in the North State.

The North State has several limitations in its transportation infrastructure with a direct or indirect impact on the type, location, and scale of economic activity in the North State. The major highway routes in the North State run north-south. There are few options for east-west travel and none have more than two lanes. The four local airports in the North State with passenger service are served by only one carrier with direct flights to few destinations. The North Coast has been without freight rail service for more than a decade. Unlike neighboring regions, the North State has no commercial hub airports or rail intermodal loading facilities.

In many ways, the North State remains an economic frontier. Some regions are isolated with very little interregional traffic. Difficult terrain, weather events, and seismic events often restrict key transportation corridors or render them out of service for extended periods of time. In the North Coast, this isolation is referred to as the “Redwood Curtain.” Other regions, including those in the northeast intermountain area, are similarly inaccessible. The passenger air service needed for business travel is restricted by small regional airports with limited services. Flexible freight options needed for wholesale trade and moving raw goods to market are likewise limited by the lack of intermodal loading facilities and adequate rail and air transport.

One of the North State’s few advantages over large, neighboring metropolitan regions is the comparative low cost of doing business and the absence of traffic congestion. It is critical that the North



State maintain this advantage, while seeking to address its many economic constraints. Currently, most of North State highways operate at an adequate level of service. If further steps are not taken, transportation models predict future operating conditions may be worse, particularly along I-5.

According to commodity flow data, the largest commodity groups are agriculture and food products, wood products, and machinery manufacturing. Roughly 15 percent of commodities produced in the North State go to customers within the North State, while about 70 percent is sent to the rest of the United States and 15 percent to the rest of the world. This compares to California as a whole, where roughly 60 percent of commodities are consumed within the state. California consumes a greater proportion of the commodities it produces because it has a larger and more diversified economy than the North State. However, the fact remains that the North State economy depends on imports and exports (domestically and internationally).

Commodity exports rely on reliable and efficient truck and rail transportation. Most of the truck travel occurs on just a few routes due to the dispersed trip generators associated with agriculture, forest, and natural resource extraction. The highest truck volumes occur on I-5, but US 97, SR-32/SR-70/SR-99, US 101, SR-20, SR-299, and US 395 also carry many trucks. The Sacramento Valley is served by two Class I freight railroads – the Union Pacific (UP) and the Burlington Northern Santa Fe (BNSF). Neither railroad serves the North Coast, which has been without rail service for more than a decade.

Further research is needed to determine if current truck and rail volumes justify freight infrastructure improvements. Southern Oregon – a region with much in common with the North State – benefits from such infrastructure in the form of wholesale trade volume. Much of the North State’s commodities are exported in raw form, without processing or other value-added economic multipliers. Capturing these economic opportunities may help the North State meet the critical mass of freight needed to warrant investment in intermodal freight infrastructure.

The North State has a less diverse economy than the state as a whole. Decades of efforts to attract business and diversify the regional economy have been unsuccessful. This leaves the North State with a disproportionately high concentration of workers employed in forestry and logging, wood products manufacturing, and crop production. The North State’s economy is in transition from natural resource based industries to an uncertain future. Many regions have found success in niche industries – from breweries along the North Coast and in Butte County to geographic information services in Shasta County. The future is likely rooted in a diversity of industries, which include natural resources, but is not dominated by such industries. Many niche industries generate high economic activity without a corresponding dependency on transportation infrastructure.

Crop production, agricultural support, and tourism are three sectors of the economy that have performed well over the last few years. Crop production is growing faster in the North State than in the nation. Agricultural support is also growing. Economic development professionals see room for growth in specialized agricultural products that, if marketed and aggregated for export, have excellent potential. Tehama, Siskiyou, and several other North State regions have initiated branding efforts to capitalize on local food production, distribution, and value-added products.



Tourism is an important industry for the North State. While there is no reliable count of tourism trips, published statistics show that visitors spend roughly \$2.4 billion per year in the North State (about 2.5 percent of the total visitor spending in California) and that spending accounts for nearly 33,000 jobs. By comparison, visitors spend roughly \$2.4 billion in the well-known Napa-Sonoma wine region where spending accounts for just over 28,000 jobs.

Many of the North State's most popular tourist destinations are also the most remote from a transportation perspective. Transportation improvements that reduce travel time (particularly from the Sacramento Region and the San Francisco Bay Area) and that increase reliability and traveler information would help grow tourism. When combined with regional branding and promotional efforts to expand tourism as part of local economic strategies, transportation improvements would also improve tourism industry performance, despite the potential seasonal limitations.

In spite of numerous limitations and deficiencies, the North State has many competitive advantages. Compared with the rest of California, the North State has lower costs of doing business, including lower taxes, labor costs, and housing costs. Along with delivery market access to the San Francisco Bay Area and the Sacramento Region, the North State's southern counties, in particular, have great economic potential. Furthermore, Nevada, Humboldt, and Butte counties have relatively high percentages of skilled workers, which provide building blocks for value-added industries.

Among the four neighboring regions examined, Southern Oregon is the closest economic competitor to the North State. While the compositions of the two economies are very similar, the concentration of employment in agriculture, forestry, and fishing is considerably higher in the North State than in Southern Oregon. Southern Oregon has a noticeably larger share of employment engaged in wholesale trade and a slightly higher share engaged in retail trade. Southern Oregon also has an advantage in retail trade due to no state sales taxes and better rail freight service. However, Southern Oregon is more isolated than the North State from major markets as measured by a performance measures tested in the NSTEDS (i.e., three-hour delivery time and 40-minute labor market access).

The North State's access to the San Francisco Bay Area and the Sacramento Region makes its average same-day delivery market much bigger than the Southern Oregon market. The North State may be less competitive than Southern Oregon on cost factors, but it has much better truck delivery access. This suggests a potential opportunity for the North State to take advantage of locations along I-5 for wholesale trade.

Agricultural products, wood products, and some manufactured goods are the primary exports from the North State to its neighboring regions. The largest flows go to the San Francisco Bay Area and the Sacramento Region due to their relative proximity and population. Most of these flows move by truck. On a per worker basis, the largest flows go to the Sacramento Region and Southern Oregon. These flows reflect ties in the agriculture and timber industries, respectively. For example, the North State produces raw wood and forestry products that are finished in Southern Oregon.

The Great Recession, combined with the elimination of redevelopment agencies, has seriously damaged the capacity of local governments in the North State to promote economic development. Several



economic development corporations with more than 20-year track records have lost their funding as a result of Assembly Bill X1 26. Most local governments have lost their redevelopment or economic development staff due to funding cuts, leaving city managers and county administrators to fill in as local economic development staff.

Assembly Bill X1 26 has dissolved redevelopment agencies as part of implementing the 2011-12 California State Budget. Senate Bill 1 was introduced to allow local governments to form sustainable community investment authorities to administer economic development and affordable housing programs, but this bill was vetoed by the Governor to allow time for the full dissolution of redevelopment agencies before any replacement entities are established. If reinstated, tax increment financing could support economic development activities in the North State, address some of the staffing issues, and be used to encourage more efficient land use.

Economic development stakeholders in the North State are focused on retaining and expanding existing firms rather than engaging in business attraction efforts that have met with minimal success. With the exception of Shasta County, North State counties no longer direct resources towards business attraction, in favor of an economic gardening approach that focuses on retaining and expanding existing firms. A number of counties are focusing on recreational tourism to develop the local economy. Where such industries are less transportation-intensive, opportunities exist to reduce travel demand. Industries projected for long-term growth, but limited by transportation infrastructure, may need special consideration in Regional Transportation Plans (RTPs).

Transportation and economic development stakeholders have recommended several transportation projects with the potential to improve the North State economy. Many types of projects are represented, including Surface Transportation Assistance Act (STAA) truck access, I-5 freeway improvements, state highway expansion, bridge replacements, and freeway interchange construction. While the current RTPs capture most of these projects, some projects are not yet in the plans.

For the most part, economic development and transportation professionals have suggested similar transportation projects, but in some cases, there are different priorities. For example, economic development professionals in Lake County are interested in traffic calming and improved signage that encourages traffic to stop at local businesses. The transportation community, through the Lake County RTP, emphasizes the need for travel through the county (i.e., on SR-20 or SR-29) for connecting the North Coast with the Sacramento Valley. Clearly, these goals can be reconciled through dialog between the transportation and economic development communities.

As can be seen in the preceding discussion, the North State has a number of comparative advantages and several opportunities for enhancing economic development through better transportation infrastructure. There are also many challenges. The next several sections describe current linkages between transportation plans and economic development. They also present a framework for strengthening these connections using more targeted economic performance measures in transportation project evaluation. This approach is demonstrated through high-level economic modeling.



Current Performance Measures

This section describes the performance measures included in the most recent Regional Transportation Plan (RTP) for each North State county. The discussion highlights current economic well-being measures.

The project team reviewed the performance measures found in existing North State RTPs (see Exhibit 21 for the dates and planning periods of the RTPs reviewed). The project team found that most RTPs use some or all of the seven performance measurement categories described in the June 2006 *Caltrans Performance Measures for Rural Transportation Systems Guidebook*:

- Safety, which refers to the frequency and severity of accidents
- System preservation, which refers to maintaining the condition of the roadway network
- Mobility, which refers to the ease or difficulty of travel from origins to destinations
- Accessibility, which refers to the opportunity and ease of reaching desired destinations
- Reliability, which refers to the consistency or dependability of travel times
- Productivity, which refers to the utilization of transportation system capacity
- Return on investment, which refers to the value the public receives from planned investments.

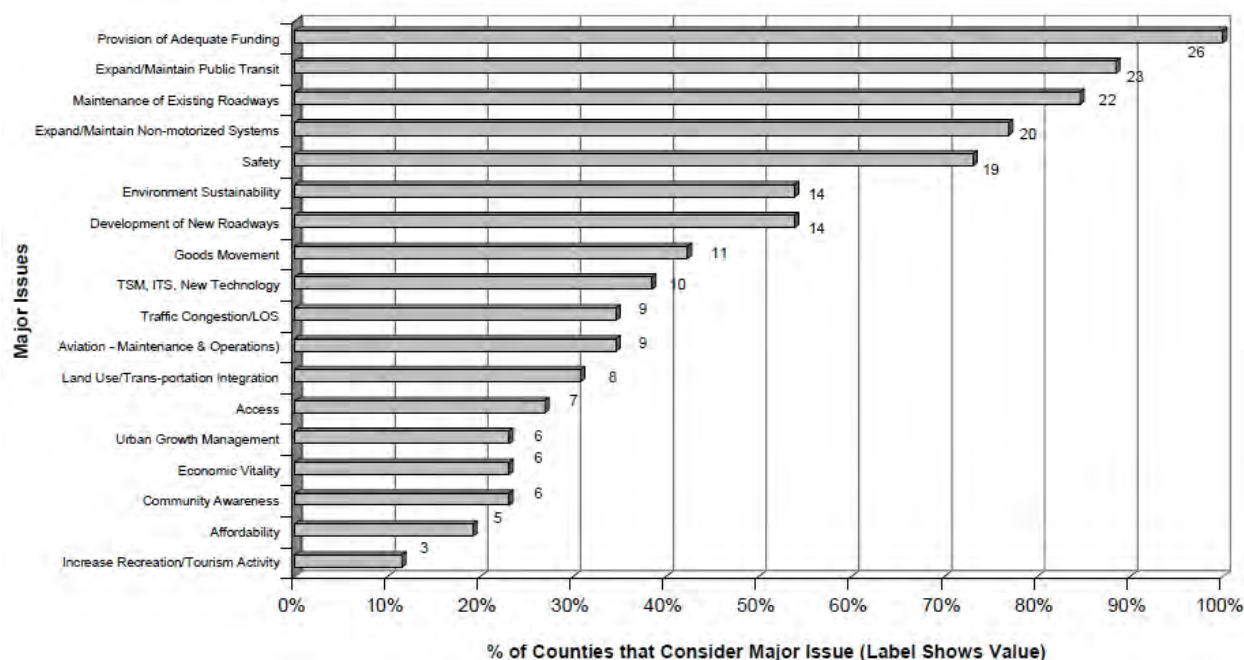
The 2006 Caltrans guidebook provides a standardized performance measurement process that can be applied to rural transportation systems. It is meant to assist in measuring roadway-related performance and to provide information on selecting appropriate measures and collecting supporting information. The guidance is user-friendly and has examples for basic, intermediate, and advanced applications of performance measurement.

The guidebook does not include a category for measuring the impact of transportation on the economy, which reflects the needs expressed by rural RTPAs. This is due in part to an actual or perceived difficulty in measuring the economic impacts of transportation projects. Due to the elevated priority of economic development, this may change.

While developing the guidebook, Caltrans conducted a survey of rural RTPAs. The survey revealed that the most pressing transportation issues for rural agencies were the provision of adequate funding, maintenance of existing roadways, and the expansion or maintenance of public transit. Goals related to the economy ranked much lower. Out of 26 agencies, six (or 23 percent) rated economic vitality as a major issue, while three (or 12 percent) rated increasing recreational tourism and 11 (or 42 percent) rated goods movement as important issues. Exhibit 68 summarizes the major issues found in the Caltrans survey. It is likely that economic development would be a more prominent issue, if the Caltrans survey were repeated today.



Exhibit 68: Major Issues Identified by Rural Counties in Caltrans Survey



Source: Caltrans, *Performance Measures for Rural Transportation Systems, Technical Supplement*, June 2006.

Exhibit 69 summarizes the performance measures found in the most recent North State RTPs. As can be seen in the exhibit, the majority of North State RTPAs do not include a performance measure related to the economy or economic development. This is consistent with the lack of economic performance measures in the Caltrans rural performance measures guidebook.

Seven of 16 North State RTPs include a performance outcome called “economic well-being.” This is one of the nine performance measures listed as examples in the *2007 California Regional Transportation Plan Guidelines* written by the California Transportation Commission (CTC). Six counties (i.e., Colusa, Glenn, Lassen, Modoc, Siskiyou, and Trinity) measure economic well-being as maintaining an acceptable level of service during peak months when state highways experience significant traffic. The economic tie is that disruptions in mobility can impact the movement of goods (e.g., flows of agriculture and wood products) and recreational travelers. Both disruptions can be detrimental to the North State economy.



Exhibit 69: Summary of Performance Measures Included in North State RTPs

County	Mobility/ Accessibility	Safety	Maintenance/ System Preservation	Environment/ Air Quality/ Quality of Life	Reliability	Economic Well-Being	Return on Investment/ Cost Effective	Equity	Productivity	Transit Cost Effectiveness	Other
Butte	●	●	●		●				●		
Colusa	●	●	●	●		●		●		●	
Del Norte	●	●	●		●		●				
Glenn	●	●	●	●		●		●		●	
Humboldt	●	●	●	●	●				●		
Lake	●	●	●								
Lassen	●	●		●		●	●	●		●	
Mendocino	●	●		●	●						
Modoc	●	●		●	●	●	●	●			●
Nevada	●	●			●		●				●
Plumas	●	●	●	●			●				●
Shasta	●	●	●		●				●		
Sierra	●	●		●		●	●		●		●
Siskiyou	●	●	●	●		●		●		●	
Tehama	●	●	●		●				●	●	
Trinity	●	●		●		●	●	●			



Unlike the other six counties, Sierra County measures economic well-being as the increase in sales tax revenues. This measure has an economic tie by recognizing the impact tourist spending can have on the local economy. Better roads can facilitate tourist access and increase tourism spending. In addition, Glenn County conducts a telephone survey of commercial interests during RTP updates to gauge economic well-being.

Exhibit 69 lists two other performance outcomes that might be related to the economy – mobility/accessibility and cost effectiveness. Accessibility is related to the economy if it is defined as access to jobs, key intermodal facilities, markets, and commerce. All of the current North State RTPs have at least one mobility/accessibility performance measure. However, these measures focus on mobility rather than accessibility and quantify performance in terms of travel time and speed.

Seven North State RTPs include a measure of cost effectiveness or return on investment. This measure captures the value of benefits that the public receives compared to the cost of providing these benefits. The benefits include only the direct impacts on users, such as reductions in travel time or improvements in safety. They do not include the less direct impacts on the economy, such as increases in employment or retail sales. However, as described in the framework for economic performance measures, the calculation of user benefits is an input to regional economic models that can be used to measure the economic impact of transportation projects.

Key findings about current RTP performance measures are:

- Few North State RTPs have performance measures related to the impacts of transportation on the regional economy. Seven counties include a measure called “economic well being.”
- Six counties describe economic well-being as maintaining a minimum acceptable level of service (LOS) during peak months as well as maintaining agricultural access.
- A seventh, Sierra County, describes economic well-being as increases in sale tax revenues.
- All North State RTPs have at least one mobility/accessibility performance measure and several have an accessibility measure. When defined as access to jobs, key intermodal facilities, markets, or commerce, accessibility helps to measure the transportation tie to the economy.
- All North State RTPs include mobility and safety performance measures, which can be used in regional economic models to estimate the economic impacts of transportation projects.

Framework for Economic Performance Measures

This section presents a hierarchical framework for tying transportation investments to the economic and development impacts of these investments. The framework shows performance measures that can be monitored in RTPs as well as impacts that can be estimated for specific projects or bundles of investments.

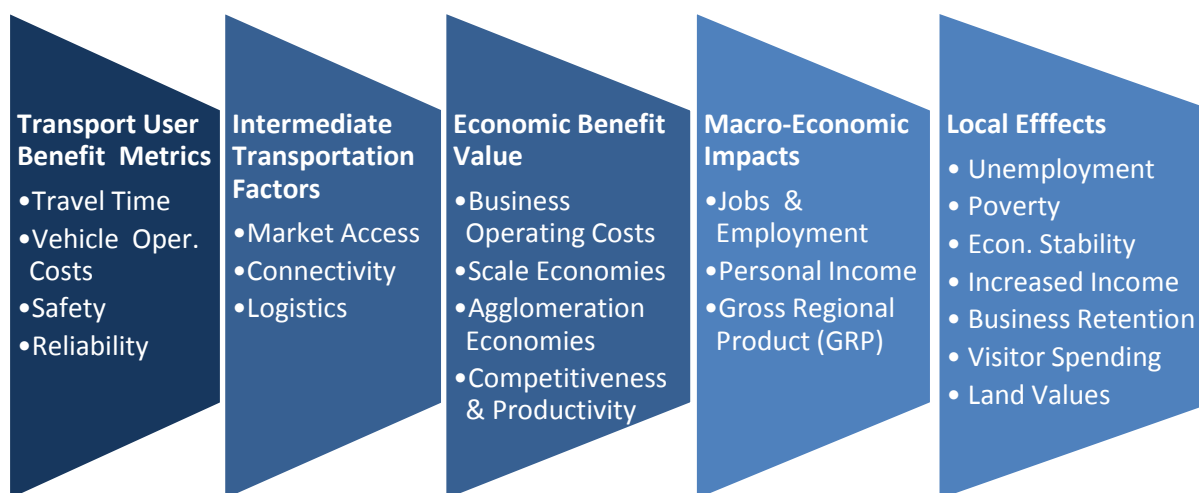
The project team reviewed economic measures used by Caltrans as well as the requirements for performance measures in the latest Federal transportation funding bill - Moving Ahead for Progress in the 21st Century (MAP-21). The project team found some direction from Caltrans practices and MAP-21



guidance for economic performance measures that could be applied to planning at North State RTPAs. In addition, the project team reviewed related ongoing efforts, such as the Performance Monitoring Indicators Technical Group being led by the San Diego Association of Governments (SANDAG). Details of the performance measurement research can be found in Appendix J. The resulting performance measurement framework is based on this review and the project team's knowledge of the linkages between transportation and the economy.

The framework follows the hierarchical approach illustrated in Exhibit 70.

Exhibit 70: Progression of Themes for Economic Performance Measures



This approach recognizes the following linkages between transportation and the economy:

- Transportation user and system performance measures, such as travel time, vehicle operating costs, safety, and reliability lead to business and personal cost savings as well as increased consumption.
- Intermediate transportation factors, such as accessibility to markets and jobs, connectivity to intermodal terminals, and logistics costs are enhanced. These, in turn, create a number of economic benefits, such as increased economic productivity, competitiveness, scale economies, and agglomeration effects.
- These impacts lead to the final economic outcomes that can be measured in terms of macro-economic impacts, such as jobs, personal income, and Gross Regional Product (GRP). They can also be tied to local economic development goals, such as reducing unemployment, increasing wages, promoting tourism, and retaining existing businesses.

The layers of performance measurement are described further below.

Transportation User Benefit Metrics, such as travel time, vehicle operating costs, safety, and travel time reliability, capture impacts that occur directly on the transportation system. Many of these



performance measures are already included in North State RTPs. For example, every North State RTP includes measures for mobility and safety benefits. The most common mobility measure in North State RTPs is the LOS on State Highways. This measure can easily be translated into or supplemented by other measures that capture travel times, vehicle-hours of delay, or speeds on highways.

Intermediate Transportation Factors, such as accessibility to markets and jobs as well as connectivity to ports, airports, and intermodal terminals tie transportation performance measures to the way the transportation system is used to achieve specific goals. Some North State RTPs already include some non-economic accessibility measures, such as the population within walking distance of transit stops. However, most focus on mobility rather than accessibility. Both measures are important for capturing the impacts of transportation on the economy. Accessibility measures can be calculated using existing GIS tools. Appendices G and H provide several examples of measures calculated using a commercial product, ESRI Business Analyst, but they could also be calculated using in-house GIS tools.

Economic Benefit Values, such as increased economic productivity, competitiveness, scale economies and agglomeration effects, can be captured in regional economic models. In the economic impact modeling presented in the next section, the project team used the TREDIS regional economic model to demonstrate how different bundles of projects can affect the North State's economy. Caltrans has recently acquired a license to use TREDIS and may be willing to help North State RTPAs conduct further economic impact analyses. Other regional economic models, such as REMI and IMPLAN, are also available and used by other California transportation planning agencies.

The final result from regional economic models can be presented in terms of the *Macro-Economic Impacts*, such as jobs, personal income, and GRP as well as in progress meeting *Local Economic Development Goals*, such as changes in unemployment and wages. Regional economic models can estimate these effects for specific projects or bundles of projects for economic impact studies. It makes sense for the North State to estimate macro-economic impacts during project development and include these impacts in project initiation documents (PIDs).

Economic development stakeholders are more interested in measures that track economic development goals. Regional economic models can estimate the impacts on measures such as unemployment and wages. However, contingent development impacts, such as jobs retained or attracted, and increased visitor spending need to be estimated outside regional economic models using local knowledge available from economic development stakeholders. Appendix E provides demographic tables that capture the baseline for a number of these measures. Economic development stakeholders can help to identify the expected change in these measures due to specific projects.

The measures included in *Macro-Economic Impacts* and *Local Economic Development Goals* can be tracked over time and reported in RTPs. If North State RTPAs choose to include macro-economic measures, such as GRP, in their RTPs, they must recognize that these measures are also affected by factors other than transportation. Similarly, the achievement of economic development goals often requires collateral activities, such as recruitment, marketing, tax incentives, and complementary policies.



Since economic development stakeholders are likely to track the achievement of economic development goals in their own plans, it makes sense for RTPs to focus on *Intermediate Transportation Factors*. The North State should also consider conducting economic impact studies for projects that matter to the region. For example, Butte County is developing an “economic transportation study” as part of the Project Study Report for SR-70. The change in measures related to *Macro-Economic Impacts* and *Local Economic Development Goals*, such employment, personal income, and taxes, can be estimated using regional economic tools and reported in these studies.

The North State should also keep in mind that the transportation-intensiveness of different industries varies, so the promotion of economic activities does not always require transportation investment. In another study, members of the project team examined the sensitivity of various industries to the types of accessibility measures described in the economic performance measurement framework. The access of every county in the United States was compared to employment, output, and exports in various industrial sectors. As shown, in Exhibit 71, some industries are less dependent on transportation access than others.

Exhibit 71: Industry Sensitivities to Accessibility Measures

		Sensitivity to Access Measure (1-10 scale)			
		40-min Market	3-hr Delivery Market	Commercial Airport	Rail Intermodal
NAICS	Sector				
Resource	212-213 Mining	3	0	4	5
	311 Food	3	0	0	0
	312 Beverage	10	0	0	3
	313 Textile Mills	5	5	2	3
Resource Based-Mfg	314 Textile	5	10	0	0
	315 Apparel	5	5	0	0
	316 Leather	5	3	2	5
	321 Wood	0	5	0	5
Durables Mfg	322 Paper	0	5	0	5
	323 Printing	10	7	0	0
	324 Petroleum	6	0	0	0
	325 Chemical	5	3	4	3
	326 Plastics	8	10	0	3
	327 Nonmetal Mineral	5	5	2	0
	331 Primary Metal	3	5	4	0
	332 Fabricated Metal	10	5	2	0
	333 Machinery Mfg	0	5	2	0
	334 Computer	3	5	2	3
	335 Elec Appliances	0	10	3	0
	336 Transport Equip	5	5	3	3
Trade & Distrib	337 Furniture	5	10	3	0
	339 Miscellaneous Mfg	5	5	5	0
	420 Wholesale Trade	10	0	3	0
	441-454 Retail Trade	8	3	3	5
Tech/ Services	481-487 Transportation	5	0	3	0
	491-493 Del & Warehousing	10	0	2	3
	511 Publishing	10	0	10	0
	512 Movie & Sound	10	3	9	0
	513 Broadcasting	10	0	5	0
	514 Internet & DP	8	3	5	0
	521-531 Finance, Insurance	10	0	3	0
	541-551 Prof. Scien Tech	10	3	10	0

Source: Altstadt, Weisbrod and Cutler (2012), *The Relationship of Transportation Access and Connectivity to Local Economic Outcomes: A Statistical Analysis*, Transportation Research Record #2297, pp. 154-162.

Exhibit 71 illustrates that the labor market access measure (40-minute drive time) is important for trade and service industries (particularly high technology), but it is a less important factor for manufacturing,



construction, and utilities sectors. This reflects the fact that these industries are more dependent on supply chain factors, such as the movement of commodities, and the cost of utilities. The delivery access measure (3-hour drive time) is more important for agriculture and manufacturing industries (including wood products manufacturing). Commercial airport access is more important for professional and technical services as well as recreational industries, because these industries require employee or customer travel. It is also important to some specialized manufacturing industries. Rail intermodal freight terminal access is important to natural resource industries, including wood and paper products.

For less transportation-sensitive industries, the North State will need to address related barriers, such as broadband internet access and speed. In this area, the North State can take advantage of efforts, such as the California Emerging Technology Fund (CETF) and the California Advanced Services Fund (CASF). Established by the California Public Utilities Commission (CPUC), these funds are providing seed money to advance broadband deployment and adoption throughout rural California as well as in other unserved or underserved areas in the state to promote economic competitiveness, access to essential services, and improve quality of life. Broadband internet access not only plays a major role in the economic viability of business in remote areas, but it also has a transportation aspect. Competitive home businesses can preclude work trips, thereby reducing traffic demand and roadway maintenance as well as providing air quality and greenhouse gas reduction benefits.

In the North State, there are four broadband efforts receiving seed money. The Upstate California Connect Consortium and the Northeastern California Connect Consortium are extensions of the partnerships initially formed by the Center for Economic Development (CED) at California State University, Chico. The Upstate California Connect Consortium covers Colusa, Glenn, and Lake counties, while the Northeastern California Connect Consortium includes Butte, Lassen, Modoc, Plumas, Shasta, Siskiyou and Tehama counties. The Redwood Coast Connect Consortium is a partnership of the Humboldt Area Foundation, the Northern California Small Business Development Center Network, Humboldt State University, and the Redwood Coast Rural Action. This consortium is focused on deploying broadband service in Del Norte, Humboldt, Mendocino, and Trinity counties. The Sierra Economic Development Corporation is leading the Gold Country Broadband Consortium, which covers a number of counties including Nevada and Sierra counties. Advanced broadband deployment and other activities could help support travel demand management strategies, such as increases in telecommuting, for industries that can take advantage of these services.

The economic performance measurement framework shown in Exhibit 70 is able to accommodate many different performance measures. However, the North State needs to focus on the most critical criteria for its industries. The project team suggests that the North State starts by incorporating the following indicators in its performance measurement processes:

- For monitoring regional performance, such as in the RTPs, the North State should consider using GIS or travel demand models to estimate:
 - Labor market access (measured by population within 40-minute travel time)
 - Delivery market access (measured by employment within a 3-hour travel time)



- Access to transportation hubs (e.g., maritime port, rail intermodal loading facility, and freight airport measured in drive time)
- For measuring the benefits of projects, such as in economic impact studies, the North State should consider using a regional economic model (such as TREDIS) to estimate:
 - Change in Gross Regional Product (GRP)
 - Change in employment
 - Change in personal income.

Key findings about the economic performance measurement framework are:

- The framework provides a hierarchy of performance measures and impacts that link transportation to economic development.
- Most North State counties already measure transportation user benefits in their RTPs and other planning documents. These can be used with access measures to estimate economic impacts in regional economic models.
- Transportation professionals should consider adding measures related to intermediate transportation factors and macro-economic impacts. The project team suggests adding access measures (i.e., access to labor markets, delivery markets, and transportation hubs) to regional performance monitoring. These can be measured using available GIS tools or calculated from travel demand model data.
- Macro-economic impacts can be measured for projects or bundles of projects using a regional economic model. The project team suggests looking at impacts in GRP, employment, and personal income. These can be included as part of separate economic impact studies or in PIDs during the project development process.

Economic Impact Modeling

This section presents the results of economic impact modeling, which demonstrates how different bundles of projects affect the North State's economy. The bundles provide examples of how economic impacts can be modeled in a regional economic model and ranges of typical benefits. The examples also illustrate the types of assumptions needed for future economic modeling.

The project team conducted economic impact modeling to demonstrate how different types of transportation projects affect the North State's economy. The project team selected projects based on input from NSTEDS workshops, interviews with economic development stakeholders about economic development initiatives, and North State RTPs. The resulting list of projects was grouped into bundles of similar projects and modeled in a regional economic model. The results indicate the scale and types of benefits expected and how these benefits translate into economic impacts, such as GRP, wages, and jobs. They also demonstrate how economic impacts can be modeled for other projects in the future.



Several assumptions were needed to model the projects and accurately reflect the benefits and impacts expected to occur. The list below illustrates the types of benefits expected and information needed for any future modeling:

- Travel time, vehicle operating cost, and safety savings
- Delivery and customer market size improvement (effect on business productivity)
- Economic development (business attraction or retention) due to improved access
- Recreation and tourism job gains or losses due to improved or restricted access.

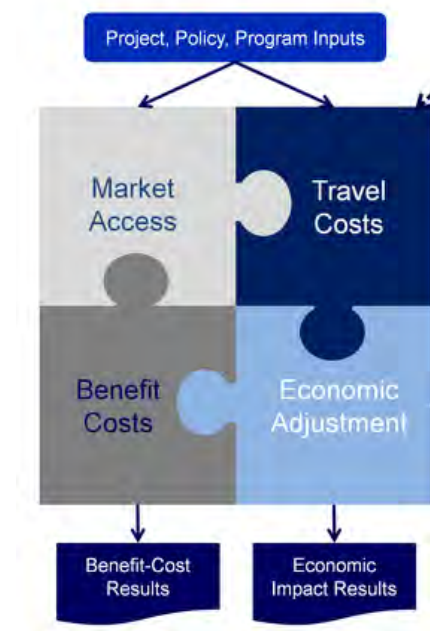
The results presented in this section are based on high-level assumptions related to the general nature of the projects included. These assumptions are listed in Appendix K. For more in-depth results, the North State should consider conducting detailed economic impact studies for projects that matter to local stakeholders.

Regional Economic Model

The project team used a regional economic model called TREDIS (Transportation Economic Development Impact System) to conduct the economic impact analysis. There are other regional economic models available, such as IMPLAN and REMI. Each model has its own strengths and weaknesses, but TREDIS is illustrative of any regional economic model used to assess the expected economic impacts of proposed infrastructure projects.

Exhibit 72 provides an overview of the four main components of TREDIS. The model combines benefit-cost and economic impact analysis to estimate several aspects of the economic outcomes. The four main components of TREDIS are described further below.

Exhibit 72: TREDIS Components and Results





Market Access. TREDIS translates changes in market access (e.g., 40-minute labor market access and 3-hour delivery market access) and intermodal connectivity (access to transportation hubs) into effects on agglomeration, dispersion, and scale economies for industry sectors. This is consistent with the economic performance measurement framework described in Exhibit 70. TREDIS also estimates wider economic impacts based on relationships in research literature.

Benefit-Cost Analysis. TREDIS can calculate the net present value of project benefits and costs from the differing perspectives of federal, state and local agencies. For the NSTEDS, the project team used the TREDIS benefit-cost results. Alternatively, benefits and costs can be analyzed in the Caltrans benefit-cost model (Cal-B/C) and inputted into TREDIS.

Travel Costs. TREDIS converts changes in traffic volumes, vehicle occupancy, speed, distance, reliability, and safety into direct cost savings for household and business travel. These costs are a subset of the benefits included in the benefit-cost analysis and correspond to the transportation user benefit metrics illustrated in the framework found in Exhibit 70.

Economic Adjustment. TREDIS uses a regional economic technique called input-output modeling and applies multi-regional economic impact simulation to estimate impacts on employment, output, and income growth over time. The model incorporates information on economic geography and econometric response factors for cost and access changes, as well as forecasts, trade flows and spatial access data from published sources.

Project Groups

To develop the bundles included in the economic impact modeling, the project team considered projects identified in North State RTPs (see the earlier section on RTP priority projects) and projects identified in the regional workshops (see Exhibit 22). The project team also included projects suggested during interviews with economic development stakeholders (see Exhibits 64 to 67). The resulting list contains a mixture of high-level project concepts and programmed projects with defined scopes.

The project team organized the project into five categories that could be modeled as groups in the regional economic model:

- Enable Truck Access
- I-5 Freeway improvements
- State Highway Expansion
- Bridge Replacements
- Freeway Interchanges.

While each of the project groups impacts different counties, in aggregate, they cover the entire North State. Several other project groupings were considered, but ultimately not included in the economic impact modeling. Examples of the other groups include the construction of an east-west railroad from Humboldt County to Tehama County, the addition of an intermodal rail-truck terminal in the North State, improvements to passenger air service at existing North State airports, increases in State Highway maintenance, and the installation of broadband service. These groups were eliminated from



consideration because not enough information was available on the potential improvements proposed. They are recommended for more detailed study individually as a follow-up to this study.

Exhibit 73 summarizes the impacts expected for the five bundles of similar projects modeled in TREDIS. As the exhibit shows, the projects are expected to produce impacts related to changes in travel characteristics that can be estimated in TREDIS. These correspond to the Transportation User Benefit Metrics and Intermediate Transportation Factors listed in the economic performance measurement framework (see Exhibit 70). The projects are also expected to produce contingent economic development in terms of increased recreation and tourism as well as business attraction or retention that must be estimated outside the economic model using local knowledge. The next few sections provide more details on the five project bundles.

Exhibit 73: Project Groups Modeled and Their Expected Impacts

Project Group	Travel Characteristics (within TREDIS model)				Contingent Development (outside TREDIS)	
	Vehicle Operating Cost Reduction	Travel Time Savings	Safety Improvement	Supplier and Delivery Markets	Tourism / Recreation Impact	Development Impact
Enable Truck Access	•	•		•	•	
I-5 Freeway Improvements		•				
State Highway Expansion		•		•		
Bridge Replacements	•	•			•	
Freeway Interchanges			•			•



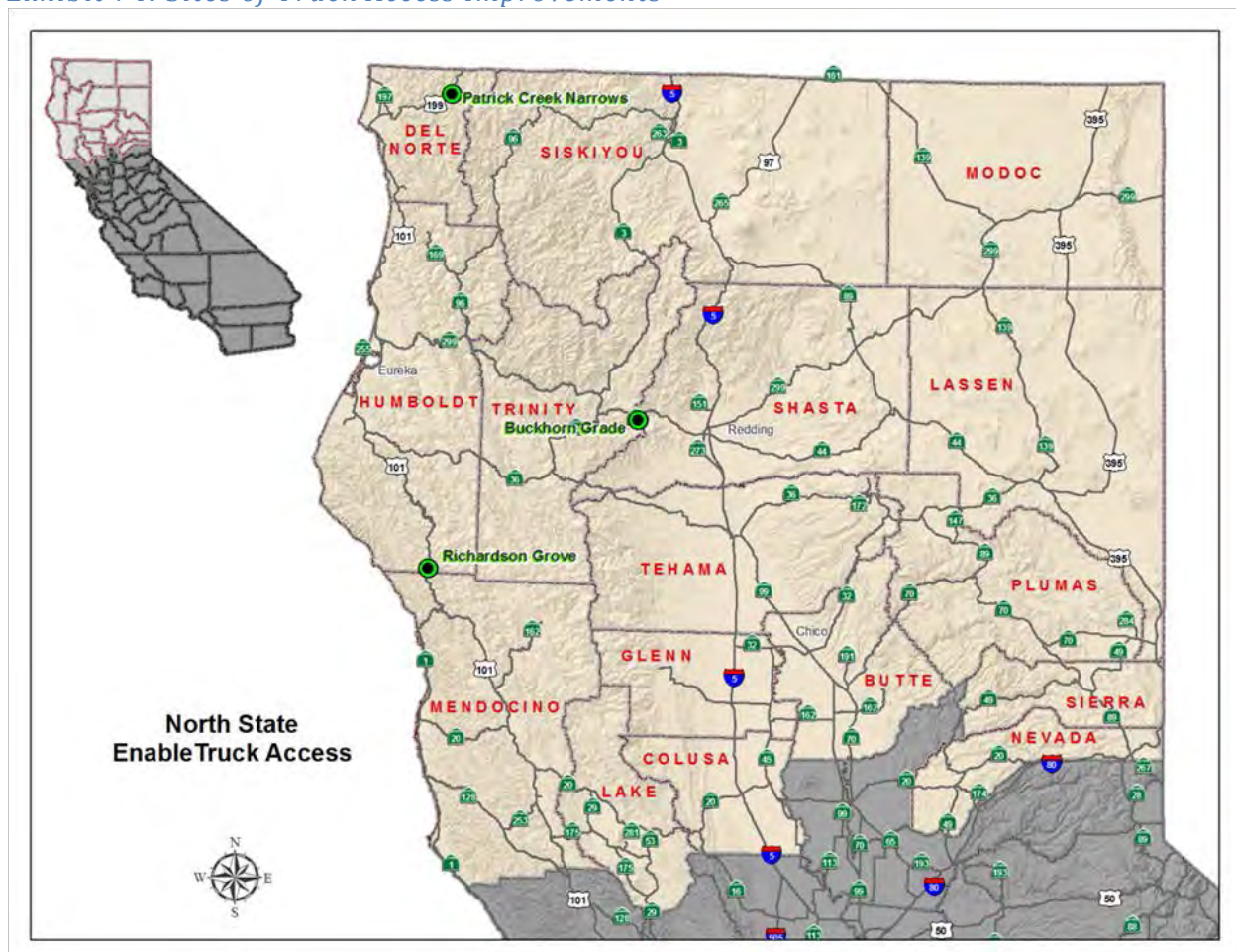
Enable Truck Access

This project group focuses on improvements needed to ensure large truck (i.e., STAA truck) access to the North Coast. As shown in Exhibit 74, the project group includes three improvements that support truck access along US 101, SR-299, and US 199. On US 101, the Richardson Grove Improvement Project is expected to remove curves through old growth redwood trees in Richardson Grove State Park. On SR-299, Caltrans and its North State partners have been making incremental improvements to reconstruct the highway from Shasta to Trinity counties. The project grouping includes the final roadway improvements necessary along Upper Buckhorn Grade. On US 199, the project grouping also includes the shoulder widening and bridge replacement at Patrick Creek Narrows.

These improvements are expected to lead to the following potential outcomes:

- More reliable access and reduced closures
- Reduced travel times and vehicle operating costs for all vehicles
- Improved business delivery market and supplier access
- Forgone negative impacts or improved recreation/tourism industry.

Exhibit 74: Sites of Truck Access Improvements





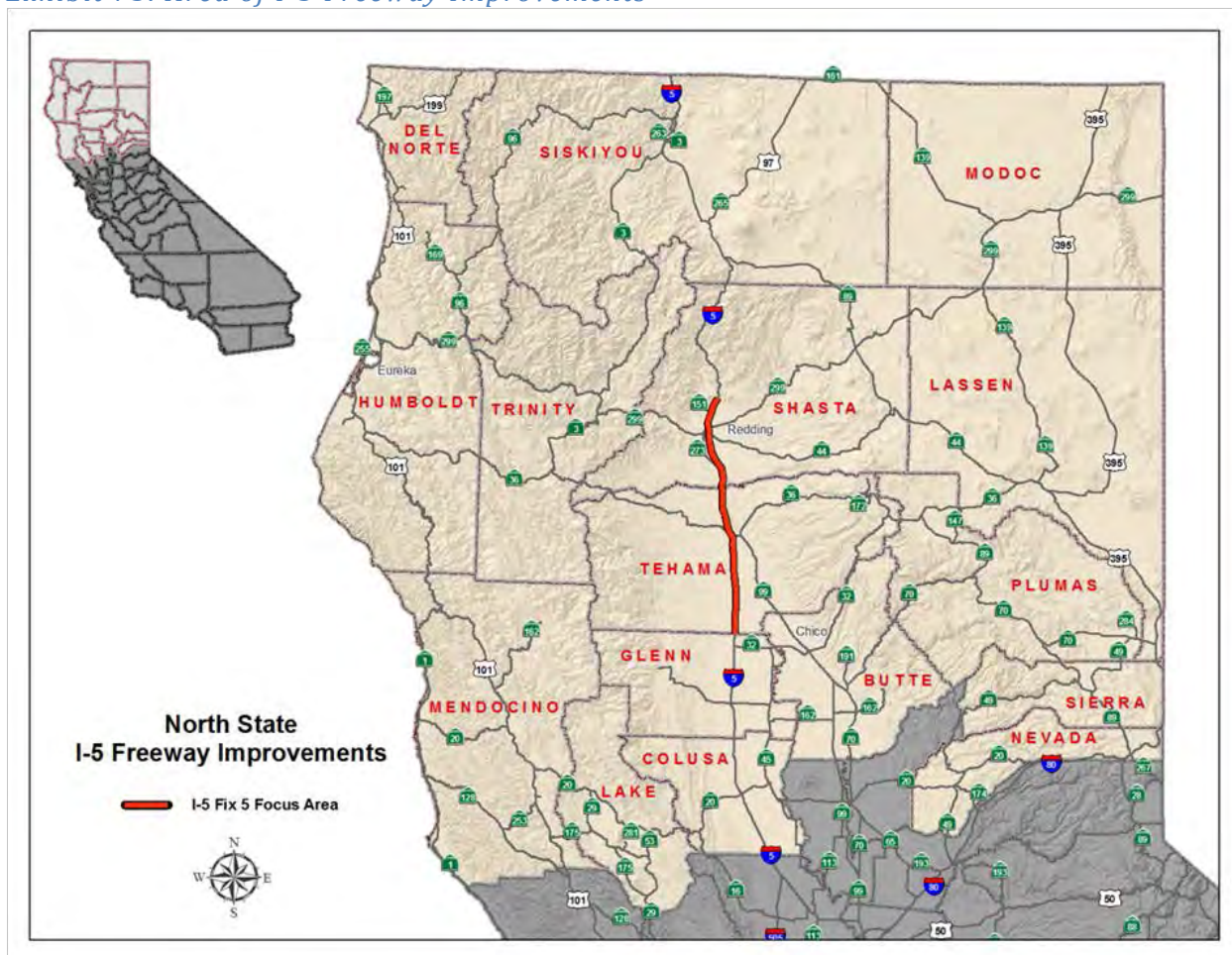
I-5 Freeway Improvements

This project group includes freeway widening and operational improvements on I-5 through Shasta and Tehama counties as well as improvements on parallel arterials to relieve I-5 from carrying local traffic (see Exhibit 75 for the location). The Fix 5 Partnership has identified a number of potential improvements along the corridor. Examples of parallel improvements include frontage road construction in Tehama County, new southern arterials in Shasta County, and improvements along McCoy Road.

These improvements, if implemented, would lead to the following potential outcomes:

- Improved future levels of service on I-5
- Better accommodation of local and through traffic
- Improved market access and connectivity through travel speed increases.

Exhibit 75: Area of I-5 Freeway Improvements





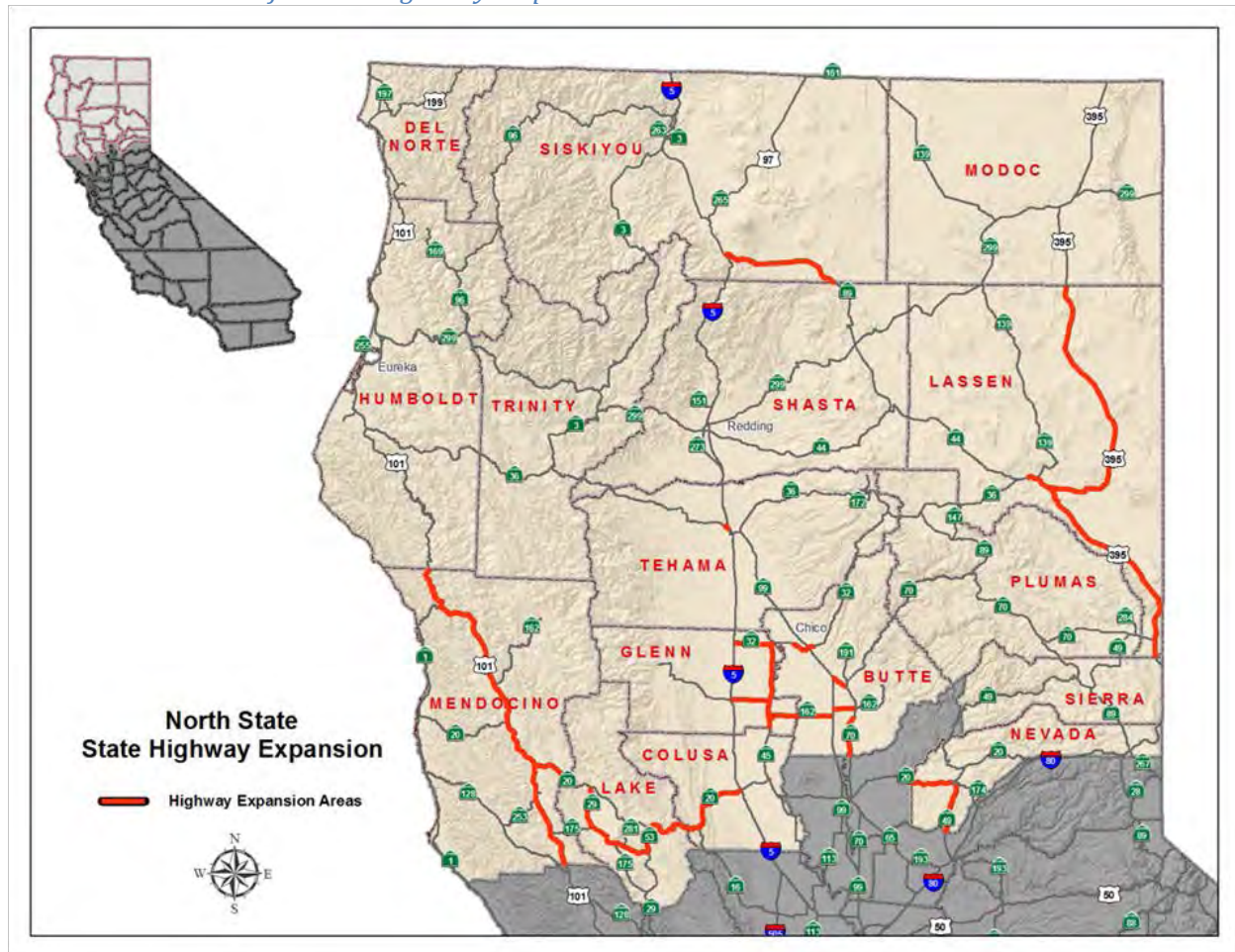
State Highway Expansion

This project group includes widening, realignments, and operational improvements, such as passing lanes, to reduce slowdowns and eliminate bottlenecks on State Highways. As shown in Exhibit 76, the projects included in the group cover a wide swath of the North State.

These improvements are expected to lead to the following potential outcomes:

- Reduced slowdowns and bottlenecks through travel speed increases
- Increased capacity or throughput
- Larger delivery market size
- Improved market access, mobility, and connectivity.

Exhibit 76: Areas of State Highway Expansion





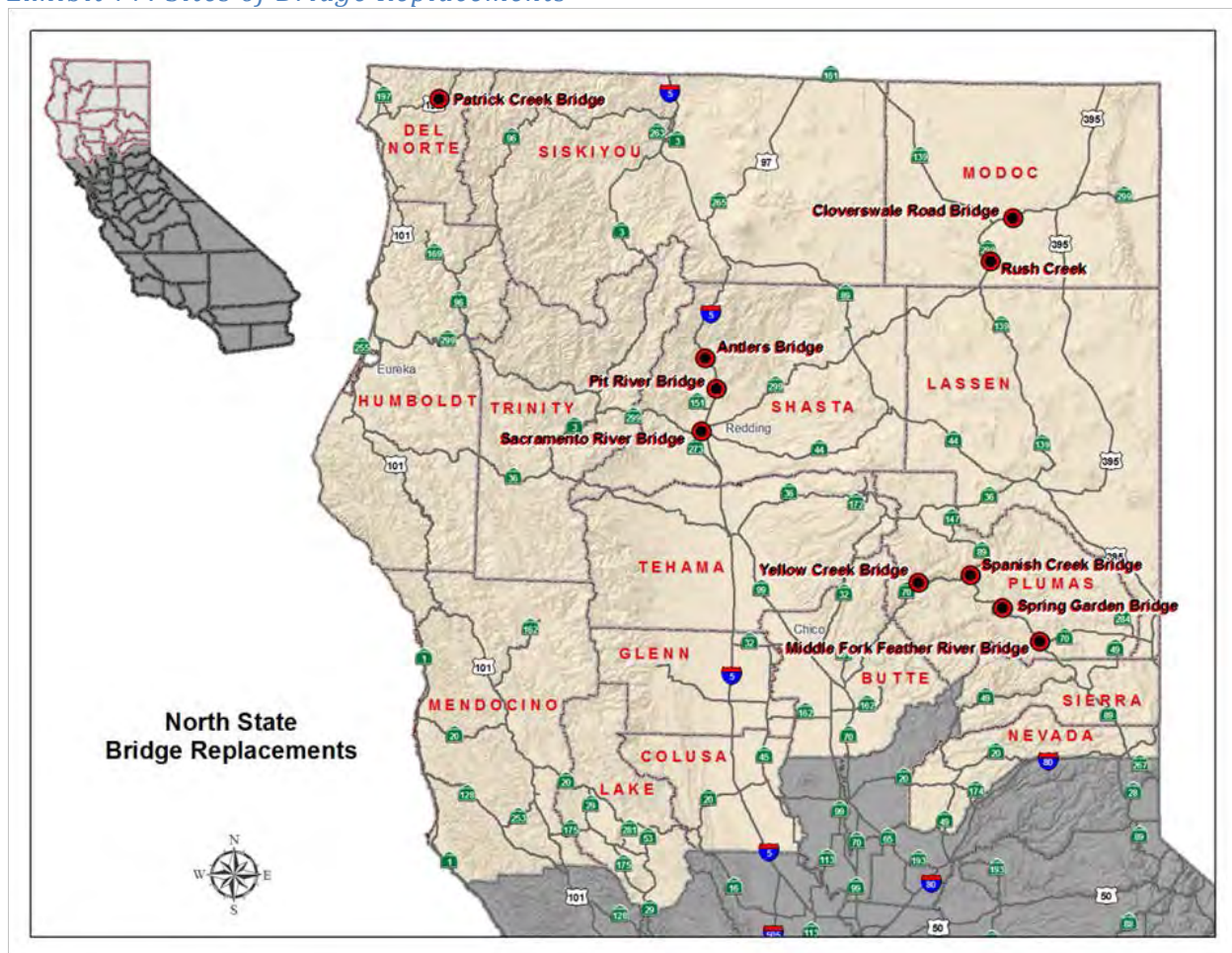
Bridge Replacements

This project grouping includes representative projects identified in North State RTPs and the regional workshops to replace bridges, add capacity, and avoid future detours. In many cases, the alternative routes (if bridges were unavailable) are quite long. As shown in Exhibit 77, the projects selected cover several counties in the North State.

These improvements are expected to lead to the following potential outcomes:

- Avoidance of future detours
- Maintenance of recreation and tourism market.

Exhibit 77: Sites of Bridge Replacements





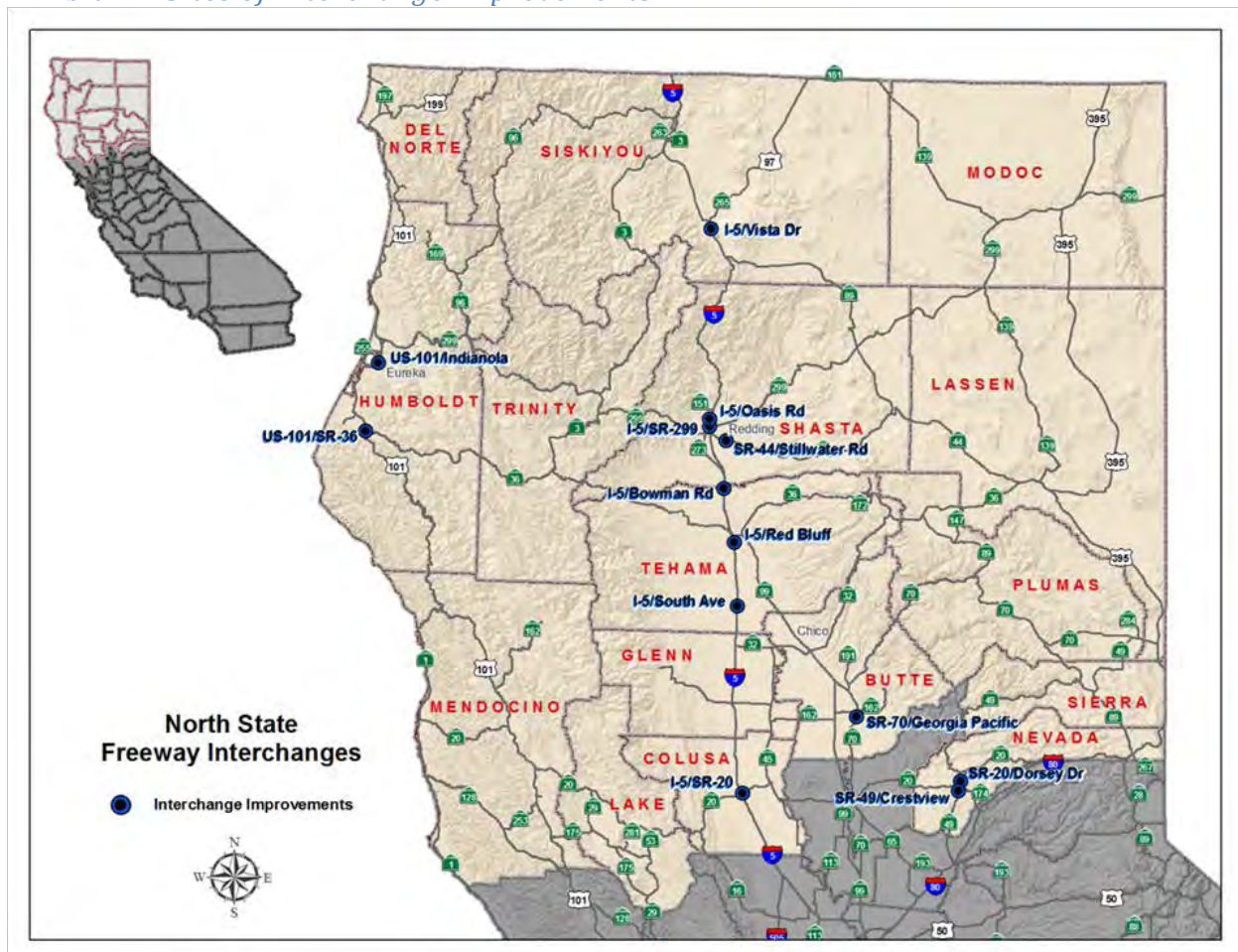
Freeway Interchanges

This project category includes upgrading existing interchanges, building new ones, and adding access roads along North State freeways to support industrial access, site development, and commerce. As shown in Exhibit 78, many of these improvements are located along I-5, but there are additional improvements throughout the North State.

These improvements are expected to lead to the following potential outcomes:

- Better access to developable land
- Increased support for industrial and commercial business attraction
- Retention of existing businesses
- Increased freeway safety.

Exhibit 78: Sites of Interchange Improvements





Modeling Assumptions

To estimate the economic impacts of these project groupings, the project team used information from several sources. The LOS database documented in Appendix A provided base conditions for travel on North State highways. Project reports or studies of traffic impacts were available to estimate changes in travel for some proposed improvements. North State RTPs supplied information on project costs for many projects. GIS and map analysis allowed the project team to estimate changes in accessibility measures and detours associated with closed routes. In addition, assumptions filled in data holes and helped estimate contingent development. Appendix K provides details on the modeling assumptions for the five project groups.

The North State should consider conducting more detailed economic impact modeling for the projects that matter to the region. For this more detailed modeling, the following information is needed to improve economic impact estimates:

Truck Access

- Expanded buyer-supplier access (e.g., employment within a 180-minute drive time)
- Recreation and tourism job gains due to improved access

I-5 Improvements

- Traffic demand and flow associated with freeway and parallel arterial improvements

State Highway Expansion

- Traffic demand and flow associated with state highway widening, realignments, and improvements
- Expanded buyer-supplier access (e.g., employment within a 180-minute drive time)

Bridge Replacement

- Recreation and tourism job losses due to restricted access from bridge deficiencies

Freeway Interchanges

- Accident rate reductions
- Development job losses (or foregone business attraction) due to lack of interchanges.

User Benefit Results

The project team used the assumptions described above and in Appendix K to estimate changes in traffic characteristics, such as VMT and VHT, and intermediate transportation factors for the regional economic model. TREDIS calculated transportation user benefit metrics from the changes in traffic characteristics. In addition, the project team supplied external estimates of impacts on supplier markets, tourism, and contingent development. Since many of the project assumptions reflect sketch-level methodologies, the project team estimated low and high ranges of inputs to provide a plausible range of results. These can be refined with more specific project information in detailed studies.

Exhibit 79 shows the mix of transportation user benefits (after being monetized) and some intermediate transportation factors, such as market access and logistics benefits, over a 30-year lifecycle from 2010 to



2040. These metrics correspond to the types of benefit typically found in benefit-cost analysis (e.g., travel time, vehicle operating costs, etc.) plus “wider economic benefits” associated with improved economic productivity and logistics benefits. TREDIS estimates the wider economic benefits using predefined equations and relationships developed from research literature. Although Exhibit 79 summarizes the results from the high-range benefit estimates, the low-range estimates show a similar benefit mix.

As Exhibit 79 illustrates, the primary user benefits for the I-5 improvement and the State Highway expansion project groups are travel time and travel time reliability improvements. This is because the projects lead to reductions in VHT. The truck access and bridge replacement project groups allow vehicles to avoid large detours, so they lead to reductions in VMT and vehicle operating costs. The truck access projects also have benefits due to expanded supplier and delivery markets. Improved truck access allows businesses to lower the costs of logistics and provide economies of scale in production. The freeway interchange projects may have operational impacts on the freeways, but their primary motivation is to improve access to developable sites. The project team assumed that these projects also reduce accident rates due to better geometrics. Since the contingent development impacts are estimated later, Exhibit 79 shows that the sole user benefits for these projects are related to safety.

Exhibit 79: Composition of Monetized User Benefits by Project Group, 2010 to 2040



Exhibit 79 shows the transportation user benefits typically reported in benefit-cost analysis, such as produced by Cal-B/C. While these benefits are calculated in economic values (e.g., travel time benefits equal travel time savings multiplied by a value of time), not all of these benefits result in economic transactions or impacts in the regional economy. For example, savings in personal travel time are considered to be benefits, but there is no economic transaction to pass along these savings to the greater economy. In contrast, time savings for businesses shipping products can result in lower transportation costs and spending redirected to other industries, which generates an impact on the regional economy.

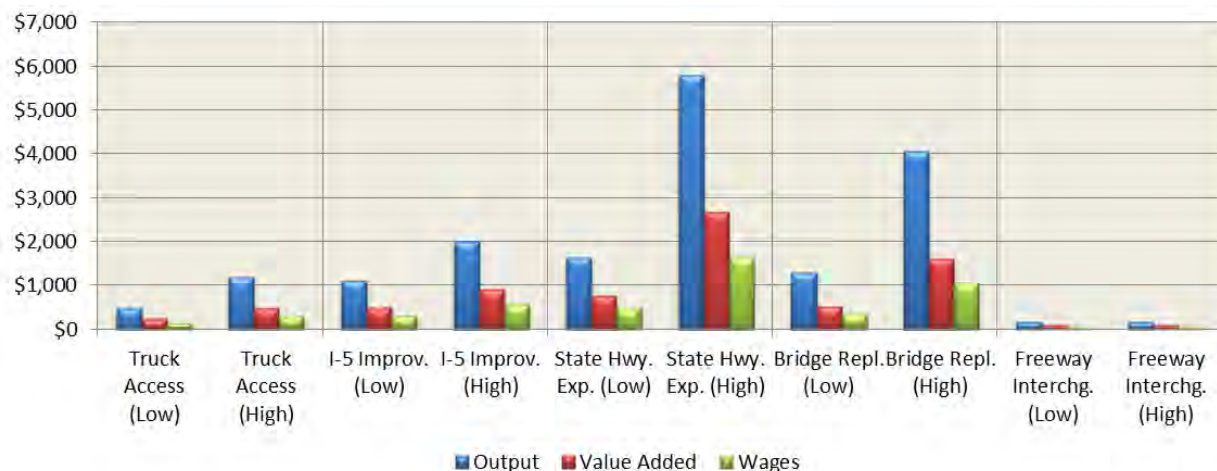


Economic Impact Results

Exhibit 80 summarizes the economic impacts of benefits that affect the regional economy in terms of output (i.e., sales), value added (i.e., GRP), and wages. This exhibit includes the economic effect of all the user benefits shown in Exhibit 79 except for market access. There are additional economic impacts related to project construction, supplier markets, tourism, and contingent development, which are added to the analysis later.

Exhibit 80 shows separate low-range and high-range estimates for the project groups. As shown in the exhibit, the State Highway expansion and bridge replacement projects have the widest range of impacts due to the speed and distance improvements that drive travel time and vehicle operating savings. The I-5 improvements also lead to capacity enhancements, but they do not affect as many vehicles as the aggregate of all the State Highway and bridge replacement projects. The freeway interchange projects show very low economic impact because Exhibit 80 does not include the contingent economic development benefits, which are the primary motivation for these projects.

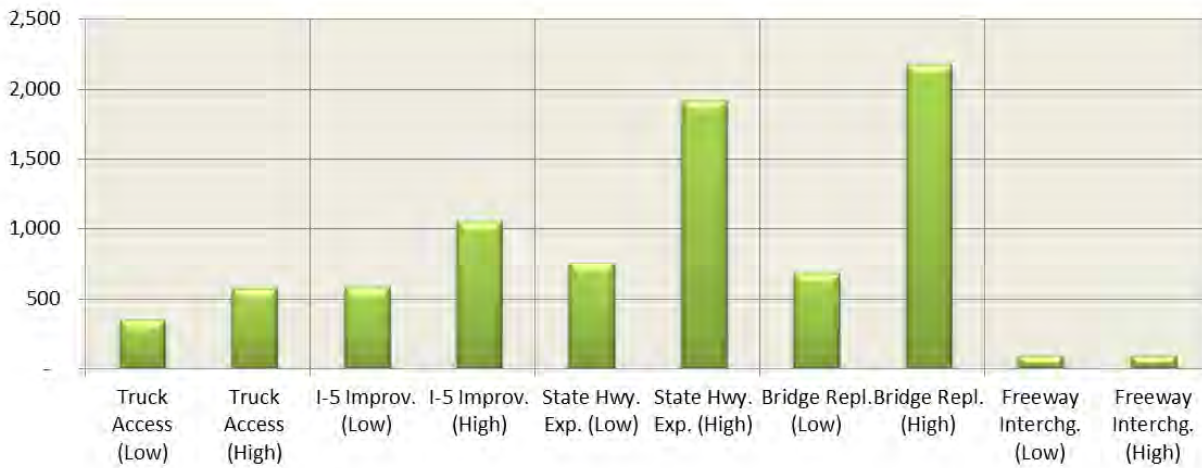
*Exhibit 80: Economic Impacts due to Travel Efficiency Benefits, 2010 to 2040
(in \$ millions)*



The economic impacts due to the travel efficiency benefits can also be expressed in terms of jobs created. Exhibit 81 shows the jobs expected by 2040 as a result of making the improvements proposed in the project groups. Like the prior exhibit, Exhibit 81 shows a low-range and high-range estimate for each project group. The job trends mirror those in the other economic impact measures. State Highway expansion and bridge replacement projects have the highest impacts in terms of jobs.



Exhibit 81: Travel Efficiency Impact Expressed in Jobs, 2040



It should be kept in mind that these job impacts capture the long-term economic benefits of the project groups. Each of these project groups will also create short-term economic impacts related to construction. Simply by spending money in the economy through construction, these projects will lead to increases in output, wages, and jobs. However, the impacts are temporary and will disappear once the construction stops.

There are other long-term economic impacts that are not included in Exhibits 80 and 81. These are related to changes in economic productivity (scale economies) due to better access to supplier and customer markets as well as increases in jobs, output, and wages due to increased recreation, tourism, and contingent economic development. While the access benefits were estimated inside TREDIS, the other additional effects were estimated outside the regional economic model using local knowledge. Appendix K provided details on the assumptions used to estimate the additional economic impacts, but the following captures the general approach:

- Access to Supplier and Customer Markets – The truck access and state highway expansion projects provide greater access in addition to their travel time savings. This can be measured by the change in employment within a three-hour drive time.
- Recreation and Tourism Impact – The truck access and bridge replacement projects allow areas to attract greater recreation and tourism. The benefits associated with these projects were calculated by estimating potential employment losses in associated industries if improvements were not made.
- Contingent Economic Development – The freeway interchange projects provide access to developable land. The benefits were calculated by estimating the employment associated with land development.

Exhibit 82 shows the results of including the additional economic impacts with the impacts due to increases in travel efficiency (shown earlier in Exhibit 80). As Exhibit 82 illustrates, these additional economic impacts generate substantially larger benefits for the North State economy. The truck access,



bridge replacement, and freeway interchange projects reflect the additional impacts due to tourism, recreation, and general economic development. These impacts could be conversely considered to be the lost impacts if the projects were not built and access became restricted. There are additional impacts for the truck access and state highway expansion projects due to improved access to suppliers and customers. As a result of these additions, the bridge replacement and truck access projects generate larger benefits than the other improvements.

Exhibit 82: Total Economic Impacts, 2010 to 2040 (in \$ millions)

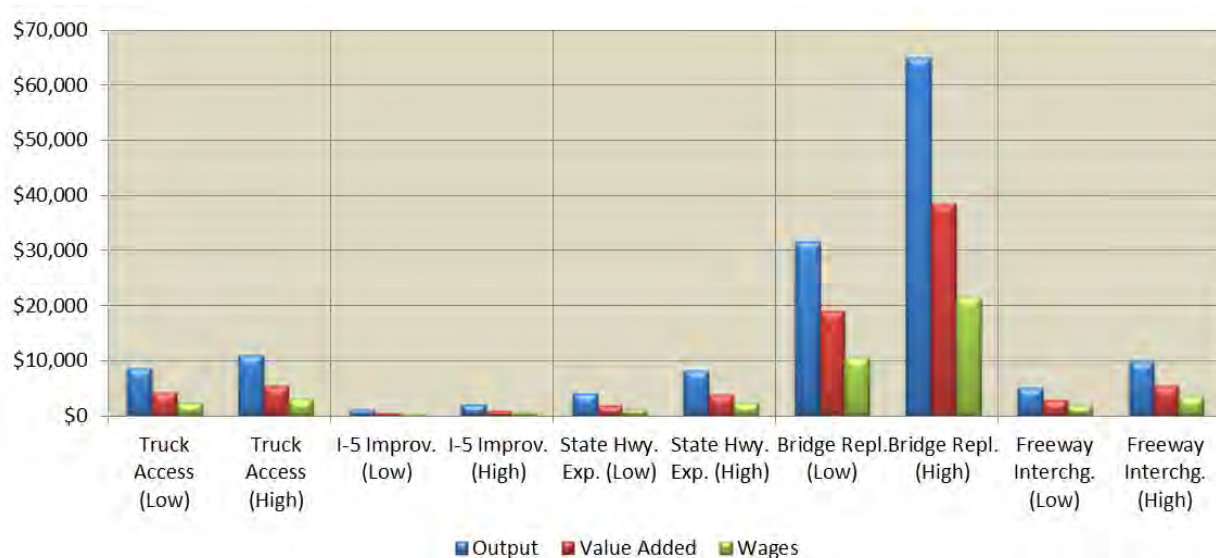
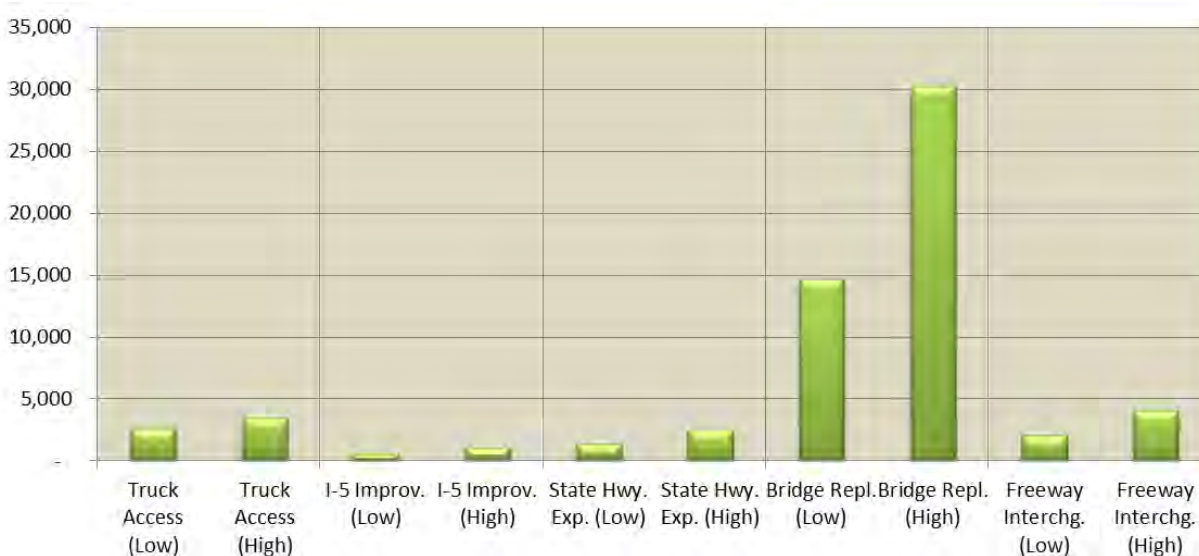


Exhibit 83 shows the job impacts associated with each project bundle. The job impacts mirror those in output (i.e., sales), value added (i.e., GRP), and wages. The largest increases in employment accrue to the bridge replacement and truck access projects. These are due primarily to changes in tourism and contingent economic development (due to access to developable land).



Exhibit 83: Total Economic Impacts Expressed in Jobs, 2040



Typical Modeling Framework

The economic impact results presented above were based on broad assumptions from a variety of sources. More in-depth modeling requires developing estimates using detailed project data. Changes in traffic characteristics can be estimated using travel demand models where available. For many North State projects, travel demand models will not be available. For these projects, the LOS database developed in the NSTEDS can be used to estimate LOS changes. In addition, many projects will have detailed project analyses available in project reports.

Several of the project groups contained conceptual projects with no costs. The project team developed cost estimates using averages from projects with costs or engineering rules of thumb. For detailed economic analyses, the project costs will be estimated based on detailed engineering reviews including contingency variables added into the totals. These estimates can come from Caltrans engineers or project reports where available.

Once the assumptions for the base and project scenarios are vetted and approved, the traffic characteristics can be entered into a model to estimate user benefits. These can be entered into TREDIS or another regional economic model as in the above analysis. Alternatively, the user benefits can be calculated in Cal-B/C and inputted into a regional economic model.

The regional economic model will estimate the associated impacts on the regional or state economy. The intermediate and final results should be carefully reviewed to identify any anomalies or uncharacteristic results that require additional input review. Most regional economic models have intermediate reports to pinpoint assumptions and input data that drive the final results. For example, the 10-percent safety improvement assumption drives the economic impact related to travel efficiency for the freeway interchange projects. In this case, more detailed engineering analysis will provide better estimates of the operational impacts.



Estimating access to buyer, supplier, labor, and customer markets as well as contingent development should be included in the modeling process where applicable. For cases in which infrastructure investments promote economic development when built or detract from economic development if not built, these assumptions should be refined and confirmed by knowledgeable economic development stakeholders in the North State.

The final step involves translating these benefits into impacts on the economy. Output (i.e., sales), value added (i.e., GRP), and wages are typically used as measures to determine the scale of a project's impact on the economy. This analysis involves understanding industry dynamics of how businesses react to transportation cost savings and how the additional economic activities percolate through the economy as businesses purchase additional goods and services from suppliers and employees spend their additional income. Determining the "ripple effect" of how the economy responds to additional economic activity provides a comprehensive assessment of the true economic impact of projects.

Key findings from the economic impact modeling are:

- The North State RTPs and economic development stakeholders have identified several transportation improvements that have the potential to help the North State's economy.
- Transportation improvements in the North State can help the economy through several mechanisms – supporting tourism, providing access to business, increasing delivery market areas, supporting commerce, opening up business sites, widening the labor market, and providing access to intermodal facilities, such as airports, ports, and rail.
- The modeling found that all projects result in short-term benefits related to construction. The longer term benefits vary by the project type. The predominant benefits of improvements on I-5 and state highways are related to changes in travel time and travel time reliability followed by some shipper and logistics benefits. STAA truck access and bridge replacement projects produce a range of benefits related to travel times, vehicle operating costs, safety, shipments and logistics, as well as market access. Tourism and economic development impacts are associated with all project types, while the STAA truck access and state highway expansion projects have the greatest change of increasing access to supplier markets.
- The economic impact of bridges highlights the high cost associated with the disruption of traffic flow and the lack of convenient, alternate routes on a corridor – even on a temporary basis. Reliability, whether due to a bridge closure/restriction or other cause (e.g., landslides, etc.) – is of great operational and economic concern.
- The modeling shows how the impact on the economy can be modeled and the typical benefits for transportation improvements in the North State. In addition, the modeling illustrates the types of assumptions needed for the economic modeling.



Study Recommendations

This chapter presents study recommendations based on the analyses conducted throughout the NSTEDS. These recommendations build on the connections between the transportation and economic landscapes as well as the framework for economic performance measures developed earlier in the report. It also presents steps to integrate transportation and economic development, identifies near-term opportunities for policy development, and describes the development of a strategic action plan to pursue long-term opportunities.

By pursuing these recommendations, the North State can:

- Build on its competitive advantages and opportunities for enhancing economic development to support emerging industries in the region
- Incorporate regional economic development initiatives into the transportation planning process
- Better compete for finite discretionary transportation funds.

Economic Impact Modeling and Performance Measures

Few North State RTPs have performance measures specifically related to the impacts of transportation on the regional economy. The performance measures currently in North State RTPs reflect the guidance found in the *Caltrans Performance Measures for Rural Transportation Systems Guidebook* on selecting measures and collecting data. This guidebook does not provide information on measures related to economic well-being. The North State Super Region should work with Caltrans to include such measures in the guidebook using information developed in the NSTEDS. More specifically, **the North State Super Region should develop and encourage integration of performance measures that more appropriately represent the economic impacts of transportation investment in a small urban or rural setting**, which is characteristic to the North State.

The NSTEDS provides a hierarchy of performance measures and impacts that link transportation to economic development. Most North State counties already measure transportation user benefits in their RTPs and other planning documents. **Transportation professionals should consider adding measures related to intermediate transportation factors and economic growth.** Although the scope of the NSTEDS economic impact modeling was limited to project groupings, Caltrans' acquisition of the Transportation Economic Development Impact System (TREDIS) software could be utilized by regional agencies to measure intermediate transportation factors for individual projects in their respective RTPs.

The NSTEDS economic impact modeling demonstrates how different types of projects identified by transportation planners and economic development stakeholders can affect the North State's economy. It shows that transportation improvements have the potential to help the economy through several mechanisms – supporting tourism, providing access to business, increasing delivery market areas, supporting commerce, opening up business sites, widening the labor market, and providing access to intermodal facilities, such as airports, ports, and rail. While the appropriateness and practicality will



vary by region, **all regions in the North State should consider these opportunity areas in their planning processes and support or coordinate with partner regions** within the North State to achieve associated objectives as appropriate.

The economic impact modeling shows all projects result in short-term benefits related to construction. The longer term benefits vary by project type. The predominant benefits of improvements on I-5 and state highways are related to changes in travel time and travel time reliability followed by some shipper and logistics benefits. STAA truck access and bridge replacement projects (that avoid catastrophic bridge closures and long detours) produce a range of benefits related to travel times, vehicle operating costs, safety, shipments and logistics, as well as market access. Tourism and economic development impacts are associated with all project types, while the STAA truck access and state highway expansion projects have the greatest change of increasing access to supplier markets.

Activities for Integrating Transportation and Economic Development

The economic modeling included in the NSTEDS is based on rough assumptions that could be refined with input from transportation planners and economic development professionals. **North State transportation agencies should consider collaborating with Caltrans to conduct more detailed economic impact studies for the projects that matter to the super region.** These studies could be conducted as part of the typical project development process. For example, Butte County is developing an “economic transportation study” as part of the Project Study Report for SR-70. The economic impact modeling conducted for the NSTEDS can be used as a guide for the type of information that needs to be collected for these studies.

North State policy makers should consider both the transportation and economic development benefits of projects for inclusion in the regional transportation planning process. The economic impacts of transportation projects (e.g., changes in visitor spending, potential for business attraction, and business needs for specific infrastructure to increase market access) can be measured if sufficient funding is available to complete the analysis. This type of local knowledge is critical for performing more detailed analyses of the economic impacts of projects.

Transportation and economic development stakeholders identified mutually supporting projects as well as very different types of projects and opportunities. The NSTEDS lists several projects mentioned during interviews with the economic development community and workshops. **Transportation projects that support economic development plans should be added to RTPs, if these projects also have reasonable transportation justification.** The NSTEDS also provides documentation of current economic development initiatives that should be considered when developing concepts and selecting transportation projects.

Economic development stakeholders should work with transportation planners to determine what, if any, transportation improvements (e.g., road widening, operational improvements, and signage) **are needed to improve tourism.** This is an important component of economic development initiatives already underway in Lake, Mendocino, Humboldt, Del Norte, Trinity, Lassen, Shasta, Tehama and Butte



counties. **Transportation planners should work with economic development stakeholders to consider the types of improvements** (e.g., local site access, construction of intermodal freight terminals, and improved freight rail and air service) **needed to attract wholesale trade to the North State.**

Transportation improvement projects that open up new land for development should be prioritized if they can help create new business areas in communities with a shortage of available land with access to infrastructure. Attracting new businesses to this land may require collateral activities, such as the provision of tax incentives, infrastructure (e.g., sewers and utilities), and workforce training.

The NSTEDS was unable to explore the impact of unanticipated closures on critical roads to the North State economy. **The North State Super Region should consider a special study of the economic implications of emergency closures given the limited roadway infrastructure** in the North State. A prospective funding source could be a Caltrans Transportation Planning Grant Program under the Partnership Planning category.

The North State Super Region should also study the market feasibility of locating a rail freight loading facility in the North State and coordinate action and investment, as appropriate. Shasta County has considered studying the potential for a rail freight loading facility. Southern Oregon has such a facility, which may help attract wholesale trade. The City of Anderson in Shasta County is currently in the process of annexing several hundred acres of heavy industrial lands with rail access. The Deschutes Road and I-5 interchange, scheduled for completion in late 2013, will greatly enhance site access for trucks. Furthermore, the City of Redding's Stillwater Business Park and the Redding Municipal Airport are just five miles north of the site. The Shasta Economic Development Corporation has supported and been actively involved in moving this effort forward.

The Nevada County RTP notes that the Union Pacific Railroad owns and operates tracks, which follow I-80 along the southern border of Nevada County. Although the tracks run through a portion of eastern Nevada County, there are currently no freight rail loading facilities in the county. As congestion increases on I-80, freight rail loading facilities may need to be considered in eastern Nevada County.

The North State Super Region should continue to cultivate relationships with economic development stakeholders, including local and regional economic development corporations or districts (e.g., Upstate California Economic Development Council and local economic development corporations), university or college-based economic programs (e.g., Shasta College Business and Entrepreneurship Center, and the Center for Economic Development at California State University, Chico), and state level entities (e.g., the Governor's Office of Business and Economic Development and California Forward) with the goal of coordinating, collaborating, aligning, planning, and leveraging fiscal resources.

The NSTEDS made a targeted effort to include tribal needs in the study. The tribes in the North State were made aware of the study through individual letters to each tribal leader and a presentation to the Native American Advisory Committee (NAAC). The tribes were also provided access to the study, but the NSTEDS was unable to get the level of engagement necessary to include a meaningful assessment of tribal needs. **The North State Super Region should continue to inform and encourage participation**



from Native American tribal governments in economic development and transportation planning projects.

Near-Term Opportunities for Policy Development

The Federal Highway Administration (FHWA) is designating a National Freight Network to assist states in “strategically directing resources” to improved freight movement. I-5 may qualify, but **the North State should consider advocating for the designation of key transportation routes as “rural freight corridors.”** These must be principal arterials carrying at least 25 percent trucks, which is a high threshold compared to typical truck percentages on North State routes.

In collaboration with the Business, Transportation and Housing Agency, Caltrans established the California Freight Advisory Committee (CFAC) to serve as a forum for discussing freight related priorities, issues, projects, and funding needs. The committee is also helping to inform the new state freight plan. A draft of the plan is expected by the end of 2013 with a draft final in June 2014, so the California Freight Plan can provide input into the National Freight Plan due in October 2014. **The North State should update the CFAC on the NSTEDS and make sure that its findings are reflected in the California Freight Plan.**

The North State Super Region should use results from the NSTEDS to provide input into the selection of rural performance measures for Moving Ahead for Progress in the 21st Century (MAP-21). The latest national highway bill emphasizes projects of national significance. The freight performance measures have not yet been defined, but they are likely to focus on the producers and users of freight as well as the jobs and income being generated. Although rules have not been published, it is likely that the Federal government will want projects with national significance. If the North State Super Region can demonstrate that certain projects (e.g., the improvement of interchanges and bridges on I-5) enable export products, the national significance argument could be made and federal freight funding justified.

The San Diego Association of Governments (SANDAG) recently led a Performance Monitoring Indicators Technical Group that proposed two “economic vitality” performance measures – transit accessibility and travel time to jobs. The initial set of proposed measures was focused on urban areas and did not consider all of the links between transportation user benefits and economic growth. However, the North State was able to provide input from the NSTEDS on potential economic measures that capture intermediate transportation factors (e.g., market access and connectivity measures) and economic growth (e.g., jobs, income, and economic output). These indicators were included for future consideration. **The North State should encourage the inclusion of market access and connectivity measures should the Performance Monitoring Indicators Technical Group reconvene to update or refine their recommendations.**

Stakeholders in the North State may wish to consider support for the east-west railroad concept between the Port of Humboldt Bay and northern Sacramento Valley. Several elected officials and North State stakeholders have provided letters of support. In addition, Upstate California has adopted the east-west railroad concept. Whereas current efforts focus on initiating a technical and engineering



feasibility of the project, **the North State may want to study the potential market for the east-west railroad prior to or in tandem with the technical study.**

Caltrans has an Interregional Transportation Strategic Plan (ITSP) to guide the development of the interregional transportation system. The first plan was written in 1998. The plan was not updated for more than a decade until a draft of the latest plan was released in December 2012. The draft plan includes a number of focus routes in the North State, including US 101, SR-99 (and SR-70), US 395, SR-20, and SR-299. Since the ITSP is not updated frequently, **the North State should use the NSTEDS as an opportunity to provide input into the ITSP.**

The Caltrans Project Development Procedures Manual (PDPM) currently does not include economic development as a deficiency to be addressed by a transportation project. Benefit-cost analysis and economic impact implications are not considered during the project development stage. **The North State should work with Caltrans transportation economists to include economic considerations in the PDPM.** This would help allow the North State to justify project using economic arguments.

The North State needs to address barriers related to travel demand reduction strategies, such as access to broadband internet. In this area, the North State can take advantage of efforts, such as the California Emerging Technology Fund and the California Advanced Services Fund. These funds are providing seed money to advance broadband deployment and adoption throughout rural California. The goal is to promote economic competitiveness, access to essential services, and improve quality of life. In the North State, four broadband consortia are receiving seed money from these funds.

The North State regions should update plans and priorities related to intelligent transportation systems (ITS) in combination or coordination with infrastructure improvements. The provision of accurate and timely traveler information (e.g., travel times and roadway restrictions) will assist the traveling public. ITS infrastructure will also help businesses efficiently move goods and provide much-needed predictability that impacts logistics and warehousing decisions (e.g., just-in-time delivery and the appropriate size of safety stock).

Efforts to reinvent redevelopment agencies in recent years have turned from the historical focus on removing blight to realizing more efficient land-use patterns. Should reinvention occur or metropolitan planning organizations (i.e., Butte County Association of Governments and Shasta Regional Transportation Agency) gain access to new funding sources designated for implementation of Senate Bill 375, **local and regional agencies should join with the private sector to grow the economy within industries that reduce or minimize travel demand.** Such efforts would serve to reduce local trips on the North State's interregional network, thus affording more widespread benefits.

Development of a Strategic Action Plan

The preceding findings and recommendations are intended to help the North State and individual regions expand their vision and realize untapped economic potential. Developing an economic development strategy is more than a series of unrelated or uncoordinated initiatives. It is



recommended that a strategic planning process for integrating transportation and economic development include the following five components:

1. **Classifying projects by their transportation significance and area of greatest economic importance.** This will support MAP-21 initiatives and will also help Caltrans recognize the significance of North State projects. For instance:
 - a) *National significance* – The I-5 corridor supports commerce and freight movement from California to Oregon and Washington State as well as Canada and Mexico. It is a vital component of interstate and international commerce on the West Coast. While this gives the corridor national significance, it also serves as a backbone for regional access. In addition, any disruption to I-5 bridges and structures could have dramatic negative consequences on the region’s quality of life and economy, due to the necessarily circuitous nature of detour routes available through the region.
 - b) *Regional/State significance* – The region’s economic base depends on activities that bring in business revenues from visitor spending and the sale of goods (e.g., timber and wood products, agricultural and food products) to customers outside the region. There are several tourism routes and truck routes that enable these activities (including US 101, US 395, US 97, US 199, SR-70/SR-99, and SR-20/SR-29), which gives them state or regional significance. Other highway routes (e.g., SR-299) could become important for regional economic growth if they are upgraded to enable large trucks and buses. Enhancement of rail and marine services for freight movement as well as highway routes that affect regional labor market access also fall into this category.
 - c) *Local or regional significance* – There are various proposals for access roads and interchanges that could help enable new commercial and industrial activities to supplement tourism and the export of raw materials and agricultural products (i.e., the current economic base). By enabling economic activity at specific locations, individual communities, and in some cases the entire region, can benefit. However, care must be taken to ensure that funds be focused on improving access in locations with good prospects for success (e.g., attracting or retaining business) and no other limitations that prevent business siting.
2. **Identifying the confluence of necessary transportation and economic development factors that must be brought together as a “total package” to facilitate business expansion and attraction.** This normally includes: (a) access to labor markets, customer markets, and in some cases, intermodal facilities, (b) job skill development to expand the labor market’s skill base, (c) availability of other business location site requirements (e.g., water, electricity, and broadband availability), and (d) a supportive local business climate to help navigate local factors that can affect business competitiveness. The specific requirements will differ depending on the nature of the business activity - agriculture, other land resources (e.g., timber), industrial, or professional/technical services. In general, state investments to support economic development



are more likely to occur if there is evidence of an ongoing concerted effort involving local actions and support.

3. **Targeting priority opportunities – situations where a transportation investment can intervene to be a “game changer” in terms of business location feasibility.** For instance, upgrading a specific route to enable large truck and bus movement could in some cases: (a) dramatically reduce the cost of operating some businesses in an area (since one large truck can substitute for several small trucks), or (b) dramatically enlarge the customer area that can be served from a given business location (for same-day customer visits and same-day truck deliveries). In a similar fashion, upgrading a specific route might enable a community to be within a reasonable travel time range of a larger city (e.g., Sacramento or San Francisco) and effectively become part of its labor market area. For a project classified by state engineers as a justified operational enhancement, there might be higher priority if there is evidence that it can also provide new forms of worker or customer access to enable further economic development.
4. **Taking proactive action to prevent economic disasters, as could occur if certain roads, bridges and other structures are allowed to degrade, leading to route delays, closures, detours, diversions, or further weight limitations.** The most dramatic example of this is the degradation of the bridges along I-5. But, on a more routine basis, there is the maintenance of bridges on State Highways (particularly in the eastern portion of the North State) and the potential for emergency closures (particularly along the North Coast). In some cases, the disruption to normal economic activities of businesses in the North State could be severe. For this reason, there should be active support for emergency rehabilitation of roads and bridges, particularly where the risk of facility failure and its repercussions are greatest. Longer term, the State needs funding to take a more cost-effective approach, such as maintaining and preserving existing infrastructure to prevent the need for emergency rehabilitation. Part of the effort to support these projects should be to make the case that the negative economic ramifications may be far greater than the mere inconvenience to drivers. In few cases are there no alternative routes to emergency closures, but the alternative routes may be inconvenient, unsuitable for trucks, and unknown to tourists.
5. **Exploring the need for new goods movement infrastructure.** The North State is served by only one port that has historically focused on the wood products and commercial fishing industries. The proposed feasibility study of constructing an east-west railroad to connect the Port of Humboldt Bay to the Class I railroad network should include an analysis of the market demand and economic feasibility in addition to the engineering and environmental feasibility of the proposed project. A minimal market study should identify how large a potential market could be based on products that move by rail and what share the North State may expect to attract given market and spatial considerations. The proposed study should also analyze the market feasibility of locating in the North State a rail freight loading facility that could serve the railroad and port.



Appendix A: Details on Highway Level of Service (LOS) Estimation

To assess the level of service (LOS) provided by North State highways, the project team developed a database of highway characteristics, traffic volumes, and traffic forecasts. The traffic database covers all 3,353 miles of State Highway System (SHS) in the 16-county North State plus other selected roadways. This appendix describes the traffic data collected, the availability of traffic forecasts, and the methodology used to estimate planning LOS. It also summarizes LOS findings. Appendices B and C present more detailed LOS findings.

Summary of Traffic Data

The North State NSTEDS traffic database is compiled from several sources:

- Caltrans 2010 traffic and truck volume data for the State Highway System
- Regional Transportation Plans (including accompanying Environmental Impact Reports) for the 16 North State counties
- Travel demand model outputs, which are available for some counties
- Caltrans traffic growth rates, which are available for some counties
- Other studies, including general plans, corridor studies and fee programs.

The project team contacted representatives from all 16 North State counties as well as Caltrans Districts 1, 2 and 3 to collect data and forecasts. The team asked county representatives if they wanted to include any non-State Highways in the analysis. The target highways were major roadways that might show significant economic benefits if improved (e.g., high volume truck routes, connections to major generators, etc.). Most counties responded that they expected economic development benefits to occur primarily through improvements on State Highways. However, a few asked for the analysis to include other selected roadways.

The principal source for existing traffic volume data was online Caltrans traffic count data. The project team compiled the following information for 870 segments on the SHS:

- 2010 Annual Average Daily Traffic (AADT) for all State Highway segments in the North State
- 2010 peak month average daily traffic for all State Highway segments in the North State
- Existing truck volumes and percentages, where available.

Exhibit A1 summarizes the traffic volume data and the LOS estimates available from the Regional Transportation Plans (RTPs).



Exhibit A1: Summary of Available Traffic Volume and LOS Estimates from RTPs

County (Agency)	Latest RTP	Volume and LOS Estimates
Butte (BCAG)	2008	2010 and 2035 model volumes provided from model used for draft 2012 RTP
Colusa (LTC)	2008	2008 and 2030 volumes and LOS on selected roadway segments in RTP
Del Norte (LTC)	2011	2008/2009 volumes and LOS, on State highways in RTP, historic growth (1999 to 2009), no forecasts
Glenn (GCTC)	2009/10	2007 and 2030 volumes and LOS on selected roadway segments in RTP
Humboldt (HCAOG)	2008	Existing congested roadways identified, no volume data in RTP
Lake (APC)	2010	Volumes and LOS not provided in RTP, growth factors for State Highways provided by Caltrans District 1
Lassen (LCTC)	2005/06	2005 and 2025 volumes and LOS in RTP
Mendocino (MCOG)	2010	Volumes and LOS not provided in RTP, growth factors for State Highways provided by Caltrans District 1
Modoc (MCTC)	2005	2005 and 2025 volumes on selected roadways in RTP
Nevada (NCTC)	2010	Volumes and LOS not provided in RTP
Plumas (PCTC)	2010	2005 and 2030 peak hour volumes and LOS on selected roadways
Shasta (SRTA)	2010	2010 and 2030 volumes and LOS on selected roadway segments in RTP
Sierra (SCTC)	2010	2010 and 2030 volumes (no LOS) on selected roadway segments in RTP
Siskiyou	2010	2010 and 2035 volume and LOS on selected roadways in RTP
Tehama (TCTC)	2006	2005 and 2030 volume and LOS on selected roadways in RTP
Trinity	2011	2009 and 2040 volume and LOS on selected roadways in RTP

Source: Regional Transportation Plans and model documentation

Existing traffic and truck volume data contained in the RTPs were placed in separate fields in the database. Since the existing volume data for the SHS are not complete and can reflect different years in RTPs, the project team used comprehensive Caltrans data for existing conditions on the SHS in 2010.

The RTPs contain existing year LOS estimates for only a portion of the State Highways in the North State, so the project team decided to prepared LOS estimates for the entire 3,353 miles of SHS using a consistent, “planning level” methodology. The method used to estimate LOS is described in in the section entitled “Estimating Level of Service.” It relies on categorizing roadways by the following factors:

- Areas type (i.e., urban, small urban or rural)
- Number of travel lanes
- Level of access control (i.e., low, medium or high)
- Terrain (i.e., level, rolling or mountainous)
- Truck percentage (i.e., low, medium, high or very high).



The project team estimated these factors using online aerial photographs, terrain mapping, and information available from Caltrans districts. These factors were combined to determine the “planning capacity” of each segment. They also provide very useful information to describe the North State highway system.

Available Traffic Forecasts

Exhibit A2 summarizes the availability and sources of traffic forecasts for State Highways in the 16 North State counties. The key issues related to the forecasts are:

- Only nine of the sixteen counties are covered by travel demand models. Some of the models have not been updated for many years or are undergoing updates. Thus, some counties did not want the available model data to be used for the North State Transportation for Economic Development Study.
- Counties without models typically use “trend” analyses based on historical traffic count data to prepare traffic forecasts
- Typically, counties with travel demand models prepare traffic volume forecasts for only selected roadway segments.
- Forecasts in the RTPs range from 2025 to 2040. To provide a consistent 2030 horizon year (20 years after our 2010 base year), the project team interpolated available forecasts to estimate 2030 traffic volumes.

Exhibit A2: Summary of Available Traffic Forecasts

County	Number of Segments			Forecast Year	Travel Demand Model	Source and Method Forecasts
	Total	Available Forecasts	Percent			
Caltrans District 1						
Del Norte	28	28	100%	2030		2010 times 20 year growth factors by roadway segments from Caltrans District 1
Humboldt	130	130	100%		3-step county model	
Lake	40	40	100%		Wine Country 4-county model	
Mendocino	89	89	100%		3-step county model and Wine Country 4-county model	
Caltrans District 2						
Lassen	34	28	82%	2025	4-Step county model	2005/06 RTP
Modoc	19	8	42%	2025		2005 RTP
Plumas	36	11	31%	2030		Percent growth in peak hour volume applied to 2010 daily volume from 2010 RTP
Shasta	117	117	100%	2030	4-step and activity-based	Draft 2030 forecast from new activity-based travel demand model



County	Number of Segments			Forecast Year	Travel Demand Model	Source and Method Forecasts
	Total	Available Forecasts	Percent			
					models	
Siskiyou	74	12	16%	2035		2010 RTP
Tehama	49	16	33%	2030		2030 forecasts for I-5 only from 2006 RTP
Trinity	25	17	68%	2040	3-step county model	2011 RTP
Caltrans District 3						
Butte	86	86	100%	2035	3-step county model	BCAG Model (post-processed by DKS)
Colusa	32	13	41%	2030	3-step county model	2008 RTP (9) and General Plan EIR (4)
Glenn	38	13	34%	2030		2009/10 RTP
Nevada	59	59	100%		3-step county model	Volume data not in RTP
Sierra	17	10	59%	2030		Peak month forecasts in 2010 RTP (growth rate applied to average day)
Total	873	618	78%			

Source: Regional Transportation Plans and model documentation

Caltrans provided growth rates for all state highways in the four North State counties in District 1 and for Nevada County in District 3. The project team applied those growth rates to 2010 traffic count data to estimate 2030 volumes. In other locations, traffic forecasts available from RTPs were used and interpolated to 2030 levels. In cases where RTPs were old and had different base or existing years than 2010, the RTP future forecasts might be less than 2010 traffic volumes. In such cases, the 2030 forecasts were adjusted to reflect the equivalent growth rate in the RTPs between base and horizon years.

Traffic forecasts were estimated for 78 percent of the 873 segments of State Highways from available sources. For the remaining 22 percent of the highway segments, the project team estimated future traffic volumes as follows:

- Since Lassen, Trinity and Sierra counties have a high percentage of SHS segments with traffic forecasts, the forecasts on the remaining segments were estimated based on the percent growth on adjacent segments.
- Modoc, Plumas, Siskiyou, Tehama, Colusa and Glenn counties have a moderate percentage of roadway segments with available traffic forecasts. The traffic forecasts on the remaining segments were estimated using a combination of the percent growth on adjacent segments or the projected 2010 to 2030 countywide population growth rate from the California Department of Finance.

The traffic volume forecasts are discussed further in the section entitled “Summary of Traffic Volumes and LOS.”



Estimating Level of Service

Since the RTPs have LOS estimates for only a limited amount of the North State SHS, the project team prepared “planning level” LOS estimates for all SHS segments. The methodology is similar to that used by a number of California counties for general plans and RTPs, including some of the North State counties. This method estimates daily roadway segment capacities for LOS A through LOS E and compares daily volumes to these capacities. Segments with volumes exceeding the LOS E capacity are considered to be LOS F. Daily volumes are used in the calculation because most counties do not estimate hourly capacities. However, the daily capacities and resulting LOS estimates are intended to reflect operating conditions during peak hours.

The estimates use annual average daily traffic (AADT). As a result, the planning LOS reflects conditions on an average day. When designing improvements on the SHS, Caltrans uses a “design hour,” which represents the 30th highest hour of the year in rural areas and the 200th highest hour in urban areas. Traffic volumes on some rural highways in the North State can be significantly higher during summer months. The traffic database has average daily volumes during peak months which can be applied to define the LOS on an average day in the peak month.

Exhibit A3 shows the factors used in the methodology, which involves the following steps:

- Hourly roadway segment capacities from the Shasta Regional Transportation Agency (SRTA) were used. SRTA has separate capacities for a number of roadway classifications, which reflect area type (rural or urban), travel lanes, access control, and terrain. The project team added additional categories for small urban areas.
- The one-way hourly capacities were converted to two-way daily capacities by applying two factors: 1) a peak direction percentage of total traffic, and 2) a peak hour percentage of daily traffic. Exhibit A3 shows the assumed percentages by roadway category.
- The resulting daily capacities are appropriate for low truck percentages and adjusted for higher truck percentages based on passenger car equivalents (pce) factors and formulas in the Highway Capacity Manual. The bottom of Exhibit A3 shows the factors used to adjust for trucks.

The number of travel lanes does not account for passing or climbing lanes that exist on some portions of State Highway segments. For segments with more lanes in one direction than the other, the LOS estimates reflect the LOS in the direction with the fewest lanes. Also, the capacities were estimated with the assumptions that travel lane widths are adequate and there are appropriate shoulders for each terrain category. There are numerous other factors that can affect capacities, but taking these into account would require a more detailed database and a detailed operational analysis of highway capacity.

The various roadway classifications estimated by the project team are intended to help estimate a “planning level” roadway segment capacity and differ from classifications used by Caltrans and the counties for other purposes. The classifications and their effect on capacity are described below.



Exhibit A3: Factors Used to Estimate Daily Capacities

Facility and Area Type (Terrain) ¹	Lanes	Access Control ¹	Hourly Capacity Per Lane ²	Pk Hr % of Daily	Pk Dir of Total	Estimated Daily Capacity ³	V/C				
							A	B	C	D	E
Urban Arterial (level)	2	Median	850	0.09	0.56	17,000	0.60	0.70	0.80	0.90	1.00
	4		900	0.09	0.56	36,000	0.60	0.70	0.80	0.90	1.00
	6		900	0.09	0.56	54,000	0.60	0.70	0.80	0.90	1.00
	2	Low	750	0.09	0.56	15,000	0.60	0.70	0.80	0.90	1.00
	4		800	0.09	0.56	32,000	0.60	0.70	0.80	0.90	1.00
	6		800	0.09	0.56	48,000	0.60	0.70	0.80	0.90	1.00
Small Urban Arterial (level)	2	Median	850	0.09	0.56	17,000	0.11	0.23	0.39	0.61	1.00
	4		900	0.09	0.56	36,000	0.30	0.49	0.70	0.90	1.00
	2	Low	750	0.09	0.56	15,000	0.11	0.23	0.39	0.61	1.00
	4		800	0.09	0.56	32,000	0.30	0.49	0.70	0.90	1.00
Urban Freeway (level)	4	High	1,990	0.09	0.56	79,000	0.34	0.53	0.74	0.90	1.00
	6		2,050	0.09	0.56	122,000	0.34	0.53	0.74	0.90	1.00
	8		2,080	0.09	0.56	165,000	0.34	0.53	0.74	0.90	1.00
Rural Freeway (level)	4	High	1,800	0.10	0.56	64,000	0.34	0.56	0.76	0.90	1.00
	6		1,850	0.10	0.56	99,000	0.34	0.56	0.76	0.90	1.00
Rural Freeway (rolling)	4	High	1,620	0.10	0.56	58,000	0.34	0.56	0.76	0.90	1.00
	6		1,670	0.10	0.56	89,000	0.34	0.56	0.76	0.90	1.00
Rural Freeway (mountainous)	4	High	1,350	0.10	0.56	48,000	0.34	0.56	0.76	0.90	1.00
	6		1,390	0.10	0.56	74,000	0.34	0.56	0.76	0.90	1.00
Rural highway (level)	2	Medium	1,600	0.11	0.56	26,000	0.11	0.23	0.39	0.61	1.00
	4		2,000	0.11	0.56	65,000	0.30	0.49	0.70	0.90	1.00
Rural highway (rolling)	2	Medium	1,300	0.11	0.56	21,000	0.11	0.23	0.39	0.61	1.00
	4		1,800	0.11	0.56	58,000	0.30	0.49	0.70	0.90	1.00
Rural highway (mountainous)	2	Medium	700	0.11	0.56	11,000	0.11	0.23	0.39	0.61	1.00
	4		1,400	0.11	0.56	45,000	0.30	0.49	0.70	0.90	1.00

¹ Definitions of roadway classifications provided in text

² Hourly capacities used by Shasta Regional Transportation Agency - assumed to reflect **low** truck percentage

³ Maximum capacities for LOS E (v/c ratios used to define maximum capacities for LOS A through D)

Truck Percent Category	Capacity Factor by Terrain Type		
	Level	Rolling	Mountain
Low	1.00	0.97	0.89
Medium	0.97	0.96	0.83
High	0.93	0.93	0.77
Very High	0.90	0.90	0.68



Area Type

The planning LOS methodology uses three area types:

- **Urban:** The capacity of urban roadways is dictated by the capacity of the major signalized or all-way, stop sign controlled intersections along them. At a planning level, segment capacities are dictated by the number lanes and the control of access. Terrain is seldom a factor on major urban roadways. Segment-based capacities are surrogates for capacities at intersections. The maximum v/c threshold for LOS A is about 60 percent of capacity and v/c thresholds for LOS B through E increase uniformly using a 0.1 factor.
- **Small Urban:** Capacities (maximum volumes for LOS E) are the same as in urban areas since they are dictated by the capacity of signalized or all-way stop sign-controlled intersections along them. However, the v/c thresholds for LOS A through D are lower to reflect their setting.
- **Rural:** Roadways in rural areas have very long distances between signals or all-way stop-controlled intersections and their capacity is dictated by the ability to pass. Segment capacities are dictated by the number lanes and terrain. For two-lane facilities, the maximum v/c threshold for LOS A is about 11 percent of capacity and v/c threshold for LOS D is about 61 percent.

Terrain

The planning LOS methodology uses three terrain categories:

- **Level:** Segments in this roadway category generally have upgrades and downgrades of 0 to 3 percent and grades are not sustained. This classification means that roadway grade has little impact on capacity and that there are few curves and more opportunities to pass.
- **Rolling:** For this roadway category, segments generally have upgrades and downgrades of 3 to 6 percent with sustained grades of less than ¼ mile. There is some impact on capacity due to the roadway grade, but there are also more curves and fewer opportunities to pass than on level terrain.
- **Mountain:** Segments have some grades greater than 6 percent and sustained grades of over ¼ mile. There are limited opportunities to pass.

Access Control

The planning LOS methodology uses three access control types:

- **High:** Segments with high access control are freeways or "high-level" expressways with grade-separated interchanges.
- **Medium:** This category has the typical level of access control for a major arterial or rural highway. For urban areas, most intersecting roadways are arterial or collector roadways.
- **Low:** This category is used for urban and small urban roadway segments that have numerous intersections with local roadways and driveways.



Truck Percent Category

The percentage of trucks (or heavy vehicles) in the total traffic stream affects roadway capacity, especially on mountainous highway segments. Truck count data were available for about half of the State Highway segments. The project team used truck counts to place the roadway segments, and adjacent ones without truck counts, into the following truck percentage categories:

- Low 0 to 5%
- Medium 6% to 12%
- High 13% to 20%
- Very high greater than 20%.

Exhibits A4 through A6 (on the next three pages) summarize existing conditions based on the centerline miles and percentage of mileage by roadway category for each county. The exhibits show the following facts about North State highways:

- About 95 percent of the SHS mileage is in rural areas and about 83 percent has two travel lanes.
- There are relatively equal percentages of mileage in level, rolling, and mountainous terrain.
- Trucks represent more than 12 percent of the total volume on about 38 percent of the SHS mileage, while 13 percent of the mileage has a truck percentage greater than 20 percent.

Appendix B shows the roadway categorization on each of the 870 SHS segments in the North State under existing conditions.

Summary of Traffic Volumes and LOS

Appendix B also provides the existing (2010) average day and peak month traffic volumes for each of the 870 SHS segments in the North State along with existing truck volumes and the 2010 average day and peak month levels of service estimated by the project team. The LOS estimates found in RTPs are shown, where available, for comparison purposes. Appendix C provides forecasts of traffic volumes and levels of service for 2015, 2020, 2025 and 2030 for each SHS segment in the North State SHS. As described earlier, the project team compiled these forecasts from available sources or estimated them.

The sum of daily volumes on all State Highway segments in the North State is projected to grow by about 48 percent between 2010 and 2030. This equals compound growth of about 2 percent per year, which is an aggressive growth rate under current economic conditions.

The project team used the methodology described above for estimating levels of service under existing and future conditions. Since truck forecasts were unavailable for the entire North State, the project team assumed that the percentage of trucks would remain about the same on each roadway segment as today.



Exhibit A4: State Highway Mileage by Roadway and Area Type

Dist	County	Mileage (Center Line)												
		Area				Lanes			Terrain			Access Control		
		Urban	S. Urban	Rural	Total	2	4	6	Level	Rolling	Mountain	Low	Medium	High
1	Del Norte	2.0	-	91.5	93.5	77.8	15.7	-	26.5	43.6	23.4	0.8	85.8	6.9
1	Humboldt	25.4	-	330.4	355.8	232.1	121.8	1.9	69.0	193.2	93.6	3.7	234.0	118.1
1	Lake	-	-	138.3	138.3	127.6	10.7	-	45.7	54.9	37.6	-	129.1	9.2
1	Mendocino	12.5	5.8	374.9	393.2	327.2	65.9	-	38.0	185.7	169.4	-	350.9	42.3
2	Lassen	-	1.8	301.8	303.6	301.8	1.8	-	175.8	108.6	19.2	1.8	301.8	-
2	Modoc	-	-	178.9	178.9	178.9	-	-	121.9	18.2	38.8	-	178.9	-
2	Plumas	-	6.1	176.2	182.3	181.0	1.3	-	32.5	107.8	42.0	-	182.3	-
2	Shasta	40.7	2.5	273.0	316.2	224.3	91.9	-	120.3	86.2	109.7	-	243.1	73.1
2	Siskiyou	1.6	6.9	342.5	351.0	281.7	62.6	6.6	140.8	44.4	165.9	-	281.7	69.3
2	Tehama	7.8	-	199.8	207.6	162.7	43.2	1.7	83.3	18.8	105.5	-	165.4	42.1
2	Trinity	-	1.7	196.8	198.5	198.5	-	-	1.7	5.4	191.4	-	198.5	-
3	Butte	24.5	-	154.4	178.9	145.4	33.4	-	135.1	11.2	32.6	1.9	149.0	28.0
3	Colusa	-	2.7	112.4	115.1	80.0	35.1	-	87.3	27.8	-	-	80.8	34.4
3	Glenn	4.3	-	105.6	109.9	81.1	28.8	-	83.9	26.0	-	3.7	77.3	28.8
3	Nevada	6.0	-	126.3	132.3	83.9	48.4	-	8.5	59.6	64.2	-	86.1	46.2
3	Sierra	-	-	98.3	98.3	93.6	4.7	-	17.6	16.6	64.0	-	93.6	4.7
	Total	124.7	27.4	3,201.1	3,353.2	2,777.6	565.3	10.2	1,187.8	1,008.1	1,157.3	11.9	2,838.3	503.0



Exhibit A5: Percentage of State Highway Mileage by Roadway and Area Type

Dist	County	Percent of Mileage												
		Urban/Rural				Lanes			Terrain			Access Control Type		
		Urban	S. Urban	Rural	Total	2	4	6	Level	Rolling	Mountain	Low	Medium	High
1	Del Norte	2.2%	0.0%	97.8%	100.0%	83.2%	16.8%	0.0%	28.3%	46.6%	25.0%	0.9%	91.8%	7.4%
1	Humboldt	7.1%	0.0%	92.9%	100.0%	65.2%	34.2%	0.5%	19.4%	54.3%	26.3%	1.0%	65.8%	33.2%
1	Lake	0.0%	0.0%	100.0%	100.0%	92.3%	7.7%	0.0%	33.1%	39.7%	27.2%	0.0%	93.3%	6.7%
1	Mendocino	3.2%	1.5%	95.4%	100.0%	83.2%	16.8%	0.0%	9.7%	47.2%	43.1%	0.0%	89.2%	10.8%
2	Lassen	0.0%	0.6%	99.4%	100.0%	99.4%	0.6%	0.0%	57.9%	35.8%	6.3%	0.6%	99.4%	0.0%
2	Modoc	0.0%	0.0%	100.0%	100.0%	100.0%	0.0%	0.0%	68.1%	10.2%	21.7%	0.0%	100.0%	0.0%
2	Plumas	0.0%	3.3%	96.7%	100.0%	99.3%	0.7%	0.0%	17.8%	59.1%	23.0%	0.0%	100.0%	0.0%
2	Shasta	12.9%	0.8%	86.3%	100.0%	70.9%	29.1%	0.0%	38.0%	27.3%	34.7%	0.0%	76.9%	23.1%
2	Siskiyou	0.4%	2.0%	97.6%	100.0%	80.3%	17.8%	1.9%	40.1%	12.6%	47.3%	0.0%	80.3%	19.7%
2	Tehama	3.8%	0.0%	96.2%	100.0%	78.4%	20.8%	0.8%	40.1%	9.0%	50.8%	0.0%	79.7%	20.3%
2	Trinity	0.0%	0.9%	99.1%	100.0%	100.0%	0.0%	0.0%	0.9%	2.7%	96.4%	0.0%	100.0%	0.0%
3	Butte	13.7%	0.0%	86.3%	100.0%	81.3%	18.7%	0.0%	75.5%	6.3%	18.2%	1.0%	83.3%	15.7%
3	Colusa	0.0%	2.4%	97.6%	100.0%	69.5%	30.5%	0.0%	75.8%	24.2%	0.0%	0.0%	70.2%	29.8%
3	Glenn	3.9%	0.0%	96.1%	100.0%	73.8%	26.2%	0.0%	76.3%	23.7%	0.0%	3.4%	70.4%	26.2%
3	Nevada	4.5%	0.0%	95.5%	100.0%	63.4%	36.6%	0.0%	6.4%	45.1%	48.5%	0.0%	65.1%	34.9%
3	Sierra	0.0%	0.0%	100.0%	100.0%	95.3%	4.7%	0.0%	17.9%	16.9%	65.2%	0.0%	95.3%	4.7%
	Total	3.7%	0.8%	95.5%	100.0%	82.8%	16.9%	0.3%	35.4%	30.1%	34.5%	0.4%	84.6%	15.0%



Exhibit A6: State Highway Mileage by Truck Percentage

	County	Center Line Mileage by Truck Percentage Category					Percentage of Center Line Mileage by Category				
		Low	Medium	High	Very High	Total	Low	Medium	High	Very High	Total
1	Del Norte	-	28.8	64.7	-	93.5	0.0%	30.8%	69.2%	0.0%	100.0%
1	Humboldt	8.7	209.1	136.0	2.0	355.8	2.5%	58.8%	38.2%	0.6%	100.0%
1	Lake	3.0	118.3	5.7	11.4	138.3	2.2%	85.5%	4.1%	8.2%	100.0%
1	Mendocino	10.4	185.2	197.6	-	393.2	2.6%	47.1%	50.3%	0.0%	100.0%
2	Lassen	2.6	144.8	87.4	68.9	303.6	0.9%	47.7%	28.8%	22.7%	100.0%
2	Modoc	-	87.8	29.2	61.9	178.9	0.0%	49.1%	16.3%	34.6%	100.0%
2	Plumas	30.3	128.5	23.4	-	182.3	16.6%	70.5%	12.9%	0.0%	100.0%
2	Shasta	21.3	153.1	75.1	66.6	316.2	6.8%	48.4%	23.8%	21.1%	100.0%
2	Siskiyou	142.2	26.9	43.7	138.3	351.0	40.5%	7.7%	12.4%	39.4%	100.0%
2	Tehama	26.4	131.2	23.4	26.5	207.6	12.7%	63.2%	11.3%	12.8%	100.0%
2	Trinity	24.3	164.1	10.0	-	198.5	12.3%	82.7%	5.1%	0.0%	100.0%
3	Butte	40.6	104.6	24.0	9.7	178.9	22.7%	58.5%	13.4%	5.4%	100.0%
3	Colusa	-	47.4	33.4	34.4	115.1	0.0%	41.1%	29.0%	29.8%	100.0%
3	Glenn	1.1	75.1	3.6	30.1	109.9	1.0%	68.4%	3.3%	27.4%	100.0%
3	Nevada	2.1	83.3	45.9	0.9	132.3	1.6%	63.0%	34.7%	0.7%	100.0%
3	Sierra	-	68.1	30.2	-	98.3	0.0%	69.2%	30.8%	0.0%	100.0%
	Total	313.2	1,756.2	833.2	450.6	3,353.2	9.3%	52.4%	24.8%	13.4%	100.0%
Categories: Low 0 to 5% Medium 6% to 12% High 13% to 20% Very High greater than 20%											

Source: 2012 Data based on Caltrans truck volume information for 2010



For the purposes of the North State NSTEDS, the 2030 LOS analysis was based on the 2010 roadway system and 2010 travel lanes. While some roadway capacity improvements are included in the RTPs, it is difficult to identify the appropriate 2030 improvements. Also, if no roadway improvements are implemented, identifying the future levels of service on all roadway segments provides a valuable assessment of roadway needs.

Exhibits A7 and A8 (on the next two pages) summarize the centerline miles and the percentage of center-lane miles by LOS category for 2010 and 2030. As can be seen in the exhibits:

- In 2010, about one percent of the SHS mileage in the North State operated at LOS F on an average day. About 11 percent of the mileage operated at LOS D or worse.
- The number of centerline miles operating at LOS D or worse is projected to increase from about 350 miles (about 11 percent) to 918 miles (about 27 percent) between 2010 and 2030.
- The North State counties with the highest percentage of SHS operating at LOS D or worse are:
 - Lake County – 62 percent
 - Nevada County – 35 percent
 - Butte County – 31 percent.
- The following three counties are expected to have the highest increase in the percent of the highway system (by centerline mileage) operating at LOS D or worse:

	<u>2010</u>	<u>2035</u>
- Colusa County	2 percent	58 percent
- Glenn County	1 percent	35 percent
- Nevada County	35 percent	78 percent.

Use of Traffic Data for the North State NSTEDS

The traffic database, with its combination of traffic volume data and categorization of roadways by type, provides a wealth of information on the State Highway System serving the North State. The database can be used to help screen the SHS and identify roadway segments where improvements have a high potential to show economic development benefits. Such a screening process could use a combination of the data and factors in the database. For example, a screening process could involve identifying those roadway segments that meet the following criteria:

- The traffic volume on the segment exceeds a minimum threshold, potentially with separate thresholds for rural and urban roadways.
- The high truck volume or a truck percentage is in the high or very high category.
- The roadway segment currently operates at LOS D or worse conditions.

This example demonstrates how the data items available for all SHS segments could be combined to focus the identification of transportation projects for economic development. The choice of factors and thresholds used in a screening process is a policy issue. In addition, the tie of transportation projects to economic development needs to be established through economic development needs and initiatives, which are described further in the economic landscape chapter.



Exhibit A7: State Highway Mileage by LOS Category

Dist	County	2010 Level Of Service							2030 Level of Service						
		A	B	C	D	E	F	Total	A	B	C	D	E	F	Total
1	Del Norte	22.5	14.1	54.8	2.1	-	-	93.5	18.1	10.9	45.4	18.0	0.5	0.6	93.5
1	Humboldt	227.8	67.9	34.2	23.3	0.9	1.8	355.8	187.9	80.3	34.6	47.7	0.9	4.4	355.8
1	Lake	10.7	17.7	24.6	67.3	18.0	-	138.3	2.7	8.0	22.4	25.2	62.0	18.0	138.3
1	Mendocino	190.2	52.8	105.2	13.4	17.5	14.1	393.2	106.1	104.9	51.6	89.9	23.4	17.3	393.2
2	Lassen	198.7	46.8	58.0	-	-	-	303.6	100.3	107.5	39.0	22.0	34.8	-	303.6
2	Modoc	114.5	62.5	1.8	-	-	-	178.9	108.4	46.0	24.5	-	-	-	178.9
2	Plumas	76.0	83.8	10.0	12.4	-	-	182.3	38.4	115.6	15.9	12.4	-	-	182.3
2	Shasta	89.8	129.5	58.3	32.4	6.2	-	316.2	70.0	75.8	54.1	73.2	25.6	17.5	316.2
2	Siskiyou	212.3	113.6	20.0	1.7	3.5	-	351.0	191.0	109.0	38.5	7.4	5.2	-	351.0
2	Tehama	107.1	61.7	32.5	6.2	-	-	207.6	71.9	64.4	12.6	24.0	3.2	31.5	207.6
2	Trinity	69.5	48.8	55.9	22.6	1.7	-	198.5	69.5	48.8	25.1	54.5	0.6	-	198.5
3	Butte	46.6	47.7	28.5	40.1	10.9	5.1	178.9	26.3	28.4	36.1	18.2	53.6	16.3	178.9
3	Colusa	36.7	35.4	40.6	0.6	1.3	0.4	115.1	20.1	17.7	10.0	37.8	22.3	7.3	115.1
3	Glenn	67.6	31.3	9.7	1.3	-	-	109.9	36.6	32.4	2.8	31.3	5.5	1.3	109.9
3	Nevada	2.4	27.8	56.5	26.9	10.2	8.5	132.3	2.0	6.3	20.7	31.5	44.1	27.7	132.3
3	Sierra	63.5	34.7	-	-	-	-	98.3	63.1	33.6	-	-	1.6	-	98.3
	Total	1,536.0	876.2	590.6	250.2	70.1	30.1	3,353.2	1,112.3	889.3	433.1	493.3	283.3	141.9	3,353.2



Exhibit A8: Percentage of State Highway Mileage by LOS Category

Dist	County	Percent of Mileage													
		2010 Level Of Service							2030 Level of Service						
		A	B	C	D	E	F	D-F	A	B	C	D	E	F	D-F
1	Del Norte	24.1%	15.1%	58.6%	2.2%	0.0%	0.0%	2.2%	19.3%	11.6%	48.5%	19.3%	0.6%	0.7%	20.6%
1	Humboldt	64.0%	19.1%	9.6%	6.6%	0.2%	0.5%	7.3%	52.8%	22.6%	9.7%	13.4%	0.2%	1.2%	14.9%
1	Lake	7.7%	12.8%	17.8%	48.7%	13.0%	0.0%	61.7%	2.0%	5.8%	16.2%	18.3%	44.8%	13.0%	76.1%
1	Mendocino	48.4%	13.4%	26.7%	3.4%	4.4%	3.6%	11.4%	27.0%	26.7%	13.1%	22.9%	6.0%	4.4%	33.2%
2	Lassen	65.5%	15.4%	19.1%	0.0%	0.0%	0.0%	0.0%	33.0%	35.4%	12.8%	7.3%	11.5%	0.0%	18.7%
2	Modoc	64.0%	35.0%	1.0%	0.0%	0.0%	0.0%	0.0%	60.6%	25.7%	13.7%	0.0%	0.0%	0.0%	0.0%
2	Plumas	41.7%	46.0%	5.5%	6.8%	0.0%	0.0%	6.8%	21.1%	63.4%	8.7%	6.8%	0.0%	0.0%	6.8%
2	Shasta	28.4%	41.0%	18.4%	10.2%	2.0%	0.0%	12.2%	22.2%	24.0%	17.1%	23.1%	8.1%	5.5%	36.8%
2	Siskiyou	60.5%	32.4%	5.7%	0.5%	1.0%	0.0%	1.5%	54.4%	31.0%	11.0%	2.1%	1.5%	0.0%	3.6%
2	Tehama	51.6%	29.7%	15.6%	3.0%	0.0%	0.0%	3.0%	34.6%	31.0%	6.1%	11.6%	1.5%	15.2%	28.3%
2	Trinity	35.0%	24.6%	28.2%	11.4%	0.9%	0.0%	12.3%	35.0%	24.6%	12.6%	27.5%	0.3%	0.0%	27.8%
3	Butte	26.1%	26.6%	15.9%	22.4%	6.1%	2.9%	31.3%	14.7%	15.9%	20.2%	10.2%	29.9%	9.1%	49.2%
3	Colusa	31.9%	30.8%	35.3%	0.5%	1.1%	0.4%	2.0%	17.5%	15.4%	8.6%	32.8%	19.3%	6.4%	58.5%
3	Glenn	61.5%	28.5%	8.9%	1.2%	0.0%	0.0%	1.2%	33.3%	29.4%	2.6%	28.5%	5.0%	1.2%	34.7%
3	Nevada	1.8%	21.0%	42.7%	20.3%	7.7%	6.4%	34.5%	1.5%	4.7%	15.6%	23.8%	33.3%	20.9%	78.1%
3	Sierra	64.7%	35.3%	0.0%	0.0%	0.0%	0.0%	0.0%	64.2%	34.2%	0.0%	0.0%	1.6%	0.0%	1.6%
	Total	45.8%	26.1%	17.6%	7.5%	2.1%	0.9%	10.5%	33.2%	26.5%	12.9%	14.7%	8.4%	4.2%	27.4%



Appendix B: Existing (2010) Traffic Conditions

The next 22 pages provide the average day and peak month traffic volumes for each of the 870 SHS segments in the North State in 2010. They also provide existing truck volumes, the 2010 average day, and 2010 peak month levels of service estimated by the project team. In addition, the pages summarize the roadway categorization for 870 SHS segments in the North State under existing conditions. The pages are formatted as landscape 11 x 17 tables.



Traffic Database: Existing (2010) Conditions

Caltrans District	County	State Route	Segment					Caltrans 2010 Daily Volumes				Existing Roadway Characteristics							
			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Del Norte	101	North of	Humboldt Co Line	0	3.56	3.56	2,900	4,600			High	4	R	High	Rolling	53,940	0.05	A
1	Del Norte	101	South of	SR 169 SE	3.56	4.638	1.078	3,450	5,500	519	15.0%	High	2	R	Medium	Level	24,180	0.14	B
1	Del Norte	101	SR 169 SE	Requa Rd	4.638	8.176	3.538	4,500	6,800			High	2	R	Medium	Rolling	19,530	0.23	C
1	Del Norte	101	Requa Rd	New Hunter Creek Rd	8.176	8.804	0.628	4,500	6,800			High	2	R	Medium	Level	24,180	0.19	B
1	Del Norte	101	New Hunter Creek Rd	Trees of Mystery	8.804	10.87	2.066	4,400	6,600			High	2	R	Medium	Level	24,180	0.18	B
1	Del Norte	101	Trees of Mystery	Humboldt Rd/ Bluff Rd	10.87	23.77	12.9	4,800	7,300			High	2	R	Medium	Rolling	19,530	0.25	C
1	Del Norte	101	Humboldt Rd/ Bluff Rd	Sandmine Rd	23.77	24.41	0.64	4,600	7,200	533	11.6%	Medium	2	R	Medium	Level	25,220	0.18	B
1	Del Norte	101	Sandmine Rd	Crescent City/ Elk Valley Rd	24.41	25.84	1.43	11,400	14,600			Medium	2	R	Medium	Level	25,220	0.45	D
1	Del Norte	101	Crescent City/ Elk Valley Rd	Cresecent City/ Front St	25.84	26.211	0.371	22,300	27,500			Medium	4	U	Low	Level	31,040	0.72	C
1	Del Norte	101	Cresecent City/ Front St	Cresecent City/ 4th St	26.211	26.38	0.169	22,300	28,300			Medium	4	U	Low	Level	31,040	0.72	C
1	Del Norte	101	Cresecent City/ 4th St	Cresecent City/ 9th St	26.38	26.663	0.283	26,200	33,900			Medium	4	U	Low	Level	31,040	0.84	D
1	Del Norte	101	Cresecent City/ 9th St	Crescent City/ Northcrest Dr	26.663	27.01	0.347	29,500	38,500	1,475	5.0%	Medium	4	U	Medium	Level	34,920	0.84	D
1	Del Norte	101	Crescent City/ Northcrest Dr	Washington Blvd	27.01	27.872	0.862	15,900	20,700			Medium	4	U	Medium	Level	34,920	0.46	A
1	Del Norte	101	Washington Blvd	Route 199 NE	27.872	30.81	2.938	10,900	14,000			Medium	4	R	High	Level	62,080	0.18	A
1	Del Norte	101	Route 199 NE	Elk Valley Cross Rd	30.81	31.188	0.378	6,000	7,700	367	6.1%	Medium	4	R	High	Level	62,080	0.10	A
1	Del Norte	101	Elk Valley Cross Rd	Route 197 SE	31.188	36.31	5.122	6,900	8,800	614	8.9%	Medium	2	R	Medium	Level	25,220	0.27	C
1	Del Norte	101	Route 197 SE	Fred Haight Dr	36.31	39.83	3.52	6,500	8,400	389	6.0%	Medium	2	R	Medium	Level	25,220	0.26	C
1	Del Norte	101	Fred Haight Dr	Oregon State Line	39.83	46.492	6.662	7,000	8,500	679	9.7%	Medium	2	R	Medium	Level	25,220	0.28	C
1	Del Norte	169	US 101	Simpson Mill Rd	0	0.248	0.248	1,900	2,650	162	8.5%	Medium	2	R	Medium	Rolling	20,160	0.09	A
1	Del Norte	169	Simpson Mill Rd	Arrow Mills Rd	0.248	2.89	2.642	930	1,300			Medium	2	R	Medium	Rolling	20,160	0.05	A
1	Del Norte	169	Arrow Mills Rd	Klamath Glen/ Riffle Rd	2.89	3.521	0.631	930	1,300			Medium	2	R	Medium	Rolling	20,160	0.05	A
1	Del Norte	197	North of	Route 199	0	2.602	2.602	2,300	2,900	130	5.7%	Medium	2	R	Medium	Rolling	20,160	0.11	B
1	Del Norte	197	South of	US 101	2.602	7.08	4.478	1,800	2,350	222	12.3%	High	2	R	Medium	Rolling	19,530	0.09	A
1	Del Norte	199	US 101	Route 197	0	4.37	4.37	5,600	8,400			High	2	R	Medium	Rolling	19,530	0.29	C
1	Del Norte	199	Route 197	Hiouchi Village	4.37	5.9	1.53	4,600	6,600	718	15.6%	High	2	R	Medium	Rolling	19,530	0.24	C
1	Del Norte	199	Hiouchi Village	Gasquet	5.9	12.999	7.099	4,300	6,200			High	2	R	Medium	Rolling	19,530	0.22	B
1	Del Norte	199			12.999	19.791	6.792					High	4	R	Medium	Mountain	34,650		A
1	Del Norte	199	Gasquet	Oregon State Line	19.791	36.408	16.617	3,100	4,450	554	17.9%	High	2	R	Medium	Mountain	8,470	0.37	C
1	Humboldt	36	Alton, US 101	Alton, East Limits	0	0.298	0.298	4,300	5,300	785	18.3%	High	2	R	Medium	Rolling	19,530	0.22	B
1	Humboldt	36	Alton, East Limits	Rohnerville Red	0.298	2.811	2.513	4,300	5,400	789	18.3%	High	2	R	Medium	Rolling	19,530	0.22	B
1	Humboldt	36	Rohnerville Red	Hydesville, East Limits	2.811	3.27	0.459	4,200	5,700			Medium	2	R	Medium	Rolling	20,160	0.21	B
1	Humboldt	36	Hydesville, East Limits	Carlotta, East	3.27	7.54	4.27	4,000	4,800	163	4.1%	Medium	2	R	Medium	Level	25,220	0.16	B
1	Humboldt	36	Carlotta, East	Bridgeville, West Limits	7.54	23.709	16.169	2,100	2,500			Medium	2	R	Medium	Rolling	20,160	0.10	A
1	Humboldt	36	Bridgeville, West Limits	Bridgeville, Alderpoint Rd	23.709	23.916	0.207	1,400	1,800			Medium	2	R	Medium	Mountain	9,130	0.15	B
1	Humboldt	36	Bridgeville, Alderpoint Rd	Cobb, East Limits	23.916	43.955	20.039	1,300	1,650			Medium	2	R	Medium	Mountain	9,130	0.14	B
1	Humboldt	36	Cobb, East Limits	Trinity County Line	43.955	45.681	1.726	1,500	1,850			Medium	2	R	Medium	Rolling	20,160	0.07	A
1	Humboldt	96	Route 299	Standard Oil Ln	0	0.1	0.1	2,900	3,150	60	2.1%	Low	2	R	Medium	Mountain	9,790	0.30	C
1	Humboldt	96	Standard Oil Ln	Willow Creek North	0.1	3.59	3.49	1,900	2,050			Medium	2	R	Medium	Mountain	9,130	0.21	B
1	Humboldt	96	Willow Creek North	Hoopa South Limits	3.59	10.95	7.36	3,700	4,100			Medium	2	R	Medium	Mountain	9,130	0.41	D
1	Humboldt	96	Hoopa South Limits	Hoopa North Limits	10.95	12.83	1.88	3,500	3,900			Medium	2	R	Medium	Mountain	9,130	0.38	C



Traffic Database: Existing (2010) Conditions

Caltrans District	County	State Route	Segment					Caltrans 2010 Daily Volumes				Existing Roadway Characteristics							
			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Humboldt	96	Hoopa North Limits	Route 169	12.83	23.086	10.256	2,150	2,500	63	2.9%	Medium	2	R	Medium	Rolling	20,160	0.11	A
1	Humboldt	96	Route 169	Eyesees Rd	23.086	37.87	14.784	900	1,100			Medium	2	R	Medium	Rolling	20,160	0.04	A
1	Humboldt	96	Eyesees Rd	Orleans North	37.87	38.5	0.63	900	1,200			Medium	2	R	Medium	Mountain	9,130	0.10	A
1	Humboldt	96	Orleans North	Klamath River North	38.5	38.773	0.273	900	1,200			Medium	2	R	Medium	Mountain	9,130	0.10	A
1	Humboldt	96	Klamath River North	Siskiyou County Line	38.773	44.979	6.206	520	570			Medium	2	R	Medium	Mountain	9,130	0.06	A
1	Humboldt	101	Mendocino County Line	Richardson Grove	0	1.61	1.61	4,500	5,600			High	4	R	High	Rolling	53,940	0.08	A
1	Humboldt	101	Richardson Grove	Lake Benbow	1.61	8.6	6.99	4,500	5,600			High	4	R	High	Rolling	53,940	0.08	A
1	Humboldt	101	Lake Benbow	Garberville, Sprowel Creek	8.6	11.125	2.525	5,700	7,600	937	16.4%	High	4	R	High	Rolling	53,940	0.11	A
1	Humboldt	101	Garberville, Sprowel Creek	Redwood Drive	11.125	11.499	0.374	3,800	4,950	828	21.8%	Very High	4	R	High	Mountain	32,640	0.12	A
1	Humboldt	101	Redwood Drive	Dean Creek	11.499	14.313	2.814	5,000	6,400			High	4	R	High	Mountain	36,960	0.14	A
1	Humboldt	101	Dean Creek	Route 254 NE	14.313	17.907	3.594	6,700	8,700	969	14.5%	High	4	R	High	Rolling	53,940	0.12	A
1	Humboldt	101	Route 254 NE	French Road	17.907	22.435	4.528	5,900	7,700	984	16.7%	High	4	R	High	Rolling	53,940	0.11	A
1	Humboldt	101	French Road	Salmon Creek Rd	22.435	25.01	2.575	5,100	6,600			High	4	R	High	Rolling	53,940	0.09	A
1	Humboldt	101	Salmon Creek Rd	Route 254	25.01	27.936	2.926	5,200	6,800	887	17.1%	High	4	R	High	Rolling	53,940	0.10	A
1	Humboldt	101	Route 254	Weott	27.936	33.246	5.31	5,400	7,000	928	17.2%	High	4	R	High	Rolling	53,940	0.10	A
1	Humboldt	101	Weott	Route 254/ Dyerville Loop Rd	33.246	35.108	1.862	5,400	6,400			High	4	R	High	Rolling	53,940	0.10	A
1	Humboldt	101	Route 254/ Dyerville Loop Rd	So Fork Rd (Ave of the Giants)	35.108	35.698	0.59	5,400	7,000	1,190	22.0%	Very High	4	R	High	Rolling	52,200	0.10	A
1	Humboldt	101	So Fork Rd (Ave of the Giants)	Redcrest	35.698	39.667	3.969	5,600	7,000	1,064	19.0%	High	4	R	High	Level	59,520	0.09	A
1	Humboldt	101	Redcrest	Barkdull Rd	39.667	43.318	3.651	6,000	8,000			High	4	R	High	Level	59,520	0.10	A
1	Humboldt	101	Barkdull Rd	Route 254/ Jordan Rd	43.318	45.902	2.584	5,900	8,000			High	4	R	High	Level	59,520	0.10	A
1	Humboldt	101	Route 254/ Jordan Rd	Shively Rd	45.902	49.175	3.273	7,300	10,000			High	4	R	High	Level	59,520	0.12	A
1	Humboldt	101	Shively Rd	S Scotia Rd	49.175	50.585	1.41	7,500	10,000			High	4	R	High	Level	59,520	0.13	A
1	Humboldt	101	S Scotia Rd	Route 283/ N Scotia Rd	50.585	51.84	1.255	7,700	10,500			High	4	R	High	Level	59,520	0.13	A
1	Humboldt	101	Route 283/ N Scotia Rd	Rio Dell/ Davis Street	51.84	52.602	0.762	8,200	10,800			Medium	4	R	High	Level	62,080	0.13	A
1	Humboldt	101	Rio Dell/ Davis Street	Rio Dell/ Scenic Way	52.602	53.379	0.777	8,800	11,000			Medium	4	R	High	Level	62,080	0.14	A
1	Humboldt	101	Rio Dell/ Scenic Way	Route 36 E	53.379	57.69	4.311	13,000	16,300	1,234	9.5%	Medium	4	R	High	Level	62,080	0.21	A
1	Humboldt	101	Route 36 E	Drake Hill Rd	57.69	58.69	1	17,900	22,400	1,779	9.9%	Medium	4	R	High	Level	62,080	0.29	A
1	Humboldt	101	Drake Hill Rd	Fortuna/ Kenmar Rd	58.69	59.503	0.813	17,900	22,400			Medium	4	R	High	Level	62,080	0.29	A
1	Humboldt	101	Fortuna/ Kenmar Rd	12th St	59.503	60.493	0.99	13,000	15,300			Medium	4	R	High	Rolling	55,680	0.23	A
1	Humboldt	101	12th St	Main St	60.493	61.531	1.038	15,100	17,900			Medium	4	R	High	Rolling	55,680	0.27	A
1	Humboldt	101	Main St	Palmer Blvd	61.531	62.229	0.698	22,800	27,500			Medium	4	R	High	Rolling	55,680	0.41	B
1	Humboldt	101	Palmer Blvd	Finch Creek Rd	62.229	63.099	0.87	22,300	26,500			Medium	4	R	High	Rolling	55,680	0.40	B
1	Humboldt	101	Finch Creek Rd	Route 211/ Singley Rd	63.099	64.29	1.191	18,500	21,600	1,758	9.5%	Medium	4	R	High	Rolling	55,680	0.33	A
1	Humboldt	101	Route 211/ Singley Rd	Loleta Dr	64.29	65.947	1.657	20,700	22,600	1,704	8.2%	Medium	4	R	High	Rolling	55,680	0.37	B
1	Humboldt	101	Loleta Dr	Hookton Rd	65.947	68.207	2.26	21,000	22,600	1,802	8.6%	Medium	4	R	High	Rolling	55,680	0.38	B
1	Humboldt	101	Hookton Rd	Fields Landing	68.207	70.611	2.404	21,900	23,600			Medium	4	R	High	Level	62,080	0.35	B
1	Humboldt	101	Fields Landing	Orchard Ave	70.611	72.031	1.42	22,100	23,600			Medium	4	U	High	Level	76,630	0.29	A
1	Humboldt	101	Orchard Ave	King Salmon Ave	72.031	72.876	0.845	23,400	25,000			Medium	4	U	High	Level	76,630	0.31	A
1	Humboldt	101	King Salmon Ave	Spruce Point	72.876	73.719	0.843	24,800	26,500			Medium	4	U	High	Level	76,630	0.32	A
1	Humboldt	101	Spruce Point	Eureka/ Herrick Ave	73.719	74.78	1.061	31,000	33,000			Medium	4	U	High	Level	76,630	0.40	B
1	Humboldt	101	Eureka/ Herrick Ave	Eureka/ McCullen Ave	74.78	75.91	1.13	31,000	33,500			Medium	4	U	Medium	Level	34,920	0.89	D



Traffic Database: Existing (2010) Conditions

Caltrans District	County	State Route	Segment					Caltrans 2010 Daily Volumes				Existing Roadway Characteristics							
			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Humboldt	101	Eureka/ McCullen Ave	Eureka/ Harris St	75.91	76.33	0.42	34,500	38,500			Medium	4	U	Medium	Level	34,920	0.99	E
1	Humboldt	101	Eureka/ Harris St	Eureka/ Henderson St	76.33	76.65	0.32	38,800	40,500			Medium	4	U	Medium	Level	34,920	1.11	F
1	Humboldt	101	Eureka/ Henderson St	Eureka/ Wabash Ave	76.65	77.299	0.649	38,800	40,500			Medium	4	U	Medium	Level	34,920	1.11	F
1	Humboldt	101	Eureka/ Wabash Ave	Eureka/ Seventh St	77.299	77.85	0.551	38,000	39,000			Medium	4	U	Low	Level	31,040	1.22	F
1	Humboldt	101	Eureka/ Seventh St	Eureka/ Sixth St	77.85	77.91	0.06	39,500	41,500			Medium	4	U	Low	Level	31,040	1.27	F
1	Humboldt	101	Eureka/ Sixth St	Begin Couplet	77.91	78.026	0.116	34,500	36,000			Medium	4	U	Low	Level	31,040	1.11	F
1	Humboldt	101	Begin Couplet	G St	78.026	78.56	0.534	39,900	44,000			Medium	6	U	Low	Level	46,560	0.86	D
1	Humboldt	101	G St	I St	78.56	78.68	0.12	53,000	56,500			Medium	6	U	Low	Level	46,560	1.14	F
1	Humboldt	101	I St	Myrtle Ave	78.68	79.126	0.446	42,300	45,700			Medium	6	U	Low	Level	46,560	0.91	E
1	Humboldt	101	Myrtle Ave	Route 255 N	79.126	79.168	0.042	40,000	43,900			Medium	6	U	Low	Level	46,560	0.86	D
1	Humboldt	101	Route 255 N	End Couplet	79.168	79.967	0.799	34,000	36,500			Medium	6	U	Low	Level	46,560	0.73	C
1	Humboldt	101	End Couplet	Cole Ave	79.967	80.26	0.293	35,500	37,500			Medium	4	U	High	Level	76,630	0.46	B
1	Humboldt	101	Cole Ave	Airport Rd	80.26	80.84	0.58	35,500	37,500			Medium	4	U	High	Level	76,630	0.46	B
1	Humboldt	101	Airport Rd	Indianola Rd	80.84	82.68	1.84	36,000	38,000			Medium	4	R	High	Level	62,080	0.58	C
1	Humboldt	101	Indianola Rd	Arcata/ Bayside Rd	82.68	83.92	1.24	36,500	39,000			Medium	4	R	High	Level	62,080	0.59	C
1	Humboldt	101	Arcata/ Bayside Rd	Arcata/ G St	83.92	85.03	1.11	37,000	39,500			Medium	4	R	High	Level	62,080	0.60	C
1	Humboldt	101	Arcata/ G St	Arcata/ Route 255 S	85.03	85.83	0.8	37,000	39,500	1,691	4.6%	Low	4	U	High	Level	79,000	0.47	B
1	Humboldt	101	Arcata/ Route 255 S	Arcata/ 14th St	85.83	86.501	0.671	37,000	39,500	2,494	6.7%	Medium	4	U	High	Level	76,630	0.48	B
1	Humboldt	101	Arcata/ 14th St	Arcata/ Sunset Ave	86.501	86.942	0.441	34,000	36,000			Medium	4	U	High	Level	76,630	0.44	B
1	Humboldt	101	Arcata/ Sunset Ave	Arcata/ Route 299 E	86.942	88.272	1.33	42,500	46,000	2,495	5.9%	Medium	4	U	High	Level	76,630	0.55	C
1	Humboldt	101	Arcata/ Route 299 E	Arcata/ Giuntoli Ln	88.272	88.803	0.531	32,500	36,500	1,931	5.9%	Medium	4	R	High	Level	62,080	0.52	B
1	Humboldt	101	Arcata/ Giuntoli Ln	Route 200 E	88.803	90.134	1.331	33,500	37,500	2,087	6.2%	Medium	4	R	High	Rolling	55,680	0.60	C
1	Humboldt	101	Route 200 E	McKinleyville/ School Rd	90.134	91.473	1.339	18,700	22,300	1,010	5.4%	Medium	4	R	High	Rolling	55,680	0.34	A
1	Humboldt	101	McKinleyville/ School Rd	McKinleyville/ Murray Rd	91.473	93	1.527	16,200	19,300			Medium	4	R	High	Rolling	55,680	0.29	A
1	Humboldt	101	McKinleyville/ Murray Rd	McKinleyville/ Airport Rd	93	93.852	0.852	13,100	15,600			Medium	4	R	High	Rolling	55,680	0.24	A
1	Humboldt	101	McKinleyville/ Airport Rd	Central Ave	93.852	95.62	1.768	11,000	12,900			High	4	R	High	Rolling	53,940	0.20	A
1	Humboldt	101	Central Ave	Crannell Rd	95.62	97.02	1.4	10,700	12,500	1,951	18.2%	High	4	R	High	Rolling	53,940	0.20	A
1	Humboldt	101	Crannell Rd	Westhaven Dr	97.02	98.067	1.047	10,600	12,300	2,234	21.1%	Very High	4	R	High	Rolling	52,200	0.20	A
1	Humboldt	101	Westhaven Dr	6th Ave	98.067	98.355	0.288	8,600	11,400			High	4	R	High	Rolling	53,940	0.16	A
1	Humboldt	101	6th Ave	Trinidad Rd	98.355	100.705	2.35	8,900	11,800			High	4	R	High	Rolling	53,940	0.16	A
1	Humboldt	101	Trinidad Rd	Seawood Dr	100.705	103.378	2.673	4,700	6,300			High	4	R	High	Rolling	53,940	0.09	A
1	Humboldt	101	Seawood Dr	Patricks Point	103.378	106.069	2.691	4,500	6,100			High	4	R	High	Rolling	53,940	0.08	A
1	Humboldt	101	Patricks Point	Big Lagoon Park Dr	106.069	108.22	2.151	4,100	5,400			High	4	R	High	Rolling	53,940	0.08	A
1	Humboldt	101	Big Lagoon Park Dr	Georgia Pacific Rd	108.22	109.55	1.33	4,000	5,300			High	2	R	Medium	Rolling	19,530	0.20	B
1	Humboldt	101	Georgia Pacific Rd	Orick/ South Limits	109.55	120.4	10.85	4,000	5,300			High	2	R	Medium	Rolling	19,530	0.20	B
1	Humboldt	101	Orick/ South Limits	Orick/ North Limits	120.4	121.61	1.21	3,800	5,100			High	2	R	Medium	Level	24,180	0.16	B
1	Humboldt	101	Orick/ North Limits	Bald Hills Rd	121.61	122.25	0.64	3,700	5,100	516	13.9%	High	2	R	Medium	Level	24,180	0.15	B
1	Humboldt	101	Bald Hills Rd	Redwood Mill Rd	122.25	123.73	1.48	3,700	5,100	504	13.6%	High	2	R	Medium	Level	24,180	0.15	B
1	Humboldt	101	Redwood Mill Rd	Davidson/ Gold Beach	123.73	123.82	0.09	3,400	4,900			High	2	R	Medium	Level	24,180	0.14	B
1	Humboldt	101	Davidson/ Gold Beach	Prairie Creek State Park	123.82	126.098	2.278	3,100	4,600			High	2	R	Medium	Rolling	19,530	0.16	B
1	Humboldt	101	Prairie Creek State Park	Del Norte County Line	126.098	137.144	11.046	2,900	4,600			High	4	R	High	Rolling	53,940	0.05	A



Traffic Database: Existing (2010) Conditions

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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Humboldt	169	Wautek Village	Martins Ferry Bridge	13.2	29.95	16.75	320	440			Medium	2	R	Medium	Mountain	9,130	0.04	A
1	Humboldt	169	Martins Ferry Bridge	Weitchpec/ Route 96	29.95	33.84	3.89	370	510	29	7.8%	Medium	2	R	Medium	Rolling	20,160	0.02	A
1	Humboldt	200	US 101	Azaea Ave	0	1.287	1.287	2,500	2,700			Medium	2	R	Medium	Rolling	20,160	0.12	B
1	Humboldt	200	Azaea Ave	Route 299	1.287	2.681	1.394	1,900	2,100	95	5.0%	Medium	2	R	Medium	Rolling	20,160	0.09	A
1	Humboldt	211	Ferndale/ Ocean Ave	Ferndale/ Van Ness Ave	73.2	74.192	0.992	6,100	6,300	590	9.7%	Medium	2	U	Low	Level	14,550	0.42	A
1	Humboldt	211	Ferndale/ Van Ness Ave	Sage Rd	74.192	75.192	1	6,000	6,200			Medium	2	R	Medium	Level	25,220	0.24	C
1	Humboldt	211	Sage Rd	Goble/ Waddington Rd	75.192	76.688	1.496	5,500	5,700			Medium	2	R	Medium	Level	25,220	0.22	B
1	Humboldt	211	Goble/ Waddington Rd	US 101	76.688	79.161	2.473	5,100	5,300	822	16.1%	High	2	R	Medium	Level	24,180	0.21	B
1	Humboldt	254	US 101	Miranda Bridge Rd	0	4.837	4.837	700	1,400	37	5.3%	Medium	2	R	Medium	Rolling	20,160	0.03	A
1	Humboldt	254	Miranda Bridge Rd	US 101	4.837	12.327	7.49	1,550	3,150	37	2.4%	Low	2	R	Medium	Rolling	20,370	0.08	A
1	Humboldt	254	US 101	Burlington State Park	12.327	16.84	4.513	590	1,150			Medium	2	R	Medium	Rolling	20,160	0.03	A
1	Humboldt	254	Burlington State Park	Weott North	16.84	18.8	1.96	540	1,100			Medium	2	R	Medium	Rolling	20,160	0.03	A
1	Humboldt	254	Weott North	Englewood Park	18.8	24.21	5.41	500	800			Medium	2	R	Medium	Rolling	20,160	0.02	A
1	Humboldt	254	Englewood Park	US 101/ Jordan Rd	24.21	46.53	22.32	330	590			Medium	2	R	Medium	Rolling	20,160	0.02	A
1	Humboldt	255	Eureka/ US 101	Navy Base Rd	0	2.028	2.028	9,500	10,000	830	8.7%	Medium	2	U	Medium	Level	16,490	0.58	A
1	Humboldt	255	Navy Base Rd	Pacific Ave	2.028	3.657	1.629	7,200	7,600			Medium	2	U	Medium	Level	16,490	0.44	A
1	Humboldt	255	Pacific Ave	Young Ln	3.657	4.728	1.071	7,100	7,500			Medium	2	U	Medium	Level	16,490	0.43	A
1	Humboldt	255	Young Ln	Mad River Slough Bridge	4.728	5.13	0.402	7,000	7,400			Medium	2	U	Medium	Level	16,490	0.42	A
1	Humboldt	255	Mad River Slough Bridge	Arcata/ K St	5.13	8.352	3.222	7,500	7,900			Medium	2	U	Medium	Level	16,490	0.45	A
1	Humboldt	255	Arcata/ K St	Arcata/ H St	8.352	8.525	0.173	8,600	9,000			Medium	4	U	Medium	Level	34,920	0.25	A
1	Humboldt	255	Arcata/ H St	Arcata/ G St	8.525	8.584	0.059	10,200	10,500			Medium	4	U	Medium	Level	34,920	0.29	A
1	Humboldt	255	Arcata/ G St	US 101	8.584	8.803	0.219	15,500	15,900	953	6.1%	Medium	4	U	Medium	Level	34,920	0.44	A
1	Humboldt	283	US 101	US 101	0	0.356	0.356	2,150	2,300	75	3.5%	Low	2	U	Medium	Level	17,000	0.13	A
1	Humboldt	299	US 101	Giuntoli Ln	0	0.722	0.722	12,900	13,900	1,015	7.9%	Medium	4	U	High	Level	76,630	0.17	A
1	Humboldt	299	Giuntoli Ln	Route 200 W	0.722	1.802	1.08	11,700	12,900	1,026	8.8%	Medium	4	U	High	Level	76,630	0.15	A
1	Humboldt	299	Route 200 W	Essex Lane	1.802	2.92	1.118	13,100	14,400	1,074	8.2%	Medium	4	R	High	Rolling	55,680	0.24	A
1	Humboldt	299	Essex Lane	Glendale	2.92	4.036	1.116	11,400	12,500			Medium	4	R	High	Rolling	55,680	0.20	A
1	Humboldt	299	Glendale	Blue Lake Rd	4.036	5.451	1.415	10,100	11,100			Medium	2	R	Medium	Rolling	20,160	0.50	D
1	Humboldt	299	Blue Lake Rd	Elgar Rd	5.451	6.254	0.803	3,300	4,900	534	16.2%	High	2	R	Medium	Mountain	8,470	0.39	C
1	Humboldt	299	Elgar Rd	Buckley Rd	6.254	6.666	0.412	3,500	5,200			High	2	R	Medium	Mountain	8,470	0.41	D
1	Humboldt	299	Buckley Rd	Old Highway	6.666	7.139	0.473	3,500	5,200			High	2	R	Medium	Mountain	8,470	0.41	D
1	Humboldt	299	Old Highway	Bair Rd	7.139	19.05	11.911	3,400	4,700			High	2	R	Medium	Mountain	8,470	0.40	D
1	Humboldt	299	Bair Rd	Willow Creek/ Route 96 N	19.05	38.833	19.783	3,200	4,600	517	16.2%	High	2	R	Medium	Mountain	8,470	0.38	C
1	Humboldt	299	Willow Creek/ Route 96 N	Willow Creek/ River Rd	38.833	38.9	0.067	4,500	5,900	685	15.2%	High	2	R	Medium	Mountain	8,470	0.53	D
1	Humboldt	299	Willow Creek/ River Rd	Gambi Village East	38.9	41.86	2.96	4,600	6,100			High	2	R	Medium	Rolling	19,530	0.24	C
1	Humboldt	299	Gambi Village East	Trinity Co Line	41.86	43.035	1.175	3,800	4,600	730	19.2%	High	2	R	Medium	Rolling	19,530	0.19	B
1	Lake	20	Mendocino County Line	Scott Valley Rd	0	3.63	3.63	8,300	9,200			Medium	2	R	Medium	Rolling	20,160	0.41	D
1	Lake	20	Scott Valley Rd	Route 29 S	3.63	8.319	4.689	8,800	9,700	754	8.6%	Medium	2	R	Medium	Rolling	20,160	0.44	D
1	Lake	20	Route 29 S	Lucerne Cut-Off	8.319	12.199	3.88	8,400	9,000	838	10.0%	Medium	2	R	Medium	Level	25,220	0.33	C
1	Lake	20	Lucerne Cut-Off	Lucerne East/ Bell Ray Ave	12.199	18.53	6.331	11,800	13,000	925	7.8%	Medium	2	R	Medium	Level	25,220	0.47	D
1	Lake	20	Lucerne East/ Bell Ray Ave	Clearlake Oaks East	18.53	25.97	7.44	7,700	8,500			Medium	2	R	Medium	Level	25,220	0.31	C



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Lake	20	Clearlake Oaks East	Route 53 South	25.97	31.62	5.65	8,000	8,800	988	12.4%	High	2	R	Medium	Level	24,180	0.33	C
1	Lake	20	Route 53 South	Colusa Co Line	31.62	46.475	14.855	6,800	7,700			Medium	2	R	Medium	Mountain	9,130	0.74	E
1	Lake	29	Napa Co Line	Rancheria Rd	0	4.15	4.15	8,700	9,100			Medium	2	R	Medium	Rolling	20,160	0.43	D
1	Lake	29	Rancheria Rd	Dry Creek Cutoff	4.15	4.54	0.39	9,300	9,700			Medium	2	R	Medium	Rolling	20,160	0.46	D
1	Lake	29	Dry Creek Cutoff	Middletown/ Route 175	4.54	5.811	1.271	11,100	11,800	738	6.6%	Medium	2	R	Medium	Rolling	20,160	0.55	D
1	Lake	29	Middletown/ Route 175	Middletown/ Butts Cyn Rd	5.811	6.36	0.549	11,200	11,900			Medium	2	R	Medium	Rolling	20,160	0.56	D
1	Lake	29	Middletown/ Butts Cyn Rd	Hidden Valley/ Spruce Rd	6.36	11.124	4.764	11,500	12,300			Medium	2	R	Medium	Rolling	20,160	0.57	D
1	Lake	29	Hidden Valley/ Spruce Rd	Spruce Grove Rd	11.124	11.93	0.806	9,200	9,700			Medium	2	R	Medium	Rolling	20,160	0.46	D
1	Lake	29	Spruce Grove Rd	Route 53 N	11.124	20.31	9.186	10,900	11,800	725	6.7%	Medium	2	R	Medium	Rolling	20,160	0.54	D
1	Lake	29	Route 53 N	Seigler Cyn Rd	20.31	21.65	1.34	10,900	11,900			Medium	2	R	Medium	Rolling	20,160	0.54	D
1	Lake	29	Seigler Cyn Rd	Point Lakeview Dr	21.65	22.19	0.54	9,800	10,700			Medium	2	R	Medium	Rolling	20,160	0.49	D
1	Lake	29	Point Lakeview Dr	Route 281	22.19	27.89	5.7	8,800	9,600			Medium	2	R	Medium	Rolling	20,160	0.44	D
1	Lake	29	Route 281	Route 175	27.89	31.05	3.16	9,100	9,700	605	6.6%	Medium	2	R	Medium	Mountain	9,130	1.00	E
1	Lake	29	Route 175	Bottle Rock Rd	31.05	32.35	1.3	10,500	11,300			Medium	2	R	Medium	Rolling	20,160	0.52	D
1	Lake	29	Bottle Rock Rd	Kelseyville/ Main St	32.35	34.58	2.23	10,700	11,500			Medium	2	R	Medium	Rolling	20,160	0.53	D
1	Lake	29	Kelseyville/ Main St	Kelseyville/ Live Oak Dr	34.58	34.747	0.167	10,500	11,500			Medium	2	R	Medium	Level	25,220	0.42	D
1	Lake	29	Kelseyville/ Live Oak Dr	Kelseyville/ Bell Hill Rd	34.747	35.32	0.573	10,800	11,600			Medium	2	R	Medium	Level	25,220	0.43	D
1	Lake	29	Kelseyville/ Bell Hill Rd	Renfro Dr	35.32	36.289	0.969	9,300	9,900			Medium	2	R	Medium	Level	25,220	0.37	C
1	Lake	29	Renfro Dr	Argonaut Rd	36.289	37.669	1.38	12,600	13,500			Medium	2	R	Medium	Level	25,220	0.50	D
1	Lake	29	Argonaut Rd	Highland Springs Rd	37.669	38.592	0.923	12,400	13,300			Medium	2	R	Medium	Level	25,220	0.49	D
1	Lake	29	Highland Springs Rd	Route 175	38.592	40.14	1.548	12,500	12,900	831	6.6%	Medium	2	R	Medium	Level	25,220	0.50	D
1	Lake	29	Route 175	Lakeport Blvd	40.14	41.423	1.283	14,600	15,100			Medium	4	R	High	Level	62,080	0.24	A
1	Lake	29	Lakeport Blvd	11th St	41.423	42.677	1.254	14,600	15,800			Medium	4	R	High	Level	62,080	0.24	A
1	Lake	29	11th St	Park Way	42.677	45.145	2.468	12,200	12,600			Medium	4	R	High	Level	62,080	0.20	A
1	Lake	29	Park Way	Lucrene	45.145	47.849	2.704	9,700	9,900			Medium	4	R	High	Level	62,080	0.16	A
1	Lake	29	Lucrene	Route 20/ Upper Lake	47.849	52.539	4.69	5,900	6,200	392	6.6%	Medium	2	R	Medium	Level	25,220	0.23	C
1	Lake	53	Route 29/ Lower Lake	Lakeshore Dr/ Old Hwy	0	1.47	1.47	17,500	18,800			Medium	4	R	Medium	Level	63,050	0.28	A
1	Lake	53	Lakeshore Dr/ Old Hwy	Clearlake Highlands/ 40th Ave	1.47	2.96	1.49	17,500	19,000	875	5.0%	Medium	4	R	High	Rolling	55,680	0.31	A
1	Lake	53	Clearlake Highlands/ 40th Ave	Route 20	2.96	7.445	4.485	8,700	10,200	498	5.7%	Medium	2	R	Medium	Rolling	20,160	0.43	D
1	Lake	175	Mendocino County Line	Route 29	0	8.254	8.254	2,050	2,300	205	10.0%	Medium	2	R	Medium	Mountain	9,130	0.22	B
1	Lake	175	Route 29	Cobb Post Office	8.254	19.62	11.366	4,000	4,450	200	5.0%	Very High	2	R	Medium	Mountain	7,480	0.53	D
1	Lake	175	Cobb Post Office	Dry Creek Rd	19.62	26.54	6.92	3,600	4,000	215	6.0%	Medium	2	R	Medium	Rolling	20,160	0.18	B
1	Lake	175	Dry Creek Rd	Route 29	26.54	28.038	1.498	3,200	3,600	237	7.4%	Medium	2	R	Medium	Rolling	20,160	0.16	B
1	Lake	281	Begin State Highway	Point Lakeview Dr	14	15.06	1.06	3,900	4,350	106	2.7%	Low	2	R	Medium	Level	26,000	0.15	B
1	Lake	281	Point Lakeview Dr	Route 29	15.06	17	1.94	6,200	6,900	273	4.4%	Low	2	R	Medium	Level	26,000	0.24	C
1	Mendocino	1	Sonoma Co Line	Gualala North Limits	0	1.02	1.02	4,300	5,200			Low	2	R	Medium	Mountain	9,790	0.44	D
1	Mendocino	1	Gualala North Limits	Fish Rock Rd	1.02	5.09	4.07	2,550	3,400	115	4.5%	Low	2	R	Medium	Mountain	9,790	0.26	C
1	Mendocino	1	Fish Rock Rd	Point Arena/ South City Limits	5.09	14.692	9.602	1,950	2,550	98	5.0%	Medium	2	R	Medium	Mountain	9,130	0.21	B
1	Mendocino	1	Point Arena/ South City Limits	Point Arena/ Riverside Dr	14.692	15.18	0.488	3,200	4,000			Medium	2	R	Medium	Mountain	9,130	0.35	C
1	Mendocino	1	Point Arena/ Riverside Dr	Point Arena/ Lake St	15.18	15.74	0.56	2,650	3,350			Medium	2	R	Medium	Mountain	9,130	0.29	C
1	Mendocino	1	Point Arena/ Lake St	Point Arena/ North City Limits	15.74	16.166	0.426	2,150	2,600			Medium	2	R	Medium	Mountain	9,130	0.24	C



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Caltrans District	County	State Route	Segment					Caltrans 2010 Daily Volumes				Existing Roadway Characteristics							
			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Mendocino	1	Point Arena/ North City Limits	Mountain View Rd	16.166	19.34	3.174	2,150	2,600			Medium	2	R	Medium	Rolling	20,160	0.11	A
1	Mendocino	1	Mountain View Rd	Elk North Limits	19.34	34.9	15.56	1,650	1,950			Medium	2	R	Medium	Rolling	20,160	0.08	A
1	Mendocino	1	Elk North Limits	Route 128 East	34.9	40.273	5.373	1,100	1,400	124	11.3%	Medium	2	R	Medium	Mountain	9,130	0.12	B
1	Mendocino	1	Route 128 East	Little River/ Airport Rd	40.273	47.5	7.227	3,200	4,000	220	6.9%	Medium	2	R	Medium	Mountain	9,130	0.35	C
1	Mendocino	1	Little River/ Airport Rd	Comptche Ukiah Rd	47.5	50.04	2.54	6,150	7,600			Medium	2	R	Medium	Rolling	20,160	0.31	C
1	Mendocino	1	Comptche Ukiah Rd	Mendocino/ Jackson St	50.04	50.56	0.52	6,700	8,500			Medium	2	R	Medium	Rolling	20,160	0.33	C
1	Mendocino	1	Mendocino/ Jackson St	Mendocino/ Lansing St	50.56	51.49	0.93	7,900	9,900			Medium	2	R	Medium	Rolling	20,160	0.39	D
1	Mendocino	1	Mendocino/ Lansing St	Caspar North Limits	51.49	55.78	4.29	12,100	15,400			Medium	2	R	Medium	Rolling	20,160	0.60	D
1	Mendocino	1	Caspar North Limits	Gibney Ln	55.78	57.22	1.44	10,800	13,700			Medium	2	R	Medium	Level	25,220	0.43	D
1	Mendocino	1	Gibney Ln	Simpson Ln	57.22	59.25	2.03	11,100	14,000			Medium	2	R	Medium	Level	25,220	0.44	D
1	Mendocino	1	Simpson Ln	Route 20 East	59.25	59.803	0.553	19,600	23,000	880	4.5%	Low	2	R	Medium	Level	26,000	0.75	E
1	Mendocino	1	Route 20 East	Fort Bragg/ Cypress St	59.803	60.68	0.877	27,200	31,500	622	2.3%	Low	4	S	Medium	Level	36,000	0.76	D
1	Mendocino	1	Fort Bragg/ Cypress St	Fort Bragg/ Redwood Ave	60.68	61.471	0.791	19,100	22,100			Low	4	S	Medium	Level	36,000	0.53	C
1	Mendocino	1	Fort Bragg/ Redwood Ave	Fort Bragg/ North City Limits	61.471	62.36	0.889	18,000	21,200			Low	2	S	Medium	Level	17,000	1.06	F
1	Mendocino	1	Fort Bragg/ North City Limits	Airport Rd	62.36	62.8	0.44	8,100	10,000			Medium	2	S	Medium	Level	16,490	0.49	D
1	Mendocino	1	Airport Rd	Mackerricher State Park	62.8	64.858	2.058	6,500	8,000			Medium	2	S	Medium	Level	16,490	0.39	D
1	Mendocino	1	Mackerricher State Park	Westport North	64.858	77.66	12.802	1,400	2,050			Medium	2	R	Medium	Rolling	20,160	0.07	A
1	Mendocino	1	Westport North	Route 211 North	77.66	90.874	13.214	840	1,200	121	14.4%	High	2	R	Medium	Mountain	8,470	0.10	A
1	Mendocino	1	Route 211 North	Leggett/ Route 271	90.874	105.501	14.627	680	1,100			High	2	R	Medium	Mountain	8,470	0.08	A
1	Mendocino	1	Leggett/ Route 271	Leggett/ Route 101	105.501	105.578	0.077	630	1,000	95	15.1%	High	2	R	Medium	Mountain	8,470	0.07	A
1	Mendocino	20	Route 1/ Fort Bragg	South Harbor Dr	0	0.274	0.274	8,500	9,200	853	10.0%	Medium	2	R	Medium	Rolling	20,160	0.42	D
1	Mendocino	20	South Harbor Dr	Summer Ln	0.274	2.08	1.806	6,400	7,000			Medium	2	R	Medium	Rolling	20,160	0.32	C
1	Mendocino	20	Summer Ln	Chamberlain Creek	2.08	17.285	15.205	3,200	4,150			Medium	2	R	Medium	Mountain	9,130	0.35	C
1	Mendocino	20	Chamberlain Creek	Willits/ West Limits	17.285	32.437	15.152	2,700	3,700	404	15.0%	High	2	R	Medium	Mountain	8,470	0.32	C
1	Mendocino	20	Willits/ West Limits	Route 101 North	32.437	33.159	0.722	6,200	6,900	670	10.8%	Medium	2	S	Medium	Level	16,490	0.38	C
1	Mendocino	20	Route 101 South	Redwood Valley Rd	33.22	33.769	0.549	11,600	12,800			Medium	2	R	Medium	Mountain	9,130	1.27	F
1	Mendocino	20	Redwood Valley Rd	Potter Valley Rd	33.769	38.054	4.285	11,600	12,500			Medium	2	R	Medium	Mountain	9,130	1.27	F
1	Mendocino	20	Potter Valley Rd	Lake Co Line	38.054	44.114	6.06	10,500	11,500			Medium	2	R	Medium	Mountain	9,130	1.15	F
1	Mendocino	101	Sonoma Co Line	East Side Rd	0.103	9.17	9.067	14,500	16,200			Medium	4	R	High	Level	62,080	0.23	A
1	Mendocino	101	East Side Rd	Mountain House Rd	9.17	10.81	1.64	14,500	16,200			Medium	2	R	Medium	Rolling	20,160	0.72	E
1	Mendocino	101	Mountain House Rd	Route 175 East	10.81	10.89	0.08	14,600	16,300			Medium	2	R	Medium	Rolling	20,160	0.72	E
1	Mendocino	101	Route 175 East	El Roble	10.89	19.683	8.793	14,600	16,300	1,654	11.3%	Medium	4	R	High	Rolling	55,680	0.26	A
1	Mendocino	101	El Roble	Robinson	19.683	20.711	1.028	15,000	16,100			Medium	4	R	High	Level	62,080	0.24	A
1	Mendocino	101	Robinson	Route 253 West	20.711	21.59	0.879	15,600	17,200			Medium	4	U	High	Level	76,630	0.20	A
1	Mendocino	101	Route 253 West	Route 222 East	21.59	23.45	1.86	19,800	24,500	2,489	12.6%	High	4	U	High	Level	73,470	0.27	A
1	Mendocino	101	Route 222 East	Ukiah/ Gobbi St	23.45	24.062	0.612	21,700	27,500	2,422	11.2%	Medium	4	U	High	Level	76,630	0.28	A
1	Mendocino	101	Ukiah/ Gobbi St	Ukiah/ East Perkins St	24.062	24.527	0.465	22,300	30,000			Medium	4	U	High	Level	76,630	0.29	A
1	Mendocino	101	Ukiah/ East Perkins St	North State St	24.527	26.161	1.634	28,200	36,000			Medium	4	U	High	Level	76,630	0.37	B
1	Mendocino	101	North State St	Lake Mendocino Dr	26.161	27.41	1.249	28,200	36,000			Medium	4	U	High	Level	76,630	0.37	B
1	Mendocino	101	Lake Mendocino Dr	Moore St	27.41	30.434	3.024	27,100	34,500			Medium	4	U	High	Level	76,630	0.35	B
1	Mendocino	101	Moore St	Route 20 East	30.434	30.833	0.399	25,300	30,500	2,765	10.9%	Medium	4	U	High	Level	76,630	0.33	A



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Mendocino	101	Route 20 East	West Rd	30.833	32.626	1.793	19,600	21,400	1,884	9.6%	Medium	4	R	High	Rolling	55,680	0.35	B
1	Mendocino	101	West Rd	Willits South Limits	32.626	45.167	12.541	14,500	16,500			Medium	4	R	Medium	Rolling	55,680	0.26	A
1	Mendocino	101	Willits South Limits	Willits/ Route 20 West	45.167	46.363	1.196	20,000	22,900	2,020	10.1%	Medium	2	U	Medium	Level	16,490	1.21	F
1	Mendocino	101	Willits/ Route 20 West	Willits North Limits	46.363	47.517	1.154	22,900	25,500	1,264	5.5%	Medium	2	U	Medium	Level	16,490	1.39	F
1	Mendocino	101	Willits North Limits	Route 162 East	47.517	59.308	11.791	7,100	8,300	1,050	14.8%	High	2	R	Medium	Rolling	19,530	0.36	C
1	Mendocino	101	Route 162 East	Laytonville South	59.308	68.78	9.472	6,800	7,800	1,313	19.3%	High	4	R	Medium	Rolling	53,940	0.13	A
1	Mendocino	101	Laytonville South	Laytonville/ Branscomb Rd	68.78	69.49	0.71	6,850	7,800	942	13.8%	High	2	R	Medium	Level	24,180	0.28	C
1	Mendocino	101	Laytonville/ Branscomb Rd	Route 271/ Cummings Rd	69.49	84.687	15.197	6,200	7,700	941	15.2%	High	2	R	Medium	Mountain	8,470	0.73	E
1	Mendocino	101	Route 271/ Cummings Rd	Scandia Rd	84.687	89.565	4.878	6,200	7,700			High	4	R	High	Rolling	53,940	0.11	A
1	Mendocino	101	Scandia Rd	Route 1/ Leggett	89.565	91.245	1.68	6,100	7,500			High	4	R	High	Rolling	53,940	0.11	A
1	Mendocino	101	Route 1/ Leggett	Route 271 North/ Reynolds	91.245	101.895	10.65	6,100	7,500	925	15.2%	High	2	R	Medium	Rolling	19,530	0.31	C
1	Mendocino	101	Route 271 North/ Reynolds	Route 271/ Cooks Valley	101.895	103.818	1.923	6,100	7,500			High	4	R	High	Rolling	53,940	0.11	A
1	Mendocino	101	Route 271/ Cooks Valley	Humboldt Co Line	103.818	106.801	2.983	4,500	5,600	764	17.0%	High	4	R	High	Rolling	53,940	0.08	A
1	Mendocino	128	Route 1	Flynn Creek Rd	0	11.67	11.67	1,700	2,100	303	17.8%	High	2	R	Medium	Rolling	19,530	0.09	A
1	Mendocino	128	Flynn Creek Rd	Philo West Limits	11.67	22.59	10.92	4,600	5,700	300	6.5%	High	2	R	Medium	Rolling	19,530	0.24	C
1	Mendocino	128	Philo West Limits	Con Creek	22.59	26.84	4.25	4,200	5,100			Medium	2	R	Medium	Rolling	20,160	0.21	B
1	Mendocino	128	Con Creek	Boonville	26.84	28.09	1.25	4,300	5,100			Medium	2	R	Medium	Rolling	20,160	0.21	B
1	Mendocino	128	Boonville	Mountain View Rd	28.09	28.4	0.31	5,800	7,600			Medium	2	R	Medium	Rolling	20,160	0.29	C
1	Mendocino	128	Mountain View Rd	Route 253 East	28.4	29.576	1.176	4,600	6,200	238	5.2%	Medium	2	R	Medium	Rolling	20,160	0.23	B
1	Mendocino	128	Route 253 East	Yorkville West Limits	29.576	41.13	11.554	2,300	2,800	285	12.4%	High	2	R	Medium	Rolling	19,530	0.12	B
1	Mendocino	128	Yorkville West Limits	Sonoma Co Line	41.13	50.902	9.772	1,850	2,350			High	2	R	Medium	Rolling	19,530	0.09	A
1	Mendocino	162	Route 101	River Bar Rd	0	2	2	870	1,100	113	13.0%	High	2	R	Medium	Rolling	19,530	0.04	A
1	Mendocino	162	River Bar Rd	Co Road 322/ Dos Rios	2	15.307	13.307	850	950			High	2	R	Medium	Mountain	8,470	0.10	A
1	Mendocino	162	Co Road 322/ Dos Rios	Co Road 327/ Poohkiny	15.307	26.78	11.473	860	1,000			High	2	R	Medium	Mountain	8,470	0.10	A
1	Mendocino	162	Co Road 327/ Poohkiny	Wattenburg Rd	26.78	28.232	1.452	950	1,100			High	2	R	Medium	Mountain	8,470	0.11	B
1	Mendocino	162	Wattenburg Rd	East Lane	28.232	29.251	1.019	2,200	2,500			High	2	R	Medium	Mountain	8,470	0.26	C
1	Mendocino	162	East Lane	Mina Rd	29.251	30.768	1.517	2,600	2,950			High	2	R	Medium	Mountain	8,470	0.31	C
1	Mendocino	162	Mina Rd	Short Creek Rd	30.768	32.984	2.216	660	740			High	2	R	Medium	Mountain	8,470	0.08	A
1	Mendocino	162	Short Creek Rd	Near Short Creek Bridge	32.984	34.045	1.061	400	450	48	12.0%	High	2	R	Medium	Mountain	8,470	0.05	A
1	Mendocino	175	Route 101	East Side Rd (R)	0	0.77	0.77	4,900	6,100	385	7.9%	Medium	2	R	Medium	Level	25,220	0.19	B
1	Mendocino	175	East Side Rd (R)	East Side Rd (L)	0.77	1.14	0.37	4,700	5,900			Medium	2	R	Medium	Level	25,220	0.19	B
1	Mendocino	175	East Side Rd (L)	Younce Rd	1.14	2.79	1.65	3,500	3,950			Medium	2	R	Medium	Level	25,220	0.14	B
1	Mendocino	175	Younce Rd	Lake Co Line	2.79	9.85	7.06	1,800	2,000			Medium	2	R	Medium	Mountain	9,130	0.20	B
1	Mendocino	222	Route 101	Sanford Ranch Rd	0	1.56	1.56	8,000	8,300	280	3.5%	Low	2	R	Medium	Level	26,000	0.31	C
1	Mendocino	222	Sanford Ranch Rd	Talmage	1.56	2.153	0.593	5,000	5,200			Low	2	R	Medium	Level	26,000	0.19	B
1	Mendocino	253	Route 128	Route 101	0	17.18	17.18	2,600	2,800	281	10.8%	Medium	2	R	Medium	Mountain	9,130	0.28	C
1	Mendocino	271	Route 101	Old Route 101 Bridge	0.02	3.385	3.365	100	120	10	10.0%	Medium	2	R	Medium	Rolling	20,160	0.00	A
1	Mendocino	271	Old Route 101 Bridge	Route 101, Scandia	3.385	5.601	2.216	450	550	41	9.1%	Medium	2	R	Medium	Rolling	20,160	0.02	A
1	Mendocino	271	Route 101, Scandia	Temporary Junction Route 1	5.601	7.308	1.707	750	1,100	46	6.1%	Medium	2	R	Medium	Rolling	20,160	0.04	A
1	Mendocino	271	Temporary Junction Route 1	Route 101, Reynolds	7.308	17.048	9.74	80	100	10	12.5%	High	2	R	Medium	Rolling	19,530	0.00	A
1	Mendocino	271	Route 101, Reynolds	Route 101, Piercy	17.048	19.459	2.411	110	130			High	2	R	Medium	Rolling	19,530	0.01	A



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
1	Mendocino	271	Route 101, Piercy	Humboldt Co Line	19.459	22.721	3.262	170	200	22	12.9%	High	2	R	Medium	Rolling	19,530	0.01	A
2	Lassen	36	Plumas Co Line	Route 147	0	0.76	0.76	1,900	2,600	142	7.5%	Medium	2	R	Medium	Mountain	9,130	0.21	B
2	Lassen	36	Route 147	Westwood/ Dellwood St	0.76	3.1	2.34	2,200	2,950			Medium	2	R	Medium	Mountain	9,130	0.24	C
2	Lassen	36	Westwood/ Dellwood St	Westwood/ Co Road A21	3.1	3.706	0.606	2,300	3,000	172	7.5%	Medium	2	R	Medium	Mountain	9,130	0.25	C
2	Lassen	36	Westwood/ Co Road A21	Route 44 Northwest	3.706	19.196	15.49	2,400	3,100	191	8.0%	Medium	2	R	Medium	Mountain	9,130	0.26	C
2	Lassen	36	Route 44 Northwest	Eagle lake Rd	19.196	22.06	2.864	3,750	4,900	499	13.3%	High	2	R	Medium	Rolling	19,530	0.19	B
2	Lassen	36	Eagle lake Rd	Susanville/ Cottage St	22.06	24.46	2.4	5,600	6,800	409	7.3%	Medium	2	R	Medium	Rolling	20,160	0.28	C
2	Lassen	36	Susanville/ Cottage St	Susanville/ Pacific St	24.46	25.05	0.59	12,400	13,700			Medium	4	S	Low	Level	31,040	0.40	B
2	Lassen	36	Susanville/ Pacific St	Susanville/ Route 139 N	25.05	25.356	0.306	12,400	13,700	485	3.9%	Low	4	S	Low	Level	32,000	0.39	B
2	Lassen	36	Susanville/ Route 139 N	Riverside Dr	25.356	25.94	0.584	14,500	19,300	655	4.5%	Low	4	S	Low	Level	32,000	0.45	B
2	Lassen	36	Riverside Dr	Susanville/ Johnstonville	25.94	26.22	0.28	13,500	18,700			Low	4	S	Low	Level	32,000	0.42	B
2	Lassen	36	Susanville/ Johnstonville	Route 395	26.22	29.394	3.174	9,500	10,800	712	7.5%	Medium	2	R	Medium	Level	25,220	0.38	C
2	Lassen	44	Shasta Co Line	Co Road A21	0	19.29	19.29	1,650	2,550	274	16.6%	High	2	R	Medium	Rolling	19,530	0.08	A
2	Lassen	44	Co Road A21	Route 36	19.29	37.247	17.957	1,550	2,250	194	12.5%	High	2	R	Medium	Rolling	19,530	0.08	A
2	Lassen	70	Plumas Co Line	Route 395	0	3.889	3.889	3,950	5,200	201	5.1%	Medium	2	R	Medium	Level	25,220	0.16	B
2	Lassen	139	Route 36	Lassen College	0	1.42	1.42	6,700	7,000	65	1.0%	Low	2	R	Medium	Level	26,000	0.26	C
2	Lassen	139	Lassen College	Susanville Dump	1.42	2.34	0.92	1,700	2,850	50	2.9%	Medium	2	R	Medium	Level	25,220	0.07	A
2	Lassen	139	Susanville Dump	Co Road A-2	2.34	61.46	59.12	540	1,100	42	7.8%	Medium	2	R	Medium	Rolling	20,160	0.03	A
2	Lassen	139	Co Road A-2	Modoc Co Line	61.46	66.635	5.175	470	700	32	6.8%	Medium	2	R	Medium	Rolling	20,160	0.02	A
2	Lassen	147	Plumas Co Line	Co Road A21	0	1.14	1.14	1,550	2,850			Medium	2	R	Medium	Rolling	20,160	0.08	A
2	Lassen	147	Co Road A21	Route 36	1.14	1.79	0.65	820	1,150	50	6.1%	Medium	2	R	Medium	Rolling	20,160	0.04	A
2	Lassen	299	Shasta Co Line	Cemetery Rd	0	10.407	10.407	1,500	1,850	167	11.1%	Medium	2	R	Medium	Level	25,220	0.06	A
2	Lassen	299	Cemetery Rd	Lookout Rd	10.407	15.101	4.694	2,100	2,450			Medium	2	R	Medium	Level	25,220	0.08	A
2	Lassen	299	Lookout Rd	Modoc Co Line	15.101	25.635	10.534	1,050	1,300			Medium	2	R	Medium	Level	25,220	0.04	A
2	Lassen	395	Sierra Co Line	Route 70 West	0	4.615	4.615	8,800	10,600	898	10.2%	Medium	2	R	Medium	Level	25,220	0.35	C
2	Lassen	395	Route 70 West	Garnier Rd	4.615	29.84	25.225	5,300	6,800	695	13.1%	High	2	R	Medium	Level	24,180	0.22	B
2	Lassen	395	Garnier Rd	Standish Rd	29.84	51.87	22.03	5,600	6,700	664	11.9%	High	2	R	Medium	Level	24,180	0.23	C
2	Lassen	395	Standish Rd	Janesville Rd	51.87	55.18	3.31	5,600	8,300	573	10.2%	Medium	2	R	Medium	Level	25,220	0.22	B
2	Lassen	395	Janesville Rd	Route 36 West	55.18	61.094	5.914	7,800	9,200	810	10.4%	Medium	2	R	Medium	Level	25,220	0.31	C
2	Lassen	395	Route 36 West	Standish/ Road A-3	61.094	70.12	9.026	4,000	4,250	225	5.6%	Medium	2	R	Medium	Level	25,220	0.16	B
2	Lassen	395	Standish/ Road A-3	Litchfield/ Road A-27	70.12	72.943	2.823	1,400	1,700	328	23.4%	Very High	2	R	Medium	Level	23,400	0.06	A
2	Lassen	395	Litchfield/ Road A-27	Wendel Rd	72.943	76.927	3.984	1,100	1,350	264	24.0%	Very High	2	R	Medium	Level	23,400	0.05	A
2	Lassen	395	Wendel Rd	Ravendale	76.927	108.455	31.528	1,150	1,450	265	23.0%	Very High	2	R	Medium	Level	23,400	0.05	A
2	Lassen	395	Ravendale	Madeline/ Ash Valley	108.455	129.195	20.74	1,100	1,450	264	24.0%	Very High	2	R	Medium	Level	23,400	0.05	A
2	Lassen	395	Madeline/ Ash Valley	Modoc Co Line	129.195	138.979	9.784	1,000	1,350			Very High	2	R	Medium	Level	23,400	0.04	A
2	Modoc	139	Lassen Co Line	Route 299/ Adin	0	0.23	0.23	450	630	32	7.1%	Medium	2	R	Medium	Level	25,220	0.02	A
2	Modoc	139	Canby	Lookout Hackamore Rd	0.23	17.35	17.12	910	1,250			Very High	2	R	Medium	Level	23,400	0.04	A
2	Modoc	139	Lookout Hackamore Rd	Co Road 114/ Malin	17.35	40.45	23.1	1,250	1,600	312	25.0%	Very High	2	R	Medium	Level	23,400	0.05	A
2	Modoc	139	Co Road 114/ Malin	Newell	40.45	44.505	4.055	2,100	2,200	376	17.9%	High	2	R	Medium	Level	24,180	0.09	A
2	Modoc	139	Newell	Siskiyou Co Line	44.505	50.684	6.179	2,400	2,850			High	2	R	Medium	Level	24,180	0.10	A
2	Modoc	299	Lassen Co Line	Route 139 S/ Adin	0	0.332	0.332	1,000	1,200	116	11.6%	Medium	2	R	Medium	Level	25,220	0.04	A



Traffic Database: Existing (2010) Conditions

Caltrans District	County	State Route	Segment					Caltrans 2010 Daily Volumes				Existing Roadway Characteristics							
			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
2	Modoc	299	Route 139 S/ Adin	Route 139 N/ Canby	0.332	21.749	21.417	1,450	1,650	160	11.0%	Medium	2	R	Medium	Mountain	9,130	0.16	B
2	Modoc	299	Route 139 N/ Canby	Canby Ranger Station	21.749	22.435	0.686	1,700	2,200	358	21.1%	Very High	2	R	Medium	Mountain	7,480	0.23	B
2	Modoc	299	Canby Ranger Station	Alturas/ Juniper St	22.435	40.276	17.841	2,700	3,050	363	13.4%	High	2	R	Medium	Rolling	19,530	0.14	B
2	Modoc	299	Alturas/ Juniper St	Route 395	40.276	40.63	0.354	4,300	4,850	503	11.7%	Medium	2	R	Medium	Rolling	20,160	0.21	B
2	Modoc	299	Route 395	Surprise Valley Rd	40.63	57.354	16.724	1,400	1,700	111	7.9%	Medium	2	R	Medium	Mountain	9,130	0.15	B
2	Modoc	299	Surprise Valley Rd	Nevada State Line	57.354	66.632	9.278	300	340	32	10.7%	Medium	2	R	Medium	Level	25,220	0.01	A
2	Modoc	395	Lassen Co Line	Likely/ Jess Valley	0	3.216	3.216	980	1,200	270	27.6%	Very High	2	R	Medium	Level	23,400	0.04	A
2	Modoc	395	Likely/ Jess Valley	Glenn St	3.216	20.975	17.759	1,250	1,800	284	22.7%	Very High	2	R	Medium	Level	23,400	0.05	A
2	Modoc	395	Glenn St	Alturas/ First St	20.975	22.07	1.095	7,000	7,800	293	4.2%	High	2	R	Medium	Level	24,180	0.29	C
2	Modoc	395	Alturas/ First St	Route 299 West	22.07	22.764	0.694	7,000	8,100	306	4.4%	Medium	2	R	Medium	Level	25,220	0.28	C
2	Modoc	395	Route 299 West	Alturas Maintenance Station	22.764	23.04	0.276	4,800	5,600	241	5.0%	Medium	2	R	Medium	Level	25,220	0.19	B
2	Modoc	395	Alturas Maintenance Station	Route 299 East	23.04	28.285	5.245	2,950	3,700	186	6.3%	Medium	2	R	Medium	Level	25,220	0.12	B
2	Modoc	395	Route 299 East	Oregon State Line	28.285	61.563	33.278	910	1,050	103	11.3%	Medium	2	R	Medium	Level	25,220	0.04	A
2	Plumas	36	Tehama Co Line	Route 89	0	6.287	6.287	1,800	3,250	196	10.9%	Medium	2	R	Medium	Rolling	20,160	0.09	A
2	Plumas	36	Route 89	Farrar Dr	6.287	8.08	1.793	3,400	6,000	362	10.6%	Medium	2	R	Medium	Level	25,220	0.13	B
2	Plumas	36	Farrar Dr	Feather River Bridge	8.08	8.84	0.76	5,100	7,500			Medium	2	R	Medium	Level	25,220	0.20	B
2	Plumas	36	Feather River Bridge	Melissa Ave	8.84	9.18	0.34	5,100	7,500	237	4.6%	Low	2	R	Medium	Level	26,000	0.20	B
2	Plumas	36	Melissa Ave	Big Springs Rd	9.18	13.93	4.75	4,750	5,300			Medium	2	R	Medium	Level	25,220	0.19	B
2	Plumas	36	Big Springs Rd	Lassen Co Line	13.93	18.421	4.491	1,900	2,600	142	7.5%	Medium	2	R	Medium	Rolling	20,160	0.09	A
2	Plumas	49	Sierra Co Line	Dyson Ln	0	3.92	3.92	880	1,200	56	6.4%	Medium	2	R	Medium	Level	25,220	0.03	A
2	Plumas	49	Dyson Ln	Route 70	3.92	7.5	3.58	1,100	1,350	58	5.3%	Medium	2	R	Medium	Level	25,220	0.04	A
2	Plumas	70	Butte Co Line	Route 89 North	0	33.026	33.026	1,250	1,800	112	9.0%	Medium	2	R	Medium	Mountain	9,130	0.14	B
2	Plumas	70	Route 89 North	Co Hospital Rd	33.026	41.97	8.944	3,800	3,950	208	5.5%	Medium	2	R	Medium	Mountain	9,130	0.42	D
2	Plumas	70	Co Hospital Rd	Begin Couplet	41.97	43.086	1.116	5,900	7,100	256	4.3%	Low	2	S	Medium	Level	17,000	0.35	C
2	Plumas	70	Begin Couplet	Railway Ave	43.086	43.303	0.217	6,500	8,650			Low	2	S	Medium	Level	17,000	0.38	C
2	Plumas	70	Railway Ave	End Couplet	43.303	43.7	0.397	8,200	12,400			Low	2	S	Medium	Level	17,000	0.48	D
2	Plumas	70	End Couplet	Quincy Junction Rd	43.7	43.785	0.085	8,200	12,400	244	3.0%	Low	2	S	Medium	Level	17,000	0.48	D
2	Plumas	70	Quincy Junction Rd	Quincy Highway Maint Station	43.785	45.245	1.46	8,800	9,900	210	2.4%	Low	2	S	Medium	Level	17,000	0.52	D
2	Plumas	70	Quincy Highway Maint Station	LaPorte Rd	45.245	46.77	1.525	8,500	9,500			Low	2	S	Medium	Level	17,000	0.50	D
2	Plumas	70	LaPorte Rd	Route 89 South	46.77	66.628	19.858	3,200	4,400	185	5.8%	Medium	2	R	Medium	Rolling	20,160	0.16	B
2	Plumas	70	Route 89 South	Portola West Limit	66.628	75.332	8.704	5,100	7,300	177	3.5%	Medium	2	R	Medium	Rolling	20,160	0.25	C
2	Plumas	70	Portola West Limit	Gulling St	75.332	75.96	0.628	7,000	8,300	224	3.2%	Low	4	S	Medium	Level	36,000	0.19	A
2	Plumas	70	Gulling St	Meadow Way	75.96	76.6	0.64	6,300	8,000			Low	4	S	Medium	Level	36,000	0.18	A
2	Plumas	70	Meadow Way	Beckwourth Calpine Rd	76.6	80.315	3.715	3,900	4,500	196	5.0%	Medium	2	R	Medium	Rolling	20,160	0.19	B
2	Plumas	70	Beckwourth Calpine Rd	Route 49 South	80.315	92.065	11.75	3,250	4,350	159	4.9%	Low	2	R	Medium	Rolling	20,370	0.16	B
2	Plumas	70	Route 49 South	Route 284 North	92.065	94.28	2.215	3,900	5,100	178	4.6%	Low	2	R	Medium	Level	26,000	0.15	B
2	Plumas	70	Route 284 North	Lassen Co Line	94.28	95.964	1.684	3,950	5,200	201	5.1%	Medium	2	R	Medium	Level	25,220	0.16	B
2	Plumas	89	Sierra Co Line	Gold Lake Hwy	0	7.08	7.08	1,400	2,200	51	3.6%	Medium	2	R	Medium	Rolling	20,160	0.07	A
2	Plumas	89	Gold Lake Hwy	Route 70	7.08	8.71	1.63	2,000	3,250	40	2.0%	Low	2	R	Medium	Level	26,000	0.08	A
2	Plumas	89	Route 70	Arlington Rd	8.71	14.84	6.13	2,050	2,750	192	9.4%	Medium	2	R	Medium	Rolling	20,160	0.10	A
2	Plumas	89	Arlington Rd	Stampfli Ln (Engle Mine)	14.84	16.56	1.72	2,100	2,950	274	13.0%	High	2	R	Medium	Rolling	19,530	0.11	A



Traffic Database: Existing (2010) Conditions

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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
2	Plumas	89	Stampfli Ln (Engle Mine)	Greenville/ Grand St	16.56	20.22	3.66	2,900	3,500			Medium	2	R	Medium	Rolling	20,160	0.14	B
2	Plumas	89	Greenville/ Grand St	Greenville/ Beckwourth	20.22	20.47	0.25	2,900	3,500	271	9.3%	Medium	2	R	Medium	Level	25,220	0.11	B
2	Plumas	89	Greenville/ Beckwourth	Route 147 North	20.47	29.589	9.119	2,100	3,400	197	9.4%	High	2	R	Medium	Rolling	19,530	0.11	A
2	Plumas	89	Route 147 North	Almanor	29.589	36.655	7.066	1,150	1,850	152	13.2%	High	2	R	Medium	Rolling	19,530	0.06	A
2	Plumas	89	Almanor	Route 36	36.655	42.185	5.53	1,700	3,050	219	12.9%	High	2	R	Medium	Level	24,180	0.07	A
2	Plumas	147	Canyon Dam/ Route 89	Big Springs Rd	0	7.37	7.37	1,200	1,900	50	4.2%	Medium	2	R	Medium	Rolling	20,160	0.06	A
2	Plumas	147	Big Springs Rd	Lassen Co Line	7.37	9.891	2.521	1,400	2,300	140	10.0%	Medium	2	R	Medium	Rolling	20,160	0.07	A
2	Plumas	284	Route 70	Frenchman Reservoir	0	8.302	8.302	620	1,000	16	2.6%	Low	2	R	Medium	Rolling	20,370	0.03	A
2	Shasta	5	Tehama Co Line	Fourth St	0	0.909	0.909	43,000	48,000	7,237	16.8%	High	4	R	High	Rolling	53,940	0.80	D
2	Shasta	5	Fourth St	Cottonwood North Limit	0.909	1.907	0.998	45,500	50,000	7,230	15.9%	High	4	R	High	Rolling	53,940	0.84	D
2	Shasta	5	Cottonwood North Limit	Route 273 North	1.907	3.83	1.923	51,000	54,000	7,303	14.3%	High	4	R	High	Rolling	53,940	0.95	E
2	Shasta	5	Route 273 North	Anderson/ Deschutes Rd	3.83	4.289	0.459	40,500	44,500	6,634	16.4%	High	4	R	High	Level	59,520	0.68	C
2	Shasta	5	Anderson/ Deschutes Rd	Anderson/ Balls Ferry Rd	4.289	5.294	1.005	50,000	54,000	6,320	12.6%	High	4	U	High	Level	73,470	0.68	C
2	Shasta	5	Anderson/ Balls Ferry Rd	Anderson/ North St	5.294	5.64	0.346	41,500	45,500	5,134	12.4%	High	4	U	High	Level	73,470	0.56	C
2	Shasta	5	Anderson/ North St	Riverside Ave	5.64	6.743	1.103	49,500	56,000	6,173	12.5%	High	4	U	High	Level	73,470	0.67	C
2	Shasta	5	Riverside Ave	Knighton Rd	6.743	9.772	3.029	49,500	56,000	6,282	12.7%	High	4	U	High	Level	73,470	0.67	C
2	Shasta	5	Knighton Rd	Churn Creek Rd	9.772	12.152	2.38	51,000	55,000			High	4	U	High	Level	73,470	0.69	C
2	Shasta	5	Churn Creek Rd	Cypress Ave	12.152	14.459	2.307	64,000	55,000			High	4	U	High	Level	73,470	0.87	D
2	Shasta	5	Cypress Ave	Redding/ Route 44	14.459	15.448	0.989	64,000	69,000			High	4	U	High	Level	73,470	0.87	D
2	Shasta	5	Redding/ Route 44	Redding/ Route 299	15.448	17.322	1.874	52,000	58,000			High	4	U	High	Level	73,470	0.71	C
2	Shasta	5	Redding/ Route 299	Redding/ Twin View Bl	17.322	18.068	0.746	39,000	46,000	6,534	16.8%	High	4	U	High	Level	73,470	0.53	C
2	Shasta	5	Redding/ Twin View Bl	Redding/ Route 273	18.068	18.481	0.413	33,000	40,000	6,068	18.4%	High	4	U	High	Level	73,470	0.45	B
2	Shasta	5	Redding/ Route 273	Redding/ Oasis Rd	18.481	19.402	0.921	41,000	47,500	5,872	14.3%	High	4	U	High	Level	73,470	0.56	C
2	Shasta	5	Redding/ Oasis Rd	Pine Grove Ave	19.402	20.995	1.593	33,500	40,000	5,651	16.9%	High	4	R	High	Level	59,520	0.56	C
2	Shasta	5	Pine Grove Ave	Route 151 West	20.995	22.144	1.149	29,500	36,000	5,504	18.7%	High	4	R	High	Level	59,520	0.50	B
2	Shasta	5	Route 151 West	Mountain Gate	22.144	24.082	1.938	22,100	28,500	5,406	24.5%	Very High	4	R	High	Level	57,600	0.38	B
2	Shasta	5	Mountain Gate	Fawndale Rd	24.082	26.035	1.953	20,500	27,000	5,210	25.4%	Very High	4	R	High	Rolling	52,200	0.39	B
2	Shasta	5	Fawndale Rd	Bridge Bay Rd	26.035	27.632	1.597	19,700	25,500	5,208	26.4%	Very High	4	R	High	Rolling	52,200	0.38	B
2	Shasta	5	Bridge Bay Rd	Begin Split Alignment	27.632	28.906	1.274	19,300	25,500	5,208	27.0%	Very High	4	R	High	Mountain	32,640	0.59	C
2	Shasta	5	Begin Split Alignment	Turntable Bay Rd	28.906	29.285	0.379	19,300	24,500			Very High	4	R	High	Mountain	32,640	0.59	C
2	Shasta	5	Turntable Bay Rd	O'Brien	29.285	32.159	2.874	19,300	24,500			Very High	4	R	High	Mountain	32,640	0.59	C
2	Shasta	5	O'Brien	End Split Alignment	32.159	34.355	2.196	18,900	24,300			Very High	4	R	High	Mountain	32,640	0.58	C
2	Shasta	5	End Split Alignment	Gilman Rd	34.355	36.825	2.47	18,400	24,300			Very High	4	R	High	Mountain	32,640	0.56	C
2	Shasta	5	Gilman Rd	Antlers Rd	36.825	41.053	4.228	17,900	23,600	5,205	29.1%	Very High	4	R	High	Mountain	32,640	0.55	B
2	Shasta	5	Antlers Rd	Lakehead	41.053	42.316	1.263	17,400	23,000	5,177	29.8%	Very High	4	R	High	Mountain	32,640	0.53	B
2	Shasta	5	Lakehead	Vollmers	42.316	45.953	3.637	17,200	22,800	5,195	30.2%	Very High	4	R	High	Mountain	32,640	0.53	B
2	Shasta	5	Vollmers	Moine Rd	45.953	49.147	3.194	17,200	22,700			Very High	4	R	High	Mountain	32,640	0.53	B
2	Shasta	5	Moine Rd	Pollard Flat	49.147	50.813	1.666	17,200	22,700			Very High	4	R	High	Mountain	32,640	0.53	B
2	Shasta	5	Pollard Flat	Gibson Rd	50.813	52.9	2.087	17,000	22,500			Very High	4	R	High	Mountain	32,640	0.52	B
2	Shasta	5	Gibson Rd	Sims Rd	52.9	57.41	4.51	17,000	22,500	5,195	30.6%	Very High	4	R	High	Mountain	32,640	0.52	B
2	Shasta	5	Sims Rd	Flume Creek Rd	57.41	59.35	1.94	17,100	22,500	5,195	30.4%	Very High	4	R	High	Mountain	32,640	0.52	B



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
2	Shasta	5	Flume Creek Rd	Conant Rd	59.35	60.508	1.158	17,100	22,500	5,195	30.4%	Very High	4	R	High	Mountain	32,640	0.52	B
2	Shasta	5	Conant Rd	Sweetbriar Ave	60.508	61.745	1.237	17,100	22,500	5,195	30.4%	Very High	4	R	High	Mountain	32,640	0.52	B
2	Shasta	5	Sweetbriar Ave	Castella	61.745	63.583	1.838	17,100	22,500	5,195	30.4%	Very High	4	R	High	Mountain	32,640	0.52	B
2	Shasta	5	Castella	Soda Creek Rd	63.583	65.413	1.83	17,300	22,500	5,202	30.1%	Very High	4	R	High	Mountain	32,640	0.53	B
2	Shasta	5	Soda Creek Rd	Castle Crags Dr	65.413	66.842	1.429	17,500	22,900	5,210	29.8%	Very High	4	R	High	Mountain	32,640	0.54	B
2	Shasta	5	Castle Crags Dr	Siskiyou Co Line	66.842	67.019	0.177	18,000	23,300	5,215	29.0%	Very High	4	R	High	Mountain	32,640	0.55	B
2	Shasta	36	Trinity Co Line	Platina Rd	0	8.87	8.87	650	680	22	3.4%	Medium	2	R	Medium	Mountain	9,130	0.07	A
2	Shasta	36	Platina Rd	Tehama Co Line	8.87	11.928	3.058	570	560	43	7.5%	Medium	2	R	Medium	Mountain	9,130	0.06	A
2	Shasta	44	Begin Route 44	Route 273 South	0	0.168	0.168	32,200	39,100			Low	4	U	High	Level	79,000	0.41	B
2	Shasta	44	Route 273 South	End Couplet	0.168	0.54	0.372	37,500	41,000	300	0.8%	Low	4	U	High	Level	79,000	0.47	B
2	Shasta	44	End Couplet	Park Marina Dr/ Auditorium Dr	0.54	0.852	0.312	37,500	41,000			Low	4	U	High	Level	79,000	0.47	B
2	Shasta	44	Park Marina Dr/ Auditorium Dr	Interstate 5	0.852	0	-0.852	49,000	51,000	348	0.7%	Low	4	U	High	Level	79,000	0.62	C
2	Shasta	44	Interstate 5	Hilltop Dr	0	0.134	0.134	48,000	50,000	566	1.2%	Low	4	U	High	Level	79,000	0.61	C
2	Shasta	44	Hilltop Dr	Victor Ave	0.134	1.239	1.105	33,500	35,500	566	1.7%	Low	4	U	High	Level	79,000	0.42	B
2	Shasta	44	Victor Ave	Shasta View Dr	1.239	2.131	0.892	32,500	34,000	570	1.8%	Low	4	U	High	Level	79,000	0.41	B
2	Shasta	44	Shasta View Dr	Airport Rd	2.131	3.627	1.496	20,500	24,600	554	2.7%	Low	4	U	High	Level	79,000	0.26	A
2	Shasta	44	Airport Rd	Deschutes Rd	3.627	7	3.373	15,800	17,700	1,270	8.0%	Medium	2	R	Medium	Level	25,220	0.63	E
2	Shasta	44	Deschutes Rd	Millville Plains	7	10.77	3.77	7,900	8,700			Medium	2	R	Medium	Level	25,220	0.31	C
2	Shasta	44	Millville Plains	Dersch Rd	10.77	19.01	8.24	4,000	5,200	234	5.9%	Medium	2	R	Medium	Level	25,220	0.16	B
2	Shasta	44	Dersch Rd	Shingletown	19.01	27.83	8.82	4,650	5,200	289	6.2%	Medium	2	R	Medium	Rolling	20,160	0.23	C
2	Shasta	44	Shingletown	Viola	27.83	42.818	14.988	3,700	4,700			Medium	2	R	Medium	Level	25,220	0.15	B
2	Shasta	44	Viola	Lassen Volcanic Nat'l Park	42.818	49.353	6.535	1,200	1,950	92	7.7%	Medium	2	R	Medium	Rolling	20,160	0.06	A
2	Shasta	44	Lassen Volcanic Nat'l Park	Route 89	49.353	62.685	13.332	1,200	1,950			Medium	2	R	Medium	Mountain	9,130	0.13	B
2	Shasta	44	Route 89	Lassen Co Line	62.685	71.389	8.704	1,700	2,550	332	19.5%	High	2	R	Medium	Mountain	8,470	0.20	B
2	Shasta	89	Route 44/ Lassen Nat'l Park	Four Corners/ Route 299	0	21.719	21.719	1,700	2,700	295	17.4%	Very High	2	R	Medium	Rolling	18,900	0.09	A
2	Shasta	89	Four Corners/ Route 299	Lake Britton Rd	21.719	30	8.281	1,900	3,150	377	19.8%	High	2	R	Medium	Level	24,180	0.08	A
2	Shasta	89	Lake Britton Rd	Co Rd A19/ McArthur Rd	30	38.777	8.777	1,500	2,550	296	19.7%	High	2	R	Medium	Level	24,180	0.06	A
2	Shasta	89	Co Rd A19/ McArthur Rd	Siskiyou Co Line	38.777	43.345	4.568	1,850	3,150	362	19.6%	High	2	R	Medium	Level	24,180	0.08	A
2	Shasta	151	Shasta Dam	Lake Blvd	0	3.781	3.781	310	660	26	8.4%	Medium	2	R	Medium	Rolling	20,160	0.02	A
2	Shasta	151	Lake Blvd	Toyon?	3.781	4.45	0.669	1,800	2,050	53	2.9%	Low	2	R	Medium	Level	26,000	0.07	A
2	Shasta	151	Toyon?	S Pacific Railroad UP	4.45	5.508	1.058	5,400	5,500	145	2.7%	Medium	2	S	Medium	Level	16,490	0.33	C
2	Shasta	151	S Pacific Railroad UP	Begin Couplet	5.508	5.62	0.112	5,400	5,500	88	1.6%	Low	2	S	Medium	Level	17,000	0.32	C
2	Shasta	151	Begin Couplet	Hardenbrook Ave	5.62	5.931	0.311	5,400	5,500			Low	2	S	Medium	Level	17,000	0.32	C
2	Shasta	151	Hardenbrook Ave	End Couplet	5.931	5.994	0.063	5,400	5,500			Low	2	S	Medium	Level	17,000	0.32	C
2	Shasta	151	End Couplet	Cascade Blvd	5.994	6.79	0.796	12,900	13,900	218	1.7%	Low	2	S	Medium	Level	17,000	0.76	E
2	Shasta	151	Cascade Blvd	Interstate 5	6.79	6.924	0.134	13,200	13,800	218	1.7%	Low	2	S	Medium	Level	17,000	0.78	E
2	Shasta	273	Interstate 5 (South)	Anderson/ Pinon Ave	3.812	4.44	0.628	9,800	10,100	718	7.3%	Medium	4	U	Medium	Level	34,920	0.28	A
2	Shasta	273	Anderson/ Pinon Ave	Anderson/ South St	4.44	5.206	0.766	13,500	14,500	959	7.1%	Medium	4	U	Medium	Level	34,920	0.39	A
2	Shasta	273	Anderson/ South St	Anderson/ North St	5.206	5.438	0.232	12,400	14,500	693	5.6%	Medium	4	U	Medium	Level	34,920	0.36	A
2	Shasta	273	Anderson/ North St	Alexander Ave	5.438	6.387	0.949	10,400	11,700	619	6.0%	Medium	4	U	Medium	Level	34,920	0.30	A
2	Shasta	273	Alexander Ave	Ox Yoke Rd	6.387	6.9	0.513	10,600	13,000	729	6.9%	Medium	4	U	Medium	Level	34,920	0.30	A



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
2	Shasta	273	Ox Yoke Rd	Champion/ Frontage Rd	6.9	7.24	0.34	11,900	14,000	732	6.2%	Medium	4	U	Medium	Level	34,920	0.34	A
2	Shasta	273	Champion/ Frontage Rd	Hill St	7.24	7.54	0.3	11,900	14,200	666	5.6%	Medium	4	U	Medium	Level	34,920	0.34	A
2	Shasta	273	Hill St	Happy Valley Rd	7.54	9.99	2.45	12,400	13,900	682	5.5%	Medium	4	U	Medium	Level	34,920	0.36	A
2	Shasta	273	Happy Valley Rd	Canyon Rd	9.99	11.1	1.11	14,000	15,800	599	4.3%	Low	4	U	Medium	Level	36,000	0.39	A
2	Shasta	273	Canyon Rd	Clear Creek Rd	11.1	11.83	0.73	21,000	22,100	531	2.5%	Low	4	U	Medium	Level	36,000	0.58	A
2	Shasta	273	Clear Creek Rd	Westwood Ave	11.83	12.27	0.44	23,000	26,500	1,035	4.5%	Low	4	U	Medium	Level	36,000	0.64	B
2	Shasta	273	Westwood Ave	Cedars Rd/ S Bonnyview Rd	12.27	12.68	0.41	22,700	26,000	1,101	4.9%	Low	4	U	Medium	Level	36,000	0.63	B
2	Shasta	273	Cedars Rd/ S Bonnyview Rd	Breslauer Wy	12.68	14.184	1.504	18,100	19,800	418	2.3%	Low	4	U	Medium	Level	36,000	0.50	A
2	Shasta	273	Breslauer Wy	Buenaventura Rd	14.184	14.47	0.286	21,500	22,800			Low	4	U	Medium	Level	36,000	0.60	A
2	Shasta	273	Buenaventura Rd	Begin Couplet	14.47	15.921	1.451	18,400	20,000			Low	4	U	Medium	Level	36,000	0.51	A
2	Shasta	273	Begin Couplet	Placer St	15.921	16.45	0.529	21,500	22,300			Low	4	U	Medium	Level	36,000	0.60	A
2	Shasta	273	Placer St	Tehama St	16.45	16.659	0.209	21,400	25,000			Low	4	U	Medium	Level	36,000	0.59	A
2	Shasta	273	Tehama St	End Couplet	16.659	16.833	0.174	15,300	18,200			Low	4	U	Medium	Level	36,000	0.43	A
2	Shasta	273	End Couplet	Quartz Hill Rd	16.833	17.39	0.557	18,000	18,700	810	4.5%	Low	4	U	Medium	Level	36,000	0.50	A
2	Shasta	273	Quartz Hill Rd	Benton Dr	17.39	17.81	0.42	21,400	22,300	910	4.3%	Low	4	U	Medium	Level	36,000	0.59	A
2	Shasta	273	Benton Dr	Lake Blvd	17.81	18.622	0.812	25,000	26,000	1,025	4.1%	Low	4	U	Medium	Level	36,000	0.69	B
2	Shasta	273	Lake Blvd	Twin View Blvd	18.622	18.92	0.298	12,800	14,100	269	2.1%	Low	4	U	Medium	Level	36,000	0.36	A
2	Shasta	273	Twin View Blvd	Caterpillar Rd	18.92	19.77	0.85	9,400	10,600	245	2.6%	Low	4	U	Medium	Level	36,000	0.26	A
2	Shasta	273	Caterpillar Rd	Interstate 5 (North)	19.77	20.033	0.263	8,900	9,400	277	3.1%	Low	4	U	Medium	Level	36,000	0.25	A
2	Shasta	299	Trinity Co Line	French Gulch Rd	0	8.648	8.648	3,800	4,650	318	8.4%	Medium	2	R	Medium	Mountain	9,130	0.42	D
2	Shasta	299	French Gulch Rd	Kennedy Dr	8.648	16.47	7.822	4,050	4,200	422	10.4%	Medium	2	R	Medium	Mountain	9,130	0.44	D
2	Shasta	299	Kennedy Dr	Rock Creek Rd	16.47	17.739	1.269	5,400	6,500	562	10.4%	Medium	2	R	Medium	Rolling	20,160	0.27	C
2	Shasta	299	Rock Creek Rd	Redding West City Limit	17.739	21.648	3.909	10,000	13,100	471	4.7%	Medium	2	R	Medium	Rolling	20,160	0.50	D
2	Shasta	299	Redding West City Limit	Buenaventura Rd	21.648	22.226	0.578	10,000	13,100	286	2.9%	Low	2	U	Medium	Level	17,000	0.59	A
2	Shasta	299	Buenaventura Rd	Court St	22.226	23.81	1.584	20,100	21,500	537	2.7%	Low	4	U	Medium	Level	36,000	0.56	A
2	Shasta	299	Court St	Route 273	23.81	24.088	0.278	19,800	22,000	537	2.7%	Low	4	U	Medium	Level	36,000	0.55	A
2	Shasta	299	Route 273	Interstate 5	24.088	24.822	0.734	19,800	22,000			Low	4	U	Medium	Level	36,000	0.55	A
2	Shasta	299	Interstate 5	Hawley Rd	24.822	25.54	0.718	24,300	26,000	496	2.0%	Low	4	U	High	Level	79,000	0.31	A
2	Shasta	299	Hawley Rd	Old Oregon Trail	25.54	27.239	1.699	14,000	14,600	526	3.8%	Low	4	R	High	Level	64,000	0.22	A
2	Shasta	299	Old Oregon Trail	Deschutes Rd	27.239	31.46	4.221	9,500	10,200	574	6.0%	Medium	2	R	Medium	Level	25,220	0.38	C
2	Shasta	299	Deschutes Rd	Terry Mill Rd	31.46	53.263	21.803	4,500	5,100			Medium	2	R	Medium	Rolling	20,160	0.22	B
2	Shasta	299	Terry Mill Rd	Big Bend Rd	53.263	60.05	6.787	4,400	4,550	416	9.5%	High	2	R	Medium	Mountain	8,470	0.52	D
2	Shasta	299	Big Bend Rd	Tamarack Rd	60.05	73.13	13.08	3,100	3,800			High	2	R	Medium	Mountain	8,470	0.37	C
2	Shasta	299	Tamarack Rd	Elm St	73.13	74.48	1.35	3,350	3,800	389	11.6%	High	2	U	Medium	Level	15,810	0.21	A
2	Shasta	299	Elm St	Burney/ Plumas St	74.48	74.98	0.5	9,800	10,400	782	8.0%	Medium	2	U	Medium	Level	16,490	0.59	A
2	Shasta	299	Burney/ Plumas St	Black Ranch Rd	74.98	76.181	1.201	9,800	10,600			Medium	2	R	Medium	Level	25,220	0.39	C
2	Shasta	299	Black Ranch Rd	Pine St	76.181	78.65	2.469	6,100	6,500	712	11.7%	Medium	2	R	Medium	Level	25,220	0.24	C
2	Shasta	299	Pine St	Route 89	78.65	80.085	1.435	4,300	5,400	692	16.1%	High	2	R	Medium	Level	24,180	0.18	B
2	Shasta	299	Route 89	Glenburn/ Dana Rds	80.085	91.08	10.995	3,000	3,600	167	5.6%	Medium	2	R	Medium	Rolling	20,160	0.15	B
2	Shasta	299	Glenburn/ Dana Rds	Fall River Mills/ Main St	91.08	91.56	0.48	3,350	3,900			Medium	2	R	Medium	Level	25,220	0.13	B
2	Shasta	299	Fall River Mills/ Main St	McArthur/ Glenburn Rd	91.56	95.24	3.68	4,500	5,100	302	6.7%	Medium	2	R	Medium	Level	25,220	0.18	B



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2	Shasta	299	McArthur/ Glenburn Rd	Pittville Rd	95.24	96.78	1.54	4,300	4,950	291	6.8%	Medium	2	R	Medium	Level	25,220	0.17	B
2	Shasta	299	Pittville Rd	Lassen Co Line	96.78	99.361	2.581	2,900	3,200	274	9.4%	Medium	2	R	Medium	Level	25,220	0.11	B
2	Siskiyou	3	Trinity Co Line	Gazelle Callahan Rd	0	6.955	6.955	190	280	10	5.3%	Medium	2	R	Medium	Mountain	9,130	0.02	A
2	Siskiyou	3	Gazelle Callahan Rd	Callahan Rd	6.955	8.8	1.845	380	540	21	5.5%	Medium	2	R	Medium	Level	25,220	0.02	A
2	Siskiyou	3	Callahan Rd	Etna/ Main St	8.8	21	12.2	1,350	1,650	26	1.9%	Medium	2	R	Medium	Level	25,220	0.05	A
2	Siskiyou	3	Etna/ Main St	Collier Wy	21	21.472	0.472	1,300	1,650	64	4.9%	Low	2	R	Medium	Level	26,000	0.05	A
2	Siskiyou	3	Collier Wy	Scott River Rd	21.472	32.2	10.728	2,750	3,250	95	3.5%	Low	2	R	Medium	Level	26,000	0.11	A
2	Siskiyou	3	Scott River Rd	Moffett Creek Rd	32.2	38.258	6.058	4,450	4,800	206	4.6%	Low	2	R	Medium	Rolling	20,370	0.22	B
2	Siskiyou	3	Moffett Creek Rd	Forest Mountain Ranch	38.258	44.67	6.412	2,900	3,550	140	4.8%	Low	2	R	Medium	Mountain	9,790	0.30	C
2	Siskiyou	3	Forest Mountain Ranch	Yreka/ Moonlit Oaks	44.67	47.264	2.594	13,800	15,100	140	1.0%	Low	2	R	Medium	Rolling	20,370	0.68	E
2	Siskiyou	3	Yreka/ Moonlit Oaks	Yreka/ Oberlin Rd	47.264	48.164	0.9	10,100	11,000	586	5.8%	Medium	2	S	Medium	Level	16,490	0.61	E
2	Siskiyou	3	Yreka/ Oberlin Rd	Yreka/ Center St	48.164	49.207	1.043	9,900	10,300	475	4.8%	Low	2	S	Medium	Level	17,000	0.58	D
2	Siskiyou	3	Yreka/ Center St	Yreka/ Route 263 North	49.207	49.871	0.664	9,300	10,600	364	3.9%	Low	2	S	Medium	Level	17,000	0.55	D
2	Siskiyou	3	Yreka/ Route 263 North	Yreka/ Rinterstate 5	49.871	50.159	0.288	4,650	4,750	202	4.3%	Low	2	S	Medium	Level	17,000	0.27	C
2	Siskiyou	3	Yreka/ Rinterstate 5	Montague/ Grenada Rd	50.159	53.22	3.061	3,450	3,550	210	6.1%	Medium	2	S	Medium	Level	16,490	0.21	B
2	Siskiyou	3	Montague/ Grenada Rd	Montague East City Limit	53.22	54.187	0.967	2,750	3,050	144	5.2%	Medium	2	S	Medium	Level	16,490	0.17	B
2	Siskiyou	5	Shasta Co Line	South Dunsmuir	0	0.685	0.685	18,000	23,300	5,215	29.0%	Very High	4	R	High	Mountain	32,640	0.55	B
2	Siskiyou	5	South Dunsmuir	Central Dunsmuir	0.685	2.514	1.829	17,200	22,600	5,189	30.2%	Very High	4	R	High	Mountain	32,640	0.53	B
2	Siskiyou	5	Central Dunsmuir	Dunsmuir Ave	2.514	3.841	1.327	18,400	23,700	5,191	28.2%	Very High	4	R	High	Mountain	32,640	0.56	C
2	Siskiyou	5	Dunsmuir Ave	Mott Rd	3.841	5.899	2.058	19,000	24,200	5,191	27.3%	Very High	6	R	High	Mountain	50,320	0.38	B
2	Siskiyou	5	Mott Rd	Route 89 East	5.899	8.475	2.576	19,500	24,500	5,191	26.6%	Very High	6	R	High	Mountain	50,320	0.39	B
2	Siskiyou	5	Route 89 East	Mount Shasta/ Lake St	8.475	10.485	2.01	19,400	24,500	5,100	26.3%	Very High	6	R	High	Mountain	50,320	0.39	B
2	Siskiyou	5	Mount Shasta/ Lake St	North Mount Shasta	10.485	12.062	1.577	19,800	24,800	5,057	25.5%	Very High	4	R	High	Mountain	32,640	0.61	C
2	Siskiyou	5	North Mount Shasta	Begin Split Alignment	12.062	12.568	0.506	23,200	43,500	5,113	22.0%	Very High	4	R	High	Mountain	32,640	0.71	C
2	Siskiyou	5	Begin Split Alignment	Abrams Lake Rd	12.568	13.184	0.616	23,200	43,500			Very High	4	R	High	Mountain	32,640	0.71	C
2	Siskiyou	5	Abrams Lake Rd	End Split Alignment	13.184	15.165	1.981	22,700	29,000			Very High	4	R	High	Mountain	32,640	0.70	C
2	Siskiyou	5	End Split Alignment	Deetz Rd	15.165	15.339	0.174	22,700	29,000	5,101	22.5%	Very High	4	R	High	Mountain	32,640	0.70	C
2	Siskiyou	5	Deetz Rd	South Weed	15.339	17.441	2.102	22,500	28,500	5,080	22.6%	Very High	4	R	High	Mountain	32,640	0.69	C
2	Siskiyou	5	South Weed	Route 97 North	17.441	19.07	1.629	21,700	27,500	3,942	18.2%	Very High	4	R	High	Mountain	32,640	0.66	C
2	Siskiyou	5	Route 97 North	Route 265	19.07	19.856	0.786	14,000	18,700	3,966	28.3%	Very High	4	R	High	Rolling	52,200	0.27	A
2	Siskiyou	5	Route 265	Edgewood	19.856	22.999	3.143	15,300	20,200	3,892	25.4%	Very High	4	R	High	Level	57,600	0.27	A
2	Siskiyou	5	Edgewood	Weed Airport NB Off	22.999	25.345	2.346	14,500	19,300	3,894	26.9%	Very High	4	R	High	Level	57,600	0.25	A
2	Siskiyou	5	Weed Airport NB Off	Louie Rd	25.345	31.178	5.833	14,600	19,000	3,896	26.7%	Very High	4	R	High	Level	57,600	0.25	A
2	Siskiyou	5	Louie Rd	Grenada	31.178	38.207	7.029	14,700	19,000	3,967	27.0%	Very High	4	R	High	Level	57,600	0.26	A
2	Siskiyou	5	Grenada	Killgore Hills Rd	38.207	42.508	4.301	16,200	20,200	4,001	24.7%	Very High	4	R	High	Level	57,600	0.28	A
2	Siskiyou	5	Killgore Hills Rd	South Yreka	42.508	45.62	3.112	16,600	20,600	3,959	23.8%	Very High	4	R	High	Level	57,600	0.29	A
2	Siskiyou	5	South Yreka	Yreka/ Miner St	45.62	47.563	1.943	15,800	19,000	3,851	24.4%	Very High	4	R	High	Level	57,600	0.27	A
2	Siskiyou	5	Yreka/ Miner St	Yreka/ Route 3	47.563	48.239	0.676	15,000	18,300	3,841	25.6%	Very High	4	R	High	Level	57,600	0.26	A
2	Siskiyou	5	Yreka/ Route 3	Route 96 West	48.239	58.326	10.087	14,800	18,000			Very High	4	R	High	Mountain	32,640	0.45	B
2	Siskiyou	5	Route 96 West	Copco Rd/ Henley Rd	58.326	61.553	3.227	14,400	17,700			Very High	4	R	High	Mountain	32,640	0.44	B
2	Siskiyou	5	Copco Rd/ Henley Rd	Ditch Creek Rd	61.553	62.921	1.368	14,000	16,800	3,821	27.3%	Very High	4	R	High	Mountain	32,640	0.43	B



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2	Siskiyou	5	Ditch Creek Rd	Bailey Hill Rd	62.921	65.517	2.596	14,000	24,600	3,821	27.3%	Very High	4	R	High	Mountain	32,640	0.43	B
2	Siskiyou	5	Bailey Hill Rd	Hilt Rd	65.517	68.328	2.811	14,000	16,600	3,821	27.3%	Very High	4	R	High	Mountain	32,640	0.43	B
2	Siskiyou	5	Hilt Rd	Oregon State Line	68.328	69.293	0.965	14,800	18,700	3,805	25.7%	Very High	4	R	High	Mountain	32,640	0.45	B
2	Siskiyou	89	Shasta Co Line	Military Pass Rd	0	14.34	14.34	1,850	3,150	375	20.3%	High	2	R	Medium	Level	24,180	0.08	A
2	Siskiyou	89	Military Pass Rd	McCloud/ Broadway Ave	14.34	24.75	10.41	2,900	4,400	563	19.4%	High	2	R	Medium	Level	24,180	0.12	B
2	Siskiyou	89	McCloud/ Broadway Ave	Interstate 5	24.75	34.622	9.872	3,500	4,700	489	14.0%	High	2	R	Medium	Rolling	19,530	0.18	B
2	Siskiyou	96	Humboldt Co Line	Ishi Pishi Rd	0	0.55	0.55	410	490			Low	2	R	Medium	Mountain	9,790	0.04	A
2	Siskiyou	96	Ishi Pishi Rd	Etna/ Somes Bar Rd	0.55	0.72	0.17	470	570			Low	2	R	Medium	Mountain	9,790	0.05	A
2	Siskiyou	96	Etna/ Somes Bar Rd	Swillup Creek Bridge	0.72	23.268	22.548	360	460			Low	2	R	Medium	Mountain	9,790	0.04	A
2	Siskiyou	96	Swillup Creek Bridge	Benjamin Creek Rd	23.268	38.758	15.49	480	550	13	2.7%	Low	2	R	Medium	Mountain	9,790	0.05	A
2	Siskiyou	96	Benjamin Creek Rd	Indian Creek Bridge	38.758	41.021	2.263	1,150	1,300	13	1.1%	Low	2	R	Medium	Mountain	9,790	0.12	B
2	Siskiyou	96	Indian Creek Bridge	Happy Camp/ Main St	41.021	41.101	0.08	1,150	1,300	20	1.7%	Low	2	R	Medium	Mountain	9,790	0.12	B
2	Siskiyou	96	Happy Camp/ Main St	Happy Camp/ Second St	41.101	41.25	0.149	1,950	2,200	51	2.6%	Low	2	R	Medium	Mountain	9,790	0.20	B
2	Siskiyou	96	Happy Camp/ Second St	Davis Rd	41.25	41.67	0.42	1,800	2,000	50	2.8%	Low	2	R	Medium	Mountain	9,790	0.18	B
2	Siskiyou	96	Davis Rd	Thompson Creek Bridge	41.67	52.475	10.805	880	1,050			Low	2	R	Medium	Mountain	9,790	0.09	A
2	Siskiyou	96	Thompson Creek Bridge	Siead Maintenance Station	52.475	60.757	8.282	620	750	27	4.4%	Low	2	R	Medium	Mountain	9,790	0.06	A
2	Siskiyou	96	Siead Maintenance Station	Scott Bar Rd	60.757	71.33	10.573	620	750			Low	2	R	Medium	Mountain	9,790	0.06	A
2	Siskiyou	96	Scott Bar Rd	Route 263 South	71.33	103.418	32.088	800	1,050	20	2.5%	Low	2	R	Medium	Mountain	9,790	0.08	A
2	Siskiyou	96	Route 263 South	Interstate 5	103.418	105.823	2.405	510	650	22	4.3%	Low	2	R	Medium	Mountain	9,790	0.05	A
2	Siskiyou	97	Interstate 5	Route 265	0	0.43	0.43	10,400	11,600	1,072	10.3%	Medium	2	U	Medium	Level	16,490	0.63	B
2	Siskiyou	97	Route 265	Weed/ W Lincoln St	0.43	1.047	0.617	7,100	8,500	1,089	15.3%	High	2	U	Medium	Level	15,810	0.45	A
2	Siskiyou	97	Weed/ W Lincoln St	Big Springs Rd	1.047	4.43	3.383	6,500	7,200			High	2	R	Medium	Level	24,180	0.27	C
2	Siskiyou	97	Big Springs Rd	Grass Lake Maint Station	4.43	20.19	15.76	3,300	4,300	1,094	33.2%	Very High	2	R	Medium	Level	23,400	0.14	B
2	Siskiyou	97	Grass Lake Maint Station	Sams Neck Rd	20.19	45.248	25.058	3,200	4,300	1,081	33.8%	Very High	2	R	Medium	Rolling	18,900	0.17	B
2	Siskiyou	97	Sams Neck Rd	Dorris/ Quarantine Station	45.248	49.827	4.579	3,150	4,100	1,077	34.2%	Very High	2	R	Medium	Level	23,400	0.13	B
2	Siskiyou	97	Dorris/ Quarantine Station	Dorris/ First/ Main St	49.827	50.89	1.063	4,400	5,300			Very High	2	R	Medium	Level	23,400	0.19	B
2	Siskiyou	97	Dorris/ First/ Main St	Route 161 East	50.89	53.809	2.919	4,400	5,300	1,087	24.7%	Very High	2	R	Medium	Level	23,400	0.19	B
2	Siskiyou	97	Route 161 East	Oregon State Line	53.809	54.089	0.28	4,000	5,100	1,016	25.4%	Very High	2	R	Medium	Level	23,400	0.17	B
2	Siskiyou	139	Modoc Co Line	Tule Lake	0	1.04	1.04	2,300	2,550	411	17.9%	High	2	R	Medium	Level	24,180	0.10	A
2	Siskiyou	139	Tule Lake	Oregon State Line	1.04	5.043	4.003	2,600	2,950	476	18.3%	High	2	R	Medium	Level	24,180	0.11	A
2	Siskiyou	161	Route 97	Hill Rd	0.037	17.31	17.273	740	1,000	201	27.2%	Very High	2	R	Medium	Level	23,400	0.03	A
2	Siskiyou	161	Hill Rd	Route 139	17.31	19.361	2.051	1,000	1,200	280	28.0%	Very High	2	R	Medium	Level	23,400	0.04	A
2	Siskiyou	263	Yreka/ Route 3	Hawkinsville Humbug Rd	49.07	50.63	1.56	1,650	1,800	68	4.1%	Low	2	R	Medium	Level	26,000	0.06	A
2	Siskiyou	263	Hawkinsville Humbug Rd	Route 96	50.63	57.195	6.565	990	1,250	40	4.0%	Low	2	R	Medium	Mountain	9,790	0.10	A
2	Siskiyou	265	Weed/ Route 97	Weed/ Interstate 5	19.801	20.328	0.527	1,800	2,150	201	11.2%	Medium	2	U	Medium	Level	16,490	0.11	A
2	Tehama	5	Glenn Co Line	Liberal Ave	0	5.769	5.769	24,500	30,000	6,088	24.8%	Very High	4	R	High	Level	57,600	0.43	B
2	Tehama	5	Liberal Ave	South Ave	5.769	7.486	1.717	24,500	29,500	5,985	24.4%	Very High	4	R	High	Level	57,600	0.43	B
2	Tehama	5	South Ave	Corning Rd	7.486	8.975	1.489	23,300	25,000	5,585	24.0%	Very High	4	R	High	Level	57,600	0.40	B
2	Tehama	5	Corning Rd	Finnell Ave	8.975	10.969	1.994	23,900	27,500	5,370	22.5%	Very High	4	R	High	Level	57,600	0.41	B
2	Tehama	5	Finnell Ave	Gyle Rd	10.969	13.965	2.996	24,200	28,000	5,075	21.0%	Very High	4	R	High	Level	57,600	0.42	B
2	Tehama	5	Gyle Rd	Flores Ave	13.965	19.781	5.816	23,100	26,500	5,052	21.9%	Very High	4	R	High	Level	57,600	0.40	B



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
2	Tehama	5	Flores Ave	Red Bluff/ S Main St	19.781	24.871	5.09	23,800	27,500	5,196	21.8%	Very High	4	R	High	Level	57,600	0.41	B
2	Tehama	5	Red Bluff/ S Main St	Red Bluff/ Diamond Ave	24.871	24.942	0.071	27,000	31,500	6,010	22.3%	Very High	6	U	High	Level	109,800	0.25	A
2	Tehama	5	Red Bluff/ Diamond Ave	Red Bluff/ Route 36	24.942	26.525	1.583	30,000	35,000	6,099	20.3%	Very High	6	U	High	Level	109,800	0.27	A
2	Tehama	5	Red Bluff/ Route 36	North Red Bluff	26.525	28.377	1.852	38,000	44,000	7,224	19.0%	High	4	U	High	Level	73,470	0.52	B
2	Tehama	5	North Red Bluff	Wilcox Rd	28.377	31.043	2.666	39,500	46,000	7,355	18.6%	High	4	R	High	Rolling	53,940	0.73	C
2	Tehama	5	Wilcox Rd	Jellys Ferry Rd	31.043	32.236	1.193	39,000	46,000	7,359	18.9%	High	4	R	High	Rolling	53,940	0.72	C
2	Tehama	5	Jellys Ferry Rd	Hooker Creek Rd	32.236	36.371	4.135	37,500	44,500	7,324	19.5%	High	4	R	High	Rolling	53,940	0.70	C
2	Tehama	5	Hooker Creek Rd	Sunset Hills Dr	36.371	38.716	2.345	37,000	44,500	7,063	19.1%	High	4	R	High	Rolling	53,940	0.69	C
2	Tehama	5	Sunset Hills Dr	Bowman Rd	38.716	41.525	2.809	37,500	44,500	7,063	19.1%	High	4	R	High	Rolling	53,940	0.70	C
2	Tehama	5	Bowman Rd	Shasta Co Line	41.525	42.115	0.59	43,000	48,000	7,237	16.8%	High	4	R	High	Rolling	53,940	0.80	D
2	Tehama	32	Butte Co Line	Butte Co Line	0	2.706	2.706	1,000	1,700	95	9.5%	Medium	2	R	Medium	Mountain	9,130	0.11	A
2	Tehama	32	West Of	Route 36	0	24.876	24.876	1,000	1,750	70	7.0%	Medium	2	R	Medium	Mountain	9,130	0.11	A
2	Tehama	36	Shasta Co Line	Bowman Rd	0	23.2	23.2	520	720	29	5.6%	Medium	2	R	Medium	Mountain	9,130	0.06	A
2	Tehama	36	Bowman Rd	Cannon Rd	23.2	28.216	5.016	470	680	22	4.7%	Low	2	R	Medium	Rolling	20,370	0.02	A
2	Tehama	36	Cannon Rd	Oak Knoll Dr	28.216	33.739	5.523	1,450	1,550			Low	2	R	Medium	Level	26,000	0.06	A
2	Tehama	36	Oak Knoll Dr	McCoy Rd	33.739	39.3	5.561	3,050	3,000			Low	2	R	Medium	Level	26,000	0.12	B
2	Tehama	36	McCoy Rd	Baker Rd	39.3	39.72	0.42	3,450	3,750	90	2.6%	Low	2	R	Medium	Level	26,000	0.13	B
2	Tehama	36	Baker Rd	N Main St	39.72	41.254	1.534	3,250	3,550	186	5.7%	Medium	2	U	Medium	Level	16,490	0.20	A
2	Tehama	36	N Main St	Red Bluff/ Adobe Rd	41.254	40.315	-0.939	11,800	12,700	362	3.1%	Medium	4	U	Medium	Level	34,920	0.34	A
2	Tehama	36	Red Bluff/ Adobe Rd	Red Bluff/ Crittenden St	40.315	40.87	0.555	9,900	10,300			Medium	4	U	Medium	Level	34,920	0.28	A
2	Tehama	36	Red Bluff/ Crittenden St	Red Bluff/ Walnut St	40.87	41.15	0.28	9,400	9,800	266	2.8%	Low	4	U	Medium	Level	36,000	0.26	A
2	Tehama	36	Red Bluff/ Walnut St	Red Bluff/ Oak St	41.15	41.29	0.14	12,300	12,700	271	2.2%	Low	4	U	Medium	Level	36,000	0.34	A
2	Tehama	36	Red Bluff/ Oak St	Red Bluff/ Sacramento River Br.	41.29	41.4	0.11	20,900	21,900			Low	4	U	Medium	Level	36,000	0.58	A
2	Tehama	36	Red Bluff/ Sacramento River Br.	Red Bluff/ Gilmore Rd	41.4	41.67	0.27	20,900	21,900	334	1.6%	Low	4	U	Medium	Level	36,000	0.58	A
2	Tehama	36	Red Bluff/ Gilmore Rd	Red Bluff/ Interstate 5	41.67	41.847	0.177	21,500	23,600	366	1.7%	Low	4	U	Medium	Level	36,000	0.60	A
2	Tehama	36	Red Bluff/ Interstate 5	Red Bluff/ Chestnut Ave	41.847	42.79	0.943	19,500	20,600	1,326	6.8%	Medium	4	U	Medium	Level	34,920	0.56	A
2	Tehama	36	Red Bluff/ Chestnut Ave	Hoy Rd	42.79	43.28	0.49	16,200	17,100	1,312	8.1%	Medium	4	U	Medium	Level	34,920	0.46	A
2	Tehama	36	Hoy Rd	Route 99 South	43.28	44.004	0.724	11,700	12,600	893	7.6%	Medium	4	U	Medium	Level	34,920	0.34	A
2	Tehama	36	Route 99 South	Manton Rd	44.004	55.26	11.256	2,000	2,550	136	6.8%	Medium	2	R	Medium	Level	25,220	0.08	A
2	Tehama	36	Manton Rd	Paynes Creek	55.26	58.18	2.92	1,200	1,950	82	6.8%	Medium	2	R	Medium	Level	25,220	0.05	A
2	Tehama	36	Paynes Creek	Mineral/ Route 172SE	58.18	83.142	24.962	1,100	1,800	75	6.8%	Medium	2	R	Medium	Mountain	9,130	0.12	B
2	Tehama	36	Mineral/ Route 172SE	Route 89 North	83.142	87.681	4.539	900	1,400			Medium	2	R	Medium	Mountain	9,130	0.10	A
2	Tehama	36	Route 89 North	Morgan Springs/ Route 172 SE	87.681	91.253	3.572	700	1,200	68	9.7%	Medium	2	R	Medium	Mountain	9,130	0.08	A
2	Tehama	36	Morgan Springs/ Route 172 SE	Route 32 SW	91.253	99.935	8.682	730	1,300	71	9.7%	Medium	2	R	Medium	Mountain	9,130	0.08	A
2	Tehama	36	Route 32 SW	Plumas Co Line	99.935	104.002	4.067	1,800	3,250	180	10.0%	Medium	2	R	Medium	Mountain	9,130	0.20	B
2	Tehama	99	Butte Co Line	South Ave	0	4.491	4.491	12,200	13,000	920	7.5%	Medium	2	R	Medium	Level	25,220	0.48	D
2	Tehama	99	South Ave	Vina Rd	4.491	5.42	0.929	6,400	6,800	889	13.9%	High	2	R	Medium	Level	24,180	0.26	C
2	Tehama	99	Vina Rd	Sherman St	5.42	11.181	5.761	6,800	7,100	863	12.7%	High	2	R	Medium	Level	24,180	0.28	C
2	Tehama	99	Sherman St	Armayo Way	11.181	12.308	1.127	10,500	11,300	894	8.5%	High	2	R	Medium	Level	24,180	0.43	D
2	Tehama	99	Armayo Way	Kaufman Ave	12.308	19.517	7.209	8,300	8,600	867	10.4%	Medium	2	R	Medium	Level	25,220	0.33	C
2	Tehama	99	Kaufman Ave	Route 36	19.517	24.943	5.426	9,300	10,300	867	9.3%	Medium	2	R	Medium	Level	25,220	0.37	C



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
2	Tehama	172	Mineral/ Route 36	Mill Creek	0	5.77	5.77	150	280	3	2.0%	Low	2	R	Medium	Mountain	9,790	0.02	A
2	Tehama	172	Mill Creek	Morgan Springs/ Route 36	5.77	8.917	3.147	120	290	4	3.3%	Low	2	R	Medium	Mountain	9,790	0.01	A
2	Trinity	3	Route 36	Morgan Hill	0	6.22	6.22	670	840	18	2.7%	Medium	2	R	Medium	Mountain	9,130	0.07	A
2	Trinity	3	Morgan Hill	Hayfork	6.22	7.2	0.98	2,150	2,400	37	1.7%	Medium	2	R	Medium	Mountain	9,130	0.24	C
2	Trinity	3	Hayfork	Weaverville/ Route 299	7.2	30.89	23.69	2,050	2,200	89	4.3%	Low	2	R	Medium	Mountain	9,790	0.21	B
2	Trinity	3	Weaverville/ Route 299	Co Dump Rd	30.89	31.94	1.05	3,500	3,950	187	5.3%	Medium	2	R	Medium	Mountain	9,130	0.38	C
2	Trinity	3	Co Dump Rd	Rush Creek Rd	31.94	37.9	5.96	3,150	3,500	225	7.1%	Medium	2	R	Medium	Mountain	9,130	0.35	C
2	Trinity	3	Rush Creek Rd	Trinity Hwy Maint Station	37.9	59.64	21.74	1,100	1,350	101	9.2%	Medium	2	R	Medium	Mountain	9,130	0.12	B
2	Trinity	3	Trinity Hwy Maint Station	Coffee Creek Rd	59.64	67.894	8.254	660	1,300	58	8.8%	Medium	2	R	Medium	Mountain	9,130	0.07	A
2	Trinity	3	Coffee Creek Rd	US Forest Service Rd	67.894	79.501	11.607	260	310	18	6.9%	Medium	2	R	Medium	Mountain	9,130	0.03	A
2	Trinity	3	US Forest Service Rd	Siskiyou Co Line	79.501	85.068	5.567	190	280	10	5.3%	Medium	2	R	Medium	Mountain	9,130	0.02	A
2	Trinity	36	Humboldt Co Line	Lower Mad River Rd	0	3.324	3.324	1,500	1,850			Medium	2	R	Medium	Mountain	9,130	0.16	B
2	Trinity	36	Lower Mad River Rd	Forest Glen Maint Station	3.324	18.09	14.766	750	930			Medium	2	R	Medium	Mountain	9,130	0.08	A
2	Trinity	36	Forest Glen Maint Station	Route 3 North	18.09	27.23	9.14	600	840	30	5.0%	Medium	2	R	Medium	Mountain	9,130	0.07	A
2	Trinity	36	Route 3 North	Shasta Co Line	27.23	41.139	13.909	300	430	22	7.3%	Medium	2	R	Medium	Mountain	9,130	0.03	A
2	Trinity	299	Humboldt Co Line	Salyer East Limits	0	1.3	1.3	3,800	4,600			High	2	R	Medium	Mountain	8,470	0.45	D
2	Trinity	299	Salyer East Limits	Burnt Ranch Rd	1.3	11.53	10.23	3,400	3,800			Medium	2	R	Medium	Mountain	9,130	0.37	C
2	Trinity	299	Burnt Ranch Rd	Del Loma	11.53	21.731	10.201	2,650	3,850			Medium	2	R	Medium	Mountain	9,130	0.29	C
2	Trinity	299	Del Loma	Little French Cr	21.731	24.263	2.532	3,100	3,800			Medium	2	R	Medium	Mountain	9,130	0.34	C
2	Trinity	299	Little French Cr	Wheel Gulch Rd	24.263	31.45	7.187	3,650	4,700			Medium	2	R	Medium	Mountain	9,130	0.40	D
2	Trinity	299	Wheel Gulch Rd	Weaverville West	31.45	51.03	19.58	3,400	5,100			Medium	2	R	Medium	Mountain	9,130	0.37	C
2	Trinity	299	Weaverville West	Weaverville Washington St	51.03	52.07	1.04	11,000	12,500	273	2.5%	Medium	2	S	Medium	Level	16,490	0.67	E
2	Trinity	299	Weaverville Washington St	Martin/ Nugget Rds	52.07	52.72	0.65	11,000	12,500	360	3.3%	Low	2	S	Medium	Level	17,000	0.65	E
2	Trinity	299	Martin/ Nugget Rds	Route 3 East	52.72	58.11	5.39	6,300	6,700	376	6.0%	Medium	2	R	Medium	Rolling	20,160	0.31	C
2	Trinity	299	Route 3 East	Lewiston Rd	58.11	63.51	5.4	4,050	4,300	442	10.9%	Medium	2	R	Medium	Mountain	9,130	0.44	D
2	Trinity	299	Lewiston Rd	New Lewiston Rd	63.51	67.425	3.915	3,500	4,050	521	14.9%	High	2	R	Medium	Mountain	8,470	0.41	D
2	Trinity	299	New Lewiston Rd	Shasta Co Line	67.425	72.246	4.821	3,800	4,650	472	12.4%	High	2	R	Medium	Mountain	8,470	0.45	D
3	Butte	32	Glenn Co Line	Meridian Rd	0	4.18	4.18	12,800	13,200			Low	2	R	Medium	Level	26,000	0.49	D
3	Butte	32	Meridian Rd	Muir Ave	4.18	5.022	0.842	13,000	13,900			Low	2	U	Medium	Level	17,000	0.76	C
3	Butte	32	Muir Ave	East Ave/ N Lindo Ave	5.022	6.238	1.216	13,000	14,200			Low	2	U	Medium	Level	17,000	0.76	C
3	Butte	32	East Ave/ N Lindo Ave	W Eighth Ave	6.238	7.11	0.872	16,000	17,100			Low	2	U	Medium	Level	17,000	0.94	E
3	Butte	32	W Eighth Ave	W Sacramento Ave	7.11	7.79	0.68	15,500	16,200			Low	2	U	Medium	Level	17,000	0.91	E
3	Butte	32	W Sacramento Ave	W 1st St	7.79	8.367	0.577	19,200	20,200	843	4.4%	Low	2	U	Medium	Level	17,000	1.13	F
3	Butte	32	W 1st St	W 5th St	8.367	8.655	0.288	21,500	22,300	1,178	5.5%	Medium	2	U	Medium	Level	16,490	1.30	F
3	Butte	32	W 5th St	Begin Couplet	8.655	8.869	0.214	22,900	27,500			Low	4	U	Medium	Level	36,000	0.64	B
3	Butte	32	Begin Couplet	Orange St	8.869	9.006	0.137	22,300	23,500			Low	4	U	Low	Level	32,000	0.70	B
3	Butte	32	Orange St	Ivy St	9.006	9.133	0.127	24,300	25,200			Low	4	U	Low	Level	32,000	0.76	C
3	Butte	32	Ivy St	Broadway	9.133	9.461	0.328	24,800	25,900			Low	4	U	Low	Level	32,000	0.78	C
3	Butte	32	Broadway	Main St	9.461	9.571	0.11	27,300	29,600			Low	4	U	Low	Level	32,000	0.85	D
3	Butte	32	Main St	Pine St	9.571	9.41	-0.161	33,800	36,900			Low	4	U	Low	Level	32,000	1.06	F
3	Butte	32	Pine St	Cypress St	9.41	9.46	0.05	40,800	44,000			Low	4	U	Low	Level	32,000	1.28	F



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
3	Butte	32	Cypress St	Route 99	9.46	10.187	0.727	33,700	35,300	1,548	4.6%	Low	4	U	Low	Level	32,000	1.05	F
3	Butte	32	Route 99	Fir St	10.187	10.28	0.093	30,100	31,700			Low	4	U	Low	Level	32,000	0.94	E
3	Butte	32	Fir St	End Couplet	10.28	10.735	0.455	17,600	18,200			Low	4	U	Low	Level	32,000	0.55	A
3	Butte	32	End Couplet	Forest Ave	10.735	11.01	0.275	18,900	20,200			Low	2	U	Medium	Level	17,000	1.11	F
3	Butte	32	Forest Ave	El Monte Ave	11.01	11.27	0.26	13,400	14,800			Low	2	U	Medium	Level	17,000	0.79	C
3	Butte	32	El Monte Ave	Bruce Rd	11.27	11.704	0.434	13,600	15,500	480	3.5%	Low	2	U	Medium	Level	17,000	0.80	C
3	Butte	32	Bruce Rd	Humboldt Rd	11.704	15.211	3.507	7,200	8,100			Low	2	R	Medium	Mountain	9,790	0.74	E
3	Butte	32	Humboldt Rd	Forest Ranch/ Nopel Ave	15.211	23.866	8.655	3,300	3,750			Low	2	R	Medium	Mountain	9,790	0.34	C
3	Butte	32	Forest Ranch/ Nopel Ave	Lomo/ Humboldt Rd	23.866	36.926	13.06	1,700	2,700			Low	2	R	Medium	Mountain	9,790	0.17	B
3	Butte	32	Lomo/ Humboldt Rd	Tehama Co Line	36.926	37.749	0.823	1,000	1,600			Low	2	R	Medium	Mountain	9,790	0.10	A
3	Butte	70	Yuba Co Line	Lower Honcut Rd	0	1.01	1.01	12,000	13,300	1,460	12.2%	High	2	R	Medium	Level	24,180	0.50	D
3	Butte	70	Lower Honcut Rd	East Gridley/ Stimpson	1.01	4.06	3.05	11,800	13,300			High	2	R	Medium	Level	24,180	0.49	D
3	Butte	70	East Gridley/ Stimpson	Welsh/ Palermo	4.06	9.06	5	11,400	14,000			High	2	R	Medium	Level	24,180	0.47	D
3	Butte	70	Welsh/ Palermo	Ophir Rd	9.06	11.55	2.49	12,400	14,400			High	2	R	Medium	Level	24,180	0.51	D
3	Butte	70	Ophir Rd	Route 162	11.55	13.901	2.351	14,600	15,400	2,162	14.8%	High	4	R	High	Level	59,520	0.25	A
3	Butte	70	Route 162	Montgomery St	13.901	14.61	0.709	20,600	22,000	3,051	14.8%	High	4	U	High	Level	73,470	0.28	A
3	Butte	70	Montgomery St	Grand Ave	14.61	15.425	0.815	25,500	26,500			High	4	U	High	Level	73,470	0.35	B
3	Butte	70	Grand Ave	Nelson Ave	15.425	15.72	0.295	14,800	15,400			High	4	U	High	Level	73,470	0.20	A
3	Butte	70	Nelson Ave	Garden Dr	15.72	16.627	0.907	20,300	21,900			High	4	U	High	Level	73,470	0.28	A
3	Butte	70	Garden Dr	Route 149 W	16.627	20.479	3.852	22,100	23,400	3,273	14.8%	High	4	R	High	Level	59,520	0.37	B
3	Butte	70	Route 149 W	Route 191 N	20.479	21.87	1.391	7,500	8,100	1,111	14.8%	High	2	R	Medium	Level	24,180	0.31	C
3	Butte	70	Route 191 N	Coal Canyon Rd	21.87	23.95	2.08	2,950	3,350	437	14.8%	High	2	R	Medium	Level	24,180	0.12	B
3	Butte	70	Coal Canyon Rd	Pentz Rd	23.95	26.47	2.52	2,400	2,550			Medium	2	R	Medium	Level	25,220	0.10	A
3	Butte	70	Pentz Rd	Pinkston/ Big Bend	26.47	34.01	7.54	2,550	2,850			Medium	2	R	Medium	Level	25,220	0.10	A
3	Butte	70	Pinkston/ Big Bend	Plumas Co Line	34.01	48.076	14.066	1,550	2,000	151	9.7%	Medium	2	R	Medium	Level	25,220	0.06	A
3	Butte	99	Sutter Co Line	Live Oak/ Gridley Rd	0	2.79	2.79	15,700	17,400	1,077	6.9%	Medium	2	R	Medium	Level	25,220	0.62	E
3	Butte	99	Live Oak/ Gridley Rd	Archer Ave	2.79	3.746	0.956	18,100	19,000	1,629	9.0%	Medium	4	U	Medium	Level	34,920	0.52	A
3	Butte	99	Archer Ave	Gridley/ Wilson St	3.746	4.121	0.375	18,500	19,500			Medium	4	U	Medium	Level	34,920	0.53	A
3	Butte	99	Gridley/ Wilson St	Gridley/ Spruce St	4.121	4.38	0.259	22,200	23,200	1,998	9.0%	Medium	4	U	Medium	Level	34,920	0.64	B
3	Butte	99	Gridley/ Spruce St	Biggs Hwy	4.38	7.69	3.31	14,500	15,600	1,305	9.0%	Medium	2	R	Medium	Level	25,220	0.57	D
3	Butte	99	Biggs Hwy	Route 162 West	7.69	11.159	3.469	10,900	11,600			Medium	2	R	Medium	Level	25,220	0.43	D
3	Butte	99	Route 162 West	Route 162 East	11.159	13.161	2.002	12,500	12,800	1,070	8.6%	Medium	2	R	Medium	Level	25,220	0.50	D
3	Butte	99	Route 162 East	Nelson Shippee Rd	13.161	16.19	3.029	10,000	11,100	1,000	10.0%	Medium	2	R	Medium	Level	25,220	0.40	D
3	Butte	99	Nelson Shippee Rd	Route 149 SE	16.19	21.81	5.62	9,600	10,200	960	10.0%	Medium	2	R	Medium	Level	25,220	0.38	C
3	Butte	99	Route 149 SE	Pentz Rd	21.81	23.863	2.053	24,800	26,000	2,592	10.5%	Medium	4	R	High	Level	62,080	0.40	B
3	Butte	99	Pentz Rd	Neal Hwy	23.863	26.04	2.177	26,000	28,500			Medium	4	R	High	Level	62,080	0.42	B
3	Butte	99	Neal Hwy	Skyway Rd	26.04	30.603	4.563	32,500	33,500			Medium	4	R	High	Level	62,080	0.52	B
3	Butte	99	Skyway Rd	E 20th St	30.603	31.498	0.895	50,000	53,000	3,310	6.6%	Medium	4	U	High	Level	76,630	0.65	C
3	Butte	99	E 20th St	Route 32 East	31.498	32.445	0.947	70,000	72,000			Medium	4	U	High	Level	76,630	0.91	E
3	Butte	99	Route 32 East	E 1st Ave	32.445	33.282	0.837	74,000	78,000	4,899	6.6%	Medium	4	U	High	Level	76,630	0.97	E
3	Butte	99	E 1st Ave	Cohasset Rd	33.282	34.245	0.963	59,000	61,000	3,988	6.8%	Medium	4	U	High	Level	76,630	0.77	D



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
3	Butte	99	Cohasset Rd	East Ave	34.245	34.927	0.682	42,000	45,000	2,780	6.6%	Medium	4	U	High	Level	76,630	0.55	C
3	Butte	99	East Ave	Eaton Rd	34.927	36.305	1.378	28,500	31,000			Medium	4	U	High	Level	76,630	0.37	B
3	Butte	99	Eaton Rd	Wilson Landing Rd	36.305	38.79	2.485	19,000	19,500			Medium	2	U	Medium	Level	16,490	1.15	F
3	Butte	99	Wilson Landing Rd	Keefer Rd	38.79	40.22	1.43	14,700	15,000			Medium	2	R	Medium	Level	25,220	0.58	D
3	Butte	99	Keefer Rd	Broyles Rd	40.22	44.32	4.1	11,600	11,800	985	8.5%	Medium	2	R	Medium	Level	25,220	0.46	D
3	Butte	99	Broyles Rd	Tehama Co Line	44.32	45.975	1.655	11,600	12,500			Medium	2	R	Medium	Level	25,220	0.46	D
3	Butte	149	Route 70	Route 99	0	4.623	4.623	15,300	16,100	964	6.3%	Medium	4	R	High	Level	62,080	0.25	A
3	Butte	162	Glenn Co Line	Richvale South Hwy	0	6.66	6.66	1,500	1,650	302	20.1%	Very High	2	R	Medium	Level	23,400	0.06	A
3	Butte	162	Richvale South Hwy	Route 99	6.66	9.726	3.066	860	990	173	20.1%	Very High	2	R	Medium	Level	23,400	0.04	A
3	Butte	162	Route 99	Orville/ Larkin Rd	9.726	14.03	4.304	2,800	3,000	273	9.8%	Medium	2	R	Medium	Level	25,220	0.11	B
3	Butte	162	Orville/ Larkin Rd	Oroville/ 12th St	14.03	14.96	0.93	8,600	9,400			Medium	2	U	Medium	Level	16,490	0.52	A
3	Butte	162	Oroville/ 12th St	Oroville/ Route 70	14.96	15.831	0.871	13,200	13,900	1,209	9.2%	Medium	2	U	Medium	Level	16,490	0.80	D
3	Butte	162	Oroville/ Route 70	Feather River Blvd	15.831	16.017	0.186	30,000	30,000			Medium	4	U	Medium	Level	34,920	0.86	D
3	Butte	162	Feather River Blvd	Oroville/ Lincoln St	16.017	17.142	1.125	32,000	33,000	3,200	10.0%	Medium	4	U	Medium	Level	34,920	0.92	E
3	Butte	162	Oroville/ Lincoln St	Olive Hwy	17.142	17.553	0.411	30,500	31,000			Medium	4	U	Medium	Level	34,920	0.87	D
3	Butte	162	Olive Hwy	Lowe Wyandote Rd	17.553	18.006	0.453	29,000	29,500			Low	2	U	Medium	Level	17,000	1.71	F
3	Butte	162	Lowe Wyandote Rd	Foothill Blvd	18.006	18.457	0.451	20,900	21,500	857	4.1%	Low	2	U	Medium	Level	17,000	1.23	F
3	Butte	162	Foothill Blvd	Oroville Quincy Hwy	18.457	20.449	1.992	12,400	12,700			Low	2	R	Medium	Rolling	20,370	0.61	D
3	Butte	162	Oroville Quincy Hwy	Oakvale Ave	20.449	20.49	0.041	11,900	12,100			Medium	2	R	Medium	Rolling	20,160	0.59	D
3	Butte	162	Oakvale Ave	Canyon Dr	20.49	21.264	0.774	11,000	11,300			Medium	2	R	Medium	Rolling	20,160	0.55	D
3	Butte	162	Canyon Dr	Ridgeview Ln/ Hillcrest Ave	21.264	21.457	0.193	7,600	7,800			Medium	2	R	Medium	Rolling	20,160	0.38	C
3	Butte	162	Ridgeview Ln/ Hillcrest Ave	Kelly Ridge Rd	21.457	22.899	1.442	5,600	5,700			Medium	2	R	Medium	Rolling	20,160	0.28	C
3	Butte	162	Kelly Ridge Rd	Forbestown Rd	22.899	24.194	1.295	4,550	4,600	455	10.0%	Medium	2	R	Medium	Rolling	20,160	0.23	B
3	Butte	162	Forbestown Rd	Loafer Creek Rd	24.194	24.56	0.366	1,850	1,900	185	10.0%	Medium	2	R	Medium	Rolling	20,160	0.09	A
3	Butte	162	Loafer Creek Rd	Foreman Creek Rd	24.56	31.07	6.51	1,500	1,550			Medium	2	R	Medium	Mountain	9,130	0.16	B
3	Butte	191	Route 70	Durham Pentz Rd	0	3.53	3.53	5,100	5,500	335	6.6%	Medium	2	R	Medium	Level	25,220	0.20	B
3	Butte	191	Durham Pentz Rd	Butte College Dr	3.53	3.925	0.395	6,100	6,200			Medium	2	R	Medium	Rolling	20,160	0.30	C
3	Butte	191	Butte College Dr	Paradise Airport Rd	3.925	8.655	4.73	5,700	5,800			Medium	2	R	Medium	Rolling	20,160	0.28	C
3	Butte	191	Paradise Airport Rd	Easy St	8.655	10.08	1.425	5,700	5,800			Medium	2	R	Medium	Level	25,220	0.23	B
3	Butte	191	Easy St	Buschmann Rd	10.08	11.13	1.05	5,900	6,000			Medium	2	R	Medium	Level	25,220	0.23	C
3	Butte	191	Buschmann Rd	Pearson Rd	11.13	11.386	0.256	10,100	10,400	450	4.5%	Low	2	R	Medium	Level	26,000	0.39	C
3	Colusa	5	Yolo Co Line	Hillgate Rd	0	6.793	6.793	30,000	35,500			Very High	4	R	High	Level	57,600	0.52	B
3	Colusa	5	Hillgate Rd	North Arbuckle	6.793	7.7	0.907	29,000	35,000			Very High	4	R	High	Level	57,600	0.50	B
3	Colusa	5	North Arbuckle	Hahn Rd	7.7	10.305	2.605	30,000	33,000			Very High	4	R	High	Level	57,600	0.52	B
3	Colusa	5	Hahn Rd	Husted Rd	10.305	15.911	5.606	29,000	35,000			Very High	4	R	High	Level	57,600	0.50	B
3	Colusa	5	Husted Rd	Williams/ E St	15.911	17.975	2.064	28,500	34,000	6,815	23.9%	Very High	4	R	High	Level	57,600	0.49	B
3	Colusa	5	Williams/ E St	Route 20	17.975	18.722	0.747	28,000	35,000	8,142	29.1%	Very High	4	R	High	Level	57,600	0.49	B
3	Colusa	5	Route 20	Maxwell Rd	18.722	26.729	8.007	25,500	33,500	7,288	28.6%	Very High	4	R	High	Level	57,600	0.44	B
3	Colusa	5	Maxwell Rd	North Maxwell	26.729	29.248	2.519	25,500	33,000			Very High	4	R	High	Level	57,600	0.44	B
3	Colusa	5	North Maxwell	Delevan Rd	29.248	31.839	2.591	26,000	32,000			Very High	4	R	High	Level	57,600	0.45	B
3	Colusa	5	Delevan Rd	Glenn Co Line	31.839	34.365	2.526	26,000	32,000			Very High	4	R	High	Level	57,600	0.45	B



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			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
3	Colusa	16	Route 20	Yolo Co Line	0	7.256	7.256	590	750	84	14.2%	High	2	R	Medium	Rolling	19,530	0.03	A
3	Colusa	20	Lake Co Line	Route 16 South	0	3.451	3.451	5,200	6,500			High	2	R	Medium	Rolling	19,530	0.27	C
3	Colusa	20	Route 16 South	Old Route 20	3.451	20.558	17.107	4,800	6,000	509	10.6%	Medium	2	R	Medium	Rolling	20,160	0.24	C
3	Colusa	20	Old Route 20	Interstate 5/ Williams	20.558	22.12	1.562	5,900	6,400			High	2	R	Medium	Level	24,180	0.24	C
3	Colusa	20	Interstate 5/ Williams	Husted Rd	22.12	23.187	1.067	3,700	3,950	703	19.0%	High	2	R	Medium	Level	24,180	0.15	B
3	Colusa	20	Husted Rd	Hunter Rd	23.187	28.69	5.503	6,400	7,100			Medium	2	R	Medium	Level	25,220	0.25	C
3	Colusa	20	Hunter Rd	Colusa/ Fremont St	28.69	30.639	1.949	7,900	8,600			Medium	2	R	Medium	Level	25,220	0.31	C
3	Colusa	20	Colusa/ Fremont St	Colusa/ Route 45 North	30.639	31.091	0.452	15,000	16,500	1,200	8.0%	Medium	2	S	Medium	Level	16,490	0.91	E
3	Colusa	20	Colusa/ Route 45 North	Colusa/ 5th St	31.091	31.47	0.379	20,400	21,600	1,428	7.0%	Medium	4	S	Medium	Level	34,920	0.58	C
3	Colusa	20	Colusa/ 5th St	Colusa/ Bridge St	31.47	31.841	0.371	25,000	25,000			Medium	4	S	Medium	Level	34,920	0.72	D
3	Colusa	20	Colusa/ Bridge St	Colusa/ Fremont St	31.841	32.29	0.449	21,000	21,400			Medium	2	S	Medium	Level	16,490	1.27	F
3	Colusa	20	Colusa/ Fremont St	Moon Bend Rd	32.29	33.12	0.83	11,000	12,000	770	7.0%	Medium	2	S	Medium	Level	16,490	0.67	E
3	Colusa	20	Moon Bend Rd	Route 45 South	33.12	36.785	3.665	9,800	10,300			Medium	2	R	Medium	Level	25,220	0.39	C
3	Colusa	20	Route 45 South	Sutter Co Line	36.785	39.34	2.555	7,500	8,000			Medium	2	R	Medium	Level	25,220	0.30	C
3	Colusa	45	Yolo Co Line	Tule Rd	0	7.365	7.365	1,000	1,350	190	19.0%	High	2	R	Medium	Level	24,180	0.04	A
3	Colusa	45	Tule Rd	Grimes-Arbuckle Rd	7.365	12.867	5.502	1,300	1,450	247	19.0%	High	2	R	Medium	Level	24,180	0.05	A
3	Colusa	45	Grimes-Arbuckle Rd	Sycamore Cutoff Rd	12.867	18.469	5.602	2,000	2,200			High	2	R	Medium	Level	24,180	0.08	A
3	Colusa	45	Sycamore Cutoff Rd	Route 20	18.469	19.84	1.371	710	800	86	12.1%	High	2	R	Medium	Level	24,180	0.03	A
3	Colusa	45	Route 20	Colusa/ Lurline Ave	19.84	20.08	0.24	7,100	7,600	739	10.4%	High	2	S	Medium	Level	15,810	0.45	D
3	Colusa	45	Colusa/ Lurline Ave	Maxwell Rd	20.08	24.53	4.45	7,100	7,600	381	5.4%	Medium	2	R	Medium	Level	25,220	0.28	C
3	Colusa	45	Maxwell Rd	Co Road P29?	24.53	32.06	7.53	2,100	2,250	188	9.0%	Medium	2	R	Medium	Level	25,220	0.08	A
3	Colusa	45	Co Road P29?	Glenn Co Line	32.06	34.176	2.116	2,250	2,600			Medium	2	R	Medium	Level	25,220	0.09	A
3	Glenn	5	Colusa Co Line	Co Road 68	0	1.517	1.517	26,000	32,000			Very High	4	R	High	Level	57,600	0.45	B
3	Glenn	5	Co Road 68	Co Road 57	1.517	7.607	6.09	25,500	32,500			Very High	4	R	High	Level	57,600	0.44	B
3	Glenn	5	Co Road 57	Willows/ Route 162	7.607	9.872	2.265	25,500	32,000			Very High	4	R	High	Level	57,600	0.44	B
3	Glenn	5	Willows/ Route 162	Co Road 39	9.872	13.895	4.023	26,500	32,000	7,574	28.6%	Very High	4	R	High	Level	57,600	0.46	B
3	Glenn	5	Co Road 39	Co Road 33	13.895	16.803	2.908	25,500	27,500	7,104	27.9%	Very High	4	R	High	Level	57,600	0.44	B
3	Glenn	5	Co Road 33	Co Road 27	16.803	20.822	4.019	25,500	27,000			Very High	4	R	High	Level	57,600	0.44	B
3	Glenn	5	Co Road 27	Co Road 16	20.822	24.817	3.995	25,500	30,000			Very High	4	R	High	Level	57,600	0.44	B
3	Glenn	5	Co Road 16	Route 32 East	24.817	25.529	0.712	25,500	28,500	7,288	28.6%	Very High	4	R	High	Level	57,600	0.44	B
3	Glenn	5	Route 32 East	Co Road 7	25.529	27.812	2.283	24,600	28,500	6,231	25.3%	Very High	4	R	High	Level	57,600	0.43	B
3	Glenn	5	Co Road 7	Tehama Co Line	27.812	28.821	1.009	24,500	30,000	6,088	24.8%	Very High	4	R	High	Level	57,600	0.43	B
3	Glenn	32	Interstate 5	6th St	0	0.523	0.523	9,200	9,800	687	7.5%	High	2	U	Medium	Level	15,810	0.58	A
3	Glenn	32	6th St	Co Road M	0.523	1.3	0.777	10,800	12,600			Medium	2	U	Low	Level	14,550	0.74	C
3	Glenn	32	Co Road M	Co Road P	1.3	3	1.7	7,600	9,000			Medium	2	R	Medium	Level	25,220	0.30	C
3	Glenn	32	Co Road P	Route 45 South	3	9.626	6.626	8,700	9,200	746	8.6%	Medium	2	R	Medium	Level	25,220	0.34	C
3	Glenn	32	Route 45 South	Butte Co Line	9.626	10.91	1.284	12,800	13,200	877	6.9%	Medium	2	U	Low	Level	14,550	0.88	D
3	Glenn	45	Colusa Co Line	Route 162 East	0	3.059	3.059	2,300	2,600	354	15.4%	High	2	R	Medium	Level	24,180	0.10	A
3	Glenn	45	Route 162 East	Route 162 West	3.059	7.527	4.468	1,550	1,750	124	8.0%	Medium	2	R	Medium	Level	25,220	0.06	A
3	Glenn	45	Route 162 West	Co Road 39	7.527	11.866	4.339	2,500	2,700	139	5.6%	Medium	2	R	Medium	Level	25,220	0.10	A
3	Glenn	45	Co Road 39	Co Road 29	11.866	17.191	5.325	2,000	2,350			Medium	2	R	Medium	Level	25,220	0.08	A



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3	Glenn	45	Co Road 29	Co Road 24	17.191	20.591	3.4	2,250	2,750			Medium	2	R	Medium	Level	25,220	0.09	A
3	Glenn	45	Co Road 24	Hamilton City/ 1st St	20.591	22.68	2.089	2,250	2,350	125	5.6%	Medium	2	R	Medium	Level	25,220	0.09	A
3	Glenn	45	Hamilton City/ 1st St	Hamilton City/ Route 32	22.68	23.23	0.55	2,350	2,600			Medium	2	R	Medium	Level	25,220	0.09	A
3	Glenn	162	Co Road 307	Mendocino Natl Forest East Limit	37.648	41.379	3.731	200	250	20	10.0%	Medium	2	R	Medium	Rolling	20,160	0.01	A
3	Glenn	162	Mendocino Natl Forest East Limit	Co Road 306	41.379	45.117	3.738	370	400			Medium	2	R	Medium	Rolling	20,160	0.02	A
3	Glenn	162	Co Road 306	Co Road 304	45.117	45.382	0.265	670	820			Medium	2	R	Medium	Rolling	20,160	0.03	A
3	Glenn	162	Co Road 304	Co Road D	45.382	63.678	18.296	800	830			Medium	2	R	Medium	Rolling	20,160	0.04	A
3	Glenn	162	Co Road D	Co Road F	63.678	64.88	1.202	2,600	2,600			Medium	2	R	Medium	Level	25,220	0.10	A
3	Glenn	162	Co Road F	Willows/ Interstate 5	64.88	65.523	0.643	8,800	9,600			Medium	2	R	Medium	Level	25,220	0.35	C
3	Glenn	162	Willows/ Interstate 5	Willows/ Tehama St	65.523	66.632	1.109	8,700	10,200	355	4.1%	Low	2	U	Low	Level	15,000	0.58	A
3	Glenn	162	Willows/ Tehama St	Willows/ 1st St	66.632	67.106	0.474	5,000	5,600			Medium	2	U	Low	Level	14,550	0.34	A
3	Glenn	162	Willows/ 1st St	Central Irrigation Canal	67.106	67.204	0.098	2,900	3,050	261	9.0%	Medium	2	U	Low	Level	14,550	0.20	A
3	Glenn	162	Central Irrigation Canal	Co Road P	67.204	69.692	2.488	3,050	3,300			Medium	2	R	Medium	Level	25,220	0.12	B
3	Glenn	162	Co Road P	Co Road V	69.692	73.549	3.857	2,700	3,100			Medium	2	R	Medium	Level	25,220	0.11	A
3	Glenn	162	Co Road V	Route 45	73.549	76.27	2.721	2,150	2,300	215	10.0%	Medium	2	R	Medium	Level	25,220	0.09	A
3	Glenn	162	Route 45	Butte City	76.27	77.534	1.264	2,400	2,550	482	20.1%	Very High	2	R	Medium	Level	23,400	0.10	A
3	Glenn	162	Butte City	Sacramento River Overflow	77.534	79.069	1.535	2,700	2,850			Medium	2	R	Medium	Level	25,220	0.11	A
3	Glenn	162	Sacramento River Overflow	Co Road Z	79.069	81.372	2.303	2,400	2,500			Medium	2	R	Medium	Level	25,220	0.10	A
3	Glenn	162	Co Road Z	Butte Co Line	81.372	84.59	3.218	1,500	1,650			Medium	2	R	Medium	Level	25,220	0.06	A
3	Nevada	20	Yuba Co Line	Pleasant Valley Rd	0	4.651	4.651	8,200	9,300			Medium	2	R	Medium	Rolling	20,160	0.41	D
3	Nevada	20	Pleasant Valley Rd	Penn Valley Dr	4.651	6.6	1.949	13,000	13,700			Medium	2	R	Medium	Rolling	20,160	0.64	E
3	Nevada	20	Penn Valley Dr	Grass Valley/ Mill St	6.6	12.162	5.562	16,500	17,400			Medium	2	R	Medium	Rolling	20,160	0.82	E
3	Nevada	20	Grass Valley/ Mill St	Grass Valley/ Route 49	12.162	12.24	0.078	24,900	25,500			Medium	4	U	High	Level	76,630	0.32	A
3	Nevada	20	Grass Valley/ Route 49	Grass Valley/ N Auburn St	12.24	12.864	0.624	43,500	45,000	3,045	7.0%	Medium	4	U	High	Level	76,630	0.57	C
3	Nevada	20	Grass Valley/ N Auburn St	Grass Valley/ Bennett St	12.864	13.112	0.248	35,000	39,500			Medium	4	U	High	Level	76,630	0.46	B
3	Nevada	20	Grass Valley/ Bennett St	Idaho Maryland Rd	13.112	13.614	0.502	48,000	57,000			Medium	4	U	High	Level	76,630	0.63	C
3	Nevada	20	Idaho Maryland Rd	Brunswick Rd	13.614	14.797	1.183	37,000	38,500			Medium	4	U	High	Level	76,630	0.48	B
3	Nevada	20	Brunswick Rd	Banner Ridge Overcross	14.797	15.41	0.613	32,500	34,500	1,950	6.0%	Medium	4	R	High	Rolling	55,680	0.58	C
3	Nevada	20	Banner Ridge Overcross	Gold Flat Rd	15.41	15.916	0.506	32,500	34,500			Medium	4	R	High	Rolling	55,680	0.58	C
3	Nevada	20	Gold Flat Rd	Nevada City/ Sacramento St	15.916	16.741	0.825	25,500	27,500			Medium	4	R	High	Rolling	55,680	0.46	B
3	Nevada	20	Nevada City/ Sacramento St	Nevada City/ Broad St	16.741	16.988	0.247	25,000	27,000			Medium	4	U	High	Level	76,630	0.33	A
3	Nevada	20	Nevada City/ Broad St	Nevada City/ Coyote St	16.988	17.24	0.252	16,900	19,800			Medium	4	U	High	Level	76,630	0.22	A
3	Nevada	20	Nevada City/ Coyote St	Nevada City/ Route 49	17.24	17.398	0.158	17,000	22,000	901	5.3%	Medium	4	U	High	Level	76,630	0.22	A
3	Nevada	20	Nevada City/ Route 49	Scotts Flat Rd	17.398	23.25	5.852	6,100	11,000	642	10.5%	Medium	2	R	Medium	Rolling	20,160	0.30	C
3	Nevada	20	Scotts Flat Rd	White Cloud Campground	23.25	29.6	6.35	3,050	4,100			Medium	2	R	Medium	Mountain	9,130	0.33	C
3	Nevada	20	White Cloud Campground	Washington Rd	29.6	31.834	2.234	4,000	6,600	618	15.5%	High	2	R	Medium	Mountain	8,470	0.47	D
3	Nevada	20	Washington Rd	Placer Co Line	31.834	41.287	9.453	4,650	7,800			Medium	2	R	Medium	Mountain	9,130	0.51	D
3	Nevada	20	Placer Co Line	Placer Co Line	43.868	45.661	1.793	2,600	3,700	276	10.6%	Medium	2	R	Medium	Mountain	9,130	0.28	C
3	Nevada	49	Placer Co Line	Wolf Rd/ Combie Rd	0	2.194	2.194	34,500	36,500			Medium	4	R	Medium	Rolling	55,680	0.62	C
3	Nevada	49	Wolf Rd/ Combie Rd	South Wolf Creek Bridge	2.194	3.614	1.42	21,100	22,000			Medium	2	R	Medium	Rolling	20,160	1.05	F
3	Nevada	49	South Wolf Creek Bridge	Alta Sierra Dr	3.614	9.22	5.606	22,000	23,500	1,177	5.4%	Medium	2	R	Medium	Rolling	20,160	1.09	F



Traffic Database: Existing (2010) Conditions

Caltrans District	County	State Route	Segment					Caltrans 2010 Daily Volumes				Existing Roadway Characteristics							
			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
3	Nevada	49	Alta Sierra Dr	Lower La Barr Meadows Rd	9.22	10.71	1.49	27,000	30,000			Medium	2	R	Medium	Rolling	20,160	1.34	F
3	Nevada	49	Lower La Barr Meadows Rd	South Grass Valley	10.71	13.663	2.953	25,000	26,000			Medium	4	R	High	Rolling	55,680	0.45	B
3	Nevada	49	South Grass Valley	Route 20	13.663	14.475	0.812	31,000	34,000	1,163	3.8%	Low	4	U	High	Level	79,000	0.39	B
3	Nevada	49	Route 20	West Broad St	14.475	15.81	1.335	11,100	12,400	290	2.6%	Low	4	U	High	Level	79,000	0.14	A
3	Nevada	49	West Broad St	Newtown/ Indian Flat Rd	15.81	17.54	1.73	6,100	7,000			Medium	2	R	Medium	Rolling	20,160	0.30	C
3	Nevada	49	Newtown/ Indian Flat Rd	Tyler Foote Crossing Rd	17.54	25.69	8.15	3,850	4,150			Medium	2	R	Medium	Rolling	20,160	0.19	B
3	Nevada	49	Tyler Foote Crossing Rd	Pleasant Valley Rd	25.69	27.52	1.83	2,700	3,100			Medium	2	R	Medium	Mountain	9,130	0.30	C
3	Nevada	49	Pleasant Valley Rd	Yuba Co Line	27.52	32.637	5.117	1,650	2,050			Medium	2	R	Medium	Mountain	9,130	0.18	B
3	Nevada	80	NEV CO LINE LT LNS	Yuba Gap OC	58.644	58.835	0.191	11,750	14,800			Very High	4	R	High	Mountain	32,640	0.36	B
3	Nevada	80	Yuba Gap OC	Route 20 West	58.835	59.54	0.705	24,000	30,000	5,160	21.5%	Very High	4	R	High	Mountain	32,640	0.74	C
3	Nevada	80	Route 20 West	Caryle Rd/ Indian Springs	59.54	62.027	2.487	25,500	32,000	4,802	18.8%	High	4	R	High	Mountain	36,960	0.69	C
3	Nevada	80	Caryle Rd/ Indian Springs	Placer Co Line	62.027	62.747	0.72	12,750	16,100			High	4	R	High	Mountain	36,960	0.34	B
3	Nevada	80	Placer Co Line	Soda Springs	0	2.476	2.476	29,400	34,400			High	4	R	High	Mountain	36,960	0.80	D
3	Nevada	80	Soda Springs	Castle Peak	2.476	5.066	2.59	30,000	34,400			High	4	R	High	Mountain	36,960	0.81	D
3	Nevada	80	Castle Peak	Truckee/ Donner Park	5.066	9.007	3.941	24,800	28,500			High	4	R	High	Mountain	36,960	0.67	C
3	Nevada	80	Truckee/ Donner Park	Truckee/ Route 89 South	9.007	14.164	5.157	28,000	31,000	5,018	17.9%	High	4	R	High	Mountain	36,960	0.76	C
3	Nevada	80	Truckee/ Route 89 South	West Truckee	14.164	14.97	0.806	33,500	37,500	5,919	17.7%	High	4	R	High	Rolling	53,940	0.62	C
3	Nevada	80	West Truckee	Route 89 North/ Route 267 South	14.97	16.285	1.315	32,000	35,500			High	4	R	High	Rolling	53,940	0.59	C
3	Nevada	80	Route 89 North/ Route 267 South	Polaris Rd (CHP Scales)	16.285	18.276	1.991	26,500	29,500	4,918	18.6%	High	4	R	High	Mountain	36,960	0.72	C
3	Nevada	80	Polaris Rd (CHP Scales)	Hirschdale OH	18.276	22.412	4.136	25,500	30,500			High	4	R	High	Mountain	36,960	0.69	C
3	Nevada	80	Hirschdale OH	Truckee River/ Floriston	22.412	27.292	4.88	27,000	29,000			High	4	R	High	Mountain	36,960	0.73	C
3	Nevada	80	Truckee River/ Floriston	Farad	27.292	29.489	2.197	27,000	33,000			High	4	R	High	Mountain	36,960	0.73	C
3	Nevada	80	Farad	Sierra Co Line	29.489	31.783	2.294	27,000	33,000			High	4	R	High	Mountain	36,960	0.73	C
3	Nevada	89	Placer Co Line	Interstate 80	0	0.621	0.621	18,400	25,000			High	2	R	Medium	Rolling	19,530	0.94	E
3	Nevada	89	Interstate 80	Prosser Dam Rd	0.621	1.15	0.529	4,900	6,700			High	2	R	Medium	Rolling	19,530	0.25	C
3	Nevada	89	Prosser Dam Rd	Hobart Mills Rd	1.15	5.04	3.89	4,000	6,000			High	2	R	Medium	Rolling	19,530	0.20	B
3	Nevada	89	Hobart Mills Rd	Sierra Co Line	5.04	8.702	3.662	1,850	3,150	209	11.3%	High	2	R	Medium	Mountain	8,470	0.22	B
3	Nevada	174	Placer Co Line	Rollins Lake Rd	0	3.35	3.35	5,300	6,200	358	6.8%	Medium	2	R	Medium	Rolling	20,160	0.26	C
3	Nevada	174	Rollins Lake Rd	Meadow View Dr	3.35	5.58	2.23	8,100	8,700			Medium	2	R	Medium	Rolling	20,160	0.40	D
3	Nevada	174	Meadow View Dr	Brunswick Rd	5.58	6.83	1.25	10,200	11,300			Medium	2	R	Medium	Rolling	20,160	0.51	D
3	Nevada	174	Brunswick Rd	Empire Mine Rd	6.83	8.94	2.11	13,200	13,700			Medium	2	R	Medium	Rolling	20,160	0.65	E
3	Nevada	174	Empire Mine Rd	Grass Valley/ Race St	8.94	9.634	0.694	8,500	8,700			Medium	2	R	Medium	Level	25,220	0.34	C
3	Nevada	174	Grass Valley/ Race St	Ophir St	9.634	9.81	0.176	13,300	13,800			Medium	2	U	Medium	Level	16,490	0.81	D
3	Nevada	174	Ophir St	Central Ave	9.81	9.88	0.07	7,700	8,000			Medium	2	U	Medium	Level	16,490	0.47	A
3	Nevada	174	Central Ave	Route 20	9.88	10.17	0.29	5,900	6,100	427	7.2%	Medium	2	U	Medium	Level	16,490	0.36	A
3	Nevada	267	Interstate 80/ Route 89	Soaring Wy	0	1.419	1.419	10,800	13,500			Medium	2	R	Medium	Level	25,220	0.43	D
3	Nevada	267	Soaring Wy	Placer Co Line	1.419	1.798	0.379	12,500	16,200			Medium	2	R	Medium	Level	25,220	0.50	D
3	Sierra	49	Yuba Co Line	Goodyear Creek Rd	0	12.23	12.23	550	830			Medium	2	R	Medium	Mountain	9,130	0.06	A
3	Sierra	49	Goodyear Creek Rd	Saddleback Rd	12.23	16.291	4.061	1,125	1,650			Medium	2	R	Medium	Mountain	9,130	0.12	B
3	Sierra	49	Saddleback Rd	Downieville/ Main St	16.291	16.787	0.496	1,100	1,550			Medium	2	R	Medium	Mountain	9,130	0.12	B
3	Sierra	49	Downieville/ Main St	Sierra City West	16.787	29.19	12.403	1,100	1,500			Medium	2	R	Medium	Mountain	9,130	0.12	B



Traffic Database: Existing (2010) Conditions

Caltrans District	County	State Route	Segment					Caltrans 2010 Daily Volumes				Existing Roadway Characteristics							
			From	To	From PM	To PM	Length	AADT	Peak Month	Trucks	Truck %	Estimated Truck % Category	Travel Lanes	Rural or Urban	Access Control (General)	Terrain Type	Capacity	V/C	Estimated LOS
3	Sierra	49	Sierra City West	Gold Lake Hwy	29.19	34.307	5.117	720	980			Medium	2	R	Medium	Mountain	9,130	0.08	A
3	Sierra	49	Gold Lake Hwy	Sattley/ Route 89	34.307	47.44	13.133	330	470	31	9.4%	Medium	2	R	Medium	Mountain	9,130	0.04	A
3	Sierra	49	Sattley/ Route 89	Sierraville/ Lemon Canyon	47.44	47.86	0.42	950	1,200	90	9.5%	Medium	2	R	Medium	Mountain	9,130	0.10	A
3	Sierra	49	Sierraville/ Lemon Canyon	Antelope Valley Rd	47.86	56.54	8.68	1,400	1,850	174	12.4%	High	2	R	Medium	Mountain	8,470	0.17	B
3	Sierra	49	Antelope Valley Rd	Loyalton/ Smithneck Creek	56.54	60.545	4.005	1,750	2,000			Medium	2	R	Medium	Mountain	9,130	0.19	B
3	Sierra	49	Loyalton/ Smithneck Creek	Smithneck Rd/ Sierra	60.545	61.32	0.775	1,900	2,100			Medium	2	R	Medium	Mountain	9,130	0.21	B
3	Sierra	49	Smithneck Rd/ Sierra	Plumas Co Line	61.32	64.047	2.727	1,500	1,800			Medium	2	R	Medium	Mountain	9,130	0.16	B
3	Sierra	80	Nevada Co Line	Nevada State Line	0	1.593	1.593	27,000	33,000	5,011	18.6%	High	4	R	High	Rolling	53,940	0.50	B
3	Sierra	89	Nevada Co Line	Sierraville/ Route 49 N	0	15.055	15.055	1,850	3,150	235	12.7%	High	2	R	Medium	Rolling	19,530	0.09	A
3	Sierra	89	Sierraville/ Route 49 N	Route 49 West	15.055	19.958	4.903	1,200	2,150	160	13.3%	High	2	R	Medium	Level	24,180	0.05	A
3	Sierra	89	Route 49 West	Calpine Rd	19.958	23.08	3.122	980	1,750	89	9.1%	Medium	2	R	Medium	Level	25,220	0.04	A
3	Sierra	89	Calpine Rd	Plumas Co Line	23.08	29.584	6.504	680	1,050			Medium	2	R	Medium	Level	25,220	0.03	A
3	Sierra	395	Nevada State Line	Lassen Co Line	0	3.059	3.059	8,800	10,600			Medium	4	R	High	Level	62,080	0.14	A
Notes: - Segments with LOS C, D, E and F are shaded yellow, orange, pink, and magenta - See Appendix A for methodology used to estimate "planning level" LOS Source: DKS Associates analysis based on Caltrans volume information for 2010																			



Appendix C: Forecasts of Traffic Volumes and Levels of Service (LOS)

The next 30 pages provide provides forecasts of traffic volumes and levels of service for 2015, 2020, 2025 and 2030 for each SHS segment in the North State SHS. The pages are formatted as landscape 8½ x 11 tables.



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
DISTRICT 1														
Del Norte County														
101	North of	Humboldt Co Line	3.56	4	2,900	3,050	3,200	3,350	3,500	A	A	A	A	A
101	South of	SR 169 SE	1.08	2	3,450	3,613	3,775	3,938	4,100	B	B	B	B	B
101	SR 169 SE	Requa Rd	3.54	2	4,500	4,725	4,950	5,175	5,400	C	C	C	C	C
101	Requa Rd	New Hunter Creek Rd	0.63	2	4,500	4,725	4,950	5,175	5,400	B	B	B	B	B
101	New Hunter Creek Rd	Trees of Mystery	2.07	2	4,400	4,625	4,850	5,075	5,300	B	B	B	B	B
101	Trees of Mystery	Humboldt Rd/ Bluff Rd	12.90	2	4,800	5,050	5,300	5,550	5,800	C	C	C	C	C
101	Humboldt Rd/ Bluff Rd	Sandmine Rd	0.64	2	4,600	4,950	5,300	5,650	6,000	B	B	B	B	C
101	Sandmine Rd	Crescent City/ Elk Valley Rd	1.43	2	11,400	12,250	13,100	13,950	14,800	D	D	D	D	D
101	Crescent City/ Elk Valley Rd	Cresecent City/ Front St	0.37	4	22,300	23,975	25,650	27,325	29,000	C	C	D	D	E
101	Cresecent City/ Front St	Cresecent City/ 4th St	0.17	4	22,300	23,975	25,650	27,325	29,000	C	C	D	D	E
101	Cresecent City/ 4th St	Cresecent City/ 9th St	0.28	4	26,200	28,175	30,150	32,125	34,100	D	E	E	F	F
101	Cresecent City/ 9th St	Crescent City/ Northcrest Dr	0.35	4	29,500	31,725	33,950	36,175	38,400	D	E	E	F	F
101	Crescent City/ Northcrest Dr	Washington Blvd	0.86	4	15,900	17,100	18,300	19,500	20,700	A	A	A	A	A
101	Washington Blvd	Route 199 NE	2.94	4	10,900	11,725	12,550	13,375	14,200	A	A	A	A	A
101	Route 199 NE	Elk Valley Cross Rd	0.38	4	6,000	6,450	6,900	7,350	7,800	A	A	A	A	A
101	Elk Valley Cross Rd	Route 197 SE	5.12	2	6,900	7,425	7,950	8,475	9,000	C	C	C	C	C
101	Route 197 SE	Fred Haight Dr	3.52	2	6,500	7,000	7,500	8,000	8,500	C	C	C	C	C
101	Fred Haight Dr	Oregon State Line	6.66	2	7,000	7,700	8,400	9,100	9,800	C	C	C	C	C
169	US 101	Simpson Mill Rd	0.25	2	1,900	1,950	2,000	2,050	2,100	A	A	A	A	A
169	Simpson Mill Rd	Arrow Mills Rd	2.64	2	930	948	965	983	1,000	A	A	A	A	A
169	Arrow Mills Rd	Klamath Glen/ Riffle Rd	0.63	2	930	948	965	983	1,000	A	A	A	A	A
197	North of	Route 199	2.60	2	2,300	2,525	2,750	2,975	3,200	B	B	B	B	B
197	South of	US 101	4.48	2	1,800	1,975	2,150	2,325	2,500	A	A	B	B	B
199	US 101	Route 197	4.37	2	5,600	5,875	6,150	6,425	6,700	C	C	C	C	C
199	Route 197	Hiouchi Village	1.53	2	4,600	4,825	5,050	5,275	5,500	C	C	C	C	C
199	Hiouchi Village	Gasquet	7.10	2	4,300	4,525	4,750	4,975	5,200	B	C	C	C	C
199			6.79	4	0	0	0	0	0	A	A	A	A	A
199	Gasquet	Oregon State Line	16.62	2	3,100	3,250	3,400	3,550	3,700	C	C	D	D	D



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
Humboldt County														
36	Alton, US 101	Alton, East Limits	0.30	2	4,300	4,525	4,750	4,975	5,200	B	C	C	C	C
36	Alton, East Limits	Rohnerville Red	2.51	2	4,300	4,525	4,750	4,975	5,200	B	C	C	C	C
36	Rohnerville Red	Hydesville, East Limits	0.46	2	4,200	4,400	4,600	4,800	5,000	B	B	B	C	C
36	Hydesville, East Limits	Carlotta, East	4.27	2	4,000	4,200	4,400	4,600	4,800	B	B	B	B	B
36	Carlotta, East	Bridgeville, West Limits	16.17	2	2,100	2,200	2,300	2,400	2,500	A	A	B	B	B
36	Bridgeville, West Limits	Bridgeville, Alderpoint Rd	0.21	2	1,400	1,475	1,550	1,625	1,700	B	B	B	B	B
36	Bridgeville, Alderpoint Rd	Cobb, East Limits	20.04	2	1,300	1,375	1,450	1,525	1,600	B	B	B	B	B
36	Cobb, East Limits	Trinity County Line	1.73	2	1,500	1,575	1,650	1,725	1,800	A	A	A	A	A
96	Route 299	Standard Oil Ln	0.10	2	2,900	3,050	3,200	3,350	3,500	C	C	C	C	C
96	Standard Oil Ln	Willow Creek North	3.49	2	1,900	2,000	2,100	2,200	2,300	B	B	C	C	C
96	Willow Creek North	Hoopa South Limits	7.36	2	3,700	3,875	4,050	4,225	4,400	D	D	D	D	D
96	Hoopa South Limits	Hoopa North Limits	1.88	2	3,500	3,675	3,850	4,025	4,200	C	D	D	D	D
96	Hoopa North Limits	Route 169	10.26	2	2,150	2,263	2,375	2,488	2,600	A	B	B	B	B
96	Route 169	Eyesee Rd	14.78	2	900	925	950	975	1,000	A	A	A	A	A
96	Eyesee Rd	Orleans North	0.63	2	900	925	950	975	1,000	A	A	A	A	A
96	Orleans North	Klamath River North	0.27	2	900	925	950	975	1,000	A	A	A	A	A
96	Klamath River North	Siskiyou County Line	6.21	2	520	540	560	580	600	A	A	A	A	A
101	Mendocino County Line	Richardson Grove	1.61	4	4,500	4,625	4,750	4,875	5,000	A	A	A	A	A
101	Richardson Grove	Lake Benbow	6.99	4	4,500	4,625	4,750	4,875	5,000	A	A	A	A	A
101	Lake Benbow	Garberville, Sprowel Creek	2.53	4	5,700	5,850	6,000	6,150	6,300	A	A	A	A	A
101	Garberville, Sprowel Creek	Redwood Drive	0.37	4	3,800	3,900	4,000	4,100	4,200	A	A	A	A	A
101	Redwood Drive	Dean Creek	2.81	4	5,000	5,125	5,250	5,375	5,500	A	A	A	A	A
101	Dean Creek	Route 254 NE	3.59	4	6,700	6,875	7,050	7,225	7,400	A	A	A	A	A
101	Route 254 NE	French Road	4.53	4	5,900	6,050	6,200	6,350	6,500	A	A	A	A	A
101	French Road	Salmon Creek Rd	2.58	4	5,100	5,225	5,350	5,475	5,600	A	A	A	A	A
101	Salmon Creek Rd	Route 254	2.93	4	5,200	5,325	5,450	5,575	5,700	A	A	A	A	A
101	Route 254	Weott	5.31	4	5,400	5,525	5,650	5,775	5,900	A	A	A	A	A
101	Weott	Route 254/ Dyerville Loop Rd	1.86	4	5,400	5,525	5,650	5,775	5,900	A	A	A	A	A
101	Route 254/ Dyerville Loop Rd	So Fork Rd (Ave of the Giants)	0.59	4	5,400	5,525	5,650	5,775	5,900	A	A	A	A	A



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
101	So Fork Rd (Ave of the Giants)	Redcrest	3.97	4	5,600	5,750	5,900	6,050	6,200	A	A	A	A	A
101	Redcrest	Barkdull Rd	3.65	4	6,000	6,150	6,300	6,450	6,600	A	A	A	A	A
101	Barkdull Rd	Route 254/ Jordan Rd	2.58	4	5,900	6,050	6,200	6,350	6,500	A	A	A	A	A
101	Route 254/ Jordan Rd	Shively Rd	3.27	4	7,300	7,475	7,650	7,825	8,000	A	A	A	A	A
101	Shively Rd	S Scotia Rd	1.41	4	7,500	7,700	7,900	8,100	8,300	A	A	A	A	A
101	S Scotia Rd	Route 283/ N Scotia Rd	1.26	4	7,700	7,900	8,100	8,300	8,500	A	A	A	A	A
101	Route 283/ N Scotia Rd	Rio Dell/ Davis Street	0.76	4	8,200	8,825	9,450	10,075	10,700	A	A	A	A	A
101	Rio Dell/ Davis Street	Rio Dell/ Scenic Way	0.78	4	8,800	9,450	10,100	10,750	11,400	A	A	A	A	A
101	Rio Dell/ Scenic Way	Route 36 E	4.31	4	13,000	13,975	14,950	15,925	16,900	A	A	A	A	A
101	Route 36 E	Drake Hill Rd	1.00	4	17,900	19,250	20,600	21,950	23,300	A	A	A	B	B
101	Drake Hill Rd	Fortuna/ Kenmar Rd	0.81	4	17,900	19,250	20,600	21,950	23,300	A	A	A	B	B
101	Fortuna/ Kenmar Rd	12th St	0.99	4	13,000	13,975	14,950	15,925	16,900	A	A	A	A	A
101	12th St	Main St	1.04	4	15,100	16,225	17,350	18,475	19,600	A	A	A	A	B
101	Main St	Palmer Blvd	0.70	4	22,800	24,500	26,200	27,900	29,600	B	B	B	B	B
101	Palmer Blvd	Finch Creek Rd	0.87	4	22,300	23,975	25,650	27,325	29,000	B	B	B	B	B
101	Finch Creek Rd	Route 211/ Singley Rd	1.19	4	18,500	19,900	21,300	22,700	24,100	A	B	B	B	B
101	Route 211/ Singley Rd	Loleta Dr	1.66	4	20,700	22,250	23,800	25,350	26,900	B	B	B	B	B
101	Loleta Dr	Hookton Rd	2.26	4	21,000	22,575	24,150	25,725	27,300	B	B	B	B	B
101	Hookton Rd	Fields Landing	2.40	4	21,900	23,550	25,200	26,850	28,500	B	B	B	B	B
101	Fields Landing	Orchard Ave	1.42	4	22,100	23,750	25,400	27,050	28,700	A	A	A	B	B
101	Orchard Ave	King Salmon Ave	0.84	4	23,400	25,150	26,900	28,650	30,400	A	A	B	B	B
101	King Salmon Ave	Spruce Point	0.84	4	24,800	26,650	28,500	30,350	32,200	A	B	B	B	B
101	Spruce Point	Eureka/ Herrick Ave	1.06	4	31,000	33,325	35,650	37,975	40,300	B	B	B	B	B
101	Eureka/ Herrick Ave	Eureka/ McCullen Ave	1.13	4	31,000	33,325	35,650	37,975	40,300	D	E	F	F	F
101	Eureka/ McCullen Ave	Eureka/ Harris St	0.42	4	34,500	37,100	39,700	42,300	44,900	E	F	F	F	F
101	Eureka/ Harris St	Eureka/ Henderson St	0.32	4	38,800	41,700	44,600	47,500	50,400	F	F	F	F	F
101	Eureka/ Henderson St	Eureka/ Wabash Ave	0.65	4	38,800	41,700	44,600	47,500	50,400	F	F	F	F	F
101	Eureka/ Wabash Ave	Eureka/ Seventh St	0.55	4	38,000	40,850	43,700	46,550	49,400	F	F	F	F	F
101	Eureka/ Seventh St	Eureka/ Sixth St	0.06	4	39,500	42,475	45,450	48,425	51,400	F	F	F	F	F
101	Eureka/ Sixth St	Begin Couplet	0.12	4	34,500	37,100	39,700	42,300	44,900	F	F	F	F	F



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
101	Begin Couplet	G St	0.53	6	39,900	42,900	45,900	48,900	51,900	D	E	E	F	F
101	G St	I St	0.12	6	53,000	56,975	60,950	64,925	68,900	F	F	F	F	F
101	I St	Myrtle Ave	0.45	6	42,300	45,475	48,650	51,825	55,000	E	E	F	F	F
101	Myrtle Ave	Route 255 N	0.04	6	40,000	43,000	46,000	49,000	52,000	D	E	E	F	F
101	Route 255 N	End Couplet	0.80	6	34,000	36,550	39,100	41,650	44,200	C	C	D	D	E
101	End Couplet	Cole Ave	0.29	4	35,500	38,175	40,850	43,525	46,200	B	B	C	C	C
101	Cole Ave	Airport Rd	0.58	4	35,500	38,175	40,850	43,525	46,200	B	B	C	C	C
101	Airport Rd	Indianola Rd	1.84	4	36,000	38,700	41,400	44,100	46,800	C	C	C	C	C
101	Indianola Rd	Arcata/ Bayside Rd	1.24	4	36,500	39,250	42,000	44,750	47,500	C	C	C	C	D
101	Arcata/ Bayside Rd	Arcata/ G St	1.11	4	37,000	39,775	42,550	45,325	48,100	C	C	C	C	D
101	Arcata/ G St	Arcata/ Route 255 S	0.80	4	37,000	39,775	42,550	45,325	48,100	B	B	C	C	C
101	Arcata/ Route 255 S	Arcata/ 14th St	0.67	4	37,000	39,775	42,550	45,325	48,100	B	B	C	C	C
101	Arcata/ 14th St	Arcata/ Sunset Ave	0.44	4	34,000	36,550	39,100	41,650	44,200	B	B	B	C	C
101	Arcata/ Sunset Ave	Arcata/ Route 299 E	1.33	4	42,500	45,700	48,900	52,100	55,300	C	C	C	C	C
101	Arcata/ Route 299 E	Arcata/ Giuntoli Ln	0.53	4	32,500	34,950	37,400	39,850	42,300	B	C	C	C	C
101	Arcata/ Giuntoli Ln	Route 200 E	1.33	4	33,500	36,025	38,550	41,075	43,600	C	C	C	C	D
101	Route 200 E	McKinleyville/ School Rd	1.34	4	18,700	20,100	21,500	22,900	24,300	A	B	B	B	B
101	McKinleyville/ School Rd	McKinleyville/ Murray Rd	1.53	4	16,200	17,425	18,650	19,875	21,100	A	A	A	B	B
101	McKinleyville/ Murray Rd	McKinleyville/ Airport Rd	0.85	4	13,100	14,075	15,050	16,025	17,000	A	A	A	A	A
101	McKinleyville/ Airport Rd	Central Ave	1.77	4	11,000	11,825	12,650	13,475	14,300	A	A	A	A	A
101	Central Ave	Crannell Rd	1.40	4	10,700	11,500	12,300	13,100	13,900	A	A	A	A	A
101	Crannell Rd	Westhaven Dr	1.05	4	10,600	11,400	12,200	13,000	13,800	A	A	A	A	A
101	Westhaven Dr	6th Ave	0.29	4	8,600	9,250	9,900	10,550	11,200	A	A	A	A	A
101	6th Ave	Trinidad Rd	2.35	4	8,900	9,575	10,250	10,925	11,600	A	A	A	A	A
101	Trinidad Rd	Seawood Dr	2.67	4	4,700	4,925	5,150	5,375	5,600	A	A	A	A	A
101	Seawood Dr	Patricks Point	2.69	4	4,500	4,725	4,950	5,175	5,400	A	A	A	A	A
101	Patricks Point	Big Lagoon Park Dr	2.15	4	4,100	4,300	4,500	4,700	4,900	A	A	A	A	A
101	Big Lagoon Park Dr	Georgia Pacific Rd	1.33	2	4,000	4,200	4,400	4,600	4,800	B	B	B	C	C
101	Georgia Pacific Rd	Orick/ South Limits	10.85	2	4,000	4,200	4,400	4,600	4,800	B	B	B	C	C
101	Orick/ South Limits	Orick/ North Limits	1.21	2	3,800	4,000	4,200	4,400	4,600	B	B	B	B	B



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
101	Orick/ North Limits	Bald Hills Rd	0.64	2	3,700	3,875	4,050	4,225	4,400	B	B	B	B	B
101	Bald Hills Rd	Redwood Mill Rd	1.48	2	3,700	3,875	4,050	4,225	4,400	B	B	B	B	B
101	Redwood Mill Rd	Davidson/ Gold Beach	0.09	2	3,400	3,575	3,750	3,925	4,100	B	B	B	B	B
101	Davidson/ Gold Beach	Prairie Creek State Park	2.28	2	3,100	3,250	3,400	3,550	3,700	B	B	B	B	B
101	Prairie Creek State Park	Del Norte County Line	11.05	4	2,900	3,050	3,200	3,350	3,500	A	A	A	A	A
169	Wautek Village	Martins Ferry Bridge	16.75	2	320	340	360	380	400	A	A	A	A	A
169	Martins Ferry Bridge	Weitchpec/ Route 96	3.89	2	370	378	385	393	400	A	A	A	A	A
200	US 101	Azaea Ave	1.29	2	2,500	2,625	2,750	2,875	3,000	B	B	B	B	B
200	Azaea Ave	Route 299	1.39	2	1,900	2,000	2,100	2,200	2,300	A	A	A	A	B
211	Ferndale/ Ocean Ave	Ferndale/ Van Ness Ave	0.99	2	6,100	6,550	7,000	7,450	7,900	A	A	A	A	A
211	Ferndale/ Van Ness Ave	Sage Rd	1.00	2	6,000	6,450	6,900	7,350	7,800	C	C	C	C	C
211	Sage Rd	Goble/ Waddington Rd	1.50	2	5,500	5,925	6,350	6,775	7,200	B	C	C	C	C
211	Goble/ Waddington Rd	US 101	2.47	2	5,100	5,475	5,850	6,225	6,600	B	B	C	C	C
254	US 101	Miranda Bridge Rd	4.84	2	700	725	750	775	800	A	A	A	A	A
254	Miranda Bridge Rd	US 101	7.49	2	1,550	1,588	1,625	1,663	1,700	A	A	A	A	A
254	US 101	Burlington State Park	4.51	2	590	593	595	598	600	A	A	A	A	A
254	Burlington State Park	Weott North	1.96	2	540	555	570	585	600	A	A	A	A	A
254	Weott North	Englewood Park	5.41	2	500	525	550	575	600	A	A	A	A	A
254	Englewood Park	US 101/ Jordan Rd	22.32	2	330	348	365	383	400	A	A	A	A	A
255	Eureka/ US 101	Navy Base Rd	2.03	2	9,500	9,975	10,450	10,925	11,400	A	B	B	B	B
255	Navy Base Rd	Pacific Ave	1.63	2	7,200	7,550	7,900	8,250	8,600	A	A	A	A	A
255	Pacific Ave	Young Ln	1.07	2	7,100	7,450	7,800	8,150	8,500	A	A	A	A	A
255	Young Ln	Mad River Slough Bridge	0.40	2	7,000	7,350	7,700	8,050	8,400	A	A	A	A	A
255	Mad River Slough Bridge	Arcata/ K St	3.22	2	7,500	7,875	8,250	8,625	9,000	A	A	A	A	A
255	Arcata/ K St	Arcata/ H St	0.17	4	8,600	9,025	9,450	9,875	10,300	A	A	A	A	A
255	Arcata/ H St	Arcata/ G St	0.06	4	10,200	10,700	11,200	11,700	12,200	A	A	A	A	A
255	Arcata/ G St	US 101	0.22	4	15,500	16,275	17,050	17,825	18,600	A	A	A	A	A
283	US 101	US 101	0.36	2	2,150	2,213	2,275	2,338	2,400	A	A	A	A	A
299	US 101	Giuntoli Ln	0.72	4	12,900	13,550	14,200	14,850	15,500	A	A	A	A	A
299	Giuntoli Ln	Route 200 W	1.08	4	11,700	12,275	12,850	13,425	14,000	A	A	A	A	A



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
299	Route 200 W	Essex Lane	1.12	4	13,100	13,750	14,400	15,050	15,700	A	A	A	A	A
299	Essex Lane	Glendale	1.12	4	11,400	11,975	12,550	13,125	13,700	A	A	A	A	A
299	Glendale	Blue Lake Rd	1.42	2	10,100	10,600	11,100	11,600	12,100	D	D	D	D	D
299	Blue Lake Rd	Elgar Rd	0.80	2	3,300	3,475	3,650	3,825	4,000	C	D	D	D	D
299	Elgar Rd	Buckley Rd	0.41	2	3,500	3,675	3,850	4,025	4,200	D	D	D	D	D
299	Buckley Rd	Old Highway	0.47	2	3,500	3,675	3,850	4,025	4,200	D	D	D	D	D
299	Old Highway	Bair Rd	11.91	2	3,400	3,575	3,750	3,925	4,100	D	D	D	D	D
299	Bair Rd	Willow Creek/ Route 96 N	19.78	2	3,200	3,350	3,500	3,650	3,800	C	D	D	D	D
299	Willow Creek/ Route 96 N	Willow Creek/ River Rd	0.07	2	4,500	4,725	4,950	5,175	5,400	D	D	D	E	E
299	Willow Creek/ River Rd	Gambi Village East	2.96	2	4,600	4,825	5,050	5,275	5,500	C	C	C	C	C
299	Gambi Village East	Trinity Co Line	1.18	2	3,800	4,000	4,200	4,400	4,600	B	B	B	B	C
Lake County														
20	Mendocino County Line	Scott Valley Rd	3.63	2	8,300	9,550	10,800	12,050	13,300	D	D	D	D	E
20	Scott Valley Rd	Route 29 S	4.69	2	8,800	10,125	11,450	12,775	14,100	D	D	D	E	E
20	Route 29 S	Lucerne Cut-Off	3.88	2	8,400	9,025	9,650	10,275	10,900	C	C	C	D	D
20	Lucerne Cut-Off	Lucerne East/ Bell Ray Ave	6.33	2	11,800	12,675	13,550	14,425	15,300	D	D	D	D	D
20	Lucerne East/ Bell Ray Ave	Clearlake Oaks East	7.44	2	7,700	8,275	8,850	9,425	10,000	C	C	C	C	D
20	Clearlake Oaks East	Route 53 South	5.65	2	8,000	8,600	9,200	9,800	10,400	C	C	C	D	D
20	Route 53 South	Colusa Co Line	14.86	2	6,800	7,825	8,850	9,875	10,900	E	E	E	F	F
29	Napa Co Line	Rancheria Rd	4.15	2	8,700	10,225	11,750	13,275	14,800	D	D	D	E	E
29	Rancheria Rd	Dry Creek Cutoff	0.39	2	9,300	10,925	12,550	14,175	15,800	D	D	E	E	E
29	Dry Creek Cutoff	Middletown/ Route 175	1.27	2	11,100	13,050	15,000	16,950	18,900	D	E	E	E	E
29	Middletown/ Route 175	Middletown/ Butts Cyn Rd	0.55	2	11,200	13,150	15,100	17,050	19,000	D	E	E	E	E
29	Middletown/ Butts Cyn Rd	Hidden Valley/ Spruce Rd	4.76	2	11,500	13,525	15,550	17,575	19,600	D	E	E	E	E
29	Hidden Valley/ Spruce Rd	Spruce Grove Rd	0.81	2	9,200	10,800	12,400	14,000	15,600	D	D	E	E	E
29	Spruce Grove Rd	Route 53 N	9.19	2	10,900	12,800	14,700	16,600	18,500	D	E	E	E	E
29	Route 53 N	Seigler Cyn Rd	1.34	2	10,900	13,075	15,250	17,425	19,600	D	E	E	E	E
29	Seigler Cyn Rd	Point Lakeview Dr	0.54	2	9,800	11,750	13,700	15,650	17,600	D	D	E	E	E
29	Point Lakeview Dr	Route 281	5.70	2	8,800	10,550	12,300	14,050	15,800	D	D	E	E	E
29	Route 281	Route 175	3.16	2	9,100	10,925	12,750	14,575	16,400	E	F	F	F	F



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
29	Route 175	Bottle Rock Rd	1.30	2	10,500	12,600	14,700	16,800	18,900	D	E	E	E	E
29	Bottle Rock Rd	Kelseyville/ Main St	2.23	2	10,700	12,850	15,000	17,150	19,300	D	E	E	E	E
29	Kelseyville/ Main St	Kelseyville/ Live Oak Dr	0.17	2	10,500	12,600	14,700	16,800	18,900	D	D	D	E	E
29	Kelseyville/ Live Oak Dr	Kelseyville/ Bell Hill Rd	0.57	2	10,800	12,950	15,100	17,250	19,400	D	D	D	E	E
29	Kelseyville/ Bell Hill Rd	Renfro Dr	0.97	2	9,300	11,150	13,000	14,850	16,700	C	D	D	D	E
29	Renfro Dr	Argonaut Rd	1.38	2	12,600	15,125	17,650	20,175	22,700	D	D	E	E	E
29	Argonaut Rd	Highland Springs Rd	0.92	2	12,400	14,875	17,350	19,825	22,300	D	D	E	E	E
29	Highland Springs Rd	Route 175	1.55	2	12,500	15,000	17,500	20,000	22,500	D	D	E	E	E
29	Route 175	Lakeport Blvd	1.28	4	14,600	17,525	20,450	23,375	26,300	A	A	A	B	B
29	Lakeport Blvd	11th St	1.25	4	14,600	17,525	20,450	23,375	26,300	A	A	A	B	B
29	11th St	Park Way	2.47	4	12,200	14,650	17,100	19,550	22,000	A	A	A	A	B
29	Park Way	Lucrene	2.70	4	9,700	11,650	13,600	15,550	17,500	A	A	A	A	A
29	Lucrene	Route 20/ Upper Lake	4.69	2	5,900	6,775	7,650	8,525	9,400	C	C	C	C	C
53	Route 29/ Lower Lake	Lakeshore Dr/ Old Hwy	1.47	4	17,500	20,125	22,750	25,375	28,000	A	B	B	B	B
53	Lakeshore Dr/ Old Hwy	Clearlake Highlands/ 40th Ave	1.49	4	17,500	20,125	22,750	25,375	28,000	A	B	B	B	B
53	Clearlake Highlands/ 40th Ave	Route 20	4.49	2	8,700	10,000	11,300	12,600	13,900	D	D	D	E	E
175	Mendocino County Line	Route 29	8.25	2	2,050	2,313	2,575	2,838	3,100	B	C	C	C	C
175	Route 29	Cobb Post Office	11.37	2	4,000	4,500	5,000	5,500	6,000	D	D	E	E	E
175	Cobb Post Office	Dry Creek Rd	6.92	2	3,600	4,050	4,500	4,950	5,400	B	B	B	C	C
175	Dry Creek Rd	Route 29	1.50	2	3,200	3,600	4,000	4,400	4,800	B	B	B	B	C
281	Begin State Highway	Point Lakeview Dr	1.06	2	3,900	4,675	5,450	6,225	7,000	B	B	B	C	C
281	Point Lakeview Dr	Route 29	1.94	2	6,200	7,450	8,700	9,950	11,200	C	C	C	C	D
Mendocino County														
1	Sonoma Co Line	Gualala North Limits	1.02	2	4,300	4,525	4,750	4,975	5,200	D	D	D	D	D
1	Gualala North Limits	Fish Rock Rd	4.07	2	2,550	2,688	2,825	2,963	3,100	C	C	C	C	C
1	Fish Rock Rd	Point Arena/ South City Limits	9.60	2	1,950	2,038	2,125	2,213	2,300	B	B	C	C	C
1	Point Arena/ South City Limits	Point Arena/ Riverside Dr	0.49	2	3,200	3,350	3,500	3,650	3,800	C	C	C	D	D
1	Point Arena/ Riverside Dr	Point Arena/ Lake St	0.56	2	2,650	2,788	2,925	3,063	3,200	C	C	C	C	C
1	Point Arena/ Lake St	Point Arena/ North City Limits	0.43	2	2,150	2,263	2,375	2,488	2,600	C	C	C	C	C
1	Point Arena/ North City Limits	Mountain View Rd	3.17	2	2,150	2,263	2,375	2,488	2,600	A	B	B	B	B



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Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
1	Mountain View Rd	Elk North Limits	15.56	2	1,650	1,738	1,825	1,913	2,000	A	A	A	A	A
1	Elk North Limits	Route 128 East	5.37	2	1,100	1,150	1,200	1,250	1,300	B	B	B	B	B
1	Route 128 East	Little River/ Airport Rd	7.23	2	3,200	3,600	4,000	4,400	4,800	C	D	D	D	D
1	Little River/ Airport Rd	Comptche Ukiah Rd	2.54	2	6,150	6,913	7,675	8,438	9,200	C	C	C	D	D
1	Comptche Ukiah Rd	Mendocino/ Jackson St	0.52	2	6,700	7,550	8,400	9,250	10,100	C	C	D	D	D
1	Mendocino/ Jackson St	Mendocino/ Lansing St	0.93	2	7,900	8,900	9,900	10,900	11,900	D	D	D	D	D
1	Mendocino/ Lansing St	Caspar North Limits	4.29	2	12,100	13,625	15,150	16,675	18,200	D	E	E	E	E
1	Caspar North Limits	Gibney Ln	1.44	2	10,800	12,150	13,500	14,850	16,200	D	D	D	D	E
1	Gibney Ln	Simpson Ln	2.03	2	11,100	12,500	13,900	15,300	16,700	D	D	D	D	E
1	Simpson Ln	Route 20 East	0.55	2	19,600	22,050	24,500	26,950	29,400	E	E	E	F	F
1	Route 20 East	Fort Bragg/ Cypress St	0.88	4	27,200	30,600	34,000	37,400	40,800	D	D	E	F	F
1	Fort Bragg/ Cypress St	Fort Bragg/ Redwood Ave	0.79	4	19,100	21,500	23,900	26,300	28,700	C	C	C	D	D
1	Fort Bragg/ Redwood Ave	Fort Bragg/ North City Limits	0.89	2	18,000	20,250	22,500	24,750	27,000	F	F	F	F	F
1	Fort Bragg/ North City Limits	Airport Rd	0.44	2	8,100	9,125	10,150	11,175	12,200	D	D	E	E	E
1	Airport Rd	Mackerricher State Park	2.06	2	6,500	7,325	8,150	8,975	9,800	D	D	D	D	D
1	Mackerricher State Park	Westport North	12.80	2	1,400	1,425	1,450	1,475	1,500	A	A	A	A	A
1	Westport North	Route 211 North	13.21	2	840	855	870	885	900	A	A	A	A	A
1	Route 211 North	Leggett/ Route 271	14.63	2	680	685	690	695	700	A	A	A	A	A
1	Leggett/ Route 271	Leggett/ Route 101	0.08	2	630	648	665	683	700	A	A	A	A	A
20	Route 1/ Fort Bragg	South Harbor Dr	0.27	2	8,500	9,350	10,200	11,050	11,900	D	D	D	D	D
20	South Harbor Dr	Summer Ln	1.81	2	6,400	7,050	7,700	8,350	9,000	C	C	C	D	D
20	Summer Ln	Chamberlain Creek	15.21	2	3,200	3,525	3,850	4,175	4,500	C	C	D	D	D
20	Chamberlain Creek	Willits/ West Limits	15.15	2	2,700	2,975	3,250	3,525	3,800	C	C	C	D	D
20	Willits/ West Limits	Route 101 North	0.72	2	6,200	6,825	7,450	8,075	8,700	C	D	D	D	D
20	Route 101 South	Redwood Valley Rd	0.55	2	11,600	13,625	15,650	17,675	19,700	F	F	F	F	F
20	Redwood Valley Rd	Potter Valley Rd	4.29	2	11,600	13,625	15,650	17,675	19,700	F	F	F	F	F
20	Potter Valley Rd	Lake Co Line	6.06	2	10,500	12,350	14,200	16,050	17,900	F	F	F	F	F
101	Sonoma Co Line	East Side Rd	9.07	4	14,500	16,325	18,150	19,975	21,800	A	A	A	A	B
101	East Side Rd	Mountain House Rd	1.64	2	14,500	16,325	18,150	19,975	21,800	E	E	E	E	F
101	Mountain House Rd	Route 175 East	0.08	2	14,600	16,425	18,250	20,075	21,900	E	E	E	E	F



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
101	Route 175 East	El Roble	8.79	4	14,600	16,425	18,250	20,075	21,900	A	A	A	B	B
101	El Roble	Robinson	1.03	4	15,000	16,875	18,750	20,625	22,500	A	A	A	A	B
101	Robinson	Route 253 West	0.88	4	15,600	17,550	19,500	21,450	23,400	A	A	A	A	A
101	Route 253 West	Route 222 East	1.86	4	19,800	22,275	24,750	27,225	29,700	A	A	A	B	B
101	Route 222 East	Ukiah/ Gobbi St	0.61	4	21,700	24,425	27,150	29,875	32,600	A	A	B	B	B
101	Ukiah/ Gobbi St	Ukiah/ East Perkins St	0.47	4	22,300	25,100	27,900	30,700	33,500	A	A	B	B	B
101	Ukiah/ East Perkins St	North State St	1.63	4	28,200	31,725	35,250	38,775	42,300	B	B	B	B	C
101	North State St	Lake Mendocino Dr	1.25	4	28,200	31,725	35,250	38,775	42,300	B	B	B	B	C
101	Lake Mendocino Dr	Moore St	3.02	4	27,100	30,500	33,900	37,300	40,700	B	B	B	B	C
101	Moore St	Route 20 East	0.40	4	25,300	28,475	31,650	34,825	38,000	A	B	B	B	B
101	Route 20 East	West Rd	1.79	4	19,600	22,050	24,500	26,950	29,400	B	B	B	B	B
101	West Rd	Willits South Limits	12.54	4	14,500	16,325	18,150	19,975	21,800	A	A	B	B	B
101	Willits South Limits	Willits/ Route 20 West	1.20	2	20,000	22,500	25,000	27,500	30,000	F	F	F	F	F
101	Willits/ Route 20 West	Willits North Limits	1.15	2	22,900	25,775	28,650	31,525	34,400	F	F	F	F	F
101	Willits North Limits	Route 162 East	11.79	2	7,100	7,625	8,150	8,675	9,200	C	D	D	D	D
101	Route 162 East	Laytonville South	9.47	4	6,800	7,300	7,800	8,300	8,800	A	A	A	A	A
101	Laytonville South	Laytonville/ Branscomb Rd	0.71	2	6,850	7,363	7,875	8,388	8,900	C	C	C	C	C
101	Laytonville/ Branscomb Rd	Route 271/ Cummings Rd	15.20	2	6,200	6,675	7,150	7,625	8,100	E	E	E	E	E
101	Route 271/ Cummings Rd	Scandia Rd	4.88	4	6,200	6,675	7,150	7,625	8,100	A	A	A	A	A
101	Scandia Rd	Route 1/ Leggett	1.68	4	6,100	6,550	7,000	7,450	7,900	A	A	A	A	A
101	Route 1/ Leggett	Route 271 North/ Reynolds	10.65	2	6,100	6,550	7,000	7,450	7,900	C	C	C	C	D
101	Route 271 North/ Reynolds	Route 271/ Cooks Valley	1.92	4	6,100	6,550	7,000	7,450	7,900	A	A	A	A	A
101	Route 271/ Cooks Valley	Humboldt Co Line	2.98	4	4,500	4,850	5,200	5,550	5,900	A	A	A	A	A
128	Route 1	Flynn Creek Rd	11.67	2	1,700	1,825	1,950	2,075	2,200	A	A	A	A	B
128	Flynn Creek Rd	Philo West Limits	10.92	2	4,600	4,950	5,300	5,650	6,000	C	C	C	C	C
128	Philo West Limits	Con Creek	4.25	2	4,200	4,525	4,850	5,175	5,500	B	B	C	C	C
128	Con Creek	Boonville	1.25	2	4,300	4,625	4,950	5,275	5,600	B	B	C	C	C
128	Boonville	Mountain View Rd	0.31	2	5,800	6,225	6,650	7,075	7,500	C	C	C	C	C
128	Mountain View Rd	Route 253 East	1.18	2	4,600	4,950	5,300	5,650	6,000	B	C	C	C	C
128	Route 253 East	Yorkville West Limits	11.55	2	2,300	2,525	2,750	2,975	3,200	B	B	B	B	B



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
128	Yorkville West Limits	Sonoma Co Line	9.77	2	1,850	2,038	2,225	2,413	2,600	A	A	B	B	B
162	Route 101	River Bar Rd	2.00	2	870	928	985	1,043	1,100	A	A	A	A	A
162	River Bar Rd	Co Road 322/ Dos Rios	13.31	2	850	913	975	1,038	1,100	A	A	B	B	B
162	Co Road 322/ Dos Rios	Co Road 327/ Poohkiny	11.47	2	860	920	980	1,040	1,100	A	A	B	B	B
162	Co Road 327/ Poohkiny	Wattensburg Rd	1.45	2	950	1,013	1,075	1,138	1,200	B	B	B	B	B
162	Wattensburg Rd	East Lane	1.02	2	2,200	2,375	2,550	2,725	2,900	C	C	C	C	C
162	East Lane	Mina Rd	1.52	2	2,600	2,800	3,000	3,200	3,400	C	C	C	C	D
162	Mina Rd	Short Creek Rd	2.22	2	660	720	780	840	900	A	A	A	A	A
162	Short Creek Rd	Near Short Creek Bridge	1.06	2	400	425	450	475	500	A	A	A	A	A
175	Route 101	East Side Rd (R)	0.77	2	4,900	5,750	6,600	7,450	8,300	B	B	C	C	C
175	East Side Rd (R)	East Side Rd (L)	0.37	2	4,700	5,525	6,350	7,175	8,000	B	B	C	C	C
175	East Side Rd (L)	Younce Rd	1.65	2	3,500	4,125	4,750	5,375	6,000	B	B	B	B	C
175	Younce Rd	Lake Co Line	7.06	2	1,800	2,125	2,450	2,775	3,100	B	C	C	C	C
222	Route 101	Sanford Ranch Rd	1.56	2	8,000	8,200	8,400	8,600	8,800	C	C	C	C	C
222	Sanford Ranch Rd	Talmage	0.59	2	5,000	5,125	5,250	5,375	5,500	B	B	B	B	B
253	Route 128	Route 101	17.18	2	2,600	2,925	3,250	3,575	3,900	C	C	C	D	D
271	Route 101	Old Route 101 Bridge	3.37	2	100	100	100	100	100	A	A	A	A	A
271	Old Route 101 Bridge	Route 101, Scandia	2.22	2	450	463	475	488	500	A	A	A	A	A
271	Route 101, Scandia	Temporary Junction Route 1	1.71	2	750	763	775	788	800	A	A	A	A	A
271	Temporary Junction Route 1	Route 101, Reynolds	9.74	2	80	85	90	95	100	A	A	A	A	A
271	Route 101, Reynolds	Route 101, Piercy	2.41	2	110	108	105	103	100	A	A	A	A	A
271	Route 101, Piercy	Humboldt Co Line	3.26	2	170	178	185	193	200	A	A	A	A	A
District 2														
Lassen County														
36	Plumas Co Line	Route 147	0.76	2	1,900	2,153	2,405	2,658	2,910	B	C	C	C	C
36	Route 147	Westwood/ Dellwood St	2.34	2	2,200	2,518	2,835	3,153	3,470	C	C	C	C	C
36	Westwood/ Dellwood St	Westwood/ Co Road A21	0.61	2	2,300	3,178	4,055	4,933	5,810	C	C	D	D	E
36	Westwood/ Co Road A21	Route 44 Northwest	15.49	2	2,400	3,358	4,315	5,273	6,230	C	C	D	D	E
36	Route 44 Northwest	Eagle lake Rd	2.86	2	3,750	4,198	4,645	5,093	5,540	B	B	C	C	C
36	Eagle lake Rd	Susanville/ Cottage St	2.40	2	5,600	5,943	6,285	6,628	6,970	C	C	C	C	C



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
36	Susanville/ Cottage St	Susanville/ Pacific St	0.59	4	12,400	13,230	14,060	14,890	15,720	B	B	B	B	C
36	Susanville/ Pacific St	Susanville/ Route 139 N	0.31	4	12,400	13,228	14,055	14,883	15,710	B	B	B	B	C
36	Susanville/ Route 139 N	Riverside Dr	0.58	4	14,500	15,178	15,855	16,533	17,210	B	B	C	C	C
36	Riverside Dr	Susanville/ Johnstonville	0.28	4	13,500	17,488	21,475	25,463	29,450	B	C	C	D	E
36	Susanville/ Johnstonville	Route 395	3.17	2	9,500	11,680	13,860	16,040	18,220	C	D	D	E	E
44	Shasta Co Line	Co Road A21	19.29	2	1,650	1,978	2,305	2,633	2,960	A	A	B	B	B
44	Co Road A21	Route 36	17.96	2	1,550	2,228	2,905	3,583	4,260	A	B	B	B	B
70	Plumas Co Line	Route 395	3.89	2	3,950	4,798	5,645	6,493	7,340	B	B	B	C	C
139	Route 36	Lassen College	1.42	2	6,700	11,250	15,800	20,350	24,900	C	D	D	E	E
139	Lassen College	Susanville Dump	0.92	2	1,700	2,023	2,345	2,668	2,990	A	A	A	A	B
139	Susanville Dump	Co Road A-2	59.12	2	540	988	1,435	1,883	2,330	A	A	A	A	B
139	Co Road A-2	Modoc Co Line	5.18	2	470	783	1,095	1,408	1,720	A	A	A	A	A
147	Plumas Co Line	Co Road A21	1.14	2	1,550	1,800	2,050	2,300	2,550	A	A	A	B	B
147	Co Road A21	Route 36	0.65	2	820	958	1,095	1,233	1,370	A	A	A	A	A
299	Shasta Co Line	Cemetery Rd	10.41	2	1,500	1,608	1,715	1,823	1,930	A	A	A	A	A
299	Cemetery Rd	Lookout Rd	4.69	2	2,100	2,103	2,105	2,108	2,110	A	A	A	A	A
299	Lookout Rd	Modoc Co Line	10.53	2	1,050	1,380	1,710	2,040	2,370	A	A	A	A	A
395	Sierra Co Line	Route 70 West	4.62	2	8,800	11,290	13,780	16,270	18,760	C	D	D	E	E
395	Route 70 West	Garnier Rd	25.23	2	5,300	5,740	6,180	6,620	7,060	B	C	C	C	C
395	Garnier Rd	Standish Rd	22.03	2	5,600	6,698	7,795	8,893	9,990	C	C	C	C	D
395	Standish Rd	Janesville Rd	3.31	2	5,600	9,673	13,745	17,818	21,890	B	C	D	E	E
395	Janesville Rd	Route 36 West	5.91	2	7,800	9,843	11,885	13,928	15,970	C	D	D	D	E
395	Route 36 West	Standish/ Road A-3	9.03	2	4,000	4,390	4,780	5,170	5,560	B	B	B	B	B
395	Standish/ Road A-3	Litchfield/ Road A-27	2.82	2	1,400	1,633	1,865	2,098	2,330	A	A	A	A	A
395	Litchfield/ Road A-27	Wendel Rd	3.98	2	1,100	1,283	1,465	1,648	1,830	A	A	A	A	A
395	Wendel Rd	Ravendale	31.53	2	1,150	1,338	1,525	1,713	1,900	A	A	A	A	A
395	Ravendale	Madeline/ Ash Valley	20.74	2	1,100	1,303	1,505	1,708	1,910	A	A	A	A	A
395	Madeline/ Ash Valley	Modoc Co Line	9.78	2	1,000	1,050	1,100	1,150	1,200	A	A	A	A	A
Modoc County														
139	Lassen Co Line	Route 299/ Adin	0.23	2	450	550	650	750	850	A	A	A	A	A



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
139	Canby	Lookout Hackamore Rd	17.12	2	910	1,013	1,115	1,218	1,320	A	A	A	A	A
139	Lookout Hackamore Rd	Co Road 114/ Malin	23.10	2	1,250	1,268	1,285	1,303	1,320	A	A	A	A	A
139	Co Road 114/ Malin	Newell	4.06	2	2,100	2,170	2,240	2,310	2,380	A	A	A	A	A
139	Newell	Siskiyou Co Line	6.18	2	2,400	2,480	2,560	2,640	2,720	A	A	A	A	B
299	Lassen Co Line	Route 139 S/ Adin	0.33	2	1,000	1,163	1,325	1,488	1,650	A	A	A	A	A
299	Route 139 S/ Adin	Route 139 N/ Canby	21.42	2	1,450	1,643	1,835	2,028	2,220	B	B	B	B	C
299	Route 139 N/ Canby	Canby Ranger Station	0.69	2	1,700	1,928	2,155	2,383	2,610	B	C	C	C	C
299	Canby Ranger Station	Alturas/ Juniper St	17.84	2	2,700	3,060	3,420	3,780	4,140	B	B	B	B	B
299	Alturas/ Juniper St	Route 395	0.35	2	4,300	4,733	5,165	5,598	6,030	B	C	C	C	C
299	Route 395	Surprise Valley Rd	16.72	2	1,400	1,540	1,680	1,820	1,960	B	B	B	B	B
299	Surprise Valley Rd	Nevada State Line	9.28	2	300	330	360	390	420	A	A	A	A	A
395	Lassen Co Line	Likely/ Jess Valley	3.22	2	980	1,000	1,020	1,040	1,060	A	A	A	A	A
395	Likely/ Jess Valley	Glenn St	17.76	2	1,250	1,275	1,300	1,325	1,350	A	A	A	A	A
395	Glenn St	Alturas/ First St	1.10	2	7,000	7,140	7,280	7,420	7,560	C	C	C	C	C
395	Alturas/ First St	Route 299 West	0.69	2	7,000	7,040	7,080	7,120	7,160	C	C	C	C	C
395	Route 299 West	Alturas Maintenance Station	0.28	2	4,800	5,058	5,315	5,573	5,830	B	B	B	B	C
395	Alturas Maintenance Station	Route 299 East	5.25	2	2,950	3,010	3,070	3,130	3,190	B	B	B	B	B
395	Route 299 East	Oregon State Line	33.28	2	910	910	910	910	910	A	A	A	A	A
Plumas County														
36	Tehama Co Line	Route 89	6.29	2	1,800	2,150	2,500	2,850	3,200	A	A	B	B	B
36	Route 89	Farrar Dr	1.79	2	3,400	3,950	4,500	5,050	5,600	B	B	B	B	B
36	Farrar Dr	Feather River Bridge	0.76	2	5,100	5,975	6,850	7,725	8,600	B	C	C	C	C
36	Feather River Bridge	Melissa Ave	0.34	2	5,100	6,000	6,900	7,800	8,700	B	C	C	C	C
36	Melissa Ave	Big Springs Rd	4.75	2	4,750	5,863	6,975	8,088	9,200	B	C	C	C	C
36	Big Springs Rd	Lassen Co Line	4.49	2	1,900	2,450	3,000	3,550	4,100	A	B	B	B	B
49	Sierra Co Line	Dyson Ln	3.92	2	880	885	890	895	900	A	A	A	A	A
49	Dyson Ln	Route 70	3.58	2	1,100	1,105	1,110	1,115	1,120	A	A	A	A	A
70	Butte Co Line	Route 89 North	33.03	2	1,250	1,258	1,265	1,273	1,280	B	B	B	B	B
70	Route 89 North	Co Hospital Rd	8.94	2	3,800	3,820	3,840	3,860	3,880	D	D	D	D	D
70	Co Hospital Rd	Begin Couplet	1.12	2	5,900	5,930	5,960	5,990	6,020	C	C	C	C	C



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
70	Begin Couplet	Railway Ave	0.22	2	6,500	6,533	6,565	6,598	6,630	C	C	C	C	C
70	Railway Ave	End Couplet	0.40	2	8,200	8,240	8,280	8,320	8,360	D	D	D	D	D
70	End Couplet	Quincy Junction Rd	0.08	2	8,200	8,240	8,280	8,320	8,360	D	D	D	D	D
70	Quincy Junction Rd	Quincy Highway Maint Station	1.46	2	8,800	8,845	8,890	8,935	8,980	D	D	D	D	D
70	Quincy Highway Maint Station	LaPorte Rd	1.53	2	8,500	8,543	8,585	8,628	8,670	D	D	D	D	D
70	LaPorte Rd	Route 89 South	19.86	2	3,200	3,215	3,230	3,245	3,260	B	B	B	B	B
70	Route 89 South	Portola West Limit	8.70	2	5,100	5,125	5,150	5,175	5,200	C	C	C	C	C
70	Portola West Limit	Gulling St	0.63	4	7,000	7,035	7,070	7,105	7,140	A	A	A	A	A
70	Gulling St	Meadow Way	0.64	4	6,300	6,333	6,365	6,398	6,430	A	A	A	A	A
70	Meadow Way	Beckwourth Calpine Rd	3.72	2	3,900	3,920	3,940	3,960	3,980	B	B	B	B	B
70	Beckwourth Calpine Rd	Route 49 South	11.75	2	3,250	3,268	3,285	3,303	3,320	B	B	B	B	B
70	Route 49 South	Route 284 North	2.22	2	3,900	3,920	3,940	3,960	3,980	B	B	B	B	B
70	Route 284 North	Lassen Co Line	1.68	2	3,950	3,970	3,990	4,010	4,030	B	B	B	B	B
89	Sierra Co Line	Gold Lake Hwy	7.08	2	1,400	1,540	1,680	1,820	1,960	A	A	A	A	A
89	Gold Lake Hwy	Route 70	1.63	2	2,000	2,200	2,400	2,600	2,800	A	A	A	A	A
89	Route 70	Arlington Rd	6.13	2	2,050	2,255	2,460	2,665	2,870	A	B	B	B	B
89	Arlington Rd	Stampfli Ln (Engle Mine)	1.72	2	2,100	2,310	2,520	2,730	2,940	A	B	B	B	B
89	Stampfli Ln (Engle Mine)	Greenville/ Grand St	3.66	2	2,900	3,190	3,480	3,770	4,060	B	B	B	B	B
89	Greenville/ Grand St	Greenville/ Beckwourth	0.25	2	2,900	3,190	3,480	3,770	4,060	B	B	B	B	B
89	Greenville/ Beckwourth	Route 147 North	9.12	2	2,100	2,450	2,800	3,150	3,500	A	B	B	B	B
89	Route 147 North	Almanor	7.07	2	1,150	1,288	1,425	1,563	1,700	A	A	A	A	A
89	Almanor	Route 36	5.53	2	1,700	1,925	2,150	2,375	2,600	A	A	A	A	A
147	Canyon Dam/ Route 89	Big Springs Rd	7.37	2	1,200	1,500	1,800	2,100	2,400	A	A	A	A	B
147	Big Springs Rd	Lassen Co Line	2.52	2	1,400	1,900	2,400	2,900	3,400	A	A	B	B	B
284	Route 70	Frenchman Reservoir	8.30	2	620	623	625	628	630	A	A	A	A	A
Shasta County														
5	Tehama Co Line	Fourth St	0.91	4	43,000	53,228	63,455	73,683	83,910	D	E	F	F	F
5	Fourth St	Cottonwood North Limit	1.00	4	45,500	53,888	62,275	70,663	79,050	D	E	F	F	F
5	Cottonwood North Limit	Route 273 North	1.92	4	51,000	61,138	71,275	81,413	91,550	E	F	F	F	F
5	Route 273 North	Anderson/ Deschutes Rd	0.46	4	40,500	50,215	59,930	69,645	79,360	C	D	F	F	F



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
5	Anderson/ Deschutes Rd	Anderson/ Balls Ferry Rd	1.01	4	50,000	59,883	69,765	79,648	89,530	C	D	E	F	F
5	Anderson/ Balls Ferry Rd	Anderson/ North St	0.35	4	41,500	49,993	58,485	66,978	75,470	C	C	D	E	F
5	Anderson/ North St	Riverside Ave	1.10	4	49,500	58,457	67,414	76,371	85,328	C	D	E	F	F
5	Riverside Ave	Knighton Rd	3.03	4	49,500	58,687	67,873	77,060	86,246	C	D	E	F	F
5	Knighton Rd	Churn Creek Rd	2.38	4	51,000	60,013	69,025	78,038	87,050	C	D	E	F	F
5	Churn Creek Rd	Cypress Ave	2.31	4	64,000	72,971	81,943	90,914	99,885	D	E	F	F	F
5	Cypress Ave	Redding/ Route 44	0.99	4	64,000	71,785	79,570	87,355	95,140	D	E	F	F	F
5	Redding/ Route 44	Redding/ Route 299	1.87	4	52,000	59,608	67,215	74,823	82,430	C	D	E	F	F
5	Redding/ Route 299	Redding/ Twin View Bl	0.75	4	39,000	45,410	51,820	58,230	64,640	C	C	C	D	D
5	Redding/ Twin View Bl	Redding/ Route 273	0.41	4	33,000	38,480	43,960	49,440	54,920	B	B	C	C	D
5	Redding/ Route 273	Redding/ Oasis Rd	0.92	4	41,000	47,278	53,555	59,833	66,110	C	C	C	D	D
5	Redding/ Oasis Rd	Pine Grove Ave	1.59	4	33,500	37,959	42,419	46,878	51,337	C	C	C	D	D
5	Pine Grove Ave	Route 151 West	1.15	4	29,500	33,300	37,100	40,900	44,700	B	B	C	C	C
5	Route 151 West	Mountain Gate	1.94	4	22,100	24,568	27,035	29,503	31,970	B	B	B	B	B
5	Mountain Gate	Fawndale Rd	1.95	4	20,500	22,930	25,360	27,790	30,220	B	B	B	B	C
5	Fawndale Rd	Bridge Bay Rd	1.60	4	19,700	22,133	24,565	26,998	29,430	B	B	B	B	C
5	Bridge Bay Rd	Begin Split Alignment	1.27	4	19,300	21,733	24,165	26,598	29,030	C	C	C	D	D
5	Begin Split Alignment	Turntable Bay Rd	0.38	4	19,300	21,733	24,165	26,598	29,030	C	C	C	D	D
5	Turntable Bay Rd	O'Brien	2.87	4	19,300	21,733	24,165	26,598	29,030	C	C	C	D	D
5	O'Brien	End Split Alignment	2.20	4	18,900	21,328	23,755	26,183	28,610	C	C	C	D	D
5	End Split Alignment	Gilman Rd	2.47	4	18,400	20,828	23,255	25,683	28,110	C	C	C	D	D
5	Gilman Rd	Antlers Rd	4.23	4	17,900	20,328	22,755	25,183	27,610	B	C	C	D	D
5	Antlers Rd	Lakehead	1.26	4	17,400	19,833	22,265	24,698	27,130	B	C	C	C	D
5	Lakehead	Vollmers	3.64	4	17,200	19,643	22,085	24,528	26,970	B	C	C	C	D
5	Vollmers	Moine Rd	3.19	4	17,200	19,570	21,940	24,310	26,680	B	C	C	C	D
5	Moine Rd	Pollard Flat	1.67	4	17,200	19,570	21,940	24,310	26,680	B	C	C	C	D
5	Pollard Flat	Gibson Rd	2.09	4	17,000	19,370	21,740	24,110	26,480	B	C	C	C	D
5	Gibson Rd	Sims Rd	4.51	4	17,000	19,375	21,750	24,125	26,500	B	C	C	C	D
5	Sims Rd	Flume Creek Rd	1.94	4	17,100	19,475	21,850	24,225	26,600	B	C	C	C	D
5	Flume Creek Rd	Conant Rd	1.16	4	17,100	19,475	21,850	24,225	26,600	B	C	C	C	D



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
5	Conant Rd	Sweetbriar Ave	1.24	4	17,100	19,475	21,850	24,225	26,600	B	C	C	C	D
5	Sweetbriar Ave	Castella	1.84	4	17,100	19,490	21,880	24,270	26,660	B	C	C	C	D
5	Castella	Soda Creek Rd	1.83	4	17,300	19,698	22,095	24,493	26,890	B	C	C	C	D
5	Soda Creek Rd	Castle Crags Dr	1.43	4	17,500	19,895	22,290	24,685	27,080	B	C	C	C	D
5	Castle Crags Dr	Siskiyou Co Line	0.18	4	18,000	20,395	22,790	25,185	27,580	B	C	C	D	D
36	Trinity Co Line	Platina Rd	8.87	2	650	803	955	1,108	1,260	A	A	A	B	B
36	Platina Rd	Tehama Co Line	3.06	2	570	640	710	780	850	A	A	A	A	A
44	Begin Route 44	Route 273 South	0.17	4	32,200	34,008	35,815	37,623	39,430	B	B	B	B	B
44	Route 273 South	End Couplet	0.37	4	37,500	39,873	42,245	44,618	46,990	B	B	C	C	C
44	End Couplet	Park Marina Dr/ Auditorium Dr	0.31	4	37,500	40,435	43,370	46,305	49,240	B	B	C	C	C
44	Park Marina Dr/ Auditorium Dr	Interstate 5	-0.85	4	49,000	52,753	56,505	60,258	64,010	C	C	C	D	D
44	Interstate 5	Hilltop Dr	0.13	4	48,000	49,706	51,411	53,117	54,822	C	C	C	C	C
44	Hilltop Dr	Victor Ave	1.11	4	33,500	35,615	37,730	39,845	41,960	B	B	B	B	C
44	Victor Ave	Shasta View Dr	0.89	4	32,500	34,243	35,985	37,728	39,470	B	B	B	B	B
44	Shasta View Dr	Airport Rd	1.50	4	20,500	22,005	23,510	25,015	26,520	A	A	A	A	A
44	Airport Rd	Deschutes Rd	3.37	2	15,800	17,318	18,835	20,353	21,870	E	E	E	E	E
44	Deschutes Rd	Millville Plains	3.77	2	7,900	8,693	9,485	10,278	11,070	C	C	C	D	D
44	Millville Plains	Dersch Rd	8.24	2	4,000	4,538	5,075	5,613	6,150	B	B	B	B	C
44	Dersch Rd	Shingletown	8.82	2	4,650	5,223	5,795	6,368	6,940	C	C	C	C	C
44	Shingletown	Viola	14.99	2	3,700	4,183	4,667	5,150	5,633	B	B	B	B	B
44	Viola	Lassen Volcanic Nat'l Park	6.54	2	1,200	1,393	1,585	1,778	1,970	A	A	A	A	A
44	Lassen Volcanic Nat'l Park	Route 89	13.33	2	1,200	1,348	1,495	1,643	1,790	B	B	B	B	B
44	Route 89	Lassen Co Line	8.70	2	1,700	1,738	1,775	1,813	1,850	B	B	B	B	B
89	Route 44/ Lassen Nat'l Park	Four Corners/ Route 299	21.72	2	1,700	1,785	1,870	1,955	2,040	A	A	A	A	A
89	Four Corners/ Route 299	Lake Britton Rd	8.28	2	1,900	1,978	2,055	2,133	2,210	A	A	A	A	A
89	Lake Britton Rd	Co Rd A19/ McArthur Rd	8.78	2	1,500	1,558	1,615	1,673	1,730	A	A	A	A	A
89	Co Rd A19/ McArthur Rd	Siskiyou Co Line	4.57	2	1,850	1,940	2,030	2,120	2,210	A	A	A	A	A
151	Shasta Dam	Lake Blvd	3.78	2	310	310	310	310	310	A	A	A	A	A
151	Lake Blvd	Toyon?	0.67	2	1,800	1,820	1,840	1,860	1,880	A	A	A	A	A
151	Toyon?	S Pacific Railroad UP	1.06	2	5,400	5,503	5,605	5,708	5,810	C	C	C	C	C



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
151	S Pacific Railroad UP	Begin Couplet	0.11	2	5,400	5,503	5,605	5,708	5,810	C	C	C	C	C
151	Begin Couplet	Hardenbrook Ave	0.31	2	5,400	5,655	5,910	6,165	6,420	C	C	C	C	C
151	Hardenbrook Ave	End Couplet	0.06	2	5,400	5,655	5,910	6,165	6,420	C	C	C	C	C
151	End Couplet	Cascade Blvd	0.80	2	12,900	13,248	13,595	13,943	14,290	E	E	E	E	E
151	Cascade Blvd	Interstate 5	0.13	2	13,200	14,723	16,245	17,768	19,290	E	E	E	F	F
273	Interstate 5 (South)	Anderson/ Pinon Ave	0.63	4	9,800	10,223	10,645	11,068	11,490	A	A	A	A	A
273	Anderson/ Pinon Ave	Anderson/ South St	0.77	4	13,500	15,398	17,295	19,193	21,090	A	A	A	A	B
273	Anderson/ South St	Anderson/ North St	0.23	4	12,400	14,293	16,185	18,078	19,970	A	A	A	A	A
273	Anderson/ North St	Alexander Ave	0.95	4	10,400	11,750	13,100	14,450	15,800	A	A	A	A	A
273	Alexander Ave	Ox Yoke Rd	0.51	4	10,600	11,860	13,120	14,380	15,640	A	A	A	A	A
273	Ox Yoke Rd	Champion/ Frontage Rd	0.34	4	11,900	13,328	14,755	16,183	17,610	A	A	A	A	A
273	Champion/ Frontage Rd	Hill St	0.30	4	11,900	13,013	14,125	15,238	16,350	A	A	A	A	A
273	Hill St	Happy Valley Rd	2.45	4	12,400	13,685	14,970	16,255	17,540	A	A	A	A	A
273	Happy Valley Rd	Canyon Rd	1.11	4	14,000	15,180	16,360	17,540	18,720	A	A	A	A	A
273	Canyon Rd	Clear Creek Rd	0.73	4	21,000	22,218	23,435	24,653	25,870	A	B	B	B	C
273	Clear Creek Rd	Westwood Ave	0.44	4	23,000	24,295	25,590	26,885	28,180	B	B	C	C	C
273	Westwood Ave	Cedars Rd/ S Bonnyview Rd	0.41	4	22,700	24,048	25,395	26,743	28,090	B	B	C	C	C
273	Cedars Rd/ S Bonnyview Rd	Breslauer Wy	1.50	4	18,100	19,605	21,110	22,615	24,120	A	A	A	B	B
273	Breslauer Wy	Buenaventura Rd	0.29	4	21,500	22,953	24,405	25,858	27,310	A	B	B	C	C
273	Buenaventura Rd	Begin Couplet	1.45	4	18,400	19,285	20,170	21,055	21,940	A	A	A	A	B
273	Begin Couplet	Placer St	0.53	4	21,500	22,960	24,420	25,880	27,340	A	B	B	C	C
273	Placer St	Tehama St	0.21	4	21,400	22,930	24,460	25,990	27,520	A	B	B	C	C
273	Tehama St	End Couplet	0.17	4	15,300	16,428	17,555	18,683	19,810	A	A	A	A	A
273	End Couplet	Quartz Hill Rd	0.56	4	18,000	19,603	21,205	22,808	24,410	A	A	A	B	B
273	Quartz Hill Rd	Benton Dr	0.42	4	21,400	22,918	24,435	25,953	27,470	A	B	B	C	C
273	Benton Dr	Lake Blvd	0.81	4	25,000	26,508	28,015	29,523	31,030	B	C	C	D	D
273	Lake Blvd	Twin View Blvd	0.30	4	12,800	14,435	16,070	17,705	19,340	A	A	A	A	A
273	Twin View Blvd	Caterpillar Rd	0.85	4	9,400	10,843	12,285	13,728	15,170	A	A	A	A	A
273	Caterpillar Rd	Interstate 5 (North)	0.26	4	8,900	10,388	11,875	13,363	14,850	A	A	A	A	A
299	Trinity Co Line	French Gulch Rd	8.65	2	3,800	4,068	4,335	4,603	4,870	D	D	D	D	D



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
299	French Gulch Rd	Kennedy Dr	7.82	2	4,050	4,308	4,565	4,823	5,080	D	D	D	D	D
299	Kennedy Dr	Rock Creek Rd	1.27	2	5,400	5,670	5,940	6,210	6,480	C	C	C	C	C
299	Rock Creek Rd	Redding West City Limit	3.91	2	10,000	10,310	10,620	10,930	11,240	D	D	D	D	D
299	Redding West City Limit	Buenaventura Rd	0.58	2	10,000	10,940	11,880	12,820	13,760	A	B	B	C	D
299	Buenaventura Rd	Court St	1.58	4	20,100	23,510	26,920	30,330	33,740	A	B	C	D	E
299	Court St	Route 273	0.28	4	19,800	21,535	23,270	25,005	26,740	A	A	B	B	C
299	Route 273	Interstate 5	0.73	4	19,800	20,943	22,085	23,228	24,370	A	A	B	B	B
299	Interstate 5	Hawley Rd	0.72	4	24,300	25,823	27,345	28,868	30,390	A	A	B	B	B
299	Hawley Rd	Old Oregon Trail	1.70	4	14,000	15,333	16,665	17,998	19,330	A	A	A	A	A
299	Old Oregon Trail	Deschutes Rd	4.22	2	9,500	10,310	11,120	11,930	12,740	C	D	D	D	D
299	Deschutes Rd	Terry Mill Rd	21.80	2	4,500	5,253	6,005	6,758	7,510	B	C	C	C	C
299	Terry Mill Rd	Big Bend Rd	6.79	2	4,400	5,133	5,865	6,598	7,330	D	D	E	E	E
299	Big Bend Rd	Tamarack Rd	13.08	2	3,100	3,790	4,480	5,170	5,860	C	D	D	E	E
299	Tamarack Rd	Elm St	1.35	2	3,350	4,053	4,755	5,458	6,160	A	A	A	A	A
299	Elm St	Burney/ Plumas St	0.50	2	9,800	10,223	10,645	11,068	11,490	A	B	B	B	B
299	Burney/ Plumas St	Black Ranch Rd	1.20	2	9,800	10,118	10,435	10,753	11,070	C	D	D	D	D
299	Black Ranch Rd	Pine St	2.47	2	6,100	6,378	6,655	6,933	7,210	C	C	C	C	C
299	Pine St	Route 89	1.43	2	4,300	4,555	4,810	5,065	5,320	B	B	B	B	B
299	Route 89	Glenburn/ Dana Rds	11.00	2	3,000	3,185	3,370	3,555	3,740	B	B	B	B	B
299	Glenburn/ Dana Rds	Fall River Mills/ Main St	0.48	2	3,350	3,515	3,680	3,845	4,010	B	B	B	B	B
299	Fall River Mills/ Main St	McArthur/ Glenburn Rd	3.68	2	4,500	4,690	4,880	5,070	5,260	B	B	B	B	B
299	McArthur/ Glenburn Rd	Pittville Rd	1.54	2	4,300	4,443	4,585	4,728	4,870	B	B	B	B	B
299	Pittville Rd	Lassen Co Line	2.58	2	2,900	3,005	3,110	3,215	3,320	B	B	B	B	B
Siskiyou County														
3	Trinity Co Line	Gazelle Callahan Rd	6.96	2	190	195	200	205	210	A	A	A	A	A
3	Gazelle Callahan Rd	Callahan Rd	1.85	2	380	390	400	410	420	A	A	A	A	A
3	Callahan Rd	Etna/ Main St	12.20	2	1,350	1,388	1,425	1,463	1,500	A	A	A	A	A
3	Etna/ Main St	Collier Wy	0.47	2	1,300	1,338	1,375	1,413	1,450	A	A	A	A	A
3	Collier Wy	Scott River Rd	10.73	2	2,750	2,828	2,905	2,983	3,060	A	A	B	B	B
3	Scott River Rd	Moffett Creek Rd	6.06	2	4,450	4,575	4,700	4,825	4,950	B	B	C	C	C



Traffic Database: Forecasts of Future Traffic Volume and LOS

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	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
3	Moffett Creek Rd	Forest Mountain Ranch	6.41	2	2,900	2,983	3,065	3,148	3,230	C	C	C	C	C
3	Forest Mountain Ranch	Yreka/ Moonlit Oaks	2.59	2	13,800	14,598	15,395	16,193	16,990	E	E	E	E	E
3	Yreka/ Moonlit Oaks	Yreka/ Oberlin Rd	0.90	2	10,100	10,505	10,910	11,315	11,720	E	E	E	E	E
3	Yreka/ Oberlin Rd	Yreka/ Center St	1.04	2	9,900	10,295	10,690	11,085	11,480	D	D	E	E	E
3	Yreka/ Center St	Yreka/ Route 263 North	0.66	2	9,300	9,673	10,045	10,418	10,790	D	D	D	E	E
3	Yreka/ Route 263 North	Yreka/ Rinterstate 5	0.29	2	4,650	4,835	5,020	5,205	5,390	C	C	C	C	C
3	Yreka/ Rinterstate 5	Montague/ Grenada Rd	3.06	2	3,450	3,588	3,725	3,863	4,000	B	B	B	C	C
3	Montague/ Grenada Rd	Montague East City Limit	0.97	2	2,750	2,860	2,970	3,080	3,190	B	B	B	B	B
5	Shasta Co Line	South Dunsmuir	0.69	4	18,000	18,900	19,800	20,700	21,600	B	C	C	C	C
5	South Dunsmuir	Central Dunsmuir	1.83	4	17,200	17,888	18,575	19,263	19,950	B	B	C	C	C
5	Central Dunsmuir	Dunsmuir Ave	1.33	4	18,400	19,135	19,870	20,605	21,340	C	C	C	C	C
5	Dunsmuir Ave	Mott Rd	2.06	6	19,000	19,760	20,520	21,280	22,040	B	B	B	B	B
5	Mott Rd	Route 89 East	2.58	6	19,500	20,388	21,275	22,163	23,050	B	B	B	B	B
5	Route 89 East	Mount Shasta/ Lake St	2.01	6	19,400	20,230	21,060	21,890	22,720	B	B	B	B	B
5	Mount Shasta/ Lake St	North Mount Shasta	1.58	4	19,800	20,593	21,385	22,178	22,970	C	C	C	C	C
5	North Mount Shasta	Begin Split Alignment	0.51	4	23,200	23,818	24,435	25,053	25,670	C	C	C	D	D
5	Begin Split Alignment	Abrams Lake Rd	0.62	4	23,200	24,128	25,055	25,983	26,910	C	C	D	D	D
5	Abrams Lake Rd	End Split Alignment	1.98	4	22,700	23,608	24,515	25,423	26,330	C	C	C	D	D
5	End Split Alignment	Deetz Rd	0.17	4	22,700	23,608	24,515	25,423	26,330	C	C	C	D	D
5	Deetz Rd	South Weed	2.10	4	22,500	23,400	24,300	25,200	26,100	C	C	C	D	D
5	South Weed	Route 97 North	1.63	4	21,700	22,568	23,435	24,303	25,170	C	C	C	C	D
5	Route 97 North	Route 265	0.79	4	14,000	14,560	15,120	15,680	16,240	A	A	A	A	A
5	Route 265	Edgewood	3.14	4	15,300	15,913	16,525	17,138	17,750	A	A	A	A	A
5	Edgewood	Weed Airport NB Off	2.35	4	14,500	15,080	15,660	16,240	16,820	A	A	A	A	A
5	Weed Airport NB Off	Louie Rd	5.83	4	14,600	15,185	15,770	16,355	16,940	A	A	A	A	A
5	Louie Rd	Grenada	7.03	4	14,700	15,288	15,875	16,463	17,050	A	A	A	A	A
5	Grenada	Killgore Hills Rd	4.30	4	16,200	16,848	17,495	18,143	18,790	A	A	A	A	A
5	Killgore Hills Rd	South Yreka	3.11	4	16,600	17,265	17,930	18,595	19,260	A	A	A	A	A
5	South Yreka	Yreka/ Miner St	1.94	4	15,800	16,433	17,065	17,698	18,330	A	A	A	A	A
5	Yreka/ Miner St	Yreka/ Route 3	0.68	4	15,000	15,600	16,200	16,800	17,400	A	A	A	A	A



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Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
5	Yreka/ Route 3	Route 96 West	10.09	4	14,800	15,393	15,985	16,578	17,170	B	B	B	B	B
5	Route 96 West	Copco Rd/ Henley Rd	3.23	4	14,400	14,975	15,550	16,125	16,700	B	B	B	B	B
5	Copco Rd/ Henley Rd	Ditch Creek Rd	1.37	4	14,000	14,560	15,120	15,680	16,240	B	B	B	B	B
5	Ditch Creek Rd	Bailey Hill Rd	2.60	4	14,000	14,560	15,120	15,680	16,240	B	B	B	B	B
5	Bailey Hill Rd	Hilt Rd	2.81	4	14,000	14,560	15,120	15,680	16,240	B	B	B	B	B
5	Hilt Rd	Oregon State Line	0.97	4	14,800	15,393	15,985	16,578	17,170	B	B	B	B	B
89	Shasta Co Line	Military Pass Rd	14.34	2	1,850	2,035	2,220	2,405	2,590	A	A	A	A	A
89	Military Pass Rd	McCloud/ Broadway Ave	10.41	2	2,900	3,185	3,470	3,755	4,040	B	B	B	B	B
89	McCloud/ Broadway Ave	Interstate 5	9.87	2	3,500	4,165	4,830	5,495	6,160	B	B	C	C	C
96	Humboldt Co Line	Ishi Pishi Rd	0.55	2	410	423	435	448	460	A	A	A	A	A
96	Ishi Pishi Rd	Etna/ Somes Bar Rd	0.17	2	470	483	495	508	520	A	A	A	A	A
96	Etna/ Somes Bar Rd	Swillup Creek Bridge	22.55	2	360	370	380	390	400	A	A	A	A	A
96	Swillup Creek Bridge	Benjamin Creek Rd	15.49	2	480	493	505	518	530	A	A	A	A	A
96	Benjamin Creek Rd	Indian Creek Bridge	2.26	2	1,150	1,183	1,215	1,248	1,280	B	B	B	B	B
96	Indian Creek Bridge	Happy Camp/ Main St	0.08	2	1,150	1,183	1,215	1,248	1,280	B	B	B	B	B
96	Happy Camp/ Main St	Happy Camp/ Second St	0.15	2	1,950	2,005	2,060	2,115	2,170	B	B	B	B	B
96	Happy Camp/ Second St	Davis Rd	0.42	2	1,800	1,850	1,900	1,950	2,000	B	B	B	B	B
96	Davis Rd	Thompson Creek Bridge	10.81	2	880	905	930	955	980	A	A	A	A	A
96	Thompson Creek Bridge	Siead Maintenance Station	8.28	2	620	638	655	673	690	A	A	A	A	A
96	Siead Maintenance Station	Scott Bar Rd	10.57	2	620	638	655	673	690	A	A	A	A	A
96	Scott Bar Rd	Route 263 South	32.09	2	800	823	845	868	890	A	A	A	A	A
96	Route 263 South	Interstate 5	2.40	2	510	525	540	555	570	A	A	A	A	A
97	Interstate 5	Route 265	0.43	2	10,400	11,400	12,400	13,400	14,400	B	B	C	D	D
97	Route 265	Weed/ W Lincoln St	0.62	2	7,100	7,668	8,235	8,803	9,370	A	A	A	A	A
97	Weed/ W Lincoln St	Big Springs Rd	3.38	2	6,500	7,020	7,540	8,060	8,580	C	C	C	C	C
97	Big Springs Rd	Grass Lake Maint Station	15.76	2	3,300	3,360	3,420	3,480	3,540	B	B	B	B	B
97	Grass Lake Maint Station	Sams Neck Rd	25.06	2	3,200	3,305	3,410	3,515	3,620	B	B	B	B	B
97	Sams Neck Rd	Dorris/ Quarantine Station	4.58	2	3,150	3,395	3,640	3,885	4,130	B	B	B	B	B
97	Dorris/ Quarantine Station	Dorris/ First/ Main St	1.06	2	4,400	4,665	4,930	5,195	5,460	B	B	B	B	C
97	Dorris/ First/ Main St	Route 161 East	2.92	2	4,400	4,665	4,930	5,195	5,460	B	B	B	B	C



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
97	Route 161 East	Oregon State Line	0.28	2	4,000	4,235	4,470	4,705	4,940	B	B	B	B	B
139	Modoc Co Line	Tule Lake	1.04	2	2,300	2,365	2,430	2,495	2,560	A	A	A	A	A
139	Tule Lake	Oregon State Line	4.00	2	2,600	2,673	2,745	2,818	2,890	A	B	B	B	B
161	Route 97	Hill Rd	17.27	2	740	760	780	800	820	A	A	A	A	A
161	Hill Rd	Route 139	2.05	2	1,000	1,028	1,055	1,083	1,110	A	A	A	A	A
263	Yreka/ Route 3	Hawkinsville Humbug Rd	1.56	2	1,650	1,698	1,745	1,793	1,840	A	A	A	A	A
263	Hawkinsville Humbug Rd	Route 96	6.57	2	990	1,018	1,045	1,073	1,100	A	A	A	A	B
265	Weed/ Route 97	Weed/ Interstate 5	0.53	2	1,800	1,850	1,900	1,950	2,000	A	A	A	A	A
Tehama County														
5	Glenn Co Line	Liberal Ave	5.77	4	24,500	30,975	37,450	43,925	50,400	B	B	C	D	D
5	Liberal Ave	South Ave	1.72	4	24,500	32,150	39,800	47,450	55,100	B	B	C	D	E
5	South Ave	Corning Rd	1.49	4	23,300	31,625	39,950	48,275	56,600	B	B	C	D	E
5	Corning Rd	Finnell Ave	1.99	4	23,900	33,500	43,100	52,700	62,300	B	C	C	E	F
5	Finnell Ave	Gyle Rd	3.00	4	24,200	33,725	43,250	52,775	62,300	B	C	C	E	F
5	Gyle Rd	Flores Ave	5.82	4	23,100	32,525	41,950	51,375	60,800	B	C	C	D	F
5	Flores Ave	Red Bluff/ S Main St	5.09	4	23,800	33,175	42,550	51,925	61,300	B	C	C	E	F
5	Red Bluff/ S Main St	Red Bluff/ Diamond Ave	0.07	6	27,000	38,325	49,650	60,975	72,300	A	B	B	C	C
5	Red Bluff/ Diamond Ave	Red Bluff/ Route 36	1.58	6	30,000	40,575	51,150	61,725	72,300	A	B	B	C	C
5	Red Bluff/ Route 36	North Red Bluff	1.85	4	38,000	47,075	56,150	65,225	74,300	B	C	D	D	F
5	North Red Bluff	Wilcox Rd	2.67	4	39,500	48,200	56,900	65,600	74,300	C	D	F	F	F
5	Wilcox Rd	Jellys Ferry Rd	1.19	4	39,000	48,825	58,650	68,475	78,300	C	E	F	F	F
5	Jellys Ferry Rd	Hooker Creek Rd	4.14	4	37,500	46,950	56,400	65,850	75,300	C	D	F	F	F
5	Hooker Creek Rd	Sunset Hills Dr	2.35	4	37,000	46,575	56,150	65,725	75,300	C	D	F	F	F
5	Sunset Hills Dr	Bowman Rd	2.81	4	37,500	46,950	56,400	65,850	75,300	C	D	F	F	F
5	Bowman Rd	Shasta Co Line	0.59	4	43,000	52,075	61,150	70,225	79,300	D	E	F	F	F
32	Butte Co Line	Butte Co Line	2.71	2	1,000	1,048	1,095	1,143	1,190	A	B	B	B	B
32	West Of	Route 36	24.88	2	1,000	1,048	1,095	1,143	1,190	A	B	B	B	B
36	Shasta Co Line	Bowman Rd	23.20	2	520	545	570	595	620	A	A	A	A	A
36	Bowman Rd	Cannon Rd	5.02	2	470	493	515	538	560	A	A	A	A	A
36	Cannon Rd	Oak Knoll Dr	5.52	2	1,450	1,518	1,585	1,653	1,720	A	A	A	A	A



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
36	Oak Knoll Dr	McCoy Rd	5.56	2	3,050	3,193	3,335	3,478	3,620	B	B	B	B	B
36	McCoy Rd	Baker Rd	0.42	2	3,450	3,613	3,775	3,938	4,100	B	B	B	B	B
36	Baker Rd	N Main St	1.53	2	3,250	3,403	3,555	3,708	3,860	A	A	A	A	A
36	N Main St	Red Bluff/ Adobe Rd	-0.94	4	11,800	12,353	12,905	13,458	14,010	A	A	A	A	A
36	Red Bluff/ Adobe Rd	Red Bluff/ Crittenden St	0.56	4	9,900	10,363	10,825	11,288	11,750	A	A	A	A	A
36	Red Bluff/ Crittenden St	Red Bluff/ Walnut St	0.28	4	9,400	9,840	10,280	10,720	11,160	A	A	A	A	A
36	Red Bluff/ Walnut St	Red Bluff/ Oak St	0.14	4	12,300	12,875	13,450	14,025	14,600	A	A	A	A	A
36	Red Bluff/ Oak St	Red Bluff/ Sacramento River Br.	0.11	4	20,900	21,878	22,855	23,833	24,810	A	B	B	B	B
36	Red Bluff/ Sacramento River Br.	Red Bluff/ Gilmore Rd	0.27	4	20,900	21,878	22,855	23,833	24,810	A	B	B	B	B
36	Red Bluff/ Gilmore Rd	Red Bluff/ Interstate 5	0.18	4	21,500	22,505	23,510	24,515	25,520	A	B	B	B	C
36	Red Bluff/ Interstate 5	Red Bluff/ Chestnut Ave	0.94	4	19,500	20,413	21,325	22,238	23,150	A	A	B	B	B
36	Red Bluff/ Chestnut Ave	Hoy Rd	0.49	4	16,200	16,958	17,715	18,473	19,230	A	A	A	A	A
36	Hoy Rd	Route 99 South	0.72	4	11,700	12,248	12,795	13,343	13,890	A	A	A	A	A
36	Route 99 South	Manton Rd	11.26	2	2,000	2,093	2,185	2,278	2,370	A	A	A	A	A
36	Manton Rd	Paynes Creek	2.92	2	1,200	1,255	1,310	1,365	1,420	A	A	A	A	A
36	Paynes Creek	Mineral/ Route 172SE	24.96	2	1,100	1,153	1,205	1,258	1,310	B	B	B	B	B
36	Mineral/ Route 172SE	Route 89 North	4.54	2	900	943	985	1,028	1,070	A	A	A	B	B
36	Route 89 North	Morgan Springs/ Route 172 SE	3.57	2	700	733	765	798	830	A	A	A	A	A
36	Morgan Springs/ Route 172 SE	Route 32 SW	8.68	2	730	765	800	835	870	A	A	A	A	A
36	Route 32 SW	Plumas Co Line	4.07	2	1,800	1,885	1,970	2,055	2,140	B	B	B	B	C
99	Butte Co Line	South Ave	4.49	2	12,200	12,770	13,340	13,910	14,480	D	D	D	D	D
99	South Ave	Vina Rd	0.93	2	6,400	6,700	7,000	7,300	7,600	C	C	C	C	C
99	Vina Rd	Sherman St	5.76	2	6,800	7,118	7,435	7,753	8,070	C	C	C	C	C
99	Sherman St	Armado Way	1.13	2	10,500	10,990	11,480	11,970	12,460	D	D	D	D	D
99	Armado Way	Kaufman Ave	7.21	2	8,300	8,688	9,075	9,463	9,850	C	C	C	C	D
99	Kaufman Ave	Route 36	5.43	2	9,300	9,735	10,170	10,605	11,040	C	C	D	D	D
172	Mineral/ Route 36	Mill Creek	5.77	2	150	158	165	173	180	A	A	A	A	A
172	Mill Creek	Morgan Springs/ Route 36	3.15	2	120	125	130	135	140	A	A	A	A	A
Trinity County														
3	Route 36	Morgan Hill	6.22	2	670	680	690	700	710	A	A	A	A	A



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
3	Morgan Hill	Hayfork	0.98	2	2,150	2,185	2,220	2,255	2,290	C	C	C	C	C
3	Hayfork	Weaverville/ Route 299	23.69	2	2,050	2,075	2,100	2,125	2,150	B	B	B	B	B
3	Weaverville/ Route 299	Co Dump Rd	1.05	2	3,500	3,683	3,865	4,048	4,230	C	D	D	D	D
3	Co Dump Rd	Rush Creek Rd	5.96	2	3,150	3,248	3,345	3,443	3,540	C	C	C	C	C
3	Rush Creek Rd	Trinity Hwy Maint Station	21.74	2	1,100	1,138	1,175	1,213	1,250	B	B	B	B	B
3	Trinity Hwy Maint Station	Coffee Creek Rd	8.25	2	660	683	705	728	750	A	A	A	A	A
3	Coffee Creek Rd	US Forest Service Rd	11.61	2	260	273	285	298	310	A	A	A	A	A
3	US Forest Service Rd	Siskiyou Co Line	5.57	2	190	203	215	228	240	A	A	A	A	A
36	Humboldt Co Line	Lower Mad River Rd	3.32	2	1,500	1,593	1,685	1,778	1,870	B	B	B	B	B
36	Lower Mad River Rd	Forest Glen Maint Station	14.77	2	750	813	875	938	1,000	A	A	A	A	A
36	Forest Glen Maint Station	Route 3 North	9.14	2	600	658	715	773	830	A	A	A	A	A
36	Route 3 North	Shasta Co Line	13.91	2	300	330	360	390	420	A	A	A	A	A
299	Humboldt Co Line	Salier East Limits	1.30	2	3,800	3,900	4,000	4,100	4,200	D	D	D	D	D
299	Salier East Limits	Burnt Ranch Rd	10.23	2	3,400	3,523	3,645	3,768	3,890	C	C	D	D	D
299	Burnt Ranch Rd	Del Loma	10.20	2	2,650	2,738	2,825	2,913	3,000	C	C	C	C	C
299	Del Loma	Little French Cr	2.53	2	3,100	3,013	2,925	2,838	2,750	C	C	C	C	C
299	Little French Cr	Wheel Gulch Rd	7.19	2	3,650	4,015	4,380	4,745	5,110	D	D	D	D	D
299	Wheel Gulch Rd	Weaverville West	19.58	2	3,400	3,740	4,080	4,420	4,760	C	D	D	D	D
299	Weaverville West	Weaverville Washington St	1.04	2	11,000	9,985	8,970	7,955	6,940	E	D	D	D	D
299	Weaverville Washington St	Martin/ Nugget Rds	0.65	2	11,000	10,998	10,995	10,993	10,990	E	E	E	E	E
299	Martin/ Nugget Rds	Route 3 East	5.39	2	6,300	6,658	7,015	7,373	7,730	C	C	C	C	C
299	Route 3 East	Lewiston Rd	5.40	2	4,050	4,200	4,350	4,500	4,650	D	D	D	D	D
299	Lewiston Rd	New Lewiston Rd	3.92	2	3,500	3,623	3,745	3,868	3,990	D	D	D	D	D
299	New Lewiston Rd	Shasta Co Line	4.82	2	3,800	4,075	4,350	4,625	4,900	D	D	D	D	D
DISTRICT 3														
Butte County														
32	Glenn Co Line	Meridian Rd	4.18	2	12,800	13,860	14,920	15,980	17,040	D	D	D	E	E
32	Meridian Rd	Muir Ave	0.84	2	13,000	13,660	14,320	14,980	15,640	C	D	D	D	E
32	Muir Ave	East Ave/ N Lindo Ave	1.22	2	13,000	13,600	14,200	14,800	15,400	C	C	D	D	E
32	East Ave/ N Lindo Ave	W Eighth Ave	0.87	2	16,000	16,620	17,240	17,860	18,480	E	E	F	F	F



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
32	W Eighth Ave	W Sacramento Ave	0.68	2	15,500	15,980	16,460	16,940	17,420	E	E	E	E	F
32	W Sacramento Ave	W 1st St	0.58	2	19,200	19,300	19,400	19,500	19,600	F	F	F	F	F
32	W 1st St	W 5th St	0.29	2	21,500	21,800	22,100	22,400	22,700	F	F	F	F	F
32	W 5th St	Begin Couplet	0.21	4	22,900	23,080	23,260	23,440	23,620	B	B	B	B	B
32	Begin Couplet	Orange St	0.14	4	22,300	22,900	23,500	24,100	24,700	B	C	C	C	C
32	Orange St	Ivy St	0.13	4	24,300	24,940	25,580	26,220	26,860	C	C	C	D	D
32	Ivy St	Broadway	0.33	4	24,800	25,700	26,600	27,500	28,400	C	D	D	D	D
32	Broadway	Main St	0.11	4	27,300	28,080	28,860	29,640	30,420	D	D	E	E	E
32	Main St	Pine St	-0.16	4	33,800	34,780	35,760	36,740	37,720	F	F	F	F	F
32	Pine St	Cypress St	0.05	4	40,800	41,940	43,080	44,220	45,360	F	F	F	F	F
32	Cypress St	Route 99	0.73	4	33,700	35,120	36,540	37,960	39,380	F	F	F	F	F
32	Route 99	Fir St	0.09	4	30,100	32,280	34,460	36,640	38,820	E	F	F	F	F
32	Fir St	End Couplet	0.46	4	17,600	19,680	21,760	23,840	25,920	A	B	B	C	D
32	End Couplet	Forest Ave	0.28	2	18,900	21,040	23,180	25,320	27,460	F	F	F	F	F
32	Forest Ave	El Monte Ave	0.26	2	13,400	15,460	17,520	19,580	21,640	C	E	F	F	F
32	El Monte Ave	Bruce Rd	0.43	2	13,600	15,180	16,760	18,340	19,920	C	D	E	F	F
32	Bruce Rd	Humboldt Rd	3.51	2	7,200	9,180	11,160	13,140	15,120	E	E	F	F	F
32	Humboldt Rd	Forest Ranch/ Nopel Ave	8.66	2	3,300	3,620	3,940	4,260	4,580	C	C	D	D	D
32	Forest Ranch/ Nopel Ave	Lomo/ Humboldt Rd	13.06	2	1,700	1,900	2,100	2,300	2,500	B	B	B	C	C
32	Lomo/ Humboldt Rd	Tehama Co Line	0.82	2	1,000	1,120	1,240	1,360	1,480	A	B	B	B	B
70	Yuba Co Line	Lower Honcut Rd	1.01	2	12,000	12,860	13,720	14,580	15,440	D	D	D	D	E
70	Lower Honcut Rd	East Gridley/ Stimpson	3.05	2	11,800	12,640	13,480	14,320	15,160	D	D	D	D	E
70	East Gridley/ Stimpson	Welsh/ Palermo	5.00	2	11,400	13,920	16,440	18,960	21,480	D	D	E	E	E
70	Welsh/ Palermo	Ophir Rd	2.49	2	12,400	13,620	14,840	16,060	17,280	D	D	E	E	E
70	Ophir Rd	Route 162	2.35	4	14,600	19,900	25,200	30,500	35,800	A	A	B	B	C
70	Route 162	Montgomery St	0.71	4	20,600	25,040	29,480	33,920	38,360	A	B	B	B	B
70	Montgomery St	Grand Ave	0.82	4	25,500	30,020	34,540	39,060	43,580	B	B	B	C	C
70	Grand Ave	Nelson Ave	0.30	4	14,800	17,580	20,360	23,140	25,920	A	A	A	A	B
70	Nelson Ave	Garden Dr	0.91	4	20,300	25,060	29,820	34,580	39,340	A	B	B	B	C
70	Garden Dr	Route 149 W	3.85	4	22,100	26,500	30,900	35,300	39,700	B	B	B	C	C



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
70	Route 149 W	Route 191 N	1.39	2	7,500	8,420	9,340	10,260	11,180	C	C	C	D	D
70	Route 191 N	Coal Canyon Rd	2.08	2	2,950	2,880	2,810	2,740	2,670	B	B	B	B	B
70	Coal Canyon Rd	Pentz Rd	2.52	2	2,400	2,320	2,240	2,160	2,080	A	A	A	A	A
70	Pentz Rd	Pinkston/ Big Bend	7.54	2	2,550	2,640	2,730	2,820	2,910	A	A	A	B	B
70	Pinkston/ Big Bend	Plumas Co Line	14.07	2	1,550	1,620	1,690	1,760	1,830	A	A	A	A	A
99	Sutter Co Line	Live Oak/ Gridley Rd	2.79	2	15,700	16,840	17,980	19,120	20,260	E	E	E	E	E
99	Live Oak/ Gridley Rd	Archer Ave	0.96	4	18,100	19,200	20,300	21,400	22,500	A	A	A	B	B
99	Archer Ave	Gridley/ Wilson St	0.38	4	18,500	20,000	21,500	23,000	24,500	A	A	B	B	C
99	Gridley/ Wilson St	Gridley/ Spruce St	0.26	4	22,200	24,080	25,960	27,840	29,720	B	B	C	C	D
99	Gridley/ Spruce St	Biggs Hwy	3.31	2	14,500	17,060	19,620	22,180	24,740	D	E	E	E	E
99	Biggs Hwy	Route 162 West	3.47	2	10,900	12,720	14,540	16,360	18,180	D	D	D	E	E
99	Route 162 West	Route 162 East	2.00	2	12,500	14,080	15,660	17,240	18,820	D	D	E	E	E
99	Route 162 East	Nelson Shippee Rd	3.03	2	10,000	11,600	13,200	14,800	16,400	D	D	D	D	E
99	Nelson Shippee Rd	Route 149 SE	5.62	2	9,600	11,240	12,880	14,520	16,160	C	D	D	D	E
99	Route 149 SE	Pentz Rd	2.05	4	24,800	29,980	35,160	40,340	45,520	B	B	C	C	C
99	Pentz Rd	Neal Hwy	2.18	4	26,000	31,360	36,720	42,080	47,440	B	B	C	C	D
99	Neal Hwy	Skyway Rd	4.56	4	32,500	39,180	45,860	52,540	59,220	B	C	C	D	E
99	Skyway Rd	E 20th St	0.90	4	50,000	56,320	62,640	68,960	75,280	C	C	D	D	E
99	E 20th St	Route 32 East	0.95	4	70,000	75,900	81,800	87,700	93,600	E	E	F	F	F
99	Route 32 East	E 1st Ave	0.84	4	74,000	80,800	87,600	94,400	101,200	E	F	F	F	F
99	E 1st Ave	Cohasset Rd	0.96	4	59,000	64,800	70,600	76,400	82,200	D	D	E	E	F
99	Cohasset Rd	East Ave	0.68	4	42,000	48,180	54,360	60,540	66,720	C	C	C	D	D
99	East Ave	Eaton Rd	1.38	4	28,500	34,480	40,460	46,440	52,420	B	B	B	C	C
99	Eaton Rd	Wilson Landing Rd	2.49	2	19,000	23,900	28,800	33,700	38,600	F	F	F	F	F
99	Wilson Landing Rd	Keefer Rd	1.43	2	14,700	16,080	17,460	18,840	20,220	D	E	E	E	E
99	Keefer Rd	Broyles Rd	4.10	2	11,600	13,080	14,560	16,040	17,520	D	D	D	E	E
99	Broyles Rd	Tehama Co Line	1.66	2	11,600	13,060	14,520	15,980	17,440	D	D	D	E	E
149	Route 70	Route 99	4.62	4	15,300	18,820	22,340	25,860	29,380	A	A	B	B	B
162	Glenn Co Line	Richvale South Hwy	6.66	2	1,500	1,760	2,020	2,280	2,540	A	A	A	A	A
162	Richvale South Hwy	Route 99	3.07	2	860	888	915	943	970	A	A	A	A	A



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
162	Route 99	Orville/ Larkin Rd	4.30	2	2,800	3,100	3,400	3,700	4,000	B	B	B	B	B
162	Orville/ Larkin Rd	Oroville/ 12th St	0.93	2	8,600	10,020	11,440	12,860	14,280	A	B	B	C	D
162	Oroville/ 12th St	Oroville/ Route 70	0.87	2	13,200	14,760	16,320	17,880	19,440	D	D	E	F	F
162	Oroville/ Route 70	Feather River Blvd	0.19	4	30,000	32,780	35,560	38,340	41,120	D	E	F	F	F
162	Feather River Blvd	Oroville/ Lincoln St	1.13	4	32,000	34,180	36,360	38,540	40,720	E	E	F	F	F
162	Oroville/ Lincoln St	Olive Hwy	0.41	4	30,500	31,840	33,180	34,520	35,860	D	E	E	E	F
162	Olive Hwy	Lowe Wyandote Rd	0.45	2	29,000	30,060	31,120	32,180	33,240	F	F	F	F	F
162	Lowe Wyandote Rd	Foothill Blvd	0.45	2	20,900	21,840	22,780	23,720	24,660	F	F	F	F	F
162	Foothill Blvd	Oroville Quincy Hwy	1.99	2	12,400	13,440	14,480	15,520	16,560	D	E	E	E	E
162	Oroville Quincy Hwy	Oakvale Ave	0.04	2	11,900	13,280	14,660	16,040	17,420	D	E	E	E	E
162	Oakvale Ave	Canyon Dr	0.77	2	11,000	12,200	13,400	14,600	15,800	D	D	E	E	E
162	Canyon Dr	Ridgeview Ln/ Hillcrest Ave	0.19	2	7,600	8,440	9,280	10,120	10,960	C	D	D	D	D
162	Ridgeview Ln/ Hillcrest Ave	Kelly Ridge Rd	1.44	2	5,600	6,380	7,160	7,940	8,720	C	C	C	D	D
162	Kelly Ridge Rd	Forbestown Rd	1.30	2	4,550	5,440	6,330	7,220	8,110	B	C	C	C	D
162	Forbestown Rd	Loafer Creek Rd	0.37	2	1,850	2,120	2,390	2,660	2,930	A	A	B	B	B
162	Loafer Creek Rd	Foreman Creek Rd	6.51	2	1,500	1,560	1,620	1,680	1,740	B	B	B	B	B
191	Route 70	Durham Pentz Rd	3.53	2	5,100	6,080	7,060	8,040	9,020	B	C	C	C	C
191	Durham Pentz Rd	Butte College Dr	0.40	2	6,100	6,420	6,740	7,060	7,380	C	C	C	C	C
191	Butte College Dr	Paradise Airport Rd	4.73	2	5,700	5,800	5,900	6,000	6,100	C	C	C	C	C
191	Paradise Airport Rd	Easy St	1.43	2	5,700	5,800	5,900	6,000	6,100	B	B	C	C	C
191	Easy St	Buschmann Rd	1.05	2	5,900	6,040	6,180	6,320	6,460	C	C	C	C	C
191	Buschmann Rd	Pearson Rd	0.26	2	10,100	10,900	11,700	12,500	13,300	C	D	D	D	D
Colusa County														
5	Yolo Co Line	Hillgate Rd	6.79	4	30,000	35,875	41,750	47,625	53,500	B	C	C	D	E
5	Hillgate Rd	North Arbuckle	0.91	4	29,000	34,800	40,600	46,400	52,200	B	C	C	D	E
5	North Arbuckle	Hahn Rd	2.61	4	30,000	36,000	42,000	48,000	54,000	B	C	C	D	E
5	Hahn Rd	Husted Rd	5.61	4	29,000	36,475	43,950	51,425	58,900	B	C	D	D	F
5	Husted Rd	Williams/ E St	2.06	4	28,500	35,625	42,750	49,875	57,000	B	C	C	D	E
5	Williams/ E St	Route 20	0.75	4	28,000	35,000	42,000	49,000	56,000	B	C	C	D	E
5	Route 20	Maxwell Rd	8.01	4	25,500	31,725	37,950	44,175	50,400	B	B	C	D	D



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
5	Maxwell Rd	North Maxwell	2.52	4	25,500	31,875	38,250	44,625	51,000	B	B	C	D	D
5	North Maxwell	Delevan Rd	2.59	4	26,000	32,500	39,000	45,500	52,000	B	C	C	D	E
5	Delevan Rd	Glenn Co Line	2.53	4	26,000	32,500	39,000	45,500	52,000	B	C	C	D	E
16	Route 20	Yolo Co Line	7.26	2	590	718	845	973	1,100	A	A	A	A	A
20	Lake Co Line	Route 16 South	3.45	2	5,200	6,370	7,540	8,710	9,880	C	C	C	D	D
20	Route 16 South	Old Route 20	17.11	2	4,800	5,875	6,950	8,025	9,100	C	C	C	D	D
20	Old Route 20	Interstate 5/ Williams	1.56	2	5,900	7,080	8,260	9,440	10,620	C	C	C	D	D
20	Interstate 5/ Williams	Husted Rd	1.07	2	3,700	4,163	4,625	5,088	5,550	B	B	B	B	B
20	Husted Rd	Hunter Rd	5.50	2	6,400	6,933	7,465	7,998	8,530	C	C	C	C	C
20	Hunter Rd	Colusa/ Fremont St	1.95	2	7,900	8,493	9,085	9,678	10,270	C	C	C	C	D
20	Colusa/ Fremont St	Colusa/ Route 45 North	0.45	2	15,000	16,125	17,250	18,375	19,500	E	E	F	F	F
20	Colusa/ Route 45 North	Colusa/ 5th St	0.38	4	20,400	21,930	23,460	24,990	26,520	C	C	C	D	D
20	Colusa/ 5th St	Colusa/ Bridge St	0.37	4	25,000	26,875	28,750	30,625	32,500	D	D	D	D	E
20	Colusa/ Bridge St	Colusa/ Fremont St	0.45	2	21,000	22,575	24,150	25,725	27,300	F	F	F	F	F
20	Colusa/ Fremont St	Moon Bend Rd	0.83	2	11,000	15,175	19,350	23,525	27,700	E	E	F	F	F
20	Moon Bend Rd	Route 45 South	3.67	2	9,800	11,950	14,100	16,250	18,400	C	D	D	E	E
20	Route 45 South	Sutter Co Line	2.56	2	7,500	8,450	9,400	10,350	11,300	C	C	C	D	D
45	Yolo Co Line	Tule Rd	7.37	2	1,000	1,150	1,300	1,450	1,600	A	A	A	A	A
45	Tule Rd	Grimes-Arbuckle Rd	5.50	2	1,300	1,495	1,690	1,885	2,080	A	A	A	A	A
45	Grimes-Arbuckle Rd	Sycamore Cutoff Rd	5.60	2	2,000	2,300	2,600	2,900	3,200	A	A	A	B	B
45	Sycamore Cutoff Rd	Route 20	1.37	2	710	1,258	1,805	2,353	2,900	A	A	A	A	B
45	Route 20	Colusa/ Lurline Ave	0.24	2	7,100	7,633	8,165	8,698	9,230	D	D	D	D	D
45	Colusa/ Lurline Ave	Maxwell Rd	4.45	2	7,100	7,563	8,025	8,488	8,950	C	C	C	C	C
45	Maxwell Rd	Co Road P29?	7.53	2	2,100	2,675	3,250	3,825	4,400	A	A	B	B	B
45	Co Road P29?	Glenn Co Line	2.12	2	2,250	2,813	3,375	3,938	4,500	A	B	B	B	B
Glenn County														
5	Colusa Co Line	Co Road 68	1.52	4	26,000	32,500	39,000	45,500	52,000	B	C	C	D	E
5	Co Road 68	Co Road 57	6.09	4	25,500	31,875	38,250	44,625	51,000	B	B	C	D	D
5	Co Road 57	Willows/ Route 162	2.27	4	25,500	31,875	38,250	44,625	51,000	B	B	C	D	D
5	Willows/ Route 162	Co Road 39	4.02	4	26,500	33,125	39,750	46,375	53,000	B	C	C	D	E



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
5	Co Road 39	Co Road 33	2.91	4	25,500	31,875	38,250	44,625	51,000	B	B	C	D	D
5	Co Road 33	Co Road 27	4.02	4	25,500	32,075	38,650	45,225	51,800	B	B	C	D	D
5	Co Road 27	Co Road 16	4.00	4	25,500	31,875	38,250	44,625	51,000	B	B	C	D	D
5	Co Road 16	Route 32 East	0.71	4	25,500	31,556	37,613	43,669	49,725	B	B	C	C	D
5	Route 32 East	Co Road 7	2.28	4	24,600	30,125	35,650	41,175	46,700	B	B	C	C	D
5	Co Road 7	Tehama Co Line	1.01	4	24,500	30,013	35,525	41,038	46,550	B	B	C	C	D
32	Interstate 5	6th St	0.52	2	9,200	9,430	9,660	9,890	10,120	A	A	B	B	B
32	6th St	Co Road M	0.78	2	10,800	11,070	11,340	11,610	11,880	C	C	C	C	D
32	Co Road M	Co Road P	1.70	2	7,600	7,980	8,360	8,740	9,120	C	C	C	C	C
32	Co Road P	Route 45 South	6.63	2	8,700	9,650	10,600	11,550	12,500	C	C	D	D	D
32	Route 45 South	Butte Co Line	1.28	2	12,800	13,338	13,875	14,413	14,950	D	E	E	E	F
45	Colusa Co Line	Route 162 East	3.06	2	2,300	2,390	2,480	2,570	2,660	A	A	A	A	B
45	Route 162 East	Route 162 West	4.47	2	1,550	1,738	1,925	2,113	2,300	A	A	A	A	A
45	Route 162 West	Co Road 39	4.34	2	2,500	2,813	3,125	3,438	3,750	A	B	B	B	B
45	Co Road 39	Co Road 29	5.33	2	2,000	2,275	2,550	2,825	3,100	A	A	A	B	B
45	Co Road 29	Co Road 24	3.40	2	2,250	2,531	2,813	3,094	3,375	A	A	B	B	B
45	Co Road 24	Hamilton City/ 1st St	2.09	2	2,250	2,531	2,813	3,094	3,375	A	A	B	B	B
45	Hamilton City/ 1st St	Hamilton City/ Route 32	0.55	2	2,350	2,644	2,938	3,231	3,525	A	A	B	B	B
162	Co Road 307	Mendocino Natl Forest East Limit	3.73	2	200	250	300	350	400	A	A	A	A	A
162	Mendocino Natl Forest East Limit	Co Road 306	3.74	2	370	463	555	648	740	A	A	A	A	A
162	Co Road 306	Co Road 304	0.27	2	670	893	1,115	1,338	1,560	A	A	A	A	A
162	Co Road 304	Co Road D	18.30	2	800	1,000	1,200	1,400	1,600	A	A	A	A	A
162	Co Road D	Co Road F	1.20	2	2,600	3,250	3,900	4,550	5,200	A	B	B	B	B
162	Co Road F	Willows/ Interstate 5	0.64	2	8,800	9,350	9,900	10,450	11,000	C	C	D	D	D
162	Willows/ Interstate 5	Willows/ Tehama St	1.11	2	8,700	9,250	9,800	10,350	10,900	A	B	B	B	C
162	Willows/ Tehama St	Willows/ 1st St	0.47	2	5,000	5,313	5,625	5,938	6,250	A	A	A	A	A
162	Willows/ 1st St	Central Irrigation Canal	0.10	2	2,900	3,408	3,915	4,423	4,930	A	A	A	A	A
162	Central Irrigation Canal	Co Road P	2.49	2	3,050	3,638	4,225	4,813	5,400	B	B	B	B	B
162	Co Road P	Co Road V	3.86	2	2,700	3,038	3,375	3,713	4,050	A	B	B	B	B
162	Co Road V	Route 45	2.72	2	2,150	2,419	2,688	2,956	3,225	A	A	A	B	B



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
162	Route 45	Butte City	1.26	2	2,400	2,700	3,000	3,300	3,600	A	B	B	B	B
162	Butte City	Sacramento River Overflow	1.54	2	2,700	2,822	2,943	3,065	3,186	A	B	B	B	B
162	Sacramento River Overflow	Co Road Z	2.30	2	2,400	2,415	2,430	2,445	2,460	A	A	A	A	A
162	Co Road Z	Butte Co Line	3.22	2	1,500	1,568	1,635	1,703	1,770	A	A	A	A	A
Nevada County														
20	Yuba Co Line	Pleasant Valley Rd	4.65	2	8,200	9,123	10,045	10,968	11,890	D	D	D	D	D
20	Pleasant Valley Rd	Penn Valley Dr	1.95	2	13,000	14,463	15,925	17,388	18,850	E	E	E	E	E
20	Penn Valley Dr	Grass Valley/ Mill St	5.56	2	16,500	19,388	22,275	25,163	28,050	E	E	F	F	F
20	Grass Valley/ Mill St	Grass Valley/ Route 49	0.08	4	24,900	28,948	32,995	37,043	41,090	A	B	B	B	C
20	Grass Valley/ Route 49	Grass Valley/ N Auburn St	0.62	4	43,500	50,025	56,550	63,075	69,600	C	C	C	D	E
20	Grass Valley/ N Auburn St	Grass Valley/ Bennett St	0.25	4	35,000	40,250	45,500	50,750	56,000	B	B	C	C	C
20	Grass Valley/ Bennett St	Idaho Maryland Rd	0.50	4	48,000	55,200	62,400	69,600	76,800	C	C	D	E	F
20	Idaho Maryland Rd	Brunswick Rd	1.18	4	37,000	42,550	48,100	53,650	59,200	B	C	C	C	D
20	Brunswick Rd	Banner Ridge Overcross	0.61	4	32,500	36,970	41,440	45,910	50,380	C	C	C	D	E
20	Banner Ridge Overcross	Gold Flat Rd	0.51	4	32,500	36,970	41,440	45,910	50,380	C	C	C	D	E
20	Gold Flat Rd	Nevada City/ Sacramento St	0.82	4	25,500	29,008	32,515	36,023	39,530	B	B	C	C	C
20	Nevada City/ Sacramento St	Nevada City/ Broad St	0.25	4	25,000	27,500	30,000	32,500	35,000	A	B	B	B	B
20	Nevada City/ Broad St	Nevada City/ Coyote St	0.25	4	16,900	18,590	20,280	21,970	23,660	A	A	A	A	A
20	Nevada City/ Coyote St	Nevada City/ Route 49	0.16	4	17,000	18,700	20,400	22,100	23,800	A	A	A	A	A
20	Nevada City/ Route 49	Scotts Flat Rd	5.85	2	6,100	6,710	7,320	7,930	8,540	C	C	C	D	D
20	Scotts Flat Rd	White Cloud Campground	6.35	2	3,050	3,355	3,660	3,965	4,270	C	C	D	D	D
20	White Cloud Campground	Washington Rd	2.23	2	4,000	4,400	4,800	5,200	5,600	D	D	D	E	E
20	Washington Rd	Placer Co Line	9.45	2	4,650	5,115	5,580	6,045	6,510	D	D	E	E	E
20	Placer Co Line	Placer Co Line	1.79	2	2,600	2,860	3,120	3,380	3,640	C	C	C	C	D
49	Placer Co Line	Wolf Rd/ Combie Rd	2.19	4	34,500	39,245	43,990	48,735	53,480	C	D	D	D	E
49	Wolf Rd/ Combie Rd	South Wolf Creek Bridge	1.42	2	21,100	24,003	26,905	29,808	32,710	F	F	F	F	F
49	South Wolf Creek Bridge	Alta Sierra Dr	5.61	2	22,000	25,025	28,050	31,075	34,100	F	F	F	F	F
49	Alta Sierra Dr	Lower La Barr Meadows Rd	1.49	2	27,000	30,375	33,750	37,125	40,500	F	F	F	F	F
49	Lower La Barr Meadows Rd	South Grass Valley	2.95	4	25,000	28,125	31,250	34,375	37,500	B	B	C	C	C
49	South Grass Valley	Route 20	0.81	4	31,000	35,263	39,525	43,788	48,050	B	B	B	C	C



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
49	Route 20	West Broad St	1.34	4	11,100	12,765	14,430	16,095	17,760	A	A	A	A	A
49	West Broad St	Newtown/ Indian Flat Rd	1.73	2	6,100	6,863	7,625	8,388	9,150	C	C	C	D	D
49	Newtown/ Indian Flat Rd	Tyler Foote Crossing Rd	8.15	2	3,850	4,188	4,525	4,863	5,200	B	B	B	C	C
49	Tyler Foote Crossing Rd	Pleasant Valley Rd	1.83	2	2,700	2,938	3,175	3,413	3,650	C	C	C	C	D
49	Pleasant Valley Rd	Yuba Co Line	5.12	2	1,650	1,753	1,855	1,958	2,060	B	B	B	B	B
80	NEV CO LINE LT LNS	Yuba Gap OC	0.19	4	11,750	12,778	13,805	14,833	15,860	B	B	B	B	B
80	Yuba Gap OC	Route 20 West	0.70	4	24,000	26,100	28,200	30,300	32,400	C	D	D	E	E
80	Route 20 West	Caryle Rd/ Indian Springs	2.49	4	25,500	27,733	29,965	32,198	34,430	C	C	D	D	E
80	Caryle Rd/ Indian Springs	Placer Co Line	0.72	4	12,750	13,865	14,980	16,095	17,210	B	B	B	B	B
80	Placer Co Line	Soda Springs	2.48	4	29,400	32,708	36,015	39,323	42,630	D	D	E	F	F
80	Soda Springs	Castle Peak	2.59	4	30,000	33,375	36,750	40,125	43,500	D	E	E	F	F
80	Castle Peak	Truckee/ Donner Park	3.94	4	24,800	27,590	30,380	33,170	35,960	C	C	D	D	E
80	Truckee/ Donner Park	Truckee/ Route 89 South	5.16	4	28,000	30,800	33,600	36,400	39,200	C	D	E	E	F
80	Truckee/ Route 89 South	West Truckee	0.81	4	33,500	36,850	40,200	43,550	46,900	C	C	C	D	D
80	West Truckee	Route 89 North/ Route 267 South	1.32	4	32,000	35,200	38,400	41,600	44,800	C	C	C	D	D
80	Route 89 North/ Route 267 South	Polaris Rd (CHP Scales)	1.99	4	26,500	28,820	31,140	33,460	35,780	C	D	D	E	E
80	Polaris Rd (CHP Scales)	Hirschdale OH	4.14	4	25,500	27,733	29,965	32,198	34,430	C	C	D	D	E
80	Hirschdale OH	Truckee River/ Floriston	4.88	4	27,000	29,363	31,725	34,088	36,450	C	D	D	E	E
80	Truckee River/ Floriston	Farad	2.20	4	27,000	29,363	31,725	34,088	36,450	C	D	D	E	E
80	Farad	Sierra Co Line	2.29	4	27,000	29,363	31,725	34,088	36,450	C	D	D	E	E
89	Placer Co Line	Interstate 80	0.62	2	18,400	21,160	23,920	26,680	29,440	E	F	F	F	F
89	Interstate 80	Prosser Dam Rd	0.53	2	4,900	5,635	6,370	7,105	7,840	C	C	C	C	D
89	Prosser Dam Rd	Hobart Mills Rd	3.89	2	4,000	4,600	5,200	5,800	6,400	B	C	C	C	C
89	Hobart Mills Rd	Sierra Co Line	3.66	2	1,850	2,013	2,175	2,338	2,500	B	C	C	C	C
174	Placer Co Line	Rollins Lake Rd	3.35	2	5,300	6,163	7,025	7,888	8,750	C	C	C	D	D
174	Rollins Lake Rd	Meadow View Dr	2.23	2	8,100	9,418	10,735	12,053	13,370	D	D	D	D	E
174	Meadow View Dr	Brunswick Rd	1.25	2	10,200	11,858	13,515	15,173	16,830	D	D	E	E	E
174	Brunswick Rd	Empire Mine Rd	2.11	2	13,200	15,345	17,490	19,635	21,780	E	E	E	E	F
174	Empire Mine Rd	Grass Valley/ Race St	0.69	2	8,500	9,670	10,840	12,010	13,180	C	C	D	D	D
174	Grass Valley/ Race St	Ophir St	0.18	2	13,300	15,130	16,960	18,790	20,620	D	E	F	F	F



Traffic Database: Forecasts of Future Traffic Volume and LOS

Rte.	Segment				Average Daily Volume					Average Day LOS				
	From	To	Miles	Lanes	2010	2015	2020	2025	2030	2010	2015	2020	2025	2030
174	Ophir St	Central Ave	0.07	2	7,700	8,760	9,820	10,880	11,940	A	A	A	B	C
174	Central Ave	Route 20	0.29	2	5,900	6,713	7,525	8,338	9,150	A	A	A	A	A
267	Interstate 80/ Route 89	Soaring Wy	1.42	2	10,800	11,880	12,960	14,040	15,120	D	D	D	D	D
267	Soaring Wy	Placer Co Line	0.38	2	12,500	13,908	15,315	16,723	18,130	D	D	D	E	E
Sierra County														
49	Yuba Co Line	Goodyear Creek Rd	12.23	2	550	565	580	595	610	A	A	A	A	A
49	Goodyear Creek Rd	Saddleback Rd	4.06	2	1,125	1,154	1,183	1,211	1,240	B	B	B	B	B
49	Saddleback Rd	Downieville/ Main St	0.50	2	1,100	1,128	1,155	1,183	1,210	B	B	B	B	B
49	Downieville/ Main St	Sierra City West	12.40	2	1,100	1,128	1,155	1,183	1,210	B	B	B	B	B
49	Sierra City West	Gold Lake Hwy	5.12	2	720	740	760	780	800	A	A	A	A	A
49	Gold Lake Hwy	Sattley/ Route 89	13.13	2	330	338	345	353	360	A	A	A	A	A
49	Sattley/ Route 89	Sierraville/ Lemon Canyon	0.42	2	950	975	1,000	1,025	1,050	A	A	A	B	B
49	Sierraville/ Lemon Canyon	Antelope Valley Rd	8.68	2	1,400	1,435	1,470	1,505	1,540	B	B	B	B	B
49	Antelope Valley Rd	Loyalton/ Smithneck Creek	4.01	2	1,750	1,795	1,840	1,885	1,930	B	B	B	B	B
49	Loyalton/ Smithneck Creek	Smithneck Rd/ Sierra	0.77	2	1,900	1,948	1,995	2,043	2,090	B	B	B	B	B
49	Smithneck Rd/ Sierra	Plumas Co Line	2.73	2	1,500	1,540	1,580	1,620	1,660	B	B	B	B	B
80	Nevada Co Line	Nevada State Line	1.59	4	27,000	33,218	39,435	45,653	51,870	B	C	C	D	E
89	Nevada Co Line	Sierraville/ Route 49 N	15.06	2	1,850	1,898	1,945	1,993	2,040	A	A	A	A	A
89	Sierraville/ Route 49 N	Route 49 West	4.90	2	1,200	1,230	1,260	1,290	1,320	A	A	A	A	A
89	Route 49 West	Calpine Rd	3.12	2	980	1,005	1,030	1,055	1,080	A	A	A	A	A
89	Calpine Rd	Plumas Co Line	6.50	2	680	698	715	733	750	A	A	A	A	A
395	Nevada State Line	Lassen Co Line	3.06	4	8,800	9,468	10,135	10,803	11,470	A	A	A	A	A
Notes:														
- Segments with LOS C, D, E and F are shaded yellow, orange, pink, and magenta - LOS for future years based on existing travel lanes - See Appendix A for methodology used to estimate "planning level" LOS														
Source: DKS Associates analysis														



Appendix D: Details on Available Commodity Flow Data

This section provides details on the data sources used to document commodity flows in the North State. The project team used three primary sources:

- 2007 Freight Analysis Framework Version 3 (FAF3)
- IMPLAN regional economic model
- Caltrans Intermodal Transportation Management System (ITMS).

The FAF3 provides recent estimates of commodity flows and values and tonnages. Unfortunately, smallest analysis zone is larger than the North State. The project team has access to IMPLAN data on the make and use of commodities for individual North State counties through the LEAP-TREDIS tool. By combining the FAF3 and the IMPLAN data, the project team is able to develop rough estimates of commodity values by county. The Caltrans ITMS provide information on county-level commodity flows. Although this data source is older than the FAF3, the ITMS can identify commodity origins at the ZIP code level. The ITMS data were used primarily to identify areas within the counties where key commodities are produced.

One complicating factor is that FAF3 and the ITMS use different systems for classifying commodities. The FAF3 reports commodity flows at the two-digit level using the Standard Classification of Transported Goods (SCTG). The ITMS also reports commodity data at the two-digit level, but it uses the older Standard Transportation Commodity Code (STCC) system for classifying commodities. To enable the comparison of data between the two sources and to simplify the analysis of commodity flows, the project team aggregated the commodity codes into a standard set of aggregate groups. Exhibit D1 shows how the aggregated commodity groups compare to the SCTG and STCC classification schemes.

The project team used a fourth source, an employer database from the California Economic Development Department, to identify the location of major employers that produce commodity flows in the North State. The sections that follow provide more details on the primary data sources and the methodologies used in their development.



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Exhibit D1: Commodity Code Aggregation Table

Aggregate Description	Standard Classification of Transported Goods (SCTG)		Standard Transportation Commodity Code (STCC)	
	Code	Description	Code	Description
Animal and Fish Products	01	Live Animals and Fish	9	Fresh Fish or Other Marine Products
	04	Animal Feed and Products of Animal Origin, n.e.c.		
	05	Meat, Fish, and Seafood, and Their Preparations		
Agriculture and Food Products	02	Cereal Grains (including seed)	1	Farm Products
	03	Other Agricultural Products, except for Animal Feed	20	Food or Kindred Products
	06	Milled Grain Products and Preparations, and Bakery Products	21	Tobacco Products, excluding Insecticides
	07	Other Prepared Foodstuffs, and Fats and Oils		
	09	Tobacco Products		
	08	Alcoholic Beverages		
Stone, Gravel, Sand, Minerals, Ores, and Related Products	10	Monumental or Building Stone	10	Metallic Ores
	11	Natural Sands	14	Non-metallic Minerals
	12	Gravel and Crushed Stone	32	Clay, Concrete, Glass, or Stone Products
	13	Non-Metallic Minerals, n.e.c.		
	14	Metallic Ores and Concentrates		
	31	Non-Metallic Mineral Products		
Petroleum, Coal and Products	15	Coal	11	Coal
	16	Crude Petroleum Oil	13	Crude Petroleum, Natural Gas, or Gasoline
	17	Gasoline and Aviation Turbine Fuel	29	Petroleum or Coal Products
	18	Fuel Oils		
	19	Coal and Petroleum Products, n.e.c.		
Chemicals and Pharmaceuticals	20	Basic Chemicals	28	Chemicals or Allied Products
	21	Pharmaceutical Products		
	22	Fertilizers		
	23	Chemical Products and Preparations, n.e.c.		
Wood Products	24	Plastics and Rubber		
	25	Logs and Other Wood in the Rough	8	Forest Products
	26	Wood Products	24	Lumber or Wood Products, excluding Furniture
	27	Pulp, Newsprint, Paper, and Paperboard	26	Pulp, Paper, or Allied Products
Machinery and Metal Products	28	Paper or Paperboard Articles		
	32	Base Metal in Primary or Semi-Finished Forms and in Finished Basic Shapes	33	Primary Metal Products
	33	Articles of Base Metal	34	Fabricated Metal Products
	34	Machinery	35	Machinery, excluding Electrical
Electronic Products/Precision Instruments	36	Motorized and Other Vehicles (including parts)	36	Electrical Machinery, Equipment, or Supplies
	37	Transportation Equipment, n.e.c.	37	Transportation Equipment
	35	Electronic and Other Electrical Equipment and Components, and Office Equipment	38	Instruments, Photographic Goods, Optical Goods, Watches, or Clocks
	38	Precision Instruments and Apparatus		
Misc Manufactured Products	29	Printed Products	19	Ordinance or Accessories
	30	Textiles, Leather, and Articles of Textiles or Leather	22	Textile Mill Products
	39	Furniture, Mattresses and Mattress Supports, Lamps, Lighting Fittings, and Illuminated Signs	23	Apparel or Other Finished Textile Products
	40	Miscellaneous Manufactured Products	25	Furniture or Fixtures
			27	Printed Matter
			30	Rubber or Miscellaneous Plastics Products
			31	Leather or Leather Products
			39	Miscellaneous Products of Manufacturing
Waste and Scrap	41	Waste and Scrap	40	Waste or Scrap Materials
			48	Waste Hazardous Materials or Waste Hazardous Substances
			49	Hazardous Materials
Mixed Freight/General Cargo	43	Mixed Freight	41	Miscellaneous Freight Shipments
	99	LTL-General Cargo	42	Containers, Carriers or Devices, Shipping, Returned Empty
			43	Mail
			44	Freight Forwarder Traffic
			45	Shipper Association or Similar Traffic
			46	Freight All Kinds
			47	Small Packages, LTC or LTL
			50	Bulk Movement in Boxcars

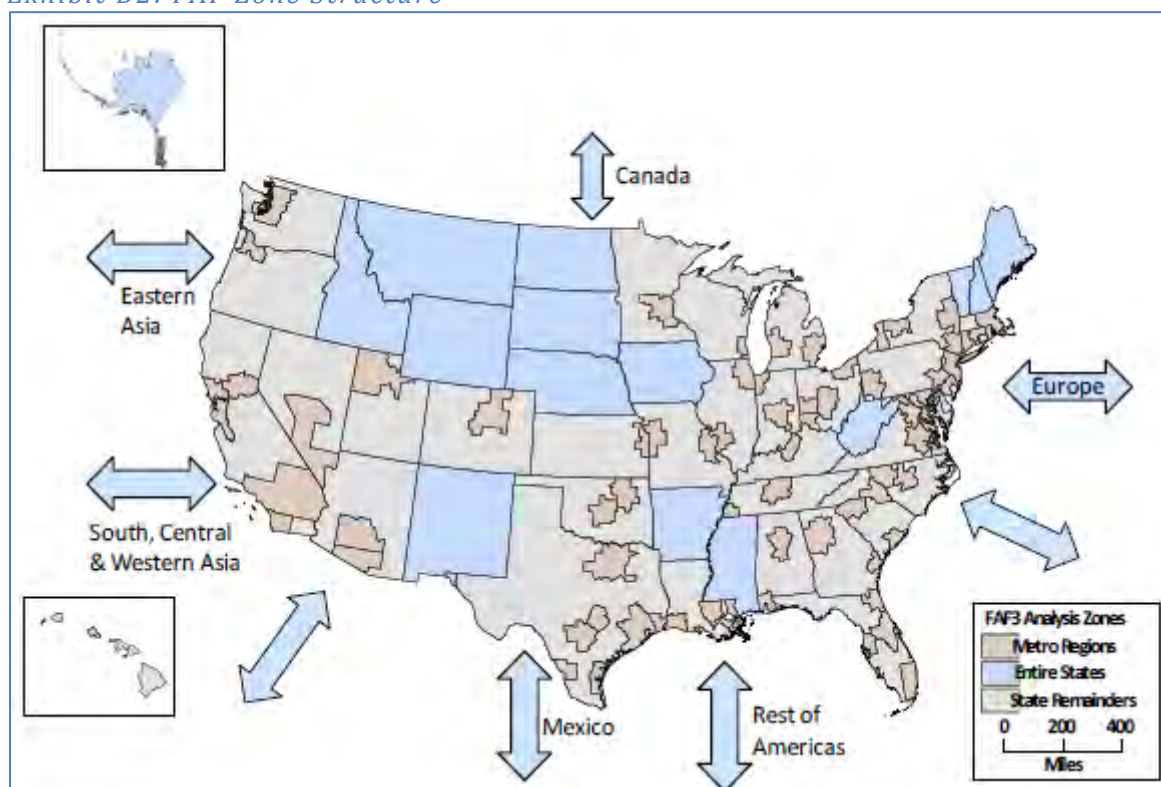


2007 Freight Analysis Framework Version 3

In the late 1990s, the Federal Highway Administration (FHWA) developed the Freight Analysis Framework (FAF). The FAF is a compilation of commodity data that provides freight flow estimates between major metropolitan areas and non-metropolitan areas for all modes of transportation.

Since the FAF focuses on metropolitan areas, non-metropolitan areas are grouped into large areas. Exhibit D2 provides the national zonal structure for the FAF. Nationally, the FAF includes 123 domestic regions, and eight foreign regions for exports and imports. Fifteen of 16 North State counties are in the “Remainder of California” FAF zone. This zone also includes the Central Coast, the San Joaquin Valley, the Central Sierras, and Imperial County. The sixteenth county, Nevada County, is included in the zone for the Sacramento metropolitan area, “Sacramento--Arden-Arcade--Truckee CA-NV Combined Statistical Area (CA Part)”.

Exhibit D2: FAF Zone Structure



Source: FHWA, Freight Analysis Framework Version 3 (FAF3) Technical Documentation

Version 3 of the FAF (FAF3) contains current estimates for tonnage, value, and domestic ton-miles by origin-destination region, commodity type, and mode using 2007 as a base year. It also has historical data for 1997 and 2002. However, these older statistics are aggregated to the statewide level. The FAF is useful as a high-level analysis tool because it contains forecasts for tonnages and values through 2040.

The FAF does not provide local detail or temporal (e.g., seasonal, daily, or hourly) variation in freight flows. These limitations are important for analyzing commodity data in the North State because truck travel is impacted by summer traffic and often uses small routes. To perform more detailed planning for

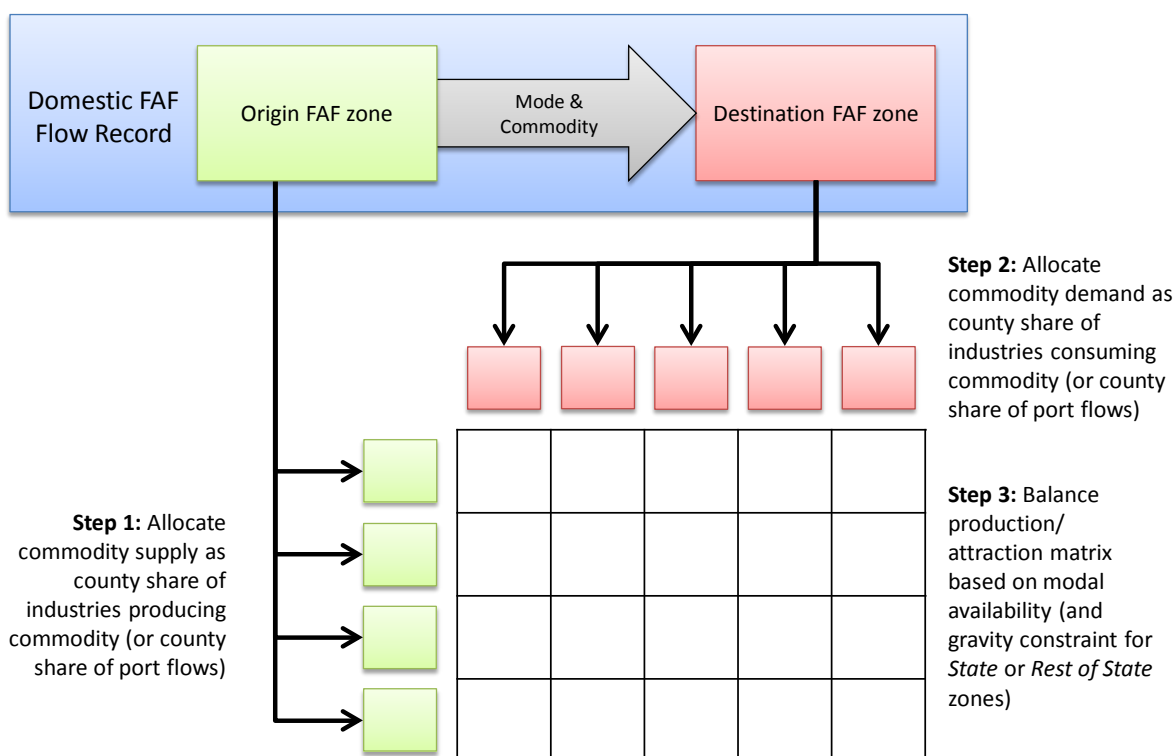


freight at the local level, more detailed data are required. At an aggregate level, the FAF can provide a good starting point for identifying trends in commodity flows originating in the North State.

IMPLAN

To better utilize the FAF data, the project team disaggregated the data from the FAF zones (i.e., the Sacramento metro area and the “Remainder of California” zones) to individual counties. Exhibit D3 illustrates the allocation method used to distribute regional commodities to smaller areas. The method takes advantage of the availability of information on the “make” and “use” of commodities in regional economic input-output models.

Exhibit D3: Allocation of FAF Data to North State Commodities



The primary source used for the allocation is the IMPLAN (IMpact analysis for PLANning) regional economic model developed by the Minnesota IMPLAN Group, Inc. (MIG). IMPLAN is a tool used to examine relationships within an economy among businesses and between businesses and final consumers by capturing monetary market transactions for consumption. The regional economic model allows users to examine the effects of changes in one or several economic activities on the economy.

The IMPLAN model produces two sets of tables that were used for the North State NSTEDS: industry activity tables and commodity absorption and byproducts tables. The industry activity matrices were used to distribute tonnages based on the relative percentage of activity for each commodity in a given county, while the absorption rate tables were used to allocate related industry activities to commodities. For example, if Glenn County has X% of industrial activity for an agricultural commodity in the FAF region, then X% of the FAF tons produced will be allocated to Glenn County.

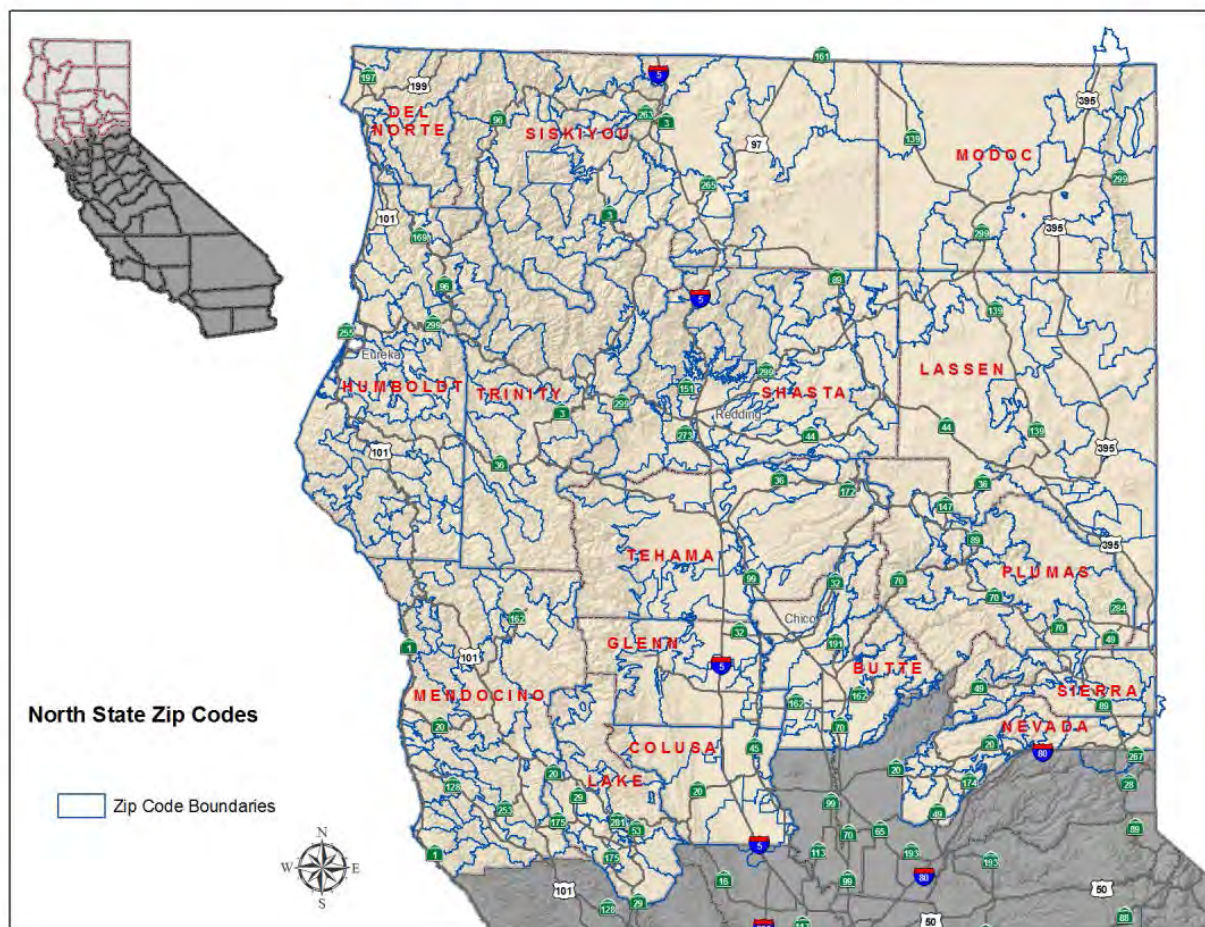


2002 Intermodal Transportation Management System (ITMS)

Caltrans initiated the development of the ITMS in 1992 to meet the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. The ITMS was one of the nation's first Geographic Information System (GIS) based tools to track California's multimodal transportation assets. The ITMS includes GIS spatial coverages and underlying data for intermodal facilities, State Highways, connector routes to intermodal facilities, state-sponsored inter-regional transit, air routes, pipelines, and freight rail. The ITMS allows Caltrans planners to evaluate transportation improvement projects at a regional and statewide level

The ITMS was also one of the first efforts to quantify freight flows at a statewide level. A key component is the freight flow processor (FFP), a tool to evaluate the impact on freight and goods movement in cases of major changes to the transportation network (e.g., earthquakes and major transportation improvements). Behind the FFP is a ZIP code level, origin-destination (OD) commodity database. Exhibit D4 shows the ZIP code structure used for the North State region of California.

Exhibit D4: North State ITMS Zip Code Structure



Source: Cal-Atlas Geospatial Clearinghouse



The freight OD database contains tonnages for commodities by mode at the six digit North American Industry Classification System (NAICS) and two-digit STCC. Developed in collaboration with Canada and Mexico, the NAICS system replaced the Standard Industrial Classification (SIC) system and allows for cross border comparisons of economic data across borders in North America.

The ITMS FFP database was developed by Reebie Associates (now IHS Global Insight) using their proprietary Transearch database as a starting point. The commercially available Transearch primarily focused on domestic manufactured goods. To meet the needs of Caltrans, Reebie Associates enhanced the ITMS Transearch to include non-manufactured goods, import/export data, international flows, and empty trucks.

In 2001, Caltrans formed an ITMS freight assignment task force to update the base year to 1996 and validate the database. By 2003, the task force updated the 2006, 2016, and 2026 forecast years. For the North State NSTEDS, the project team used the 2006 ITMS freight flow data to identify ZIP codes where commodities originate in the North State.

North State Major Employers Information

The California Economic Development Department (EDD) provides a searchable, online employer database. The database contains proprietary information from the America's Labor Market Information System (ALMIS) Employer Database, 2013 Second Edition. The information in ALMIS comes from InfoUSA, a private market research firm. The InfoUSA data have been made available to EDD under contract with the US Employment and Training Administration.

The ALMIS can provide detailed searches of employers by industry, occupation, geographic area, or name. These searches can be made at: <http://www.labormarketinfo.edd.ca.gov/aspdotnet/databrowsing/empMain.aspx>.

The California EDD also provides summaries of major employers by county from the same employer database. This data can be queried at: <http://www.labormarketinfo.edd.ca.gov/majorer/majorer.asp>. Exhibit D5 lists the major North State employers included in the ALMIS database.

Exhibit D5: Major North State Employers

Employer Name	Location	Industry
Butte County		
Bettendorf Trucking	Oroville	Trucking
Butte Community Insurance Agcy	Chico	Insurance
Butte County Behavioral	Chico	Government Offices-County
Butte County Social Welfare	Oroville	County Government-Social/Human Resources
Chico High School	Chico	Schools
County Sheriff	Oroville	Sheriff
Enloe Medical Ctr	Chico	Hospitals
Enloe Medical Ctr	Chico	Hospitals
Enloe Medical Ctr	Chico	Physical Therapists



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Employer Name	Location	Industry
Enloe Medical Ctr	Chico	Hospitals
Feather Falls Casino & Lodge	Oroville	Casinos
Feather River Hospital	Paradise	Hospitals
Gold Country Casino	Oroville	Casinos
Home Health Care Management	Chico	Home Health Service
KNIFE River Corp	Chico	Asphalt & Asphalt Products
Lifetouch National Schl Studio	Chico	Photographers-Portrait
Lodge At Feather Falls	Oroville	Casinos
Northern California Homes	Paradise	Real Estate
Pacific Coast Producers	Oroville	Canning (Mfrs)
Rabobank	Chico	Banks
United Healthcare	Chico	Medical Insurance Plans
Walmart	Chico	Department Stores
Wil-Ker-Son Ranch & Packing Co	Gridley	Fruits & Vegetables-Growers & Shippers
Wittmeier Chevrolet	Chico	Automobile Dealers-New Cars
YRC Freight	Chico	Trucking-Motor Freight
Colusa County		
Adams Grain Co	Arbuckle	Trucking-Contract Hauling
Adams Vegetable Oils Inc	Arbuckle	Oils-Essential (Whls)
Arbuckle Children's Ctr	Arbuckle	Schools
Arbuckle Elementary School	Arbuckle	Schools
California Family Foods LLC	Arbuckle	Rice-Wholesale
Colusa Casino Resort	Colusa	Casinos
Colusa County Canning Co	Williams	Food Processing Consultants
Colusa County Coroner	Colusa	Government Offices-County
Colusa County Sheriff Dept	Colusa	Sheriff
Colusa County-Family Resource	Colusa	Human Services Organizations
Colusa Regional Medical Ctr	Colusa	Rehabilitation Services
De Pue Warehouse Co	Williams	Rice-Wholesale
De Pue Warehouse Co Inc	Maxwell	Rice-Wholesale
Enid Prine Continuation High	Maxwell	Schools
George E Cain Children's Ctr	Maxwell	Schools
Granzella's Restaurant	Williams	Cocktail Lounges
James Burchfield Primary Schl	Colusa	Schools
Los Lagos Market	Williams	Department Stores
Myers & Charter Inc	Not Available	Rice Mills (Mfrs)
Petersen Ranch Farms	Arbuckle	Farms
Sun VALLEY Rice Co Llc	Arbuckle	Investments
Sunsweet Dryers	Colusa	Fruits & Vegetables-Growers & Shippers
US Forestry Dept	Stonyford	Government-Forestry Services



Employer Name	Location	Industry
Valley West Care Ctr	Williams	Health Services
Williams Elementary School	Williams	Schools
Del Norte County		
Bess Maxwell Elementary School	Crescent City	Schools
College of the Redwoods	Crescent City	Schools
Crescent City Nursing & Rehab	Crescent City	Nursing & Convalescent Homes
Crescent Elk Middle School	Crescent City	Schools
Del Norte County Health Dept	Crescent City	County Government-Public Health Programs
Del Norte County High School	Crescent City	Schools
Del Norte County Unified Schl	Crescent City	Schools
Del Norte Sheriff's Office	Crescent City	Sheriff
Elk Valley Casino	Crescent City	Casinos
Hambro Forest Products Inc	Crescent City	Building Materials
Home Depot	Crescent City	Home Centers
Joe Hamilton Elementary	Crescent City	Schools
Lucky 7 Casino	Smith River	Casinos
Mary Peacock Elementary School	Crescent City	Schools
Open Door Cmnty Hlth & Dental	Crescent City	Clinics
Ray's Food Place	Crescent City	Grocers-Retail
Redwood Elementary School	Crescent City	Schools
Redwood National Park	Crescent City	Museums
Safeway	Crescent City	Grocers-Retail
Stter Coast Hospital	Crescent City	Hospitals
Sutter Coast Hospital	Crescent City	Hospitals
Sutter Coast Hospital	Crescent City	Hospitals
Walmart	Crescent City	Department Stores
Yurok Indian Tribe	Klamath	Government Offices-Native American
Yurok Tribe	Klamath	Native American Reservations & Tribes
Glenn County		
Child Protective Svc	Willows	County Government-Social/Human Resources
Department of Child Family Svc	Orland	Government-Individual/Family Social Svcs
Erick Nielsen Enterprises Inc	Orland	Agricultural Consultants
Glen County Mental Health	Willows	County Government-Public Health Programs
Glenn County Emergency Svc	Willows	County Government-Public Order & Safety
Glenn County Health & Welfare	Willows	County Government-Public Health Programs
Glenn County Human Resource	Willows	Government Offices-County
Glenn County Office-Emergency	Willows	Government Offices-County
Glenn County Sheriffs Civil Dv	Willows	Sheriff
Glenn Medical Ctr	Willows	Hospitals
Glenn Medical Rural Health	Willows	Hospitals



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Employer Name	Location	Industry
Glenn-Colusa Irrigation Dist	Willows	Irrigation Companies
Hamilton Elementary School	Hamilton City	Schools
Hart Farms & North Valley Nut	Orland	Nuts-Edible
Head Start	Orland	Child Care Service
Jacinto Grange	Glenn	Associations
Johns Manville	Willows	Insulation-Manufacturers
Land O'Lakes Indl Cheese	Orland	Cheese Processors (Mfrs)
Lassen Land Co	Orland	Consultants-Business NEC
Mill Street School	Orland	Schools
Murdock Elementary School	Willows	Schools
Rumiano Cheese Factory	Willows	Cheese-Wholesale
US Reclamation Bureau	Willows	Federal Government-Conservation Depts
Walmart Supercenter	Willows	Department Stores
Willows Care Ctr	Willows	Nursing & Convalescent Homes
Humboldt County		
Bettendorf Trucking	Arcata	Trucking
Blue Lake Casino	Blue Lake	Casinos
Cher-Ae Heights Casino	Trinidad	Casinos
Costco	Eureka	Wholesale Clubs
Eureka City Clerk	Eureka	City Government-Executive Offices
Eureka High School	Eureka	Schools
Green Diamond Resource Co	Korbel	Logging Companies (Mfrs)
Green Diamond Resource Co	Trinidad	Timber & Timberland Companies (WHls)
Humboldt Cnty Office-Education	Eureka	Schools
Humboldt County Dept-Health	Eureka	Clinics
Humboldt County Sheriff Dept	Eureka	Sheriff
Humboldt County Social Svc	Eureka	County Government-Social/Human Resources
Humboldt Mental Health Admin	Eureka	Crisis Intervention Service
Mad River Community Hospital	Arcata	Hospitals
Public Health Admin	Eureka	County Government-Public Health Programs
Redwood Memorial Hospital	Fortuna	Hospitals
Sierra Pacific Industries	Arcata	Lumber-Manufacturers
St Joseph Health System	Eureka	Hospitals
St Joseph Hospital	Eureka	Hospitals
Sun Valley Group	Arcata	Greenhouses
Target	Eureka	Department Stores
Trinidad Rancheria	Trinidad	Associations
Umpqua Bank	Eureka	Banks
United Indian Health Svc	Arcata	Clinics
US Post Office	Eureka	Post Offices



Employer Name	Location	Industry
Lake County		
Adobe Creek Packing Co Inc	Kelseyville	Fruits & Vegetables-Growers & Shippers
Brunos Shop Smart	Lakeport	Business Services NEC
Calpine Corp	Middletown	Electric Companies
Clearlake Family Health Ctr	Clearlake	Physicians & Surgeons
Crowne Plaza	Upper Lake	Hotels & Motels
Harbin Hot Springs	Middletown	Hot Springs
Hidden Valley Lake Assn	Hidden Valley Lk	Banquet Rooms
Hidden Valley Lake Assn	Hidden Valley Lk	Community Organizations
Kmart	Lakeport	Department Stores
Konocti Vista Casino	Lakeport	Casinos
Lake County Social Svc Dept	Lower Lake	County Government-Social/Human Resources
Lakeport Skilled Nursing Ctr	Lakeport	Convalescent Homes
Mariani Dryers	Kelseyville	Fruit Drying
Meadowood Nursing Ctr	Clearlake	Convalescent Homes
People Services Inc	Lakeport	Social Service & Welfare Organizations
Rancheria Grille	Nice	Full-Service Restaurant
Robinson Rancheria Resort	Nice	Casinos
Robinson Rancheria Resort	Upper Lake	Bingo Games
Safeway	Clearlake	Grocers-Retail
Scully Packing Co LLC	Finley	Fruits & Vegetables-Growers & Shippers
Shannon Ranches Inc	Clearlake Oaks	Vineyards
Sutter Lakeside Hosp Woman's	Clearlake	Hospitals
Sutter Lakeside Hospital	Lakeport	Hospitals
Twin Pine Casino & Hotel	Middletown	Hotels & Motels
Walmart	Clearlake	Department Stores
Lassen County		
Community Day School	Herlong	Schools
Diamond Mountain Casino	Susanville	Casinos
Diamond Mountain Charter High	Susanville	Schools
Diploma Gold Adult School	Susanville	Schools
Eagle Lake Village	Susanville	Residential Care Homes
Family Health	Susanville	Clinics
Forestry & Fire Protection	Susanville	Government-Forestry Services
Lassen Community College	Susanville	Schools-Universities & Colleges Academic
Lassen Community College Dist	Susanville	Schools-Universities & Colleges Academic
Lassen County Adult Detention	Susanville	Government Offices-County
Lassen Indian Health Ctr	Susanville	Clinics
Lassen National Forest	Susanville	Government-Forestry Services
Lassen Union High School	Susanville	Schools



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Lassen Union High School Dist	Susanville	Schools
Mc Kinley School Nurse	Susanville	Schools
Monticola Club House	Susanville	Clubs
Render Continuation High Schl	Herlong	Schools
Safeway	Susanville	Grocers-Retail
Sierra-Cascade Nursery	Susanville	Nurserymen
Susanville Indian Rancheria	Susanville	Ranches
Susanville Nursing & Rehab Ctr	Susanville	Nursing & Convalescent Homes
Susanville Supermarket	Susanville	Grocers-Retail
US Army Depot	Herlong	Federal Government-National Security
US Eagle Lake Ranger District	Susanville	Government Offices-US
Walmart	Susanville	Department Stores
Mendocino County		
City of Ukiah	Ukiah	Government Offices-City, Village & Twp
Coyote Valley Casino	Redwood Valley	Casinos
Dharma Realm Buddhist Assn	Talmage	Associations
Fetzer Vineyards	Hopland	Vineyards
Forestry & Fire Protection	Willits	Government-Forestry Services
Hillside Health Ctr	Ukiah	Clinics
Hopland Sho Ka Wah Casino	Hopland	Casinos
Kohl's Department Store	Ukiah	Department Stores
Little River Inn	Littleriver	Hotels & Motels
Mendocino Coast District Hosp	Fort Bragg	Hospitals
Mendocino County Coroner	Point Arena	Government Offices-County
Mendocino County Coroner Ofc	Ukiah	Government Offices-County
Mendocino County Food Stamps	Ukiah	County Government-Social/Human Resources
Mendocino County Office-Edctn	Ukiah	Government Offices-County
Mendocino County Social Svc	Ukiah	County Government-Social/Human Resources
Metalfx	Willits	Sheet Metal Fabricators (Mfrs)
Oak Point Ranch	Potter Valley	Vineyards
Raley's	Ukiah	Grocers-Retail
Redwood Empire Packing Inc	Ukiah	Fruits & Vegetables-Growers & Shippers
Safeway	Fort Bragg	Grocers-Retail
Trinity Youth Svc	Ukiah	Religious Schools
Ukiah Campus	Ukiah	Schools-Universities & Colleges Academic
Ukiah City Civic Ctr	Ukiah	Government Offices-City, Village & Twp
Ukiah Valley Medical Ctr	Ukiah	Hospitals
Walmart	Ukiah	Department Stores
Modoc County		
Alturas Elementary School	Alturas	Schools



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Employer Name	Location	Industry
Alturas Ranches	Alturas	Ranches
Arlington Elementary School	Canby	Schools
Big Valley Ranger District	Adin	Government Offices-US
Bureau of Land Management	Cedarville	Trucking-Heavy Hauling
Desert Rose Casino	Alturas	Casinos
Eagle Peak Rock & Paving	Alturas	Asphalt & Asphalt Products
Holiday Quality Foods	Alturas	Grocers-Retail
John Cross Potatoes	Tulelake	Potatoes-Wholesale
Modoc County Assistant Supt	Alturas	Government Offices-County
Modoc County School Supt	Alturas	Schools
Modoc High School	Alturas	Schools
Modoc Joint Unified Schl Dist	Alturas	Schools
Modoc Middle School	Alturas	Schools
Modoc National Forest	Alturas	Government-Forestry Services
Modoc Physical Therapy & Rehab	Alturas	Physical Therapists
Newell Potato Co-Op	Tulelake	Potato Products (Mfrs)
South Fork Elementary School	Likely	Schools
Surprise Valley Health Care	Cedarville	Hospitals
Surprise Valley Joint Unified	Cedarville	Schools
Teach Inc	Alturas	Social Service & Welfare Organizations
Tulelake Horseradish Growers	Tulelake	Associations
US Fire Dispatch	Alturas	Fire Departments
Warner Mountains Group Home	Canby	Group Homes
Warnerview Skilled Nursing	Alturas	Physicians & Surgeons
Nevada County		
Boreal Ski Area	Soda Springs	Skiing Equipment-Retail
Boreal Ski Inn	Soda Springs	Hotels & Motels
Briarpatch Community Market	Grass Valley	Grocers-Retail
Clear Capital	Truckee	Real Estate Buyers & Brokers
County-Nevada	Nevada City	Government Offices-US
Furniture By Thurston	Grass Valley	Furniture-Dealers-Wholesale
Golden Empire Convalescent Hosp	Grass Valley	Nursing & Convalescent Homes
Grass Valley	Nevada City	Semiconductors & Related Devices (Mfrs)
Interfaith Food Ministry	Grass Valley	Non-Profit Organizations
Jehovah's Witnesses	Grass Valley	Churches
Kmart	Grass Valley	Department Stores
Milhous School Inc	Nevada City	Schools
Networked Insurance Agents	Grass Valley	Insurance
Nevada County Charter Co-Op	Nevada City	County Government-General Offices
Nevada Irrigation District	Grass Valley	Water & Sewage Companies-Utility



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Employer Name	Location	Industry
Nevada Union High School	Grass Valley	Schools
Raley's	Grass Valley	Grocers-Retail
Robinson Enterprises Inc	Nevada City	Logging Companies (Mfrs)
Safeway	Grass Valley	Grocers-Retail
Safeway	Truckee	Grocers-Retail
Sierra Nevada Memorial Hosp	Grass Valley	Hospitals
Tahoe Donner Assn	Truckee	Full-Service Restaurant
Tahoe Forest Hospital	Truckee	Child Care Service
Union Hill Charter Home Schl	Grass Valley	Schools
Village Lodge-Sugar Bowl	Truckee	Hotels & Motels
Plumas County		
Almanor Ranger District	Chester	Government Offices-Us
Benevolent & Protective	Not Available	Fraternal Organizations
C Roy Carmichael School	Portola	Schools
Collins Pine Co	Chester	Sawmills (Mfrs)
County of Plumas	Quincy	Government Offices-County
Environmental Alternatives	Quincy	Foster Care
Feather Publishing Co Inc	Quincy	Commercial Printing NEC (Mfrs)
Indian Valley Hospital	Quincy	Dentists
Plumas Co Sheriff's Office	Quincy	Sheriff
Plumas County Board-Supervisor	Quincy	Government Offices-County
Plumas County Public Health	Quincy	County Government-Public Health Programs
Plumas County Public Works	Quincy	Grading Contractors
Plumas Pines Golf Resort	Graeagle	Golf Courses
Portola Medical Clinic	Portola	Clinics
Quincy Convalescent	Quincy	Nursing & Convalescent Homes
Seneca Health Care	Chester	Physicians & Surgeons
Seneca Healthcare District	Chester	Hospitals
Shasta Orthopaedics	Chester	Physicians & Surgeons
Sierra Cascade Head Start	Quincy	Child Care Service
Sierra Pacific Industries	Quincy	Logging (Mfrs)
Two Rivers Soccer Camp	Cromberg	Camps
US Forest Svc Ranger Station	Blairsden	Government-Forestry Services
US Forest Svc Ranger Station	Quincy	Government-Forestry Services
USDA Forest Svc-Plumas	Quincy	Government-Forestry Services
Walton's Grizzly Lodge	Portola	Camps
Shasta County		
Ave's Audio Visual Equipment	Redding	Audio-Visual Equipment & Supls (Whls)
Blue Shield-Ca	Redding	Insurance
Bridge Bay Resort & Marina	Redding	Resorts



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Employer Name	Location	Industry
Fall River School District	Burney	Schools
J F Shea Co	Redding	Home Builders
Lassen Canyon Nursery Inc	Redding	Nurserymen
Mayers Memorial Hosp-Burney	Burney	Hospitals
Mayers Memorial Hospital	Fall River Mills	Hospitals
Mercy Medical Ctr Redding	Redding	Hospitals
Mercy Medical Ctr Redding	Redding	Medical Centers
Northern California Rehab Hosp	Redding	Rehabilitation Services
Oakdale Heights Mgmt Corp	Redding	Business Management Consultants
Record Searchlight	Redding	Newspapers (Publishers/Mfrs)
Redding Lumber Transport Inc	Redding	Trucking
Shascade Community Svc	Redding	Business Services NEC
Shasta College	Redding	Schools
Shasta Community Health Ctr	Redding	Clinics
Shasta Nursery	Anderson	Nurserymen
Shasta Regional Medical Ctr	Redding	Hospitals
State Compensation Ins Fund	Redding	Insurance
Transportation Department	Redding	State Government-Transportation Programs
US Post Office	Redding	Post Offices
Victor Treatment Ctr	Redding	Residential Care Homes
Walmart Supercenter	Redding	Department Stores
Win-River Casino	Redding	Casinos
Sierra County		
Alleghany Volunteer Fire Dept	Alleghany	Fire Departments
Camp O Ki Hi	Sierra City	Camps
Downieville Fire Dept	Downieville	Fire Departments
Downieville Fire Dept	Downieville	Fire Departments
Downieville Schools	Downieville	Schools
Eastern Plumas Health Care	Loyalton	Convalescent Homes
Loyalton Elementary School	Loyalton	Schools
Loyalton Fire Dept	Loyalton	Fire Departments
Loyalton High School	Loyalton	Schools
Loyalton Junior High School	Loyalton	Schools
Morning Glory Gold Mines	Alleghany	Mining Companies
Packer Lake Lodge	Sierra City	Resorts
Pliocene Ridge Schools	North San Juan	Schools
Sardine Lake Resort	Sierra City	Resorts
Sierra County Coroner	Loyalton	Sheriff
Sierra County Human Svc	Loyalton	County Government-Social/Human Resources
Sierra County Public Works	Downieville	Grading Contractors



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Employer Name	Location	Industry
Sierra County Sheriff	Downieville	Sheriff
Sierra Pass School	Loyalton	Schools
Sierraville Fire & Rescue Svc	Sierraville	Fire Departments
Sierraville Kitchen	Sierraville	Limited-Service Restaurant
Tahoe National Forest	Sierraville	Government-Forestry Services
Transportation Department	Downieville	State Government-Transportation Programs
Volunteer Fire Dept	Calpine	Fire Departments
Western Sierra Medical Clinic	Downieville	Physicians & Surgeons
Siskiyou County		
College of the Siskiyous	Weed	Schools-Universities & Colleges Academic
County Sheriff	Yreka	Sheriff
Electro-Guard Inc	Mount Shasta	Manufacturers
Fairchild Medical Ctr	Yreka	Hospitals
Forestry & Fire Protection	Yreka	Government-Forestry Services
Jackson Street Elementary Schl	Yreka	Schools
KLAMATH National Forest	Yreka	Government-Forestry Services
Mc Cloud Ranger District	Mccloud	Government Offices-US
Mercy Medical Ctr Mt Shasta	Mount Shasta	Medical Centers
Mt Shasta Resort	Mount Shasta	Resorts
Raley's	Yreka	Grocers-Retail
Roseburg Forest Products	Weed	Plywood & Veneers
Siskiyou County Alcohol & Drug	Yreka	Drug Abuse & Addiction Info & Treatment
Siskiyou County Coroner	Yreka	Sheriff
Siskiyou County Fire Warden	Yreka	Government Offices-County
Siskiyou County Sheriff	Yreka	Sheriff
Siskiyou County Sheriffs Ofc	Dunsmuir	Police Departments
Siskiyou Golden Fair	Yreka	Associations
Siskiyou Lake LLC	Mount Shasta	Resorts
Sugar Creek Ranch	Etna	Guide Service
Timber Products Co	Yreka	Plywood & Veneers-Manufacturers
Union Pacific Railroad Co	Dunsmuir	Railroads
US Forestry Dept	Happy Camp	Government-Forestry Services
Walmart Supercenter	Yreka	Department Stores
Weed Union Elementary School	Weed	Schools
Tehama County		
Bell-Carter Olive Co	Corning	Canning (Mfrs)
CAL Fire	Red Bluff	Fire Departments
Corning Ford Chrysler	Corning	Automobile Dealers-New Cars
Country Market	Corning	Food Markets
Forestry & Fire Protection	Red Bluff	Government-Forestry Services



Employer Name	Location	Industry
Home Depot	Red Bluff	Home Centers
Petro Stopping Ctr	Corning	Truck Stops & Plazas
Precision Towing	Red Bluff	Wrecker Service
Red Bluff Union High School	Red Bluff	Schools
Rolling Hills Casino	Corning	Casinos
Sierra Pacific Industries	Corning	Millwork (Mfrs)
Sierra Pacific Industries	Red Bluff	Lumber Mill Representatives (Whls)
Sierra Pacific Windows	Red Bluff	Millwork (Mfrs)
St Elizabeth Community Hosp	Red Bluff	Hospitals
State Dept Forrestry & Fire	Red Bluff	Fire Departments
Tehama County Education Dept	Red Bluff	County Government-Education Programs
Tehama County Health Svc	Red Bluff	County Government-Public Health Programs
Tehama County Health Svc	Red Bluff	County Government-Public Health Programs
Tehama County Health Svc Agcy	Red Bluff	County Government-Public Health Programs
Tehama County Mental Health	Red Bluff	County Government-Public Health Programs
Tehama County Sherriff/Records	Red Bluff	Government Offices-County
Tehama County Social Svc Dept	Red Bluff	County Government-Social/Human Resources
Vita Dermatology & Laser Inst	Red Bluff	Clinics
Walmart	Red Bluff	Department Stores
Walmart Distribution Ctr	Red Bluff	Distribution Centers (Whls)
Trinity County		
County Landfill	Weaverville	Government Offices-County
Hayfork Elementary School	Hayfork	Schools
Health & Human Svc Dept	Weaverville	County Government-Public Health Programs
Jehovah's Witnesses	Not Available	Churches
Junction City School	Junction City	Schools
Mountain Valley Unified Supt	Hayfork	Schools
Shasta Trinity National	Weaverville	Government Offices-State
Southern Trinity Joint School	Mad River	Schools
Tops Superfoods	Weaverville	Food Markets
Trinity Alps Unified Sch Dist	Weaverville	Schools
Trinity Center Elementary Sch	Trinity Center	Schools
Trinity County Dept of Trans	Weaverville	Government Offices-County
Trinity County Jail	Weaverville	County Govt-Correctional Institutions
Trinity County Road Dept	Trinity Center	Grading Contractors
Trinity County Supt-Schools	Weaverville	Schools
Trinity High School	Weaverville	Schools
Trinity Hospital	Weaverville	Hospitals
Trinity Lakes Resorts & Marina	Trinity Center	Resorts
Trinity River Lumber Co	Weaverville	Sawmills (Mfrs)



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Employer Name	Location	Industry
Trinity Union High School Dist	Weaverville	Schools
US Forest Svc Ranger Station	Weaverville	Government-Forestry Services
US Forest Svc Ranger Station	Big Bar	Government-Forestry Services
US Forest Svc Ranger Station	Hayfork	Government-Forestry Services
Usda Forrest Svc	Weaverville	County Government-Executive Offices
Weaverville Elementary School	Weaverville	Schools

Source: EDD, ALMIS Employer Database



Appendix E: Demographic Tables

This appendix provides 20 tables that describe demographic and economic conditions within California, the North State, and the 16 counties that make up the North State. The data are organized to measure growth trends between 2000 and 2006 and between 2006 and the most recent year available. This organization highlights the regional economic impacts of the Great Recession, which officially started in late 2007. All data have been collected from readily available published sources.

Exhibit E1: Population Growth Trends in California and the North State, 1990 to 2012

Geographic Area	1990	2000	2006	2012	Annual Growth Rate 1990-2000	Annual Growth Rate 2000-06	Annual Growth Rate 2006-12
California	29,760,021	33,873,086	36,116,200	37,678,600	1.3%	1.1%	0.7%
North State	888,845	983,350	1,035,700	1,048,100	1.0%	0.9%	0.2%
Counties							
Butte	182,120	203,171	214,700	221,300	1.1%	0.9%	0.5%
Colusa	16,275	18,804	20,700	21,700	1.5%	1.6%	0.8%
Del Norte	23,460	27,507	28,300	28,400	1.6%	0.5%	0.1%
Glenn	24,798	26,453	27,600	28,100	0.6%	0.7%	0.3%
Humboldt	119,118	126,518	132,000	134,600	0.6%	0.7%	0.3%
Lake	50,631	58,325	63,400	63,300	1.4%	1.4%	0.0%
Lassen	27,598	33,828	34,770	34,300	2.1%	0.5%	-0.3%
Mendocino	80,345	86,265	87,800	87,600	0.7%	0.3%	0.0%
Modoc	9,678	9,449	9,600	9,600	-0.2%	0.3%	-0.1%
Nevada	78,510	92,033	98,100	97,200	1.6%	1.1%	-0.2%
Plumas	19,739	20,824	20,800	19,700	0.5%	0.0%	-0.9%
Shasta	147,036	163,256	174,700	177,800	1.1%	1.1%	0.3%
Sierra	3,318	3,555	3,400	3,200	0.7%	-0.6%	-1.4%
Siskiyou	43,531	44,301	44,900	44,640	0.2%	0.2%	-0.1%
Tehama	49,625	56,039	61,000	63,200	1.2%	1.4%	0.6%
Trinity	13,063	13,022	13,800	13,700	0.0%	1.0%	-0.1%

Sources: California Department of Finance and the US Census



Exhibit E2: Composition of Population Growth in California and the North State, 2000 to 2006

Geographic Area	July 1, 2000	July 1, 2006	Pop Increase 2000-06	Births 2000-06	Deaths 2000-06	Net Natural Increase 2000-06	Annual Rate of Natural Population Gains 2000-06	Int'l Migration 2000-06	Domestic Migration 2000-06	Annual Rate of Domestic Migration 2000-06	Annual Rate of Int'l Migration 2000-06	Int'l Migration as % of Net Migration 2000-06
California	34,000,840	36,246,820	2,245,990	3,233,120	1,407,390	1,825,730	0.9%	1,015,960	-595,710	-0.3%	0.5%	100%
North State	984,820	1,038,800	53,970	68,170	62,040	6,120	0.1%	6,030	41,820	0.7%	0.1%	13%
Counties												
Butte	203,450	215,680	12,240	14,180	13,290	880	0.1%	1,160	10,190	0.8%	0.1%	10%
Colusa	18,880	20,890	2,010	2,080	850	1,220	1.1%	600	190	0.2%	0.5%	76%
Del Norte	27,450	28,280	830	1,820	1,620	190	0.1%	120	520	0.3%	0.1%	19%
Glenn	26,560	27,730	1,180	2,500	1,410	1,090	0.7%	430	-340	-0.2%	0.3%	100%
Humboldt	126,660	132,230	5,560	8,980	7,400	1,580	0.2%	560	3,420	0.4%	0.1%	14%
Lake	58,480	63,790	5,310	3,970	4,760	-790	-0.2%	470	5,630	1.5%	0.1%	8%
Lassen	33,870	35,010	1,140	1,690	1,250	440	0.2%	70	630	0.3%	0.0%	10%
Mendocino	86,510	87,580	1,080	6,550	4,960	1,590	0.3%	770	-1,280	-0.2%	0.1%	100%
Modoc	9,510	9,640	130	470	620	-160	-0.3%	60	220	0.4%	0.1%	23%
Nevada	91,870	98,330	6,460	4,910	5,610	-700	-0.1%	360	6,800	1.2%	0.1%	5%
Plumas	20,650	20,710	60	1,020	1,280	-270	-0.2%	80	240	0.2%	0.1%	26%
Shasta	164,150	175,240	11,090	12,090	11,120	970	0.1%	750	9,370	0.9%	0.1%	7%
Sierra	3,620	3,420	-190	140	210	-70	-0.3%	20	-140	-0.6%	0.1%	100%
Siskiyou	44,380	44,890	510	2,670	3,090	-420	-0.2%	270	650	0.2%	0.1%	29%
Tehama	55,830	61,540	5,710	4,450	3,670	780	0.2%	280	4,650	1.3%	0.1%	6%
Trinity	12,960	13,820	860	650	880	-220	-0.3%	20	1,070	1.3%	0.0%	2%

Sources: California Department of Finance and the US Census



Exhibit E3: Composition of Population Growth in California and the North State, 2006 to 2011

Geographic Area	July 1, 2006	July 1, 2011	Pop Increase 2006-11	Births 2006-11	Deaths 2008-11	Net Natural Increase 2006-11	Annual Rate of Natural Population Gains 2006-11	Int'l Migration 2006-11	Domestic Migration 2006-11	Annual Rate of Domestic Migration 2006-11	Annual Rate of Int'l Migration 2006-11	Int'l Migration as % of Net Migration 2006-11
California	36,246,820	37,578,620	1,331,790	2,646,090	1,149,260	1,496,840	0.8%	734,060	-963,530	-0.5%	0.4%	100.0%
North State	1,038,800	1,049,400	10,600	59,630	51,460	8,170	0.2%	2,940	-3,580	-0.1%	0.1%	93.0%
Counties												
Butte	215,680	220,570	4,890	12,380	11,060	1,320	0.1%	660	1,730	0.2%	0.1%	30.8%
Colusa	20,890	21,560	670	1,760	660	1,090	1.0%	250	-980	-1.0%	0.5%	100.0%
Del Norte	28,280	28,520	240	1,730	1,290	440	0.3%	50	-480	-0.3%	0.1%	100.0%
Glenn	27,730	28,200	470	2,190	1,040	1,150	0.8%	180	-1,150	-0.8%	0.2%	100.0%
Humboldt	132,230	134,480	2,260	7,790	6,290	1,500	0.2%	200	780	0.1%	0.1%	19.7%
Lake	63,790	63,700	-90	3,580	4,000	-420	-0.1%	210	-160	-0.1%	0.1%	27.9%
Lassen	35,010	34,280	-730	1,600	1,030	570	0.3%	30	-2,140	-1.3%	0.0%	100.0%
Mendocino	87,580	87,670	80	5,550	4,060	1,490	0.3%	470	-1,920	-0.4%	0.2%	100.0%
Modoc	9,640	9,520	-120	570	340	220	0.5%	30	-100	-0.2%	0.1%	35.9%
Nevada	98,330	98,160	-180	4,010	4,400	-390	-0.1%	160	-160	0.0%	0.1%	71.5%
Plumas	20,710	19,770	-940	830	990	-160	-0.2%	20	-760	-0.7%	0.0%	100.0%
Shasta	175,240	177,680	2,440	10,650	9,830	810	0.1%	320	1,080	0.1%	0.1%	26.2%
Sierra	3,420	3,180	-240	120	140	-20	-0.1%	10	-170	-1.0%	0.1%	100.0%
Siskiyou	44,890	44,750	-140	2,310	2,590	-290	-0.1%	130	-50	0.0%	0.1%	53.4%
Tehama	61,540	63,800	2,260	4,000	2,940	1,070	0.3%	220	850	0.3%	0.1%	21.6%
Trinity	13,820	13,560	-270	580	780	-210	-0.3%	10	60	0.1%	0.0%	5.5%

Sources: California Department of Finance and the US Census



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*Exhibit E4: Median Age Trends in California and the
North State, 2000 to 2010*

Geographic Area	Median Age 2000	Median Age 2010	Percent Above State Median Age 2010	Change of Median Age 2000-10
California	33	34	n/a	1
North State	38	41	20.6%	3
Counties				
Butte	36	36	5.9%	0
Colusa	30	34	0.0%	4
Del Norte	36	38	11.8%	2
Glenn	33	34	0.0%	1
Humboldt	37	36	5.9%	-1
Lake	43	44	29.4%	1
Lassen	35	36	5.9%	1
Mendocino	39	41	20.6%	2
Modoc	42	45	32.4%	3
Nevada	43	47	38.2%	4
Plumas	44	49	44.1%	5
Shasta	37	41	20.6%	4
Sierra	44	50	47.1%	6
Siskiyou	43	46	35.3%	3
Tehama	38	39	14.7%	1
Trinity	45	48	41.2%	3

Sources: US Census 2000 and 2010



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Exhibit E5: Ethnicity in California and the North State, 2010

Geographic Area	Total Population	Hispanic or Latino of Any Race	Percent Total Hispanic	Caucasian	Percent Total Caucasian	African-American	Percent Total African-American	American Indian	Percent Total American Indian	Asian	Percent Total Asian	Other*	Percent Total Other
California	37,254,000	14,013,700	37.6%	14,956,300	40.1%	2,163,800	5.8%	162,200	0.4%	4,775,100	12.8%	1,182,900	3.2%
North State	1,051,200	154,500	14.7%	795,400	75.7%	13,400	1.3%	28,100	2.7%	23,000	2.2%	36,900	3.5%
Counties													
Butte	220,000	31,100	14.1%	165,400	75.2%	3,100	1.4%	3,400	1.5%	8,900	4.1%	8,000	3.6%
Colusa	21,400	11,800	55.1%	8,500	39.8%	200	0.8%	300	1.4%	300	1.2%	400	1.7%
Del Norte	28,600	5,100	17.8%	18,500	64.7%	1,000	3.4%	1,900	6.8%	900	3.3%	1,200	4.1%
Glenn	28,100	10,500	37.5%	15,700	55.9%	200	0.7%	500	1.7%	700	2.4%	500	1.9%
Humboldt	134,600	13,200	9.8%	104,000	77.2%	1,400	1.0%	7,000	5.2%	2,900	2.1%	6,200	4.6%
Lake	64,700	11,100	17.1%	47,900	74.1%	1,200	1.8%	1,500	2.4%	700	1.1%	2,200	3.4%
Lassen	34,900	6,100	17.5%	23,300	66.7%	2,800	8.0%	1,000	2.9%	300	1.0%	1,400	4.0%
Mendocino	87,800	19,500	22.2%	60,200	68.6%	500	0.6%	3,500	4.0%	1,400	1.6%	2,700	3.0%
Modoc	9,700	1,300	13.9%	7,600	79.0%	100	0.8%	300	3.0%	100	0.7%	300	2.6%
Nevada	98,800	8,400	8.5%	85,500	86.5%	300	0.3%	800	0.8%	1,100	1.1%	2,600	2.6%
Plumas	20,000	1,600	8.0%	17,000	85.0%	200	0.9%	500	2.3%	100	0.6%	600	3.1%
Shasta	177,000	14,900	8.4%	146,000	82.4%	1,400	0.8%	4,200	2.3%	4,300	2.4%	6,400	3.6%
Sierra	3,000	300	8.3%	2,900	88.1%	0	0.0%	0	0.0%	0	0.0%	100	1.8%
Siskiyou	44,000	4,600	10.3%	35,700	79.5%	600	1.2%	1,500	3.4%	500	1.2%	2,000	4.4%
Tehama	63,500	13,900	21.9%	45,600	71.9%	300	0.5%	1,200	1.9%	600	1.0%	1,800	2.8%
Trinity	13,800	1,000	7.0%	11,600	83.5%	0	0.0%	600	4.0%	100	0.7%	600	4.4%

Source: US Census 2010

* Other = Native Hawaiian, other race, and biracial



Exhibit E6: Population Growth by Ethnicity in California and the North State, 2000 to 2010

Geographic Area	Total	Population Growth 2000-10	Caucasian	Hispanic or Latino	Other*	Annual Growth Rates 2000-10	Caucasian	Hispanic or Latino	Other*
California	37,253,960	3,382,310	-860,540	3,047,160	1,195,680	1.0%	-0.6%	2.5%	1.6%
North State	1,051,240	67,910	3,670	49,570	14,670	0.7%	0.0%	3.9%	1.6%
Counties									
Butte	220,000	16,830	2,850	9,780	4,200	0.8%	0.2%	3.8%	2.0%
Colusa	21,420	2,620	-490	3,050	60	1.3%	-0.6%	3.0%	0.5%
Del Norte	28,610	1,100	-780	1,260	620	0.4%	-0.4%	2.9%	1.3%
Glenn	28,120	1,670	-830	2,700	-200	0.6%	-0.5%	3.0%	-1.0%
Humboldt	134,620	8,100	730	5,000	2,380	0.6%	0.1%	4.9%	1.5%
Lake	64,660	6,360	1,000	4,450	900	1.0%	0.2%	5.3%	1.8%
Lassen	34,900	1,070	-620	1,440	250	0.3%	-0.3%	2.7%	0.5%
Mendocino	87,840	1,580	-4,330	5,290	620	0.2%	-0.7%	3.2%	0.8%
Modoc	9,690	240	-10	250	-0	0.2%	0.0%	2.1%	0.0%
Nevada	98,760	6,730	2,380	3,240	1,110	0.7%	0.3%	5.0%	2.6%
Plumas	20,010	-820	-1,460	430	210	-0.4%	-0.8%	3.2%	1.7%
Shasta	177,220	13,970	4,950	5,880	3,140	0.8%	0.3%	5.2%	2.2%
Sierra	3,240	-320	-360	60	-20	-0.9%	-1.2%	2.4%	-1.3%
Siskiyou	44,900	600	-1,230	1,260	560	0.1%	-0.3%	3.2%	1.3%
Tehama	63,460	7,420	1,630	5,040	760	1.3%	0.4%	4.6%	2.2%
Trinity	13,790	760	250	440	80	0.6%	0.2%	6.4%	0.6%

Sources: US Census 2000 and 2010

* Other = African American, American Indian, Asian, Native Hawaiian, other race, and biracial



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*Exhibit E7: Primary Language Spoken at Home among People
Age 5 and Older in California and the North State, 2012*

Geographic Area	English	Spanish	Asian	Other
California	19,938,000	9,960,300	3,172,500	1,824,700
North State	823,600	73,200	12,700	18,300
Counties				
Butte	167,600	14,900	5,000	4,000
Colusa	10,000	6,900	100	300
Del Norte	23,500	1,600	400	500
Glenn	16,800	6,500	700	400
Humboldt	109,500	5,400	1,300	3,200
Lake	49,600	4,300	300	1,000
Lassen	27,700	3,200	700	500
Mendocino	68,000	10,700	500	1,900
Modoc	7,900	800	0	200
Nevada	82,200	3,700	300	1,700
Plumas	18,800	700	100	300
Shasta	143,600	5,100	2,600	2,300
Sierra	3,200	100	0	100
Siskiyou	38,300	2,400	500	900
Tehama	44,900	6,800	200	600
Trinity	12,000	200	0	300
Geographic Area	Percent Totals			
California	57%	29%	9%	5%
North State	89%	8%	1%	2%
Counties				
Butte	88%	8%	3%	2%
Colusa	58%	40%	0%	2%
Del Norte	90%	6%	2%	2%
Glenn	69%	27%	3%	2%
Humboldt	92%	5%	1%	3%
Lake	90%	8%	1%	2%
Lassen	86%	10%	2%	2%
Mendocino	84%	13%	1%	2%
Modoc	89%	9%	0%	2%
Nevada	94%	4%	0%	2%
Plumas	95%	4%	0%	2%
Shasta	93%	3%	2%	1%
Sierra	94%	3%	0%	3%
Siskiyou	91%	6%	1%	2%
Tehama	86%	13%	0%	1%
Trinity	96%	2%	0%	2%

Sources: Claritas and the US Census American Community Survey



Exhibit E8: Educational Attainment among Adults Age 25 and Older in California and the North State, 2012

Geographic Area	Not High School Graduate	High School Graduate Some College or Associates Degree	Bachelor's Degree	Professional or Advanced Degree
California	4,711,527	12,285,618	4,642,313	2,603,269
North State	117,332	409,673	80,597	39,257
Counties				
Butte	22,477	76,585	18,826	8,848
Colusa	3,927	5,823	858	304
Del Norte	5,235	11,196	1,474	554
Glenn	5,077	9,299	1,261	462
Humboldt	12,298	50,448	12,720	6,035
Lake	9,256	26,547	3,065	1,849
Lassen	4,673	15,834	1,764	692
Mendocino	10,906	34,475	6,979	4,526
Modoc	1,483	4,182	568	231
Nevada	6,309	41,836	11,285	5,718
Plumas	1,770	10,427	1,737	852
Shasta	17,952	71,512	12,118	5,690
Sierra	375	1,729	289	147
Siskiyou	4,978	20,259	3,630	1,815
Tehama	8,826	23,342	3,024	1,069
Trinity	1,790	6,179	999	465
Geographic Area	Percent Totals			
California	19%	51%	19%	11%
North State	18%	63%	12%	6%
Counties				
Butte	18%	60%	15%	7%
Colusa	36%	53%	8%	3%
Del Norte	28%	61%	8%	3%
Glenn	32%	58%	8%	3%
Humboldt	15%	62%	16%	7%
Lake	23%	65%	8%	5%
Lassen	20%	69%	8%	3%
Mendocino	19%	61%	12%	8%
Modoc	23%	65%	9%	4%
Nevada	10%	64%	17%	9%
Plumas	12%	71%	12%	6%
Shasta	17%	67%	11%	5%
Sierra	15%	68%	11%	6%
Siskiyou	16%	66%	12%	6%
Tehama	24%	64%	8%	3%
Trinity	19%	66%	11%	5%

Sources: Claritas and the US Census American Community Survey



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Exhibit E9: Labor Force Characteristics in California and North State, 2012

Geographic Area	Labor Force	Employed	Unemployed	Unemployment Rate	Not in Labor Force*	Labor Force Participation Rate
California	18,486,100	16,475,000	2,011,000	10.9%	9,936,390	65%
North State	474,110	415,270	59,300	12.5%	367,110	56%
Counties						
Butte	101,800	88,800	13,000	12.8%	77,520	57%
Colusa	11,990	9,920	2,070	17.3%	8,180	59%
Del Norte	11,170	9,620	1,540	13.8%	12,860	46%
Glenn	12,690	10,760	1,930	15.2%	8,450	60%
Humboldt	59,200	52,800	6,400	10.8%	38,960	60%
Lake	25,550	21,790	3,760	14.7%	25,430	50%
Lassen	12,820	11,190	1,630	12.7%	18,430	41%
Mendocino	41,660	37,950	4,070	9.8%	25,500	62%
Modoc	3,760	3,250	500	13.3%	2,910	56%
Nevada	51,120	46,250	4,870	9.5%	35,320	59%
Plumas	9,550	8,300	1,260	13.2%	7,460	56%
Shasta	83,100	72,300	10,900	13.1%	61,890	57%
Sierra	1,760	1,560	200	11.5%	1,230	59%
Siskiyou	19,300	16,530	2,770	14.4%	16,270	54%
Tehama	23,740	20,110	3,630	15.3%	23,390	50%
Trinity	4,900	4,140	770	15.7%	3,300	60%

Sources: California Employment Development Department and Claritas

* Not in the labor force includes students, homemakers, prisoners, disabled, retired, and others.



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Exhibit E10: Sources of Income in California and the North State, 2012

Geographic Area	Wage and Salary	Self-Employment	Int./Div./Rents	Retirement	Gov. Transfer Payments*	Total Income
California	\$754,575,230,000	\$78,059,723,000	\$62,741,043,000	\$45,816,148,000	\$71,660,375,000	\$1,012,852,520,000
North State	\$14,191,545,000	\$2,392,465,000	\$1,643,648,000	\$1,851,894,000	\$3,150,689,000	\$23,230,242,500
Counties						
Butte	\$2,888,877,000	\$404,688,000	\$391,918,000	\$390,415,000	\$708,983,900	\$4,784,882,500
Colusa	\$283,324,000	\$40,472,000	\$29,355,000	\$23,539,000	\$45,955,000	\$422,645,000
Del Norte	\$304,014,000	\$31,774,000	\$27,316,000	\$38,817,000	\$78,579,000	\$480,500,000
Glenn	\$305,209,000	\$73,211,000	\$23,513,000	\$21,052,000	\$72,332,000	\$495,317,500
Humboldt	\$1,737,238,000	\$351,549,000	\$187,719,000	\$215,597,000	\$338,946,000	\$2,831,050,000
Lake	\$803,383,000	\$159,798,000	\$81,018,000	\$125,939,000	\$209,144,000	\$1,379,282,500
Lassen	\$398,673,000	\$48,197,000	\$22,589,000	\$51,338,000	\$58,848,000	\$579,645,000
Mendocino	\$1,182,992,000	\$277,588,000	\$148,408,000	\$140,949,000	\$250,558,000	\$2,000,495,000
Modoc	\$109,001,000	\$23,183,000	\$10,726,000	\$18,311,000	\$30,102,000	\$191,322,500
Nevada	\$1,910,664,000	\$341,114,000	\$272,956,000	\$257,080,000	\$335,904,000	\$3,117,720,000
Plumas	\$292,526,000	\$56,486,000	\$38,269,000	\$46,644,000	\$72,886,000	\$506,810,000
Shasta	\$2,558,197,000	\$287,929,000	\$209,034,000	\$307,463,000	\$558,191,000	\$3,920,815,000
Sierra	\$44,511,000	\$14,016,000	\$4,838,000	\$8,394,000	\$10,398,000	\$82,157,500
Siskiyou	\$514,840,000	\$111,236,000	\$92,345,000	\$88,989,000	\$158,495,000	\$965,905,000
Tehama	\$726,916,000	\$137,597,000	\$77,831,000	\$78,700,000	\$172,083,000	\$1,193,127,500
Trinity	\$131,181,000	\$33,629,000	\$25,811,000	\$38,664,000	\$49,283,000	\$278,567,500
Geographic Area	Percent Totals					
California	75%	8%	6%	5%	7%	
North State	61%	10%	7%	8%	14%	
Counties						
Butte	60%	8%	8%	8%	15%	
Colusa	67%	10%	7%	6%	11%	
Del Norte	63%	7%	6%	8%	16%	
Glenn	62%	15%	5%	4%	15%	
Humboldt	61%	12%	7%	8%	12%	
Lake	58%	12%	6%	9%	15%	
Lassen	69%	8%	4%	9%	10%	
Mendocino	59%	14%	7%	7%	13%	
Modoc	57%	12%	6%	10%	16%	
Nevada	61%	11%	9%	8%	11%	
Plumas	58%	11%	8%	9%	14%	
Shasta	65%	7%	5%	8%	14%	
Sierra	54%	17%	6%	10%	13%	
Siskiyou	53%	12%	10%	9%	16%	
Tehama	61%	12%	7%	7%	14%	
Trinity	47%	12%	9%	14%	18%	

Sources: Claritas and US Bureau of Economic Analysis

* Government transfer payments include social security, disability, public assistance, and others.



*Exhibit E11: Average Real Household Income Trends
in California and the North State, 2000 to 2012*

Geographic Area	Real Income (2012\$)			Real Income Change 2000 - 2006	Real Income Change 2006 - 2012	Avg. Rate of Income Change 2000 - 2006	Avg. Rate of Income Change 2006 - 2012
	2000	2006	2012				
California	\$87,500	\$93,400	\$79,500	\$5,900	-\$13,900	1.1%	-3.9%
North State	\$73,200	\$64,600	\$45,000	-\$8,600	-\$19,600	-2.1%	-8.6%
Counties							
Butte	\$72,000	\$63,700	\$44,100	-\$8,300	-\$19,600	-2.0%	-8.8%
Colusa	\$78,000	\$69,700	\$45,000	-\$8,300	-\$24,700	-1.9%	-10.4%
Del Norte	\$64,200	\$56,500	\$39,100	-\$7,700	-\$17,400	-2.1%	-8.8%
Glenn	\$66,700	\$59,000	\$39,800	-\$7,700	-\$19,200	-2.0%	-9.4%
Humboldt	\$66,600	\$58,400	\$41,700	-\$8,200	-\$16,700	-2.2%	-8.1%
Lake	\$68,000	\$60,500	\$39,800	-\$7,500	-\$20,700	-1.9%	-9.9%
Lassen	\$76,200	\$67,900	\$44,400	-\$8,300	-\$23,500	-1.9%	-10.1%
Mendocino	\$75,900	\$66,500	\$49,500	-\$9,400	-\$17,000	-2.2%	-7.1%
Modoc	\$62,200	\$54,400	\$42,300	-\$7,800	-\$12,100	-2.2%	-6.1%
Nevada	\$98,500	\$86,900	\$59,400	-\$11,600	-\$27,500	-2.1%	-9.1%
Plumas	\$75,500	\$66,900	\$44,600	-\$8,600	-\$22,300	-2.0%	-9.6%
Shasta	\$73,200	\$64,500	\$45,200	-\$8,700	-\$19,300	-2.1%	-8.5%
Sierra	\$74,300	\$65,800	\$43,800	-\$8,500	-\$22,000	-2.0%	-9.7%
Siskiyou	\$65,500	\$57,600	\$41,500	-\$7,900	-\$16,100	-2.1%	-7.9%
Tehama	\$65,900	\$57,800	\$41,400	-\$8,100	-\$16,400	-2.2%	-8.0%
Trinity	\$60,600	\$53,000	\$38,400	-\$7,600	-\$14,600	-2.2%	-7.7%

Sources: Claritas and the US Census American Community Survey

Note: Data are adjusted for inflation and rounded to the nearest \$100 in 2012 dollars.



Exhibit E12: Household Income Distribution in California and the North State, 2000

Geographic Area	Number of Households in Income Bracket					Total Households
	< \$35k	\$35 to \$50K	\$50 to \$100K	\$100 to \$150K	> \$150k	
California	4,249,200	1,746,000	3,529,400	1,192,600	794,800	11,512,000
North State	184,400	67,900	118,800	23,500	26,900	421,500
Counties						
Butte	40,000	13,600	24,400	4,800	5,400	88,200
Colusa	2,700	1,200	2,300	500	500	7,200
Del Norte	5,000	1,400	2,500	500	500	9,900
Glenn	4,400	1,800	2,700	500	400	9,800
Humboldt	27,200	9,300	14,700	2,600	2,700	56,500
Lake	12,700	4,400	6,900	1,600	1,500	27,100
Lassen	3,900	1,600	3,300	700	700	10,200
Mendocino	14,600	6,000	10,000	2,000	2,400	35,000
Modoc	2,200	600	1,000	200	200	4,200
Nevada	12,400	6,400	14,500	3,500	5,100	41,900
Plumas	3,600	1,300	2,900	500	600	8,900
Shasta	30,600	11,800	20,400	3,900	4,500	71,200
Sierra	600	300	500	100	100	1,600
Siskiyou	9,700	3,100	5,000	800	1,000	19,600
Tehama	11,500	4,100	6,400	1,100	1,000	24,100
Trinity	3,300	1,000	1,300	200	300	6,100
Geographic Ares	Percent Totals					
California	37%	15%	31%	10%	7%	
North State	44%	16%	28%	6%	6%	
Counties						
Butte	45%	15%	28%	5%	6%	
Colusa	38%	17%	32%	7%	7%	
Del Norte	51%	14%	25%	5%	5%	
Glenn	45%	18%	28%	5%	4%	
Humboldt	48%	16%	26%	5%	5%	
Lake	47%	16%	25%	6%	6%	
Lassen	38%	16%	32%	7%	7%	
Mendocino	42%	17%	29%	6%	7%	
Modoc	52%	14%	24%	5%	5%	
Nevada	30%	15%	35%	8%	12%	
Plumas	40%	15%	33%	6%	7%	
Shasta	43%	17%	29%	5%	6%	
Sierra	38%	19%	31%	6%	6%	
Siskiyou	49%	16%	26%	4%	5%	
Tehama	48%	17%	27%	5%	4%	
Trinity	54%	16%	21%	3%	5%	

Sources: Claritas and the US Census American Community Survey



Exhibit E13: Household Income Distribution in California and the North State, 2012

Geographic Area	Number of Households in Income Bracket					Total Households
	< \$35k	\$35 to \$50K	\$50 to \$100K	\$100 to \$150K	> \$150k	
California	3,520,270	1,658,780	3,832,340	1,109,420	2,600,040	12,720,900
North State	215,320	69,630	101,620	19,480	10,400	416,400
Counties						
Butte	47,240	14,400	20,550	3,810	2,130	88,100
Colusa	3,570	1,280	1,850	290	160	7,100
Del Norte	5,560	1,480	2,240	420	150	9,800
Glenn	5,340	1,860	2,120	340	130	9,800
Humboldt	30,850	9,200	12,710	2,090	1,170	56,000
Lake	14,970	4,090	5,490	1,000	410	26,000
Lassen	4,720	1,780	2,700	510	140	9,800
Mendocino	16,950	5,870	9,060	1,910	1,050	34,800
Modoc	2,380	540	900	130	70	4,000
Nevada	15,220	6,970	13,170	3,350	2,150	40,900
Plumas	4,310	1,430	2,460	480	170	8,800
Shasta	35,850	12,090	17,560	3,380	1,710	70,600
Sierra	700	280	370	60	30	1,400
Siskiyou	11,060	3,270	3,950	710	400	19,400
Tehama	12,910	4,140	5,420	760	440	23,700
Trinity	3,690	960	1,080	240	90	6,100
Geographic Ares	Percent Totals					
California	28%	13%	30%	9%	20%	
North State	52%	17%	24%	5%	2%	
Counties						
Butte	54%	16%	23%	4%	2%	
Colusa	50%	18%	26%	4%	2%	
Del Norte	56%	15%	23%	4%	1%	
Glenn	55%	19%	22%	3%	1%	
Humboldt	55%	16%	23%	4%	2%	
Lake	58%	16%	21%	4%	2%	
Lassen	48%	18%	27%	5%	1%	
Mendocino	49%	17%	26%	5%	3%	
Modoc	59%	13%	22%	3%	2%	
Nevada	37%	17%	32%	8%	5%	
Plumas	49%	16%	28%	5%	2%	
Shasta	51%	17%	25%	5%	2%	
Sierra	49%	20%	26%	4%	2%	
Siskiyou	57%	17%	20%	4%	2%	
Tehama	55%	17%	23%	3%	2%	
Trinity	61%	16%	18%	4%	1%	

Sources: Claritas and the US Census American Community Survey



Exhibit E14: Poverty Rates in California and the North State, 2000 to 2010

Geographic Area	Households 2000	Households Below Poverty 2000	Percent Households Below Poverty 2000	Households 2010	Households Below Poverty 2010	Percent Households Below Poverty 2010
California	11,502,870	1,363,030	12%	12,577,500	1,720,370	14%
North State	381,890	50,580	13%	417,710	71,330	17%
Counties						
Butte	79,570	11,040	14%	87,620	15,180	17%
Colusa	6,100	920	15%	7,060	1,260	18%
Del Norte	9,170	1,800	20%	9,910	2,380	24%
Glenn	9,170	1,310	14%	9,800	2,090	21%
Humboldt	51,240	7,590	15%	56,030	11,170	20%
Lake	23,970	3,550	15%	26,550	7,020	26%
Lassen	9,620	1,200	12%	10,060	1,340	13%
Mendocino	33,270	4,060	12%	34,940	6,500	19%
Modoc	3,780	740	20%	4,060	810	20%
Nevada	36,890	2,160	6%	41,530	2,660	6%
Plumas	9,000	890	10%	8,980	950	11%
Shasta	63,430	8,120	13%	70,350	11,050	16%
Sierra	1,520	150	10%	1,480	50	3%
Siskiyou	18,560	3,020	16%	19,500	2,890	15%
Tehama	21,010	3,130	15%	23,770	5,250	22%
Trinity	5,590	910	16%	6,080	710	12%

Sources: Claritas, US Census American Community Survey, and California Department of Finance

Notes: (1) Federal poverty rates are determined by income and family size.

(2) Families of 4 people with annual incomes less than \$23,050 are considered impoverished.



*Exhibit E15: Inflation-Adjusted Home Values in California
and the North State, 2000 to 2012*

Geographic Area	Average Housing Value (2012\$)			Total Percent Change	
	2000	2006	2012	2000-06	2006-12
California	\$283,000	\$597,400	\$295,900	111%	-50%
North State	\$164,000	\$350,700	\$182,600	114%	-48%
Counties					
Butte	\$156,500	\$327,700	\$171,000	109%	-48%
Colusa	\$146,500	\$342,200	\$127,100	134%	-63%
Del Norte	\$140,700	\$267,600	\$136,800	90%	-49%
Glenn	\$106,700	\$278,800	\$173,000	161%	-38%
Humboldt	\$156,600	\$354,700	\$254,300	127%	-28%
Lake	\$147,000	\$340,400	\$113,800	132%	-67%
Lassen	\$118,000	\$340,400	\$112,800	188%	-67%
Mendocino	\$212,300	\$485,800	\$236,700	129%	-51%
Modoc(2)	\$76,600	\$83,700	\$128,300	9%	53%
Nevada	\$286,000	\$549,100	\$266,300	92%	-52%
Plumas	\$188,700	\$379,700	\$177,700	101%	-53%
Shasta	\$138,500	\$308,400	\$148,200	123%	-52%
Sierra	N/A	N/A	\$186,300	N/A	N/A
Siskiyou	\$127,300	\$240,000	\$166,700	89%	-31%
Tehama	\$126,300	\$247,200	\$105,000	96%	-58%
Trinity	\$126,300	\$217,400	\$171,900	72%	-21%
Percent of California Housing Value	58%	59%	62%		

Source: Zillow.com

Notes: (1) Data are adjusted for inflation measured in 2012 dollars.

(2) Modoc County housing values are based on few real estate transactions and may be unreliable.



Exhibit E16: Inflation-Adjusted Value of Agricultural Production in California and the North State, 2000 to 2009

Geographic Area	Value of Fruits, Vegetables, Nursery Products and Field Crops (2009\$)			Annual Growth Rate		Value of Livestock and Poultry Products (2009\$)			Annual Growth in Production Value	
	2000	2006	2009	2000-06	2006-09	2000	2006	2009	2000-06	2006-09
California	\$24,353,761,000	\$25,362,474,000	\$27,030,000,000	0.7%	2.1%	\$8,277,583,000	\$8,137,514,000	\$7,810,000,000	-0.3%	-1.4%
North State	\$1,573,933,000	\$1,838,494,000	\$2,192,019,000	2.6%	6.0%	\$356,577,000	\$327,028,000	\$302,326,000	-1.4%	-2.6%
Counties										
Butte	\$352,233,000	\$449,785,000	\$530,675,000	4.2%	5.7%	\$11,199,000	\$12,571,000	\$8,904,000	1.9%	-10.9%
Colusa	\$378,999,000	\$435,791,000	\$590,839,000	2.4%	10.7%	\$14,889,000	\$13,958,000	\$7,935,000	-1.1%	-17.2%
Del Norte	\$21,900,000	\$20,215,000	\$15,331,000	-1.3%	-8.8%	\$18,439,000	\$28,579,000	\$21,851,000	7.6%	-8.6%
Glenn	\$287,359,000	\$324,690,000	\$416,557,000	2.1%	8.7%	\$65,723,000	\$67,792,000	\$60,806,000	0.5%	-3.6%
Humboldt	\$52,412,000	\$65,536,000	\$56,397,000	3.8%	-4.9%	\$71,396,000	\$58,717,000	\$55,418,000	-3.2%	-1.9%
Lake	\$76,541,000	\$70,221,000	\$63,081,000	-1.4%	-3.5%	\$3,214,000	\$2,585,000	\$2,073,000	-3.6%	-7.1%
Lassen	\$52,302,000	\$48,132,000	\$52,352,000	-1.4%	2.8%	\$13,948,000	\$14,801,000	\$13,679,000	1.0%	-2.6%
Mendocino	\$145,434,000	\$137,340,000	\$104,946,000	-0.9%	-8.6%	\$15,438,000	\$14,730,000	\$13,203,000	-0.8%	-3.6%
Modoc	N/A	N/A	\$63,134,000	N/A	N/A	N/A	N/A	\$18,894,000	N/A	N/A
Nevada	\$4,737,000	\$5,544,000	\$5,542,000	2.7%	0.0%	\$4,508,000	\$3,966,000	\$4,109,000	-2.1%	1.2%
Plumas	\$7,442,000	\$8,158,000	\$5,965,000	1.5%	-9.9%	\$15,601,000	\$13,441,000	\$13,794,000	-2.5%	0.9%
Shasta	\$41,536,000	\$46,953,000	\$49,247,000	2.1%	1.6%	\$23,965,000	\$23,529,000	\$19,922,000	-0.3%	-5.4%
Sierra	\$2,888,000	\$2,617,000	\$1,797,000	-1.6%	-11.8%	\$5,998,000	\$4,213,000	\$3,835,000	-5.7%	-3.1%
Siskiyou	\$52,096,000	\$89,869,000	\$85,149,000	9.5%	-1.8%	\$47,337,000	\$27,050,000	\$26,583,000	-8.9%	-0.6%
Tehama	\$96,480,000	\$132,187,000	\$150,256,000	5.4%	4.4%	\$43,433,000	\$40,097,000	\$30,355,000	-1.3%	-8.9%
Trinity	\$1,574,000	\$1,456,000	\$751,000	-1.3%	-19.8%	\$1,489,000	\$999,000	\$965,000	-6.4%	-1.1%

Sources: Department of Agriculture Crop Report, 2000, 2006 and 2009

Notes: (1) Value of production is adjusted for inflation and measured in 2009 dollars.
(2) Data do not include timber harvest.



Exhibit E17: Timber Harvest and Inflation-Adjusted Harvest Value in California and the North State, 2000 to 2011

Geographic Area	Million Board Feet (MBF)			Annual Growth Rate		Annual Harvest Value (2011\$)			Annual Growth in Harvest Value		Percent of State Total 2011	
	2000	2006	2011	2000-06	2006-11	2000	2006	2011	2000-06	2006-11	MBF	Value
California	1,966,000	1,631,000	1,288,000	-3.1%	-4.6%	\$1,187,483,000	\$595,937,000	\$272,490,000	-10.9%	-14.5%		
North State	1,556,000	1,306,000	1,054,000	-2.9%	-4.2%	\$995,891,000	\$500,656,000	\$228,940,000	-10.8%	-14.5%	81.9%	84.0%
Counties												
Butte	86,000	63,000	42,000	-5.1%	-7.5%	\$43,739,000	\$21,928,000	\$9,459,000	-10.9%	-15.5%	3.3%	3.5%
Colusa	0	0	1,000	0.0%	n/a	\$0	\$0	\$157,000	0.0%	100.0%	0.1%	0.1%
Del Norte	46,000	17,000	9,000	-15.5%	-10.9%	\$50,401,000	\$8,310,000	\$2,789,000	-25.9%	-19.6%	0.7%	1.0%
Glenn	17,000	0	400	-100.0%	n/a	\$7,359,000	\$0	\$66,000	-100.0%	100.0%	0.0%	0.0%
Humboldt	389,000	337,000	216,000	-2.4%	-8.5%	\$372,587,000	\$191,497,000	\$65,778,000	-10.5%	-19.2%	16.8%	24.1%
Lake	6,000	1,000	400	-27.0%	-17.2%	\$2,894,000	\$378,000	\$46,000	-28.8%	-34.4%	0.0%	0.0%
Lassen	61,000	60,000	79,000	-0.1%	5.5%	\$26,979,000	\$14,880,000	\$12,173,000	-9.4%	-3.9%	6.1%	4.5%
Mendocino	156,000	110,000	90,000	-5.6%	-4.0%	\$149,745,000	\$59,558,000	\$25,762,000	-14.2%	-15.4%	7.0%	9.5%
Modoc	42,000	25,000	24,000	-8.2%	-0.8%	\$15,716,000	\$6,018,000	\$4,551,000	-14.8%	-5.4%	1.9%	1.7%
Nevada	47,000	28,000	16,000	-8.4%	-10.3%	\$19,814,000	\$8,169,000	\$3,249,000	-13.7%	-16.8%	1.3%	1.2%
Plumas	154,000	119,000	74,000	-4.2%	-9.0%	\$64,300,000	\$32,148,000	\$5,254,000	-10.9%	-30.4%	5.8%	1.9%
Shasta	144,000	190,000	187,000	4.6%	-0.3%	\$64,014,000	\$56,302,000	\$40,381,000	-2.1%	-6.4%	14.5%	14.8%
Sierra	41,000	22,000	22,000	-9.8%	0.0%	\$16,145,000	\$5,848,000	\$3,840,000	-15.6%	-8.1%	1.7%	1.4%
Siskiyou	193,000	199,000	195,000	0.5%	-0.4%	\$83,337,000	\$53,473,000	\$39,212,000	-7.1%	-6.0%	15.1%	14.4%
Tehama	101,000	51,000	57,000	-10.7%	2.1%	\$46,449,000	\$16,567,000	\$10,635,000	-15.8%	-8.5%	4.4%	3.9%
Trinity	73,000	85,000	40,000	2.6%	-13.9%	\$32,412,000	\$25,580,000	\$5,589,000	-3.9%	-26.2%	3.1%	2.1%

Source: California Department of Forestry

Note: Annual harvest value is adjusted for inflation and measured in 2011 dollars.



Exhibit E18: Commercial Fishing and Inflation-Adjusted Harvest Value in California and the North State, 2000 to 2011

Geographic Area	Total Pounds of Harvest			Annual Growth Rate		Annual Harvest Value (2011\$)			Annual Growth in Harvest Value		Percent of State Total 2011	
	2000	2006	2011	2000-06	2006-11	2000	2006	2011	2000-06	2006-11	Pounds	Value
California	553,461,000	334,176,000	438,379,000	-8.1%	5.6%	\$178,071,000	\$141,358,000	\$179,105,000	-3.8%	4.8%		
North State	39,590,000	43,837,000	32,182,000	1.7%	-6.0%	\$36,879,000	\$47,745,000	\$29,870,000	4.4%	-9.0%	7.3%	16.7%
Counties												
Butte	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Colusa	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Del Norte	15,613,000	17,792,000	13,313,000	2.2%	-5.6%	\$13,711,000	\$24,674,000	\$10,588,000	10.3%	-15.6%	3.0%	5.9%
Glenn	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Humboldt	14,338,000	20,620,000	11,083,000	6.2%	-11.7%	\$11,414,000	\$16,849,000	\$11,588,000	6.7%	-7.2%	2.5%	6.5%
Lake	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Lassen	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Mendocino	9,638,000	5,425,000	7,786,000	-9.1%	7.5%	\$11,754,000	\$6,222,000	\$7,694,000	-10.1%	4.3%	1.8%	4.3%
Modoc	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Nevada	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Plumas	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Shasta	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Sierra	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Siskiyou	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Tehama	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%
Trinity	0	0	0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	0.0%	0.0%

Source: California Department of Fish and Game

Note: Annual harvest value is adjusted for inflation and measured in 2011 dollars.



Exhibit E19: Inflation-Adjusted Taxable Retail Sales in California and the North State, 2000 to 2010

Geographic Area	Number of Retail Outlets			Annual Change in Number of Outlets		Taxable Retail Sales (2011\$)			Annual Change in Taxable Sales	Annual Change in Taxable Sales
	2000	2006	2010	2000 - 06	2006 - 10	2000	2006	2010	2000-06	2006-10
California	380,414	488,998	649,119	4.3%	5.8%	\$363,512,391,000	\$420,824,903,000	\$326,777,717,000	2.5%	-4.9%
North State	13,066	15,763	22,553	3.2%	7.4%	\$8,550,687,000	\$10,387,857,000	\$8,402,536,000	3.3%	-4.2%
Counties										
Butte	2,377	2,942	4,078	3.6%	6.7%	\$1,924,480,000	\$2,325,741,000	\$1,773,107,000	3.2%	-5.3%
Colusa	283	243	201	-2.5%	-3.7%	\$118,732,000	\$190,038,000	\$201,968,000	8.2%	1.2%
Del Norte	258	290	381	2.0%	5.6%	\$145,007,000	\$160,096,000	\$204,311,000	1.7%	5.0%
Glenn	297	391	685	4.7%	11.9%	\$159,389,000	\$153,997,000	\$277,683,000	-0.6%	12.5%
Humboldt	1,721	2,074	3,302	3.2%	9.7%	\$1,179,993,000	\$1,356,274,000	\$1,177,739,000	2.3%	-2.8%
Lake	639	747	1,759	2.6%	18.7%	\$369,687,000	\$440,186,000	\$464,277,000	3.0%	1.1%
Lassen	279	302	369	1.3%	4.1%	\$178,318,000	\$206,721,000	\$149,827,000	2.5%	-6.2%
Mendocino	1,383	1,593	2,539	2.4%	9.8%	\$893,200,000	\$1,000,467,000	\$824,006,000	1.9%	-3.8%
Modoc	137	146	124	1.1%	-3.2%	\$52,617,000	\$59,555,000	\$34,228,000	2.1%	-10.5%
Nevada	1,283	1,746	2,654	5.3%	8.7%	\$838,571,000	\$949,134,000	\$702,470,000	2.1%	-5.8%
Plumas	431	498	300	2.4%	-9.6%	\$140,305,000	\$152,645,000	\$104,835,000	1.4%	-7.2%
Shasta	2,341	2,870	3,506	3.5%	4.1%	\$1,777,968,000	\$2,283,445,000	\$1,675,578,000	4.3%	-6.0%
Sierra	70	69	90	-0.2%	5.5%	\$14,688,000	\$14,027,000	\$8,978,000	-0.8%	-8.5%
Siskiyou	741	881	1,203	2.9%	6.4%	\$285,843,000	\$411,614,000	\$292,311,000	6.3%	-6.6%
Tehama	617	719	969	2.6%	6.1%	\$424,310,000	\$633,222,000	\$459,432,000	6.9%	-6.2%
Trinity	209	252	393	3.2%	9.3%	\$47,579,000	\$50,695,000	\$51,786,000	1.1%	0.4%

Source: California Board of Equalization

Note: Taxable retail sales are adjusted for inflation and measured in 2011 dollars.



Exhibit E20: Inflation-Adjusted Visitor Spending in California and the North State, 2000 to 2010

Geographic Area	Employment Generated by Visitor Spending			Total Direct Visitor Spending (2010\$)			Industry Earnings Generated by Visitor Spending (2010\$)		
	2000	2006	2010	2000	2006	2010	2000	2006	2010
California	940,000	918,000	879,230	\$90,030,000,000	\$92,800,000,000	\$88,600,000,000	\$31,150,000,000	\$31,150,000,000	\$29,472,800,000
North State	36,720	36,620	32,860	\$2,480,700,000	\$2,557,900,000	\$2,357,000,000	\$844,400,000	\$821,100,000	\$766,000,000
Counties									
Butte	3,420	3,780	3,410	\$241,500,000	\$270,600,000	\$253,300,000	\$71,900,000	\$71,700,000	\$66,800,000
Colusa	540	550	490	\$46,200,000	\$45,200,000	\$41,000,000	\$10,300,000	\$9,500,000	\$8,700,000
Del Norte	2,080	1,720	1,590	\$103,100,000	\$98,100,000	\$104,400,000	\$45,100,000	\$46,000,000	\$42,000,000
Glenn	810	810	820	\$49,900,000	\$53,000,000	\$51,800,000	\$17,100,000	\$17,500,000	\$18,100,000
Humboldt	4,890	4,490	4,620	\$317,100,000	\$319,700,000	\$315,600,000	\$98,400,000	\$96,300,000	\$98,300,000
Lake	2,330	2,870	2,150	\$162,100,000	\$173,300,000	\$142,400,000	\$56,000,000	\$57,100,000	\$45,700,000
Lassen	1,680	1,650	1,070	\$65,300,000	\$67,300,000	\$56,200,000	\$26,800,000	\$25,000,000	\$18,500,000
Mendocino	5,820	5,350	4,920	\$362,300,000	\$342,600,000	\$298,900,000	\$137,100,000	\$124,000,000	\$116,100,000
Modoc	290	290	290	\$21,800,000	\$23,500,000	\$21,500,000	\$7,300,000	\$6,900,000	\$7,000,000
Nevada	3,300	3,250	2,980	\$274,800,000	\$289,600,000	\$271,400,000	\$90,400,000	\$91,200,000	\$91,100,000
Plumas	1,660	1,610	1,330	\$113,600,000	\$110,500,000	\$98,500,000	\$41,500,000	\$38,400,000	\$34,800,000
Shasta	4,740	4,680	4,240	\$369,800,000	\$389,000,000	\$358,600,000	\$117,800,000	\$115,800,000	\$105,800,000
Sierra	260	260	270	\$19,600,000	\$18,700,000	\$17,800,000	\$5,200,000	\$4,800,000	\$4,700,000
Siskiyou	2,470	2,670	2,440	\$168,500,000	\$180,300,000	\$166,000,000	\$65,100,000	\$63,000,000	\$60,700,000
Tehama	1,610	1,680	1,320	\$113,100,000	\$124,500,000	\$112,700,000	\$35,300,000	\$35,500,000	\$30,400,000
Trinity	820	960	920	\$52,000,000	\$52,000,000	\$46,900,000	\$19,100,000	\$18,400,000	\$17,300,000

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Exhibit E20: Inflation-Adjusted Visitor Spending in California and the North State, 2000 to 2010 (cont'd)

Geographic Area	Employment Generated by Visitor Spending		Total Direct Visitor Spending		Industry Earnings Generated by Visitor Spending	
	Annual Growth Rate 2000-06	Annual Growth Rate 2006-10	Annual Growth Rate 2000-06	Annual Growth Rate 2006-10	Annual Growth Rate 2000-06	Annual Growth Rate 2006-10
California	-0.4%	-1.1%	0.5%	-1.2%	0.0%	-1.4%
North State	0.0%	-2.7%	0.5%	-2.0%	-0.5%	-1.7%
Counties						
Butte	1.7%	-2.5%	1.9%	-1.6%	0.0%	-1.8%
Colusa	0.3%	-2.8%	-0.4%	-2.4%	-1.3%	-2.2%
Del Norte	-3.1%	-1.9%	-0.8%	1.6%	0.3%	-2.2%
Glenn	0.0%	0.3%	1.0%	-0.6%	0.4%	0.8%
Humboldt	-1.4%	0.7%	0.1%	-0.3%	-0.4%	0.5%
Lake	3.5%	-7.0%	1.1%	-4.8%	0.3%	-5.4%
Lassen	-0.3%	-10.3%	0.5%	-4.4%	-1.2%	-7.3%
Mendocino	-1.4%	-2.1%	-0.9%	-3.4%	-1.7%	-1.6%
Modoc	0.0%	0.0%	1.3%	-2.2%	-0.9%	0.4%
Nevada	-0.3%	-2.1%	0.9%	-1.6%	0.1%	0.0%
Plumas	-0.5%	-4.7%	-0.5%	-2.8%	-1.3%	-2.4%
Shasta	-0.2%	-2.4%	0.8%	-2.0%	-0.3%	-2.2%
Sierra	0.0%	0.9%	-0.8%	-1.2%	-1.3%	-0.5%
Siskiyou	1.3%	-2.2%	1.1%	-2.0%	-0.5%	-0.9%
Tehama	0.7%	-5.9%	1.6%	-2.5%	0.1%	-3.8%
Trinity	2.7%	-1.1%	0.0%	-2.5%	-0.6%	-1.5%

Source: California Travel Impacts, 1992 - 2010

Note: Visitor spending and industry earning values are adjusted for inflation and measured in 2010 dollars.



Appendix F: Study Workshop Summaries

In May 2012, the project team held three regional meetings with North State transportation and economic development professionals. Thirty-five (35) people attended the meetings. They represented multiple North State stakeholders and 7 of the 16 counties. Several items were discussed including the local economy and contributing factors, economic development initiatives, as well as transportation bottlenecks and projects. This appendix provides meeting summaries for all three workshops.

Redding Workshop (May 7, 2012)

Dan Wayne from the Shasta Regional Transportation Agency (SRTA – formerly Shasta County Regional Transportation Planning Agency) started the meeting with group introductions and opening remarks. Dan introducing himself as the project manager and provided a general overview of the project, how it got started, and what the North State will get from the project. Dan described a Development Incentive Program grant that SRTA recently received as an example of how the North State can leverage resources and enable investments that help the economy.

Chris Williges from System Metrics Group (SMG) provided a project overview that highlighted the purpose, objectives, and primary tasks involved in the study. He also identified a few issues and challenges in conducting the study, but emphasized that the study can result in improved alignment between transportation spending and economic development planning as well as a foundation for the development of grant funding proposals and public-private partnerships. The success of the study will depend on participation from stakeholders throughout the North State. The project will produce a high-level, “glossy” report for decision-makers and the public as well as a more detailed, technical analysis with county-level detail for planning purposes.

After these introductions, the workshop continued with a discussion among all participants about:

- Transportation and Economic Development Issues
- Relevant Data, Plans, and Studies.

Transportation and Economic Development Issues

How would you describe the local economy?

Key sectors include agriculture, manufacturing, health care, and professional services. Small businesses with 5 or fewer employees dominate the economy (89% was mentioned). The City of Redding (along with Chico) functions as a sub-regional hub for jobs, services, and retail shopping. Redding provides health care services for neighboring counties and the use of telemedicine is increasing in the North State. There are also a number of non-profits in Redding.



What factors have contributed to/inhibited the region's economic development?

The region has successfully attracted significant amounts of federal and state grants, which are a shot in the arm to the regional economy. Shasta College, College of the Siskiyous, and Lassen College offer higher education opportunities.

Key factors that constrain growth include a lack of broadband to serve rural residents (e.g., no internet service in Rancho Tehama in Tehama County and many locations in Modoc County), lack of air service, and long distances between communities that add unproductive travel times. In addition, the quality of the roads and weather reduce the reliability of travel. Some participants noted that the local culture does not value education and produces very low high school graduation rates (less than 50 percent was mentioned). Expect More Tehama is a program to raise educational expectations in the community. However, Butte County has different educational values due to the presence of Chico State University. Constraints attributed to "transportation reliability" include windy roads, poor drainage along some roadways (leading to flooding), lack of east-west connections, and poor signage. Business attraction efforts are constrained by California state tax and regulatory structures.

What are your major economic development initiatives?

Traditional efforts have focused on attracting manufacturing. These efforts have not been successful. Other initiatives yet to be implemented include the proposed development of the Stillwater Business Park in Redding.

The region is beginning to realize that an economic gardening approach is required. This approach would focus economic development efforts on retaining and expanding existing firms. Tehama is focusing on agricultural tourism and has developed the following brands: Northern California Tehama County Reach Your Peak, Red Bluff California Your Lassen Adventure Starts Here, Manton California Change Your Attitude, and Corning Everything Olive. SR-36 is a popular route for motorcycles and is a "world-class ride."

There is a proposal to develop a "Wine Village" along I-5. The "village" would support local vineyards by having tasting rooms and restaurants. The village would be able to support events hosting up to 600 people.

What can be done to improve the economy?

Ideas presented include agricultural tourism, promotion of Highway 36 as a scenic highway, better utilization of Lassen Park as a destination, attracting alternative energy, and the reuse of old mill sites for manufacturing (but this requires STAA access). In addition, mill sites can be used as bio-mass and solar sites or for the storage of hay.

Does transportation access limit the success of your economic development efforts?

Large trucks are not able to transport goods to the coast along SR-299. Railway connections between Modoc and Lakeview, Oregon are prone to accidents (i.e. derailment of freight box cars). Past efforts to build residential subdivisions and new commercial projects near I-5 were constrained by the need to



finance and improve interchanges. Development along the west side of I-5 is constrained by the need to finance interchange improvements. There are limited alternatives to I-5.

What are primary bottlenecks to transportation movement in the region?

- SR-299 at Buckhorn (to the west), will be STAA compliant in 2017
- SR-299 at Hatchet Road (to the east)
- SR-99 alignment north of Chico (uncertain, right-of-way sold)
- I-5 and SR-299 interchange in Redding
- Deschutes Road (triangle concept)
- Buenaventura
- Lack of east-west STAA-compliant routes north of I-80 and south of SR-299

The Hatchet Ridge Wind Turbine Project provides an example of how addressing bottlenecks can improve the economy. SR-299 was used to move over 44 wind turbines from Gerber (turbines were offloaded from the Union Pacific Railroad) and the towers were offloaded in Reno, Nevada and trucked to Burney for the construction of the Hatchet Ridge Wind Farm. The trucks could not have negotiated Fountain Curve and Pink House Curve (Cedar Creek) without improvements that had recently been made. These curve corrections were funded as safety improvements.

What are the major planned transportation system enhancements?

Modoc

- SR-299 drainage, widening, pedestrian, and shoulder improvements west of Alturas

Tehama

- Jellys Ferry Bridge - seismic bridge replacement, serves as alternate for I-5
- SR-99 improvements in Los Molinos area, safety improvements, rumble strips
- I-5 South Avenue interchange in Tehama (Phase 2) – supports development on west side
- Bowman Road interchange – currently has LOS F, but economic development potential (retirement center, commercial development, residential development)

What projects without funding are on your wish list?

- Multiple interchanges on I-5 in Tehama and Shasta counties
- Bridge repair and improvements in Shasta County (e.g., Pit River and Antler)
- Belt line road improving access around the City of Red Bluff
- General improvements along the east-west corridor

What specific transportation improvements are needed to support economic development/business attraction?

Better connectivity between the Red Bluff airport, the College and the industrial park.



Relevant Data, Plans, and Studies

- Shasta College has a subscription to the employment data in EMSI (Economic Modeling Specialists). These data are updated quarterly.
- The CTC Transportation Needs Assessment also provides relevant information.
- Chico State provides economic profiles. Used to be free, but now requires a subscription. Del Norte County is the only county that has paid the subscription. The others receive only summaries.
- Expect More Tehama is a program to champion higher educational expectations. Program started in 2009.
- Business, Transportation and Housing (BT&H) Agency and California Environmental Protection Agency (Cal/EPA) Goods Movement Action Plan
- SRTA, Tehama County RTPA, and Caltrans wrote a I-5 Impact Fee Nexus Study as part of the Fix 5 Partnership
- There is an origin-destination survey for the gateways of I-5, SR-299, SR-36, and SR-44 that is 4-5 years old. Scott White is the Caltrans contact for the survey.
- Modoc updated its Regional Transportation Plan (RTP) in 2008. The 2013 update will begin in FY2012/13.
- Trinity also recently updated its RTP.
- Dave Moore can provide the latest RTP for Siskiyou.
- Lake County has recently conducted a Blueprint Study.
- Del Norte County is also working on a Blueprint study.
- Tehama County is developing a Blueprint Plan and a working partner on the GIS Platform effort led by SRTA and Shasta Community College.

Other Comments

- A useful product of this study would be a document that quantifies the region-wide benefits of projects. This would help prepare capital improvement plans and funding requests.
- Butte County Association of Governments (BCAG) is hosting a freight workshop by the Federal Highway Administration (FHWA). There may be a tie to this study.
- Useful performance measures would be jobs created, jobs retained, and increased sales.
- The Adobe Road Interchange in Red Bluff and the South Avenue Interchange Phase 1 in Corning might provide an example of the tie between transportation and the economy.
- Reliability is an important consideration. For example, the failure of a bridge may severely impact accessibility and the economy. The Pit River Bridge is a good example to show the importance to the economy.

Meeting Attendees

The following individuals participated in the workshop in person or over the phone.

County	Name	Organization
Glenn	John Linhart	Glenn County Planning & Public Works Agency



County	Name	Organization
Modoc	Kim Hunter	County of Modoc, Planning
Shasta	Jan Bulinski Jenn Pollom Darren Gurney Chris Peterson	Shasta Regional Transportation Agency VESTRA/ Far North GIS Council Shasta College, Business & Enterprise Center Shasta Economic Development Corporation
Tehama	Barbara O’Keeffe	Tehama County Transportation Commission
State	Dave Moore	Caltrans District 2, Planning & Local Assistance
Facilitators	Dan Wayne Chris Williges Steve Wahlstrom	Shasta Regional Transportation Agency System Metrics Group Wahlstrom & Associates

Eureka Workshop (May 8, 2012)

Dan Wayne from the Shasta Regional Transportation Agency (SRTA – formerly Shasta County Regional Transportation Planning Agency) started the meeting with group introductions and opening remarks. Dan introduced himself as the project manager and provided a general overview of the project, how it got started, and what the North State will get from the project. Dan described a Development Incentive Program grant that SRTA recently received as an example of how the North State can leverage resources and enable investments that help the economy.

Chris Williges from System Metrics Group (SMG) provided a project overview that highlighted the purpose, objectives, and primary tasks involved in the study. He also identified a few issues and challenges in conducting the study, but emphasized that the study can result in improved alignment between transportation spending and economic development planning as well as a foundation for the development of grant funding proposals and public-private partnerships. The success of the study will depend on participation from stakeholders throughout the North State. The project will produce a high-level, “glossy” report for decision-makers and the public as well as a more detailed, technical analysis with county-level detail for planning purposes.

After these introductions, the workshop continued with a discussion among all participants about:

- Transportation and Economic Development Issues
- Relevant Data, Plans, and Studies.

Transportation and Economic Development Issues

How would you describe the local economy?

Key sectors in Humboldt County include the arts, fisheries, forestry, small-scale manufacturing, education, dairy, information technology, specialty agriculture (legal and illicit), wineries and tourism. Large employers include the health care sector, Humboldt State University, and government agencies.



In Trinity County, the economy provides retail and recreation opportunities for residents and pass-through traffic. The CVS and Tops Market were mentioned as draws.

What factors have contributed to/inhibited the region's economic development?

The high quality of life creates the local economic foundation. Many people born in the area have a desire to return, and many Humboldt State University graduates want to remain in the area if they can find jobs. Jobs are scarce, so people need to start businesses in order to stay in the area.

The area's primary constraints are its regional location and isolation. Key factors that constrain growth include minimal air service and long distances between communities that add to unproductive travel times. Truck traffic is constrained by inadequate (non-STAA compliant) roads going north, south and east. Rail service is non-existent. Air transportation is extremely limited and very expensive. The Port of Humboldt remains relatively small and isolated from international markets. The distance to market will still constrain growth even if the roads can be improved. Firms that expand to more than 100 employees ultimately leave the area due to local labor force limits to production (e.g., sales and middle manager skills, need to provide employment for spouses of those attracted) and distance from markets.

Humboldt County has a higher rate of entrepreneurial activity than many counties. This can be attributed to the presence of Humboldt State University and a desire of residents to stay. The availability of capital is an issue.

What are your major economic development initiatives?

Retaining and expanding existing business is the priority economic development activity. The region initiated a major cluster study in 2007, which included a work plan for 8 industry clusters. The business cluster groups are ongoing entities seeking to improve the economic conditions of their industry. Eureka successfully established an Enterprise Zone (until 2022 or 2023) and three Foreign Trade Zones (i.e., Port, Airport, and South Bay) were approved in the region.

During the past decade the City of Eureka made major investments in Port improvements, which includes the construction of an ice plant and the attraction of fish processing facilities. A waterfront expansion plan is completed to guide future development. The City is also expending effort to retain heavy industrial establishments near the waterfront. Eureka is also planning to subdivide old mill sites in order to make them more developable, and to develop the mixed-use commercial and residential development project known as the Marina Center. Past efforts by Calpine to develop a liquefied natural gas facility in Eureka was not implemented due to local opposition. Other economic development initiatives are:

- A feasibility study for developing a new light industrial business park in Arcata
- A rails-to-trails route on US 101 between Arcata and Eureka (grassroots effort)
- Build out of the airport industrial park in McKinleyville
- Redway business park in Garberville (close to full, but land available)
- Waste water treatment improvements in Willow Creek
- The reuse of a mill site in Fortuna
- A mixed-use development project (industrial, residential, etc.) on the Samoa Peninsula



- An east-west rail corridor
- A north-south rail corridor that connects to Sonoma County, which will cost at least \$60 million to rehabilitate.

What can be done to improve the economy?

Improve the environment for entrepreneurship and better connectivity to markets.

Does transportation access limit the success of your economic development efforts?

Chronic slides during bad weather limit access to the region. Lack of STAA routes and rail also limit regular and consistent access. Port facilities and transportation networks are not adequate to handle more international trade. Air transportation is extremely limited and expensive.

What are primary bottlenecks to transportation movement in the region?

- Richardson Grove – this is the last STAA bottleneck to the south along US 101
- Big Lagoon – an STAA bottleneck to the north along US 101
- Confusion Hill, recently addressed (project was funded using the economic argument that a bypass would be better than recurring maintenance)
- STAA bottlenecks in Del Norte on US 199 and SR-197, which are being addressed by Caltrans
- SR-299 (STAA access, curves, reliability due to slides, weather, fires) – STAA access should be achieved by 2017
- Chronic slides – about half of the chronic slide locations have been addressed
- Affordable and reliable air service – currently have only United Express; Alaska Airlines and Delta have left
- Downtown Eureka and the US 101/Broadway Corridor (between Kmart and the 4th/5th Street Couplet) – currently modeling in micro-simulation and considering median barriers among other treatments

What are the major planned transportation system enhancements?

- SR-299 drainage
- Jellys Ferry seismic replacement bridge
- I-5 South Avenue interchange in Tehama (Phase 2)
- Bowman Road interchange
- STAA projects in Del Norte County, South Humboldt County, and SR-299
- Indianola Interchange (US 101 Corridor between Eureka and Arcata)

What projects without funding are on your wish list?

- East-west railroad
- North-south railroad (North Coast Railroad)
- Bike trails between Arcata and Eureka along US 101
- More passing lanes on SR-299
- Orick revitalization (gateway project)



- Grade separation a medians at Indianola Interchange – Phase I funded, but Phase II (bike and pedestrian improvements) is not.
- For Trinity County, SR-3 pedestrian access and better transit transfer location for Hoopa and SR-299 corridor buses

What specific transportation improvements are needed to support economic development/business attraction?

Better connectivity to and from Humboldt County via roads, rail and air.

Relevant Data, Plans, and Studies

- The Humboldt County Economic Development website has an Economic Development Plan and Targets of Opportunity. Kathy Saxon can provide more information.
- The City of Arcata has an Economic Development Strategic Plan that builds on the county plan and identifies specific business types.
- Parsons Brinckerhoff conducted a Harbor Revitalization Study about 10 years ago.
- The Marine Highway Study is also a useful study.
- The 1994 Waterfront Revitalization Plan led to the boardwalk, commercial area on Waterfront Drive, Marina Center, and construction of the Wharfinger Building.
- There are Social and Economic Development Strategies (SEDS) for Humboldt, Del Norte, and Mendocino (2010).
- Caltrans District 1 provides modeling support for most of the counties along the North Coast, including Humboldt County.
- Humboldt is currently working on a new Regional Transportation Plan (RTP), which will be released in 2013.
- The latest Trinity County RTP is the 2010 plan developed by Fehr and Peers.
- A corridor study was conducted on SR-36. Tammy Quick and Lora Ramos are contacts.
- The District System management Plan (DSMP) is being updated and an administrative internal document will be available soon.

Other Comments

- There was some discussion about the east-west railroad. Some participants indicated that there was private interest in funding the railroad, so the emphasis needs to be on proving that it is physically possible. This would also address concerns that government or local politics would stop the project. Other participants thought a market study needed to be conducted to determine the demand for the railroad and port access. The region has been following the Marine Administration efforts on the M-5 Marine Highway Study.
- David Tyson volunteered to be a Technical Advisory Committee (TAC) member at the kickoff.



Meeting Attendees

The following individuals participated in the workshop.

County	Name	Organization
Humboldt	Kirk Girard	Humboldt County Community Development Services
	Marcella Clem	Humboldt County Association of Governments
	Kathy Moxon	Humboldt County Association of Governments
	David Tyson	City of Eureka, City Manager
	Mike Knight	City of Eureka, Assistant City Manager
	Judy Harrison	City of Eureka, Economic Development
	Cindy Trobitz-Thomas	City of Eureka, Economic Development
	David Hull	City of Eureka/Consultant
	Jack Crider	Humboldt Bay Harbor District
	Larry Oetker	City of Arcata, Community Development
Trinity	Polly Chapman	Trinity County Transportation Commission
State	Leishara Ward	Caltrans, District 1 Planning
Facilitators	Dan Wayne	Shasta Regional Transportation Agency
	Chris Williges	System Metrics Group
	Steve Wahlstrom	Wahlstrom & Associates

Oroville Workshop (May 11, 2012)

Dan Wayne from the Shasta Regional Transportation Agency (SRTA – formerly Shasta County Regional Transportation Planning Agency) started the meeting with group introductions and opening remarks. Dan introduced himself as the project manager and provided a general overview of the project, how it got started, and what the North State will get from the project. Dan explained that the project is casting a wide net to generate a lot of ideas that can leverage resources and enable investments that help the economy. Both small and large projects should be considered. He described a Development Incentive Program grant that SRTA recently received for supporting sustainable development as an example of a small-scale project. The potential for an east-west rail line between Humboldt and the Sacramento Valley is an example of a large-scale project.

Chris Williges from System Metrics Group (SMG) provided a project overview that highlighted the purpose, objectives, and primary tasks involved in the study. He also identified a few issues and challenges in conducting the study, but emphasized that the study can result in improved alignment between transportation spending and economic development planning as well as a foundation for the development of grant funding proposals and public-private partnerships. The success of the study will depend on participation from stakeholders throughout the North State. The project will produce a high-level, “glossy” report for decision-makers and the public as well as a more detailed, technical analysis with county-level detail for planning purposes.



After these introductions, the workshop continued with a discussion among all participants about:

- Transportation and Economic Development Issues
- Relevant Data, Plans, and Studies.

Transportation and Economic Development Issues

How would you describe the local economy?

Nevada County is in malaise. The population is declining and in-migration is slower than outmigration. There has been a shift from the traditional resource-based economy. A distinct difference exists between the east county (Truckee) and the west county (Grass Valley and Nevada City). The western portion of the county has a high technology enclave and attracts retirees, while the eastern portion is focused on tourism and second (vacation) homes. There is some renewed interest in resource extraction – plans to develop a gold mine and other resource extraction projects. Efforts are needed to focus on renewable energy and to develop the resource base. The county currently has no new automobile dealers, so indirect benefits from automobile sales flow out of the county to Auburn and Roseville.

Chico State University (CSU) is a major asset for Butte County. Chico is the shopping hub for residents of Butte and Glenn counties. A green line constrains annexations and limits Chico's growth. As a result of these growth restrictions, Chico is focused on attracting firms that do not need much space. Downtown Oroville has a tomato production facility, which generates roughly 4,000 trucks per day during production time. SR-162 divides economic development along SR-70 in Oroville – north of SR-162, SR-70 has interchanges and there is a more robust economy; south of SR-162, SR-70 has at-grade intersections and the area is blighted. Oroville has an electrical lineman training facility (one of two in the nation) near the Oroville airport.

There is a concern about Chico being forgotten, because it is not on I-5. SR-70 and SR-99 are the major highways providing access to Chico. However, neither route has four lanes because of right-of-way issues and passage through small towns. As a result of the limited access, the region's growth is constrained. There is competition between widening SR-99 or SR-70 in Butte County – different communities are affected by expansions on the routes, which are separated by the Feather River. A goal of the Butte County Association of Governments (BCAG) is to expand SR-70.

Susanville is the primary community in Lassen County. Susanville used to be a mill town, but the mill is no longer in operation. To replace lost jobs, the county has attracted prisons. Now, two state prisons, one federal prison, and a US Army depot dominate Lassen County's economy. In addition, most of the Lassen County is owned by the federal government or Sierra Pacific Industries (SPI). A majority of employment is in the government sector, while employment in the private sector is weak. Main Street is in decline and there are few local shopping options. A Wal-Mart store dominates local retailing. County leaders would like to slow through traffic on US 395 ("two-hour stop lights") to encourage people to stop in Susanville, while driving from Chico, Redding, or Oregon to Reno. The current economic development emphasis is to attract more tourism.



Tehama County has been working on a transportation “Blueprint” project. The county’s economy is agriculturally based. Walnuts, olives, almonds, and prunes are key agricultural products. The Wal-Mart distribution center and St. Elizabeth’s Hospital in Red Bluff, Bell Carter Olive Packing in Corning, and Sierra Pacific Industries are the county’s significant employers. Government employment is also large. The area’s growth is constrained by a large amount of government land (a national park and three wilderness areas) and agricultural land zoned under the Williamson Act.

What factors have contributed to/inhibited the region’s economic development?

Workshop participants identified the following constraints:

- High utility costs
- Environmental constraints
- Brain drain of young people due to the lack of jobs (e.g., area cannot retain recent CSU graduates)
- Large number of retirees (although more in-migration due to families than retirees)
- Lack of an entrepreneurial base
- Expanding income distribution
- Lack of rail service
- Truck access constrained by narrow roads (SR-70 and SR-99)
- Declining revenue stream to fund transportation improvements
- Poor image and perceived lack of things to do
- Poor signage and lack of information about the area’s assets
- Large, temporary population (associated with prisons and army base) in Susanville

What are your major economic development initiatives? What can be done to improve the economy?

Tehama County is focused on rebranding itself as a recreation destination. The county has prepared new tourism brochures, but they are not yet finalized. Other economic development efforts are focused on existing businesses.

Meeting participants were unaware of economic development strategies prepared by either Butte County or the City of Chico. However, value-added agricultural production seems to be a focus of the economy. The City of Oroville plans to revitalize the area south of SR-162. Oroville is also promoting tourism and health care. Oroville has attracted the US National Whitewater Center. Improvements to SR-70 will also enhance the city’s location as a potential commute location to the Sacramento region.

Lassen County is focusing on tourism and recreation. Susanville is competing with Reno, but increased tourism in Reno and the Tahoe area has pushed “locals” to seek recreation in Lassen County. The County intends to update its economic development strategy to retain money in the county and will issue a Request for Proposals (RFP) soon to accomplish that task.

Nevada County is in neutral. One participant (not a Nevada County economic development specialist) noted that current efforts seem to focus on promoting value-added agriculture and area wines.



Participants also raised the question whether counties are competing with each other. Perhaps the region needs a shared tourism message.

Does transportation access limit the success of your economic development efforts?

Participants noted a number of transportation issues associated with economic development:

- Improve air service (expand airport in Chico)
- Improve Chico's access to I-5
- Create different ways to finance transportation improvements and reduce the reliance on traffic impact fees
- Slow traffic through Susanville and provide parking
- Maintain roads that serve agriculture and provide access to I-5 (SR-162 is state-owned, but many others are locally-owned and have difficulty obtaining maintenance funding)

Several examples were provided for the Oroville area. When visitors came to establish the US National Whitewater Center, they noted that the two-lane highway is a psychological barrier – “You fall off the map once you hit Marysville.” Efforts to recruit businesses often result in the questions about SR-70 – “When is it going to be four lanes?” Airport connections are important. A global logistics firm wants to locate near the Oroville airport.

What are primary bottlenecks to transportation movement in the region?

- Chico to Red Bluff on SR-99
- SR-49 between Grass Valley and Auburn
- Two-lane corridors (SR-70 and SR-99) between Oroville and Sacramento
- Truckee “mouse hole” (access to Squaw Valley under railway)
- US 395 closures due to high winds. (Susanville is promoting developing a truck stop parking area at the end of town.)

What are the major planned transportation system enhancements and/or wish list projects?

- Transform I-5 from four lanes into six lanes
- Interchange improvements along I-5 in Tehama County
- Transform SR-70 or SR-99 from two lanes to four lanes between Oroville and Sacramento
- Improve rail connections
- Fix the Truckee “mouse hole”
- Improve SR-49 from Auburn to Grass Valley
- Improve SR-20 from Grass Valley to Yuba City
- Lassen grade separation
- Susanville crosswalks and beautification enhancements as well as safety projects
- Develop Feather River Boulevard in Oroville
- Meyer Road improvements in southern Oroville
- Chico airport area access improvements
- Third bridge over the Feather River



- Widening SR-32 near Chico
- Providing a “downtown coupling” in Chico
- Improve link from SR-99 to airport in Chico

Relevant Data, Plans, and Studies

- Northern Rural Training and Employment Consortium (NoRTEC) conducted an economic cluster analysis (for Butte, Del Norte, Lassen, Modoc, Nevada, Plumas, Shasta, Sierra, Siskiyou, Tehama and Trinity counties) - Stewart Knox is the contact.
- Lassen County is developing a new strategic plan by end of September – will include analysis of economic impact of Williamson Act in Lassen.
- Tri-County Economic Development Corporation has prepared a Comprehensive Economic Development Strategy (CEDS) for Butte, Glenn, and Tehama counties.
- Butte is updating its Regional Transportation Plan (RTP) by December of 2012.
- SR-49 Corridor System Management Plan (CSMP) – “State of the Corridor Report”
- 2005-06 is most recent RTP for Lassen County.
- 2006 RTP is most recent for Tehama County.
- SR-99 North CSMP near Chico
- US 395 study in Lassen County (how to get people off highway to shop in Susanville)
- Fix 5 Study (for Shasta and Tehama counties)
- I-5 Origin-Destination Study
- Yuba River Scenic Highway Study
- Honey Lake Corridor Study
- Modoc Scenic Byway Study
- Caltrans District 2 Corridor Management Plans (US 395, SR-44, SR-36, SR-99)

Other Comments

- There are no rail yards between Oregon and Stockton/Sacramento/Reno. Oroville or Redding is a potential site for a rail distribution facility.
- Modoc County is interested in a short line rail tie to Klamath.
- Plumas County would likely be interested in improvements to SR-70 near Quincy.
- The gas tax subvention is a sacred cow in many counties.

Meeting Attendees

The following individuals participated in the workshop.

County	Name	Organization
Butte	Warren Jensen	CSU Center for Economic Development
	Michael Suplita	CSU Center for Economic Development
	Quené Hansen	City of Chico, Capital Project Services
	Sam Driggers	City of Oroville, Economic Development
	Art Da Rosa	City of Oroville, Public Works



North State Transportation for Economic Development Study (NSTEDS)
Full Compendium Report

County	Name	Organization
Lassen	Jenna Aguilera	Lassen County, Planning & Development
	Maurice Anderson	Lassen County, Planning & Development
Nevada	Dan Landon	Nevada County Transportation Commission
Tehama	Adam Hansen	Tehama County, Transportation Planning
	Sean Harrasser	Tehama County, Transportation Planning
State	Shannon Culbertson	Caltrans, District 3 Planning
	Rose Agacer	Caltrans, Economic Analysis Branch
	Barry Padilla	Caltrans, Economic Analysis Branch
	Martha Martinez	Caltrans, Collaborative Planning Branch
	Marilee Mortenson	Caltrans, Collaborative Planning Branch
Facilitators	Dan Wayne	Shasta Regional Transportation Agency
	Chris Williges	System Metrics Group
	Steve Wahlstrom	Wahlstrom & Associates



Appendix G: LEAP Analysis Tables

This appendix contains detailed tables generated by the LEAP analysis. LEAP is a web-based analytical tool developed by Economic Development Research Group (EDRG) for analyzing a region's economic development. The tool can diagnose the region's competitive position, identify opportunities for target industries, and inform strategies to address development barriers. These barriers are in cost, workforce quality, infrastructure quality, multi-modal market access, or other factors considered important to economic development.

LEAP draws from a variety of data sources:

- Industry employment levels are assembled by the Minnesota IMPLAN Group (MIG, Inc.) using data from the US Bureau of Economic Analysis and the US Department of Labor. LEAP employment levels provide the most industry sector detail when compared to other data sources. The latest data available are for 2010.
- Energy and electricity cost data are derived from a combination of state energy costs collected by the US Energy Information Agency and local electricity costs available through Energy User News. The latest data available are for 2007.
- Indices of market size are generated from information collected by ESRI and the US Census Bureau.
- Transportation data are provided by the US Department of Transportation's Office of Intermodal Transportation, the Federal Maritime Administration, and the Federal Aviation Administration.

The remainder of this appendix provides tables that show employment by industry sector for California and every county in the North State in 2001, 2006, and 2010. Tables are also provided on economic diversity and average cost factors by county. Economic diversity is measured by the Shannon-Weaver Index. In this index, a value of 0 indicates an economy that is completely dependent on a single industry in terms of employment. A value of 1 indicates an economy that is perfectly diverse (i.e., each sector represents an equal share of regional employment). More details on the Shannon-Weaver Index can be found at: https://implan.com/v4/index.php?option=com_multicategories&view=article&id=682:understanding-the-shannon-weaver-index&Itemid=71.

There are also tables showing transportation and market access by county. LEAP calculates the access values using the published data described above and the ESRI ArcView Geographic Information System (GIS), which is available online as ESRI Business Analyst. The ESRI Business Analyst tool is intended to help businesses plan for entering new markets, select sites, design sales territories, and target marketing efforts. Appendix H provides examples of labor market and delivery market maps generated using GIS and published data.

Finally, there are detailed industry concentration tables for each county in the North State. These tables compare the industry concentration and recent growth trends. The industry concentration is measured by location quotient (i.e., percent of employment relative to the same percent at the national level for



each industry). Only industries representing at least one percent of the workforce are included in the analysis for each county. It should be noted that this industry mix analysis is less useful for counties with small employment bases, such as Sierra County.

Exhibit G1: Employment by Industry Sector in California and the North State, 2010

Geographic Area	Agriculture, Forestry, Fishing & Hunting	Mining	Utilities	Construction	Manufacturing	Wholesale Trade	Retail Trade
California	405,157	62,051	59,132	892,301	1,282,417	707,547	1,877,929
North State	31,688	2,964	2,945	29,989	19,860	10,139	56,299
Counties							
Butte	5,763	137	560	5,271	4,181	2,184	12,237
Colusa	3,543	39	88	516	807	606	651
Del Norte	1,081	18	25	400	135	128	1,212
Glenn	3,666	61	83	549	626	327	884
Humboldt	1,576	131	622	4,171	3,007	1,295	8,696
Lake	1,651	68	438	1,427	299	241	2,444
Lassen	728	130	57	544	73	116	1,259
Mendocino	3,008	85	170	3,052	2,629	886	5,810
Modoc	697	18	27	196	27	108	352
Nevada	897	276	75	5,425	2,132	802	5,769
Plumas	260	43	160	808	524	84	866
Shasta	3,097	1,499	417	5,052	2,613	1,923	11,118
Sierra	58	16	22	92	20	19	88
Siskiyou	1,749	227	57	1,158	813	838	2,042
Tehama	3,729	198	125	1,038	1,747	551	2,386
Trinity	177	16	18	289	228	30	486

Source: LEAP Analysis using BEA/IMPLAN data



*Exhibit G1: Employment by Industry Sector in California and the North State, 2010
(cont'd)*

Geographic Area	Transportation & Warehousing	Information	Finance & Insurance	Real Estate	Professional, Scientific & Tech. Services	Administrative, Support & Waste Mgmt. Services	Educational Services
California	622,234	501,719	1,259,757	1,011,007	1,943,308	1,192,201	396,778
North State	20,556	5,306	23,784	23,993	28,760	19,858	4,970
Counties							
Butte	5,517	1,291	6,601	4,756	5,800	3,975	981
Colusa	327	101	261	321	253	331	135
Del Norte	215	102	249	384	337	200	74
Glenn	551	17	357	336	287	307	88
Humboldt	4,558	766	2,500	2,797	4,084	2,520	601
Lake	392	206	834	1,423	1,098	793	141
Lassen	164	117	344	570	754	303	65
Mendocino	819	505	2,053	2,267	3,033	1,884	509
Modoc	197	13	97	197	161	97	23
Nevada	2,109	664	3,286	4,463	5,233	2,679	787
Plumas	177	228	404	529	546	661	89
Shasta	3,541	899	5,090	4,066	4,859	4,342	1,084
Sierra	32	5	22	41	47	39	25
Siskiyou	590	257	737	873	1,024	812	170
Tehama	1,290	94	802	756	1,021	791	107
Trinity	78	40	151	213	222	124	90

Source: LEAP Analysis using BEA/IMPLAN data



*Exhibit G1: Employment by Industry Sector in California and the North State, 2010
(cont'd)*

Geographic Area	Health Care & Social Assist.	Arts, Entertainment & Recreation	Accommodations & Food Services	Other Services	Public Admin.
California	1,846,821	516,974	1,366,875	1,192,030	2,685,238
North State	58,735	11,161	34,540	33,745	89,258
Counties					
Butte	15,598	1,873	6,994	7,967	14,481
Colusa	589	72	656	520	2,212
Del Norte	1,500	120	875	575	3,871
Glenn	786	157	673	756	2,269
Humboldt	7,883	1,884	5,141	4,829	13,256
Lake	2,718	385	1,369	1,679	4,206
Lassen	1,206	156	707	660	7,582
Mendocino	4,796	1,348	3,900	2,974	7,106
Modoc	268	62	162	387	1,369
Nevada	5,439	2,288	3,619	4,065	6,285
Plumas	751	325	794	563	2,536
Shasta	12,175	1,623	6,228	5,738	13,707
Sierra	37	44	59	73	429
Siskiyou	2,197	481	1,704	1,307	4,442
Tehama	2,253	208	1,277	1,376	4,037
Trinity	540	134	380	274	1,473

Source: LEAP Analysis using BEA/IMPLAN data



Exhibit G2: Employment by Industry Sector in California and the North State, 2006

Geographic Area	Agriculture, Forestry, Fishing & Hunting	Mining	Utilities	Construction	Manufacturing	Wholesale Trade	Retail Trade
California	486,859	37,117	59,788	1,285,034	1,573,887	792,732	2,105,453
North State	25,908	782	1,514	35,320	23,685	9,109	59,232
Counties							
Butte	4,647	78	285	6,944	4,160	2,143	12,569
Colusa	3,920	28	4	227	1,747	474	783
Del Norte	1,099	2	3	384	300	52	1,086
Glenn	2,544	36	42	481	631	453	757
Humboldt	2,059	10	293	3,962	3,875	1,256	8,763
Lake	1,460	43	294	1,519	423	191	2,376
Lassen	542	25	30	547	30	103	1,288
Mendocino	3,338	56	72	2,882	3,031	917	5,499
Modoc	624	7	12	254	-	129	362
Nevada	282	121	60	6,288	1,950	609	7,113
Plumas	216	19	125	1,209	811	84	848
Shasta	1,584	191	195	8,011	3,105	2,112	12,827
Sierra	46	2	-	83	53	3	82
Siskiyou	1,215	15	53	1,147	741	267	1,998
Tehama	2,185	129	39	1,174	2,564	311	2,501
Trinity	148	15	7	208	261	6	380

Source: LEAP Analysis using BEA/IMPLAN data



*Exhibit G2: Employment by Industry Sector in California and the North State, 2006
(cont'd)*

Geographic Area	Transportation & Warehousing	Information	Finance & Insurance	Real Estate	Professional, Scientific & Tech. Services	Administrative, Support & Waste Mgmt. Services	Educational Services
California	679,733	554,815	938,877	1,085,953	1,987,226	1,347,843	394,164
North State	14,422	4,953	15,083	18,629	23,496	17,935	5,143
Counties							
Butte	2,199	1,271	3,674	3,417	5,190	4,129	746
Colusa	512	19	140	167	98	188	5
Del Norte	204	103	151	295	199	104	34
Glenn	856	54	274	142	313	132	55
Humboldt	2,003	770	2,294	2,096	3,365	2,144	658
Lake	409	191	410	866	914	731	682
Lassen	243	111	482	652	208	213	47
Mendocino	948	408	1,513	1,673	1,946	1,583	431
Modoc	230	40	47	123	67	38	12
Nevada	868	447	2,149	3,832	4,024	3,073	648
Plumas	368	110	226	454	347	282	79
Shasta	3,470	988	2,842	3,694	5,315	3,968	1,481
Sierra	22	11	13	22	3	38	11
Siskiyou	665	269	373	674	748	524	105
Tehama	1,371	128	430	412	638	761	112
Trinity	57	33	64	108	122	25	36

Source: LEAP Analysis using BEA/IMPLAN data



*Exhibit G2: Employment by Industry Sector in California and the North State, 2006
(cont'd)*

Geographic Area	Health Care & Social Assist.	Arts, Entertainment & Recreation	Accommodations & Food Services	Other Services	Public Admin.
California	1,701,940	514,628	1,386,260	1,211,561	2,476,235
North State	55,657	8,161	36,359	34,401	85,220
Counties					
Butte	15,639	1,485	7,144	8,446	15,631
Colusa	1,428	66	619	535	2,067
Del Norte	1,275	89	927	503	3,490
Glenn	1,289	81	678	832	2,089
Humboldt	6,953	1,183	5,101	4,544	13,097
Lake	2,395	175	1,569	2,090	4,499
Lassen	1,025	50	763	981	5,858
Mendocino	4,029	588	4,306	2,566	6,810
Modoc	219	51	178	411	1,223
Nevada	4,727	1,590	3,603	3,746	5,281
Plumas	609	535	659	549	2,418
Shasta	11,666	1,448	7,261	5,895	13,052
Sierra	43	7	74	46	410
Siskiyou	1,868	396	1,861	1,298	4,214
Tehama	2,068	312	1,266	1,564	3,932
Trinity	425	104	351	394	1,148

Source: LEAP Analysis using BEA/IMPLAN data



Exhibit G3: Employment by Industry Sector in California and the North State, 2001

Geographic Area	Agriculture, Forestry, Fishing & Hunting	Mining	Utilities	Construction	Manufacturing	Wholesale Trade	Retail Trade
California	472,470	36,661	52,820	1,202,508	1,837,890	716,180	1,988,241
North State	33,125	538	1,666	34,892	28,250	9,603	60,421
Counties							
Butte	5,944	58	344	5,833	4,457	1,907	12,562
Colusa	3,503	-	21	235	777	339	734
Del Norte	768	2	5	463	335	167	1,241
Glenn	3,446	50	35	602	705	369	1,106
Humboldt	2,546	2	271	4,121	5,510	1,889	9,104
Lake	1,654	23	48	1,690	631	282	2,675
Lassen	941	33	33	653	380	212	1,407
Mendocino	4,261	35	88	3,672	4,677	856	6,084
Modoc	854	7	121	247	21	198	380
Nevada	839	87	72	6,855	2,614	907	6,527
Plumas	487	8	97	916	985	106	1,264
Shasta	2,264	136	424	6,807	3,595	1,802	11,419
Sierra	120	17	-	130	104	6	52
Siskiyou	2,061	66	46	1,222	862	294	2,666
Tehama	3,207	13	57	1,115	2,302	227	2,618
Trinity	234	1	6	333	301	42	582

Source: LEAP Analysis using BEA/IMPLAN data



*Exhibit G3: Employment by Industry Sector in California and the North State, 2001
(cont'd)*

Geographic Area	Transportation & Warehousing	Information	Finance & Insurance	Real Estate	Professional, Scientific & Tech. Services	Administrative, Support & Waste Mgmt. Services	Educational Services
California	659,367	583,132	892,267	849,686	2,063,232	1,243,706	289,928
North State	15,938	6,268	15,341	20,755	25,740	19,497	4,416
Counties							
Butte	2,788	1,595	3,807	4,170	6,176	5,580	581
Colusa	344	40	188	199	173	104	132
Del Norte	280	107	136	295	274	52	42
Glenn	579	80	210	275	290	205	176
Humboldt	1,678	885	2,079	2,349	3,774	2,460	491
Lake	425	224	504	1,009	1,139	833	109
Lassen	242	178	214	511	467	147	74
Mendocino	1,162	681	1,136	2,038	2,460	1,626	340
Modoc	72	32	60	171	94	18	3
Nevada	1,010	552	2,441	3,476	3,911	2,732	637
Plumas	173	135	251	482	417	71	306
Shasta	3,973	1,228	3,031	3,961	4,727	4,238	1,109
Sierra	28	10	3	4	54	3	3
Siskiyou	758	334	483	880	953	584	85
Tehama	2,351	133	697	703	670	823	114
Trinity	75	55	102	231	159	18	215

Source: LEAP Analysis using BEA/IMPLAN data



*Exhibit G3: Employment by Industry Sector in California and the North State, 2001
(cont'd)*

Geographic Area	Health Care & Social Assist.	Arts, Entertainment & Recreation	Accommodations & Food Services	Other Services	Public Admin.
California	1,497,237	484,757	1,340,028	1,260,663	2,575,434
North State	50,370	9,634	38,102	35,599	87,903
Counties					
Butte	12,873	1,845	7,577	8,988	15,910
Colusa	327	57	651	459	1,837
Del Norte	1,145	84	957	483	3,218
Glenn	408	77	655	649	2,195
Humboldt	7,345	1,312	5,758	5,138	13,113
Lake	2,346	421	1,733	1,638	4,210
Lassen	1,034	118	844	709	5,801
Mendocino	4,164	1,083	4,599	3,339	7,526
Modoc	249	-	238	495	1,600
Nevada	4,538	1,856	3,603	3,632	5,254
Plumas	687	298	1,016	650	2,723
Shasta	10,642	1,459	6,518	6,294	13,816
Sierra	71	-	101	53	706
Siskiyou	2,130	713	2,001	1,314	4,762
Tehama	2,108	226	1,389	1,479	3,655
Trinity	303	84	460	277	1,577

Source: LEAP Analysis using BEA/IMPLAN data



Exhibit G4: Economic Diversity in California and the North State, 2010

Geographic Area	Shannon-Weaver Index
California	0.75
North State	0.37
Counties	
Butte	0.36
Colusa	0.28
Del Norte	0.21
Glenn	0.31
Humboldt	0.33
Lake	0.31
Lassen	0.16
Mendocino	0.37
Modoc	0.27
Nevada	0.35
Plumas	0.31
Shasta	0.34
Sierra	0.21
Siskiyou	0.35
Tehama	0.38
Trinity	0.26

Source: LEAP Analysis using BEA/IMPLAN data



Exhibit G5: Economic Diversity in California and the North State, 2010

Geographic Area	Avg. Labor Cost (2010)	Avg. Electricity Cost (2007)	Avg. Tax Burden (2007)	Avg. Housing Cost (2012)
California	\$58,881	\$ 0.08	\$ 1,787	\$295,900
North State	\$39,023	\$ 0.10	\$ 1,214	\$182,600
Counties				
Butte	\$39,005	\$ 0.10	\$ 1,142	\$171,000
Colusa	\$43,316	\$ 0.10	\$ 1,394	\$127,100
Del Norte	\$38,866	\$ 0.08	\$ 780	\$136,800
Glenn	\$38,263	\$ 0.11	\$ 1,014	\$173,000
Humboldt	\$37,018	\$ 0.09	\$ 1,073	\$254,300
Lake	\$38,282	\$ 0.10	\$ 1,130	\$113,800
Lassen	\$48,342	\$ 0.10	\$ 739	\$112,800
Mendocino	\$38,241	\$ 0.11	\$ 1,482	\$236,700
Modoc	\$37,909	\$ 0.07	\$ 1,219	\$128,300
Nevada	\$36,665	\$ 0.09	\$ 1,657	\$266,300
Plumas	\$39,525	\$ 0.10	\$ 2,125	\$177,700
Shasta	\$41,371	\$ 0.09	\$ 1,234	\$148,200
Sierra	\$31,678	\$ 0.09	\$ 2,208	\$186,300
Siskiyou	\$38,225	\$ 0.08	\$ 1,134	\$166,700
Tehama	\$37,711	\$ 0.10	\$ 988	\$105,000
Trinity	\$34,253	\$ 0.10	\$ 811	\$171,900

Source: LEAP Analysis using data from BEA/IMPLAN, Energy Information Agency, Energy User News, US Census of Governments, Zillow.com



Exhibit G6: Transportation and Market Access in the North State, 2010

Counties	Freight Marine Port (avg. drive time)	Rail Intermodal Loading (avg. drive time)	Int'l. Land Border (avg. drive time)	Int'l. Air Freight Gateway (avg. drive time)	Labor Market ¹	Same-Day Truck Delivery Market ²
Butte	190	150	571	211	68,198	3,392,627
Colusa	129	81	548	166	9,120	6,671,667
Del Norte	152	542	579	323	3,924	355,653
Glenn	155	108	573	190	13,689	5,095,389
Humboldt	268	541	705	346	40,104	88,570
Lake	216	235	595	185	15,394	4,709,235
Lassen	294	109	663	332	6,142	681,406
Mendocino	201	183	632	189	1,331	2,219,674
Modoc	532	212	680	413	2,404	57,270
Nevada	131	66	544	188	24,183	5,316,956
Plumas	287	137	659	303	3,567	839,017
Shasta	224	172	637	254	61,198	801,416
Sierra	199	81	609	253	6,304	2,017,559
Siskiyou	298	354	576	317	12,852	516,264
Tehama	179	131	593	211	55,535	2,917,851
Trinity	322	274	702	320	1,725	339,099

Source: LEAP Analysis using data from Federal Aviation Administration, Federal Maritime Administration, Office of Intermodal Transportation, US Department of Transportation, ESRI, NAVTEQ, US Census Bureau

¹ Population within a 40-minute drive time

² Employees within a 180-minute drive time



Exhibit G7: Butte County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	Crop Production	- Real Estate - Amusement & Recreation	Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally	Health Care & Social Services	- Repair, Maintenance & Personal Services - Accommodations, Eating & Drinking		
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*		Monetary, Financial & Credit Activity		Weaknesses/Threatened
Industry growing locally while declining nationally	- Transportation - Insurance Carriers & Related Activities	Mail, Package Delivery & Warehousing	Wholesale Trade	
Industry declining locally <i>slower</i> than nationally*	Support for Agriculture & Forestry	Retail Trade	Administrative & Support Services	
Industry declining locally <i>faster</i> than nationally*		Construction		
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G8: Colusa County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*			- Educational Services - Repair, Maintenance & Personal Services - Accommodations, Eating & Drinking - Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally			Health Care & Social Services	
Industry growing locally <i>slower</i> than nationally*	Crop Production			
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	- Rental & Leasing Services - Wholesale Trade	Construction	Administrative & Support Services	
Industry declining locally <i>slower</i> than nationally*				
Industry declining locally <i>faster</i> than nationally*	- Support for Agriculture & Forestry - Food Products		Retail Trade	
Industry declining locally at a rate <i>similar</i> to national trend		Transportation		

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G9: Del Norte County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*		Health Care & Social Services	- Professional Scientific, Technical Services - Real Estate - Amusement & Recreation	Strengths/Opportunities
Industry declining locally while growing nationally		Accommodations, Eating & Drinking	Repair, Maintenance & Personal Services	
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	Fishing, Hunting & Trapping	Retail Trade	- Construction - Wholesale Trade - Administrative & Support Services - Transportation	
Industry declining locally <i>slower</i> than nationally*				
Industry declining locally <i>faster</i> than nationally*				
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G10: Glenn County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	Crop Production		- Repair, Maintenance & Personal Services - Real Estate - Amusement & Recreation	Strengths/Opportunities
Industry declining locally while growing nationally			- Professional Scientific, Technical Services - Health Care & Social Services - Accommodations, Eating & Drinking	
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	- Animal Production - Support for Agriculture & Forestry - Food Products	Construction	- Administrative & Support Services - Retail Trade	
Industry declining locally <i>slower</i> than nationally*				
Industry declining locally <i>faster</i> than nationally*		- Mail, Package Delivery & Warehousing - Transportation	Wholesale Trade	

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G11: Humboldt County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	Amusement & Recreation	- Real Estate - Repair, Maintenance & Personal Services - Health Care & Social Services	Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally				
Industry growing locally <i>slower</i> than nationally*		Accommodations, Eating & Drinking	Monetary, Financial & Credit Activity	
Industry growing at a rate <i>similar</i> to national trend*				Weaknesses/Threatened
Industry growing locally while declining nationally	- Misc. Manufacturing - Mail, Package Delivery & Warehousing - Transportation	Construction	- Administrative & Support Services - Wholesale Trade	
Industry declining locally <i>slower</i> than nationally*	Retail Trade			
Industry declining locally <i>faster</i> than nationally*	Wood Products			
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G12: Lake County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	- Real Estate - Crop Production - Utilities	- Amusement & Recreation - Health Care & Social Services	Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally		- Repair, Maintenance & Personal Services - Accommodations, Eating & Drinking		
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally		Retail Trade	- Administrative & Support Services - Wholesale Trade - Transportation	
Industry declining locally <i>slower</i> than nationally*	- Construction - Support for Agriculture & Forestry			
Industry declining locally <i>faster</i> than nationally*				
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G13: Lassen County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	• Crop Production		- Professional Scientific, Technical Services - Amusement & Recreation - Health Care & Social Services	Strengths/Opportunities
Industry declining locally while growing nationally			- Real Estate - Accommodations, Eating & Drinking - Monetary, Financial & Credit Activity	
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*				Weaknesses/Threatened
Industry growing locally while declining nationally	• Animal Production		• Administrative & Support Services	
Industry declining locally <i>slower</i> than nationally*		• Retail Trade	• Construction	
Industry declining locally <i>faster</i> than nationally*				
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G14: Mendocino County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	- Amusement & Recreation - Repair, Maintenance & Personal Services	- Professional Scientific, Technical Services - Health Care & Social Services - Real Estate	Educational Services	Strengths/Opportunities
Industry declining locally while growing nationally	- Crop Production - Accommodations, Eating & Drinking			
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*		Monetary, Financial & Credit Activity		Weaknesses/Threatened
Industry growing locally while declining nationally	- Forestry & Logging - Retail Trade - Construction		Administrative & Support Services	
Industry declining locally <i>slower</i> than nationally*	Beverage & Tobacco Products		Wholesale Trade	
Industry declining locally <i>faster</i> than nationally*	Wood Products			
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G15: Modoc County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	Crop Production	Repair, Maintenance & Personal Services	- Amusement & Recreation - Professional Scientific, Technical Services - Health Care & Social Services	Strengths/Opportunities
Industry declining locally while growing nationally			- Real Estate - Accommodations, Eating & Drinking	
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	- Rental & Leasing Services - Animal Production - Transportation		Administrative & Support Services	
Industry declining locally <i>slower</i> than nationally*	Support for Agriculture & Forestry		Retail Trade	
Industry declining locally <i>faster</i> than nationally*		- Mail, Package Delivery & Warehousing - Construction	Wholesale Trade	
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G16: Nevada County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	- Amusement & Recreation - Repair, Maintenance & Personal Services - Real Estate	- Professional Scientific, Technical Services - Health Care & Social Services	Educational Services	Strengths/Opportunities
Industry declining locally while growing nationally				
Industry growing locally <i>slower</i> than nationally*		Accommodations, Eating & Drinking		
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	
Industry growing locally while declining nationally	Mail, Package Delivery & Warehousing	Administrative & Support Services	- Transportation - Wholesale Trade	Weaknesses/Threatened
Industry declining locally <i>slower</i> than nationally*	- Construction - Computer & Electronic Products			
Industry declining locally <i>faster</i> than nationally*		Retail Trade		
Industry declining locally at a rate <i>similar</i> to national trend			Insurance Carriers & Related Activities	

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G17: Plumas County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	- Utilities - Real Estate	- Repair, Maintenance & Personal Services - Accommodations, Eating & Drinking	- Professional Scientific, Technical Services - Health Care & Social Services	Strengths/Opportunities
Industry declining locally while growing nationally	Amusement & Recreation			
Industry growing locally <i>slower</i> than nationally*		Internet & Data Processing Services		
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	- Animal Production - Transportation Equipment - Waste Management & Remediation	- Administrative & Support Services - Retail Trade		
Industry declining locally <i>slower</i> than nationally*				
Industry declining locally <i>faster</i> than nationally*	- Construction - Wood Products		Transportation	
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G18: Shasta County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*		- Real Estate - Amusement & Recreation		Strengths/Opportunities
Industry declining locally while growing nationally		- Repair, Maintenance & Personal Services - Accommodations, Eating & Drinking	- Educational Services - Professional Scientific, Technical Services	
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*	Oil & Gas Extraction	Monetary, Financial & Credit Activity		Weaknesses/Threatened
Industry growing locally while declining nationally	Transportation	- Administrative & Support Services - Insurance Carriers & Related Activities		
Industry declining locally <i>slower</i> than nationally*				
Industry declining locally <i>faster</i> than nationally*	Retail Trade	Construction		
Industry declining locally at a rate <i>similar</i> to national trend			Wholesale Trade	

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G19: Sierra County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	- Amusement & Recreation - Crop Production	Educational Services	- Real Estate - Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally			- Accommodations, Eating & Drinking - Health Care & Social Services	
Industry growing locally <i>slower</i> than nationally*	- Utilities - Oil & Gas Extraction			
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	- Chemical Manufacturing - Construction		- Transportation - Retail Trade - Wholesale Trade	
Industry declining locally <i>slower</i> than nationally*				
Industry declining locally <i>faster</i> than nationally*		Mail, Package Delivery & Warehousing		
Industry declining locally at a rate <i>similar</i> to national trend			Administrative & Support Services	

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G20: Siskiyou County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	Crop Production	- Real Estate - Amusement & Recreation - Health Care & Social Services	Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally		- Repair, Maintenance & Personal Services - Accommodations, Eating & Drinking		
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally	- Animal Production - Support for Agriculture & Forestry - Wood Products	- Retail Trade - Construction - Wholesale Trade - Mail, Package Delivery & Warehousing	Administrative & Support Services	
Industry declining locally <i>slower</i> than nationally*				
Industry declining locally <i>faster</i> than nationally*			Transportation	
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G21: Tehama County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	Crop Production		- Real Estate - Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally			Repair, Maintenance & Personal Services	
Industry growing locally <i>slower</i> than nationally*			Accommodations, Eating & Drinking	
Industry growing at a rate <i>similar</i> to national trend*		Health Care & Social Services	Monetary, Financial & Credit Activity	
Industry growing locally while declining nationally	- Animal Production - Forestry & Logging - Support for Agriculture & Forestry - Mail, Package Delivery & Warehousing		Wholesale Trade	Weaknesses/Threatened
Industry declining locally <i>slower</i> than nationally*		- Retail Trade - Construction	Administrative & Support Services	
Industry declining locally <i>faster</i> than nationally*	Food Products	Transportation		
Industry declining locally at a rate <i>similar</i> to national trend	Wood Products			

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G22: Trinity County Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*	- Amusement & Recreation - Crop Production	- Real Estate - Educational Services - Accommodations, Eating & Drinking - Health Care & Social Services	Professional Scientific, Technical Services	Strengths/Opportunities
Industry declining locally while growing nationally			Repair, Maintenance & Personal Services	
Industry growing locally <i>slower</i> than nationally*				
Industry growing at a rate <i>similar</i> to national trend*			Monetary, Financial & Credit Activity	Weaknesses/Threatened
Industry growing locally while declining nationally		- Retail Trade - Construction	Administrative & Support Services	
Industry declining locally <i>slower</i> than nationally*	Wood Products			
Industry declining locally <i>faster</i> than nationally*				
Industry declining locally at a rate <i>similar</i> to national trend				

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Exhibit G23: California Industry Concentration and Trend Analysis, 2006 to 2010

Industry Trend Category	Relative Concentration			
	Greater than 1.2	0.8 – 1.2	Less than 0.8	
Industry growing <i>faster</i> locally than nationally*				Strengths/Opportunities
Industry declining locally while growing nationally	Professional Scientific, Technical Services	- Real Estate - Repair, Maintenance & Personal Services - Accommodations, Eating & Drinking		
Industry growing locally <i>slower</i> than nationally*	Amusement & Recreation	Educational Services		
Industry growing at a rate <i>similar</i> to national trend*		- Health Care & Social Services - Internet & Data Processing Services - Monetary, Financial & Credit Activity		
Industry growing locally while declining nationally				Weaknesses/Threatened
Industry declining locally <i>slower</i> than nationally*		Transportation		
Industry declining locally <i>faster</i> than nationally*		- Administrative & Support Services - Construction - Insurance Carriers & Related Activities - Retail Trade		
Industry declining locally at a rate <i>similar</i> to national trend	Computer & Electronic Products	- Mail, Package Delivery & Warehousing - Wholesale Trade		

Source: LEAP analysis using BEA/IMPLAN data

Note: *Faster* denotes local a growth or decline trend that is more than 20 percent greater than the national trend. *Slower* denotes a local growth or decline trend that is more than 20 percent less than the national trend. *Similar* denotes growth trends that are less than 20 percent different.



Appendix H: Labor Market and Delivery Market Maps

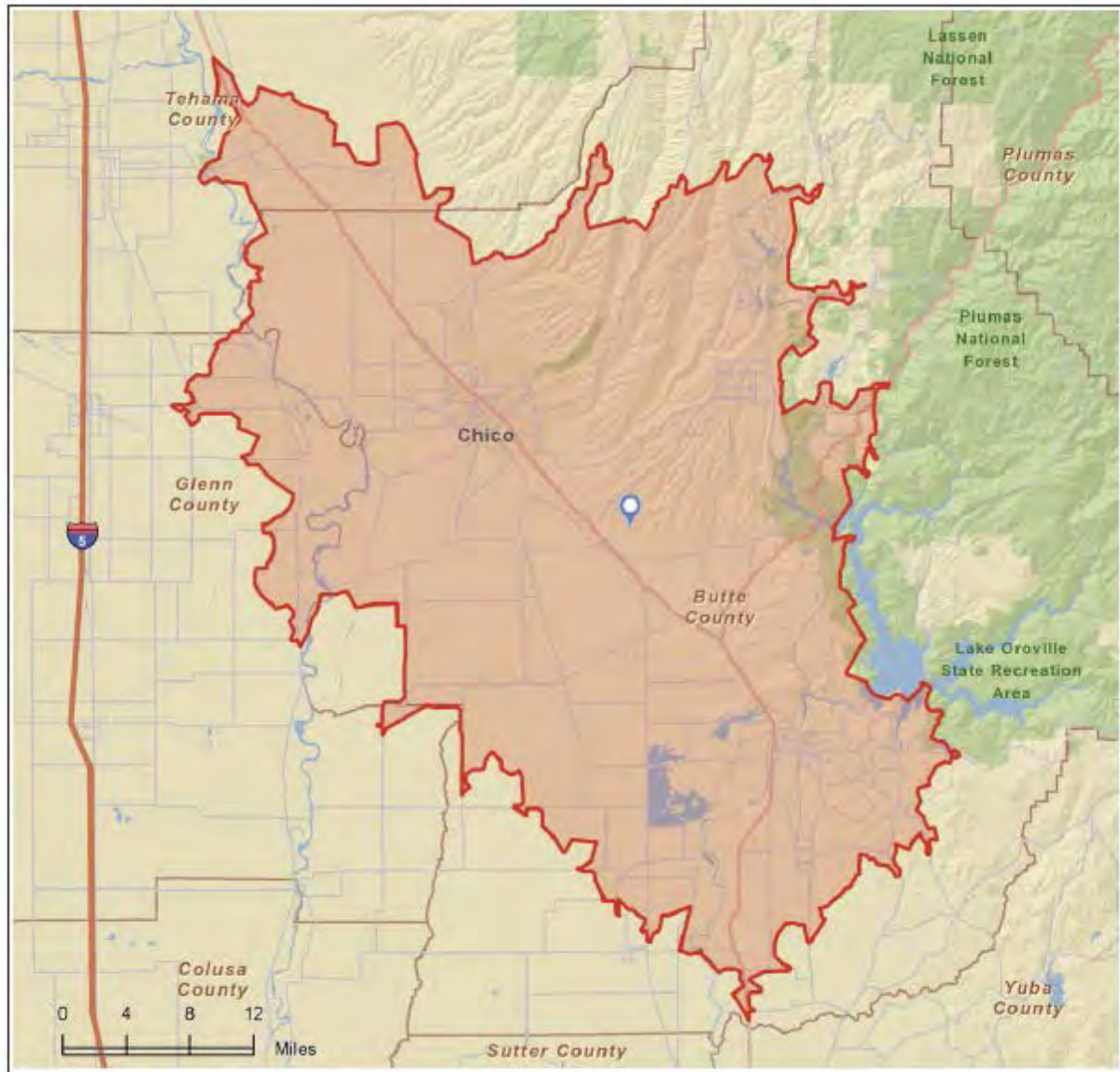
This appendix contains maps showing the labor and delivery markets for each county in the North State. The *labor market* is defined as the population within a 40-minute drive time of a county's population-weighted centroid. This is intended to measure the size of a labor pool within a reasonable commute distance. It is a relative measure because not every worker commutes within 40 minutes and not everyone in the population participates in the labor force. As the demographic tables in Appendix E indicate, labor force participation rates vary considerably within the North State.

The *delivery market* is defined as the number of employees within a 180-minute drive of the population-weighted centroid of each county. Employees are used as a proxy for the number and size of businesses within a given drive distance. The 180-minute drive time is intended to represent a same-day truck delivery market. Like the labor market measure, this measure is relative – not every business within a given drive time participates in the supply chains of the North State and truck deliveries can be longer than 180 minutes.

Both measures have been calculated in the LEAP model using US Census data and the ESRI ArcView Geographic Information System (GIS) with highway drive times calculated based on NAVTEQ national and local highway network data. By using GIS and NAVTEQ, LEAP is able to account for regional differences in drive time and topography. The labor market maps are presented first, followed by the delivery market maps.



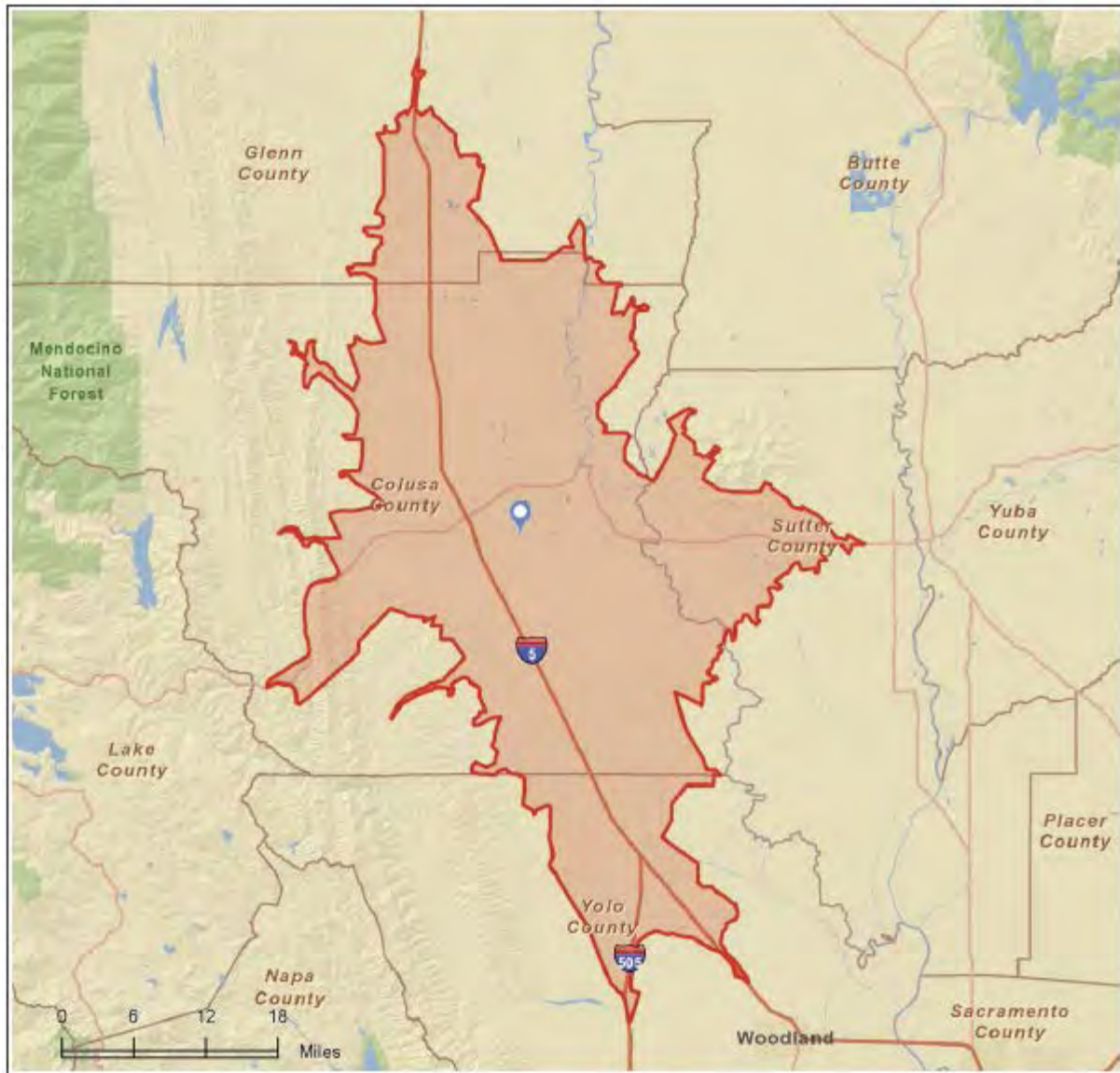
Exhibit H1: Butte County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Exhibit H2: Colusa County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



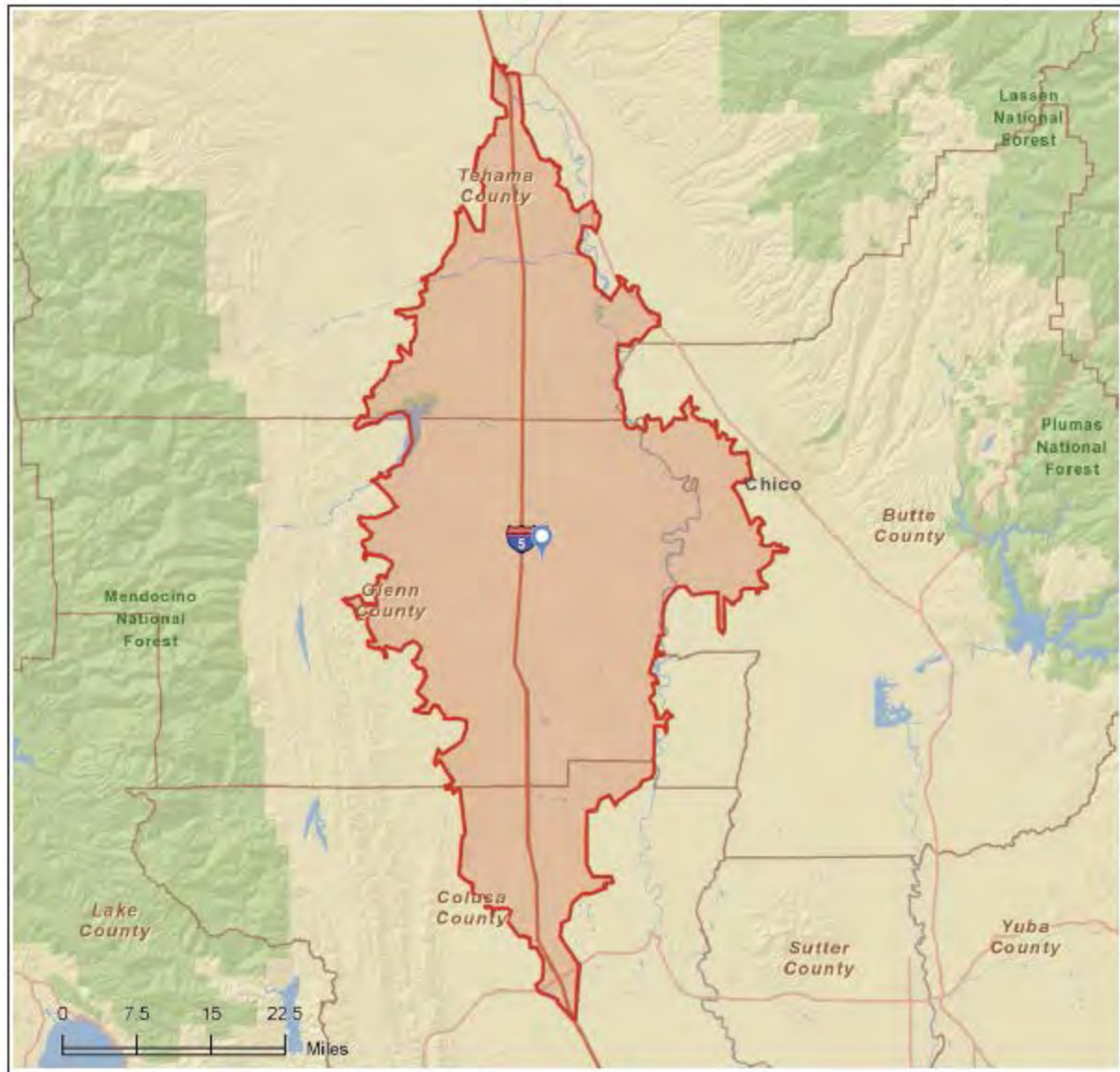
Exhibit H3: Del Norte County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Exhibit H4: Glenn County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



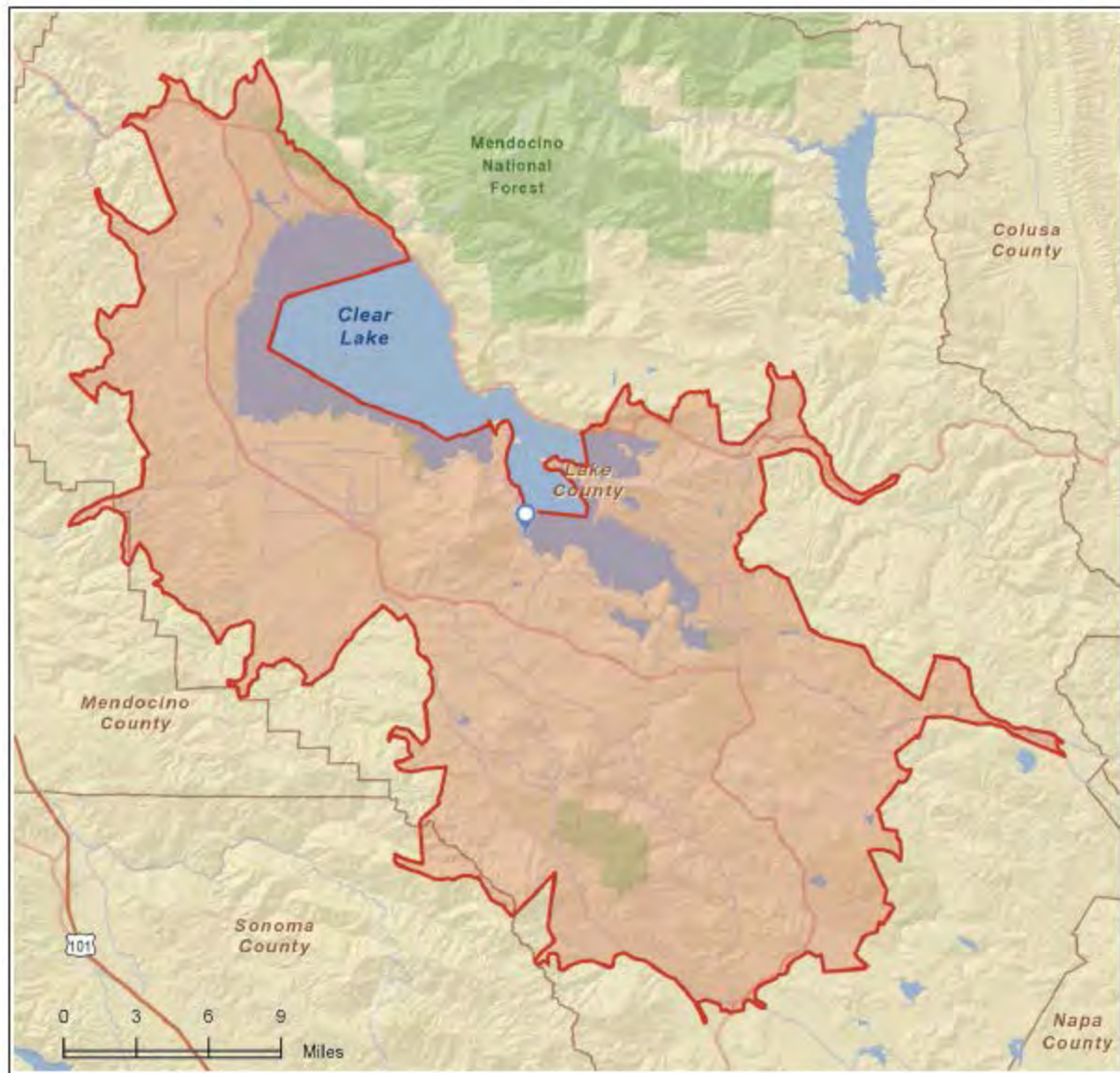
Exhibit H5: Humboldt County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Exhibit H6: Lake County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



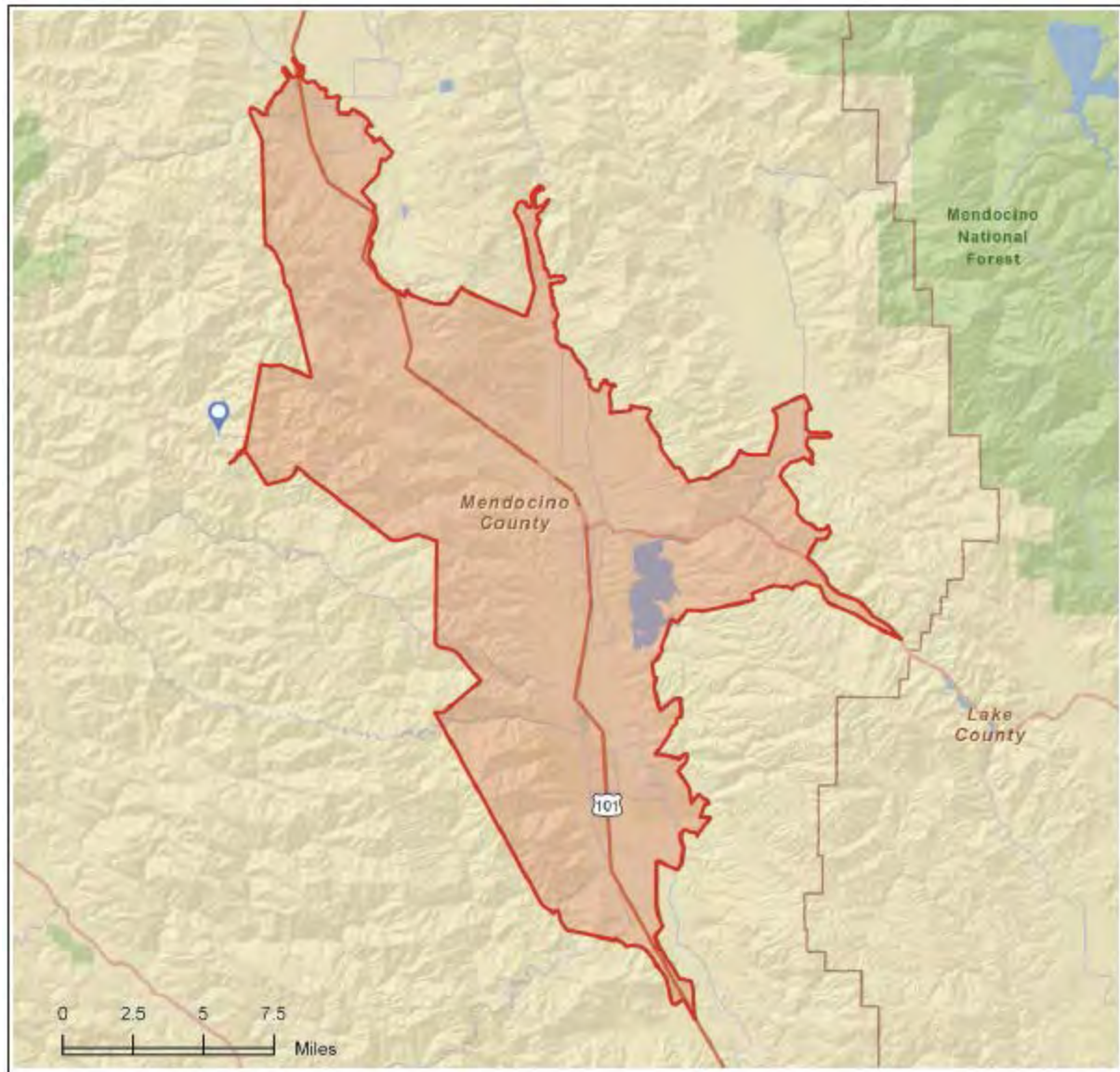
Exhibit H7: Lassen County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



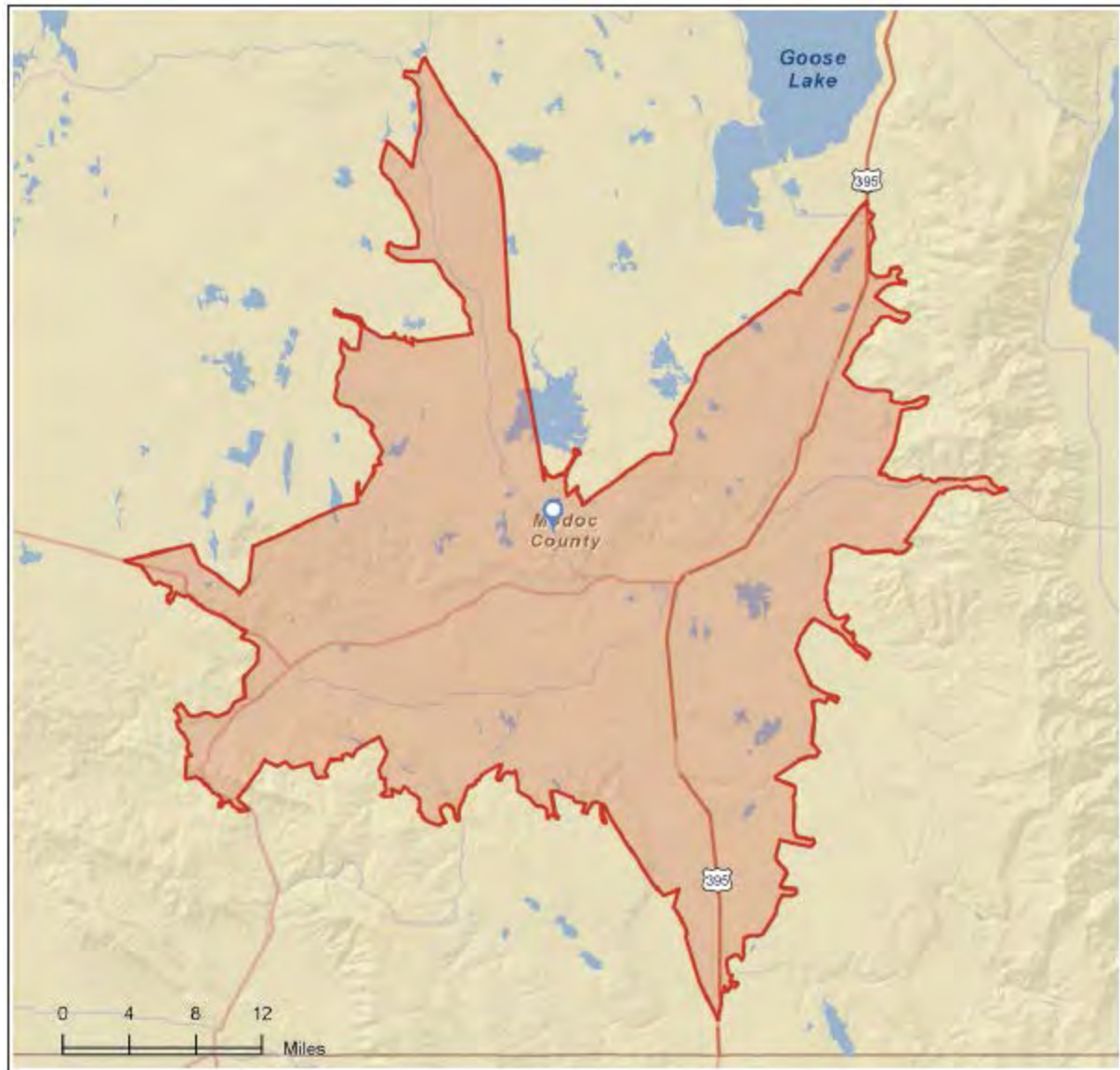
Exhibit H8: Mendocino County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



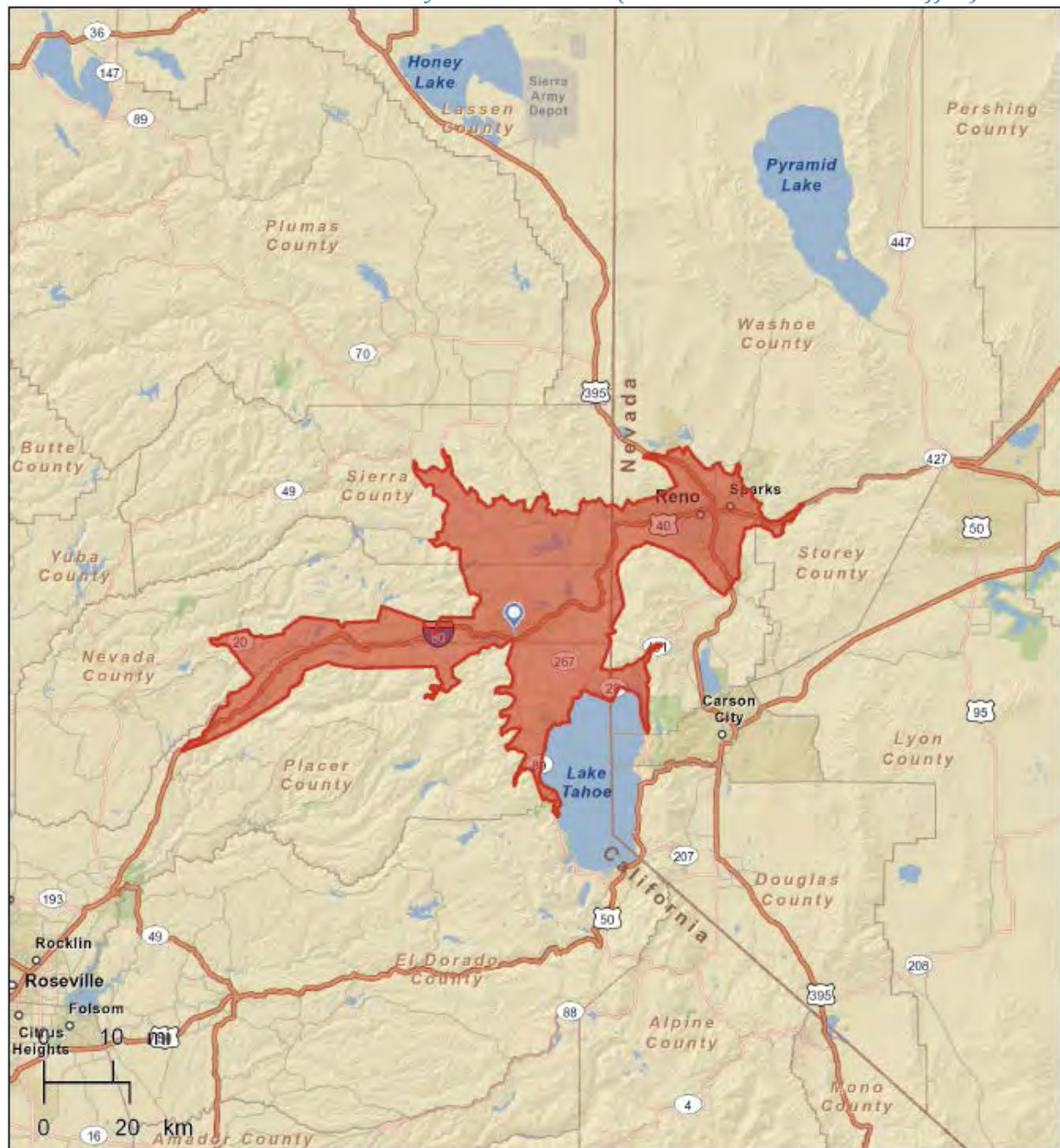
Exhibit H9: Modoc County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



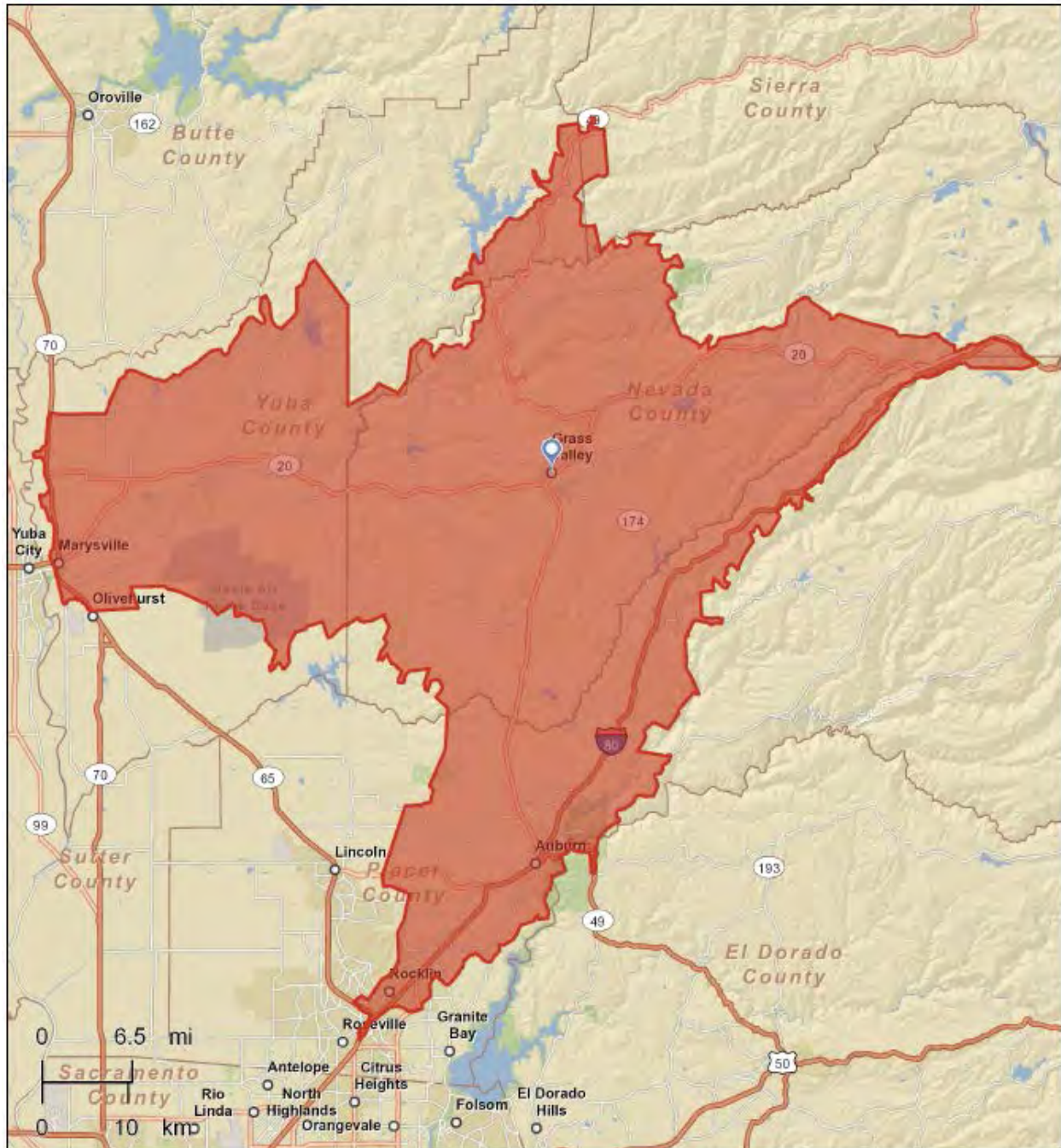
Exhibit H10: Eastern Nevada County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



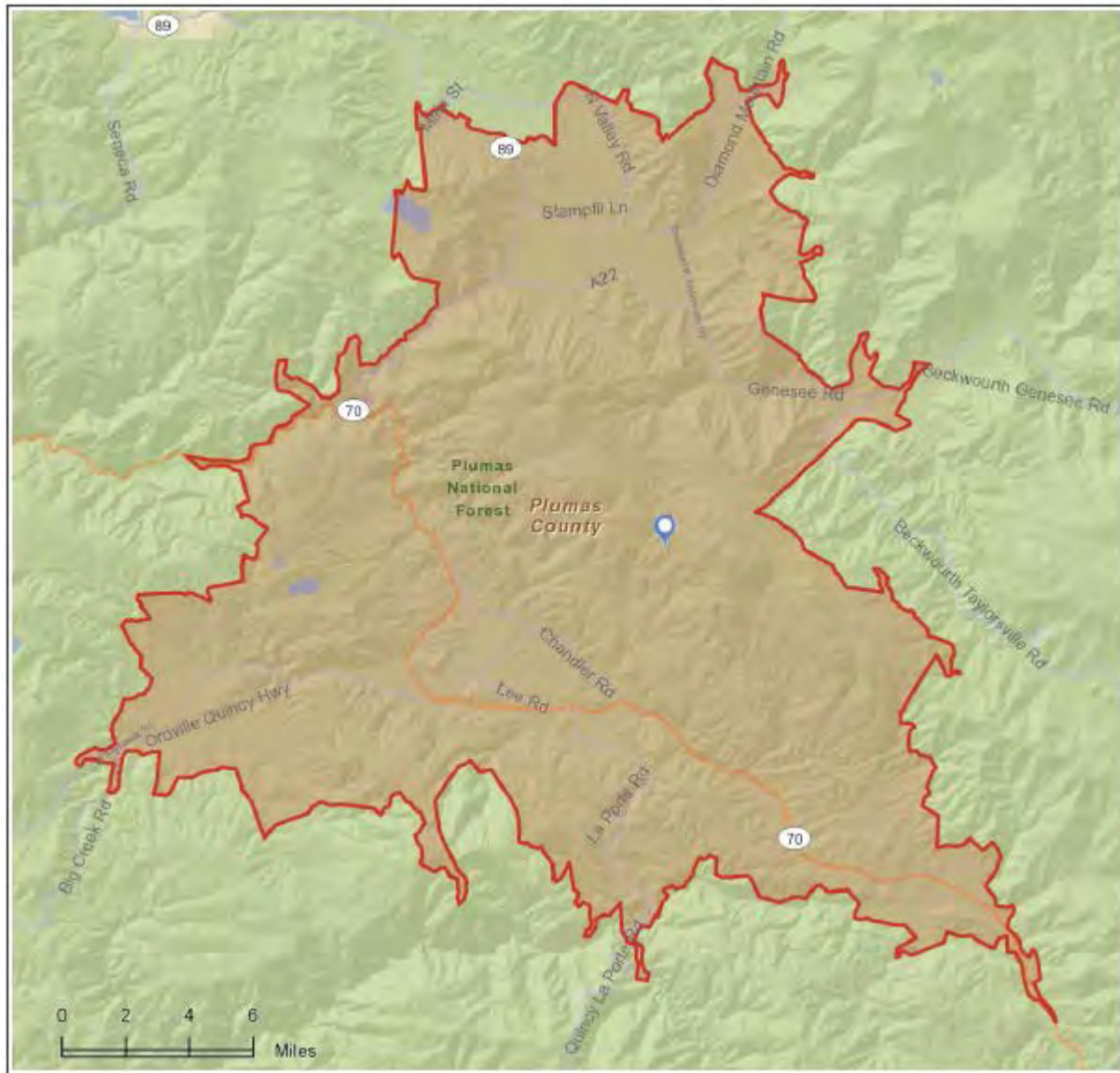
Exhibit H11: Western Nevada County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



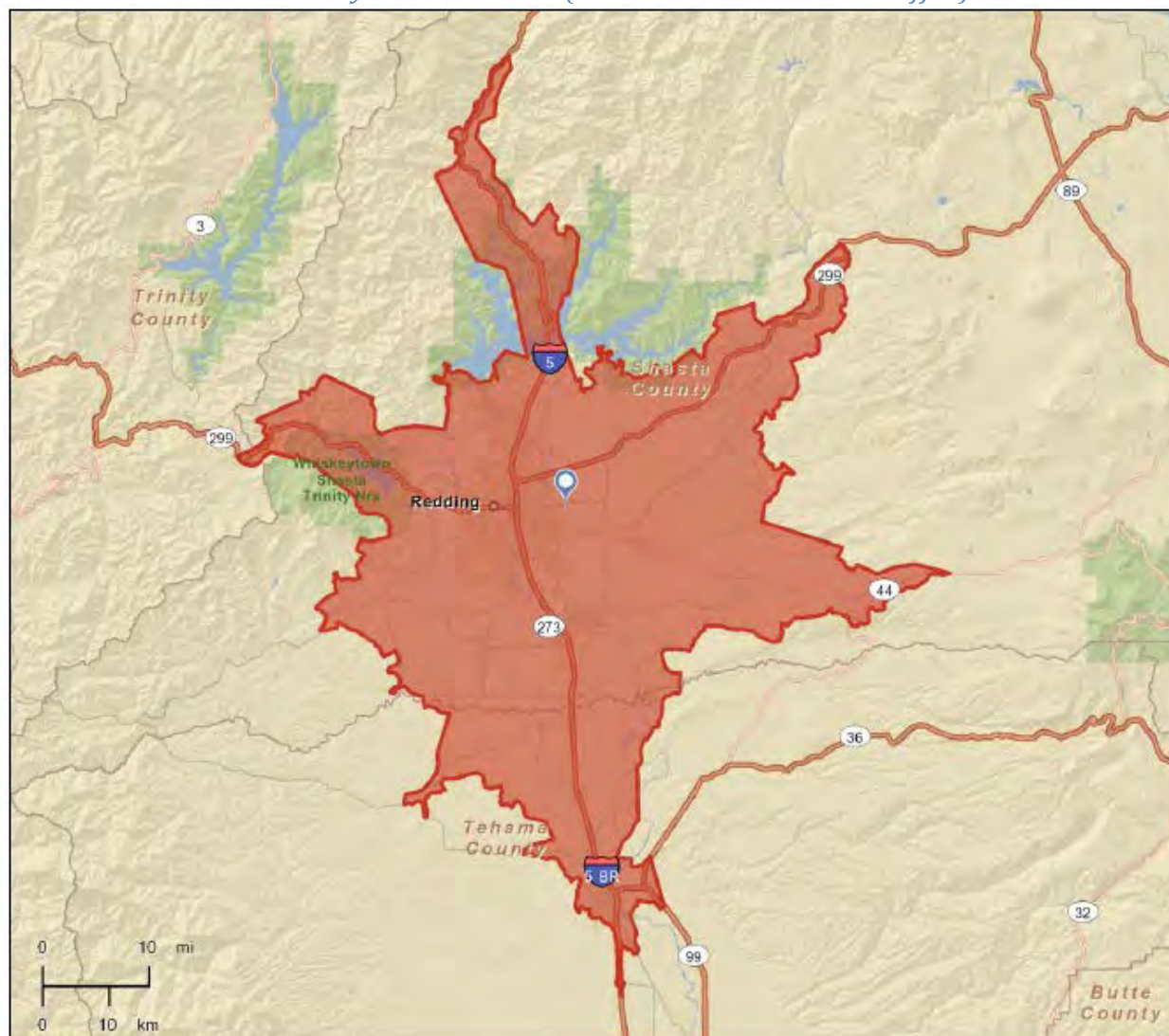
Exhibit H12: Plumas County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



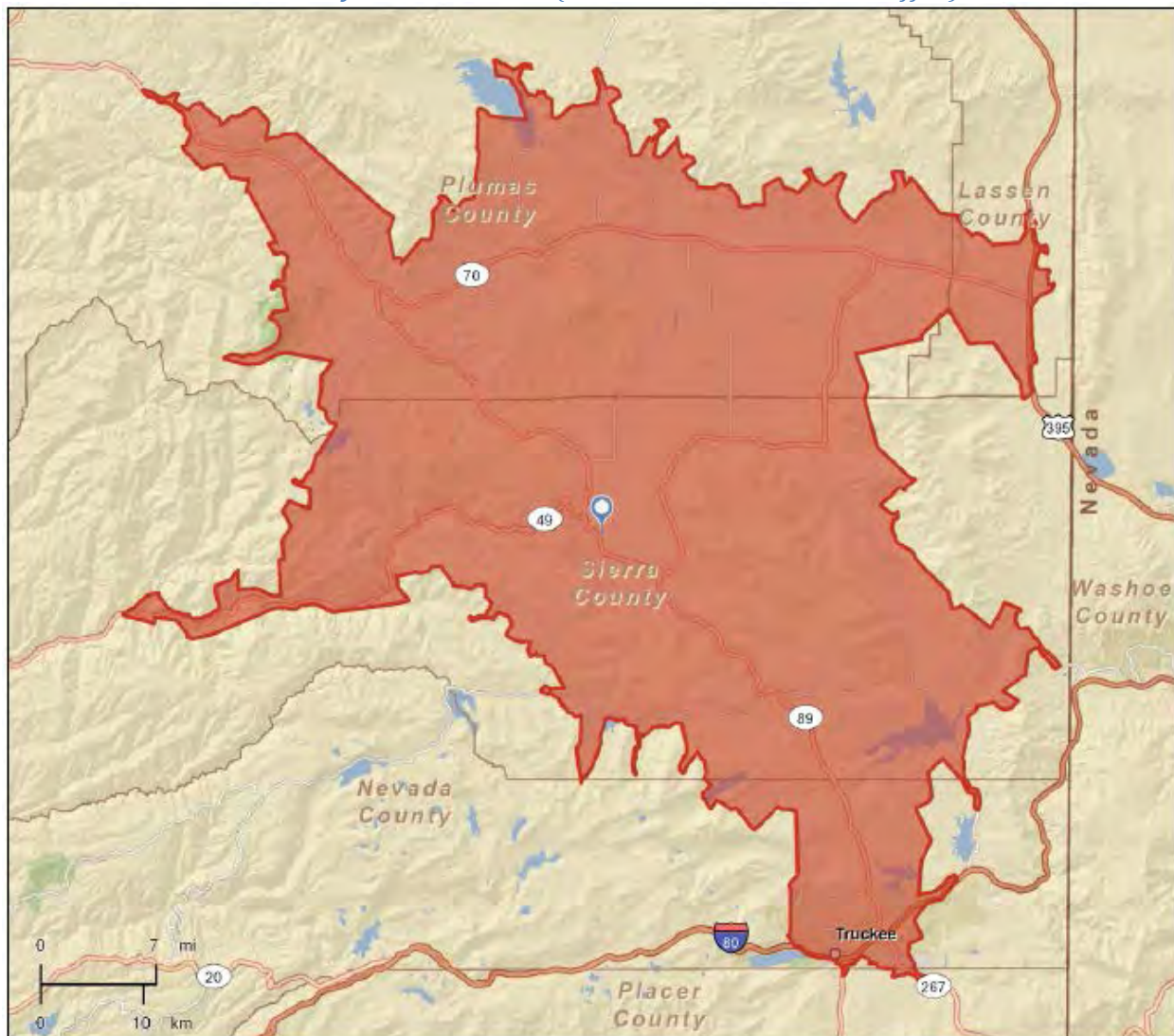
Exhibit H13: Shasta County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



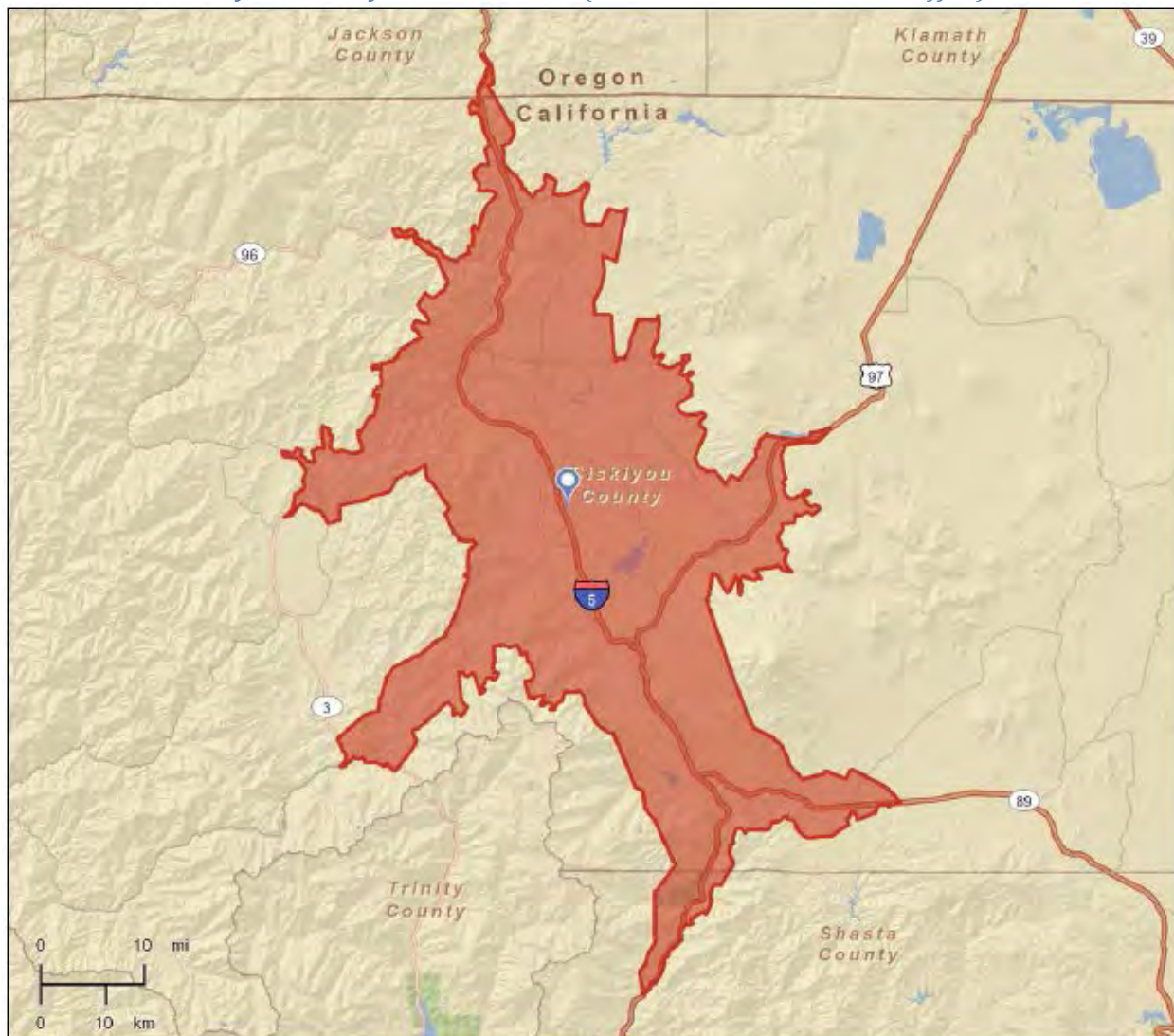
Exhibit H14: Sierra County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



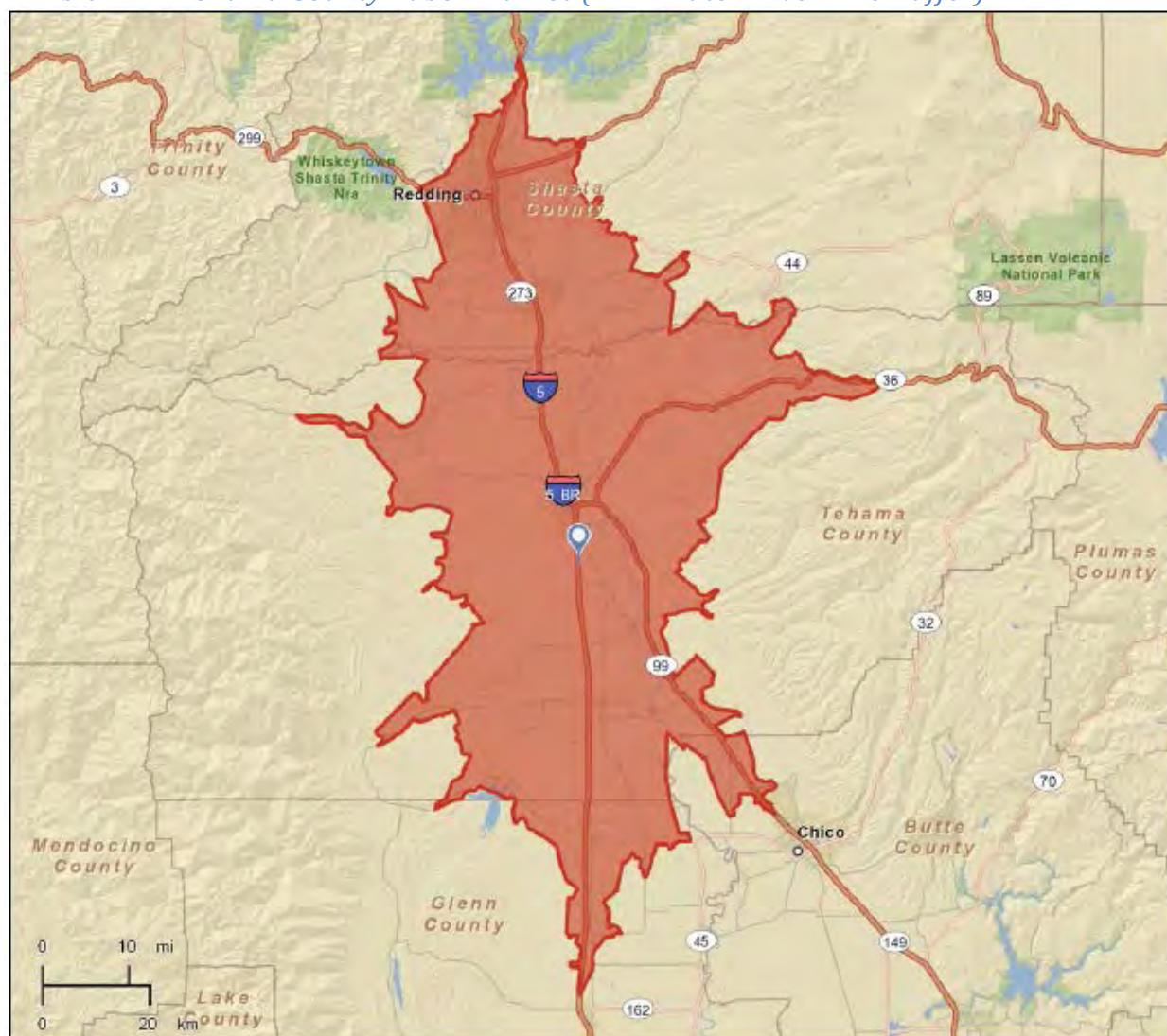
Exhibit H15: Siskiyou County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



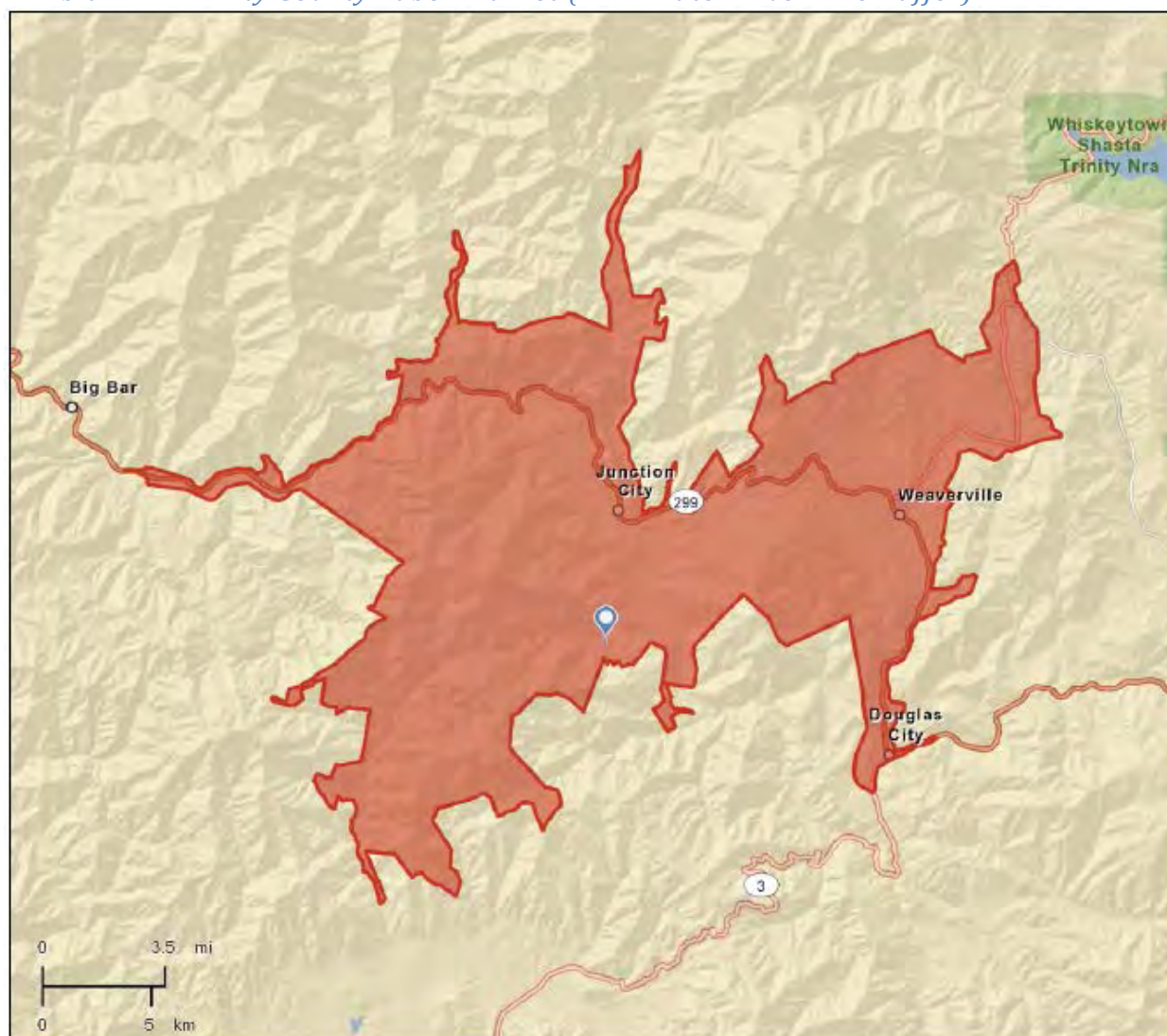
Exhibit H16: Tehama County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



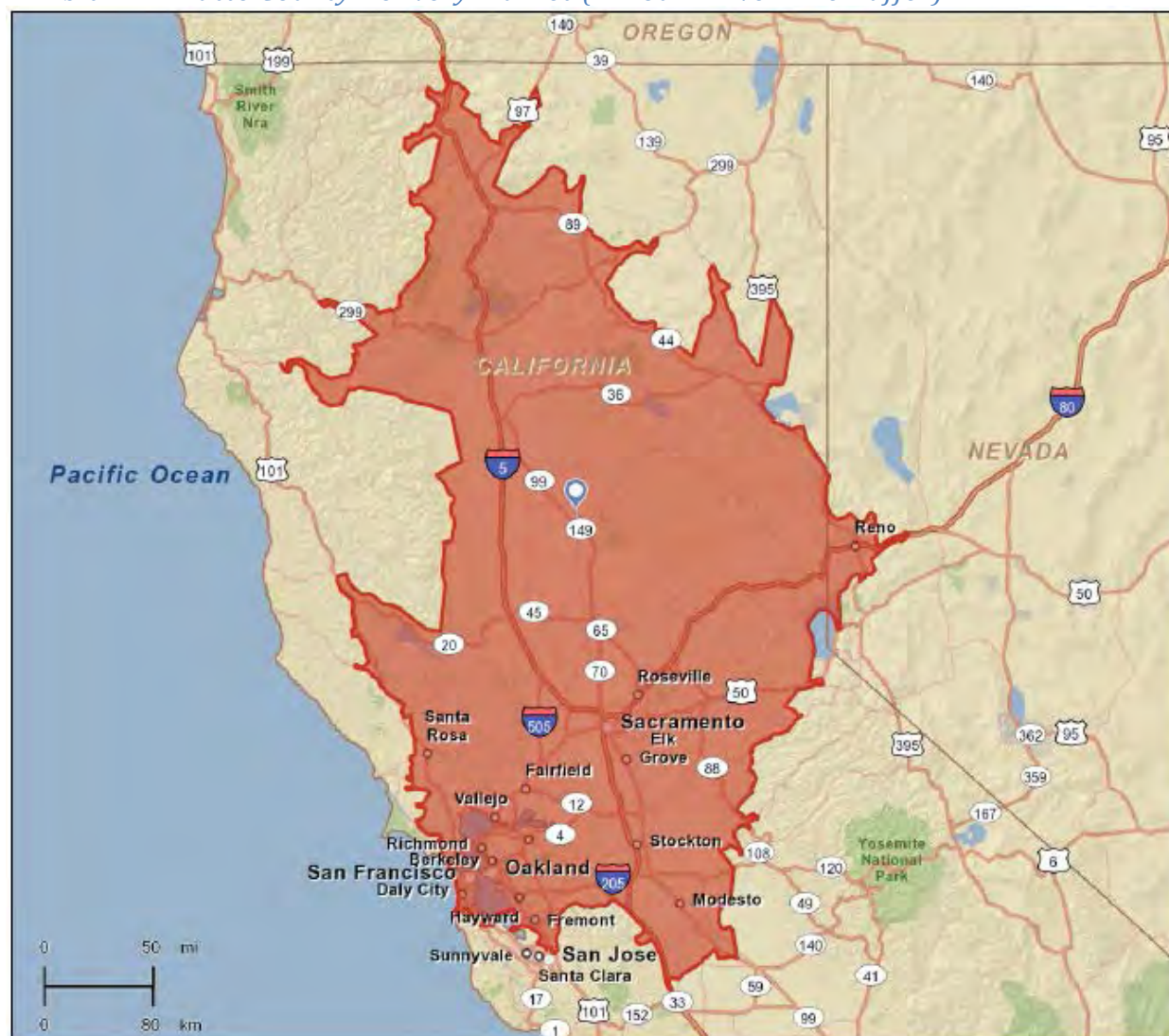
Exhibit H17: Trinity County Labor Market (40-Minute Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



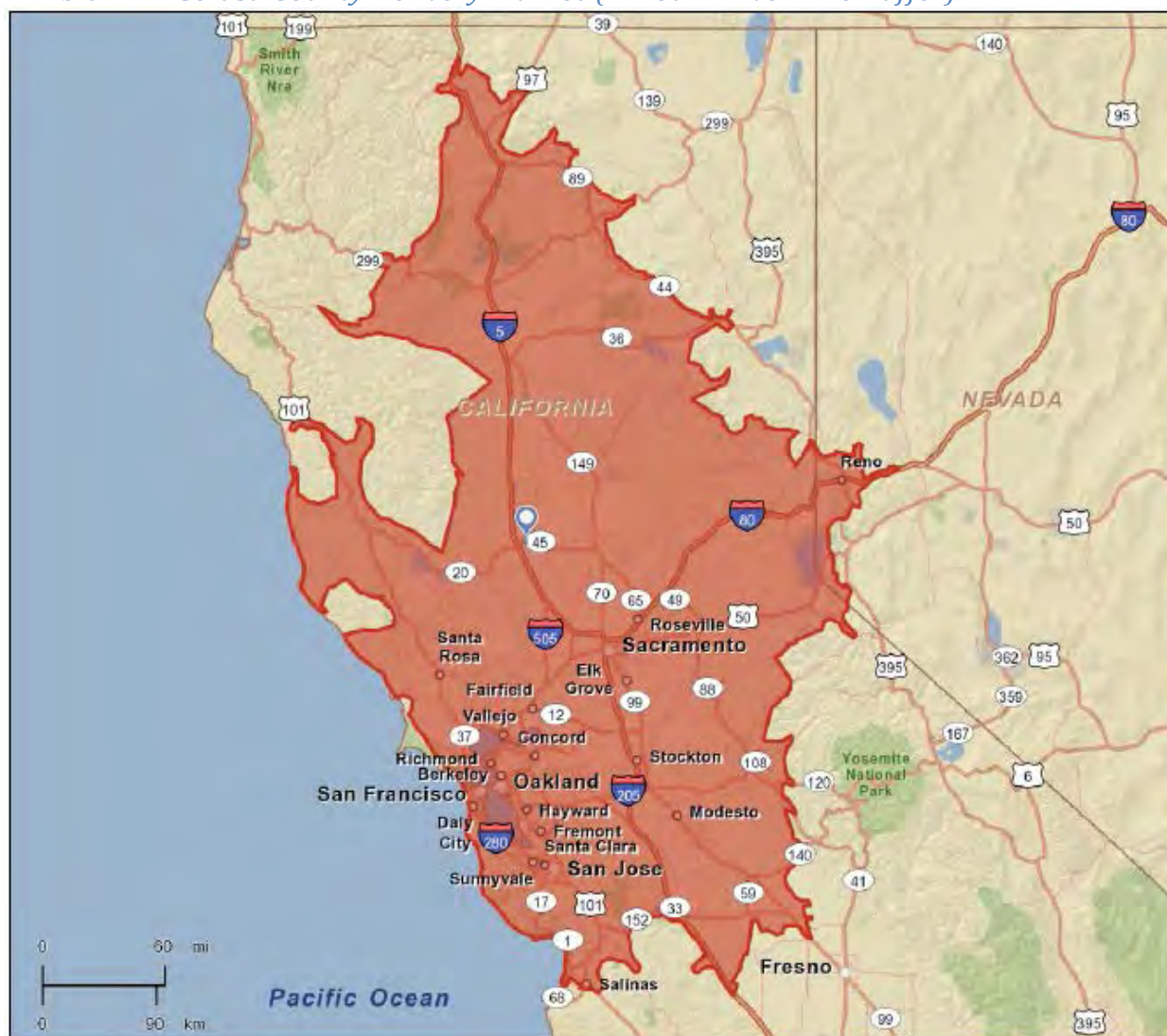
Exhibit H18: Butte County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



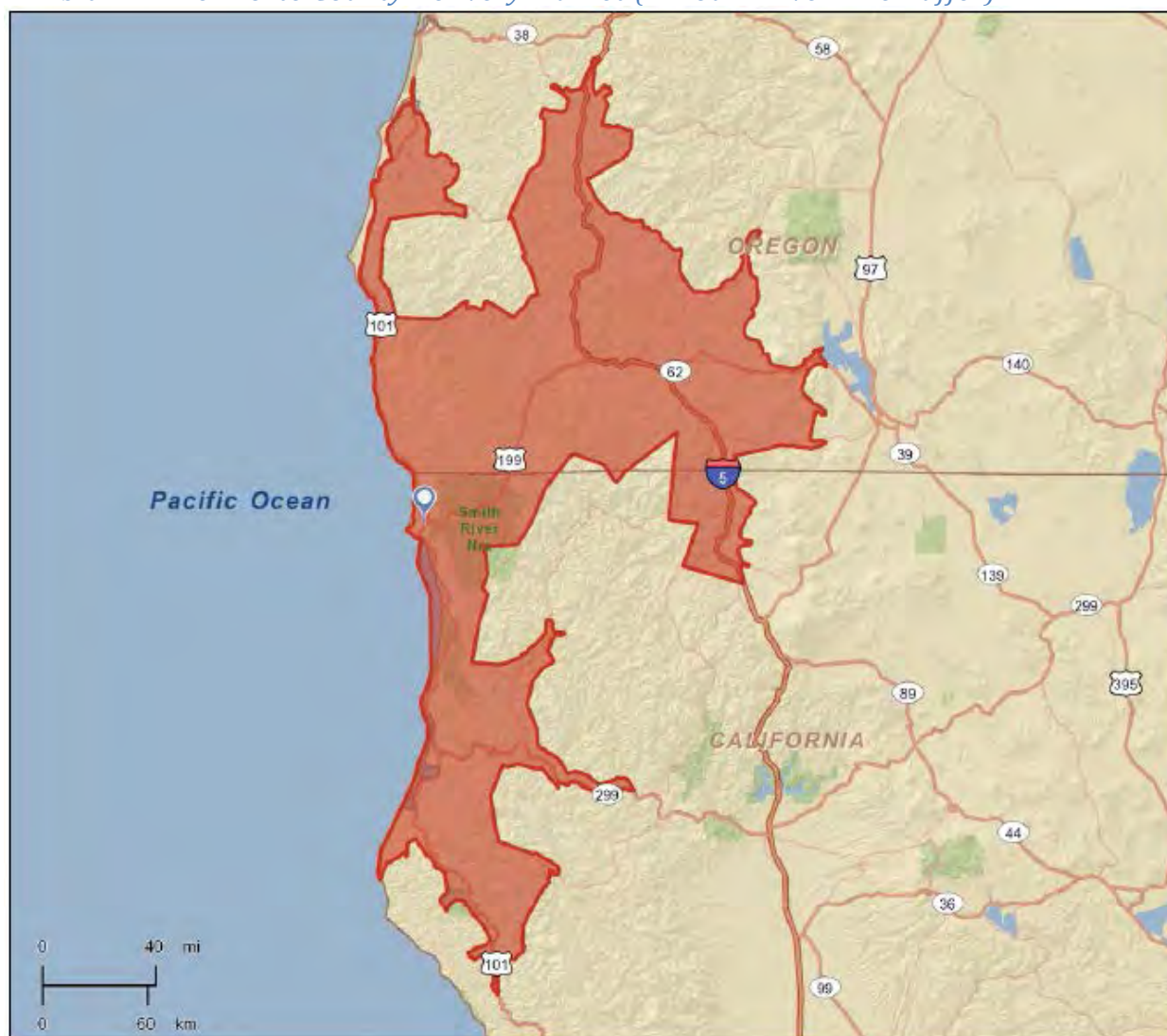
Exhibit H19: Colusa County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



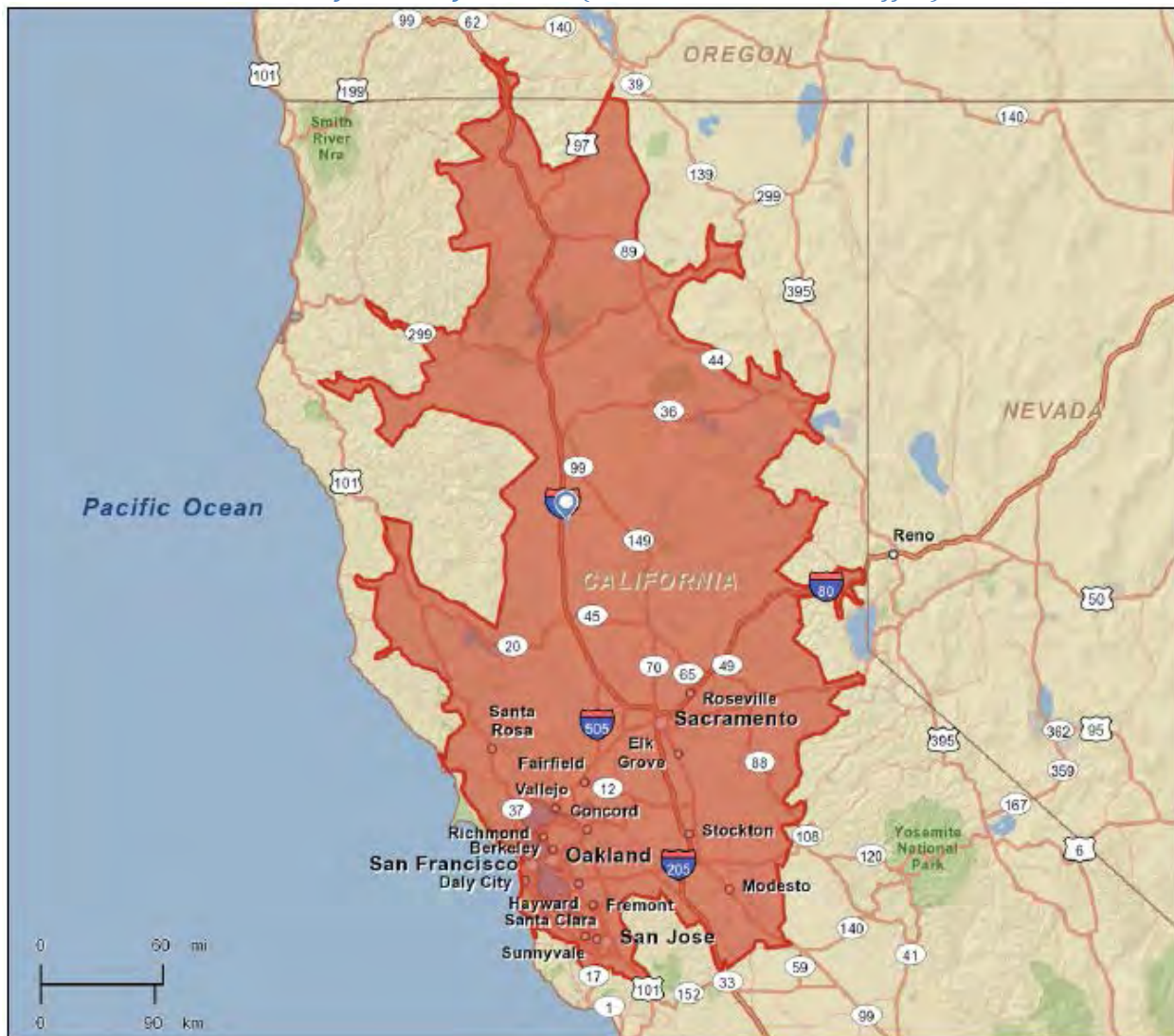
Exhibit H20: Del Norte County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Exhibit H21: Glenn County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Exhibit H22: Humboldt County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis

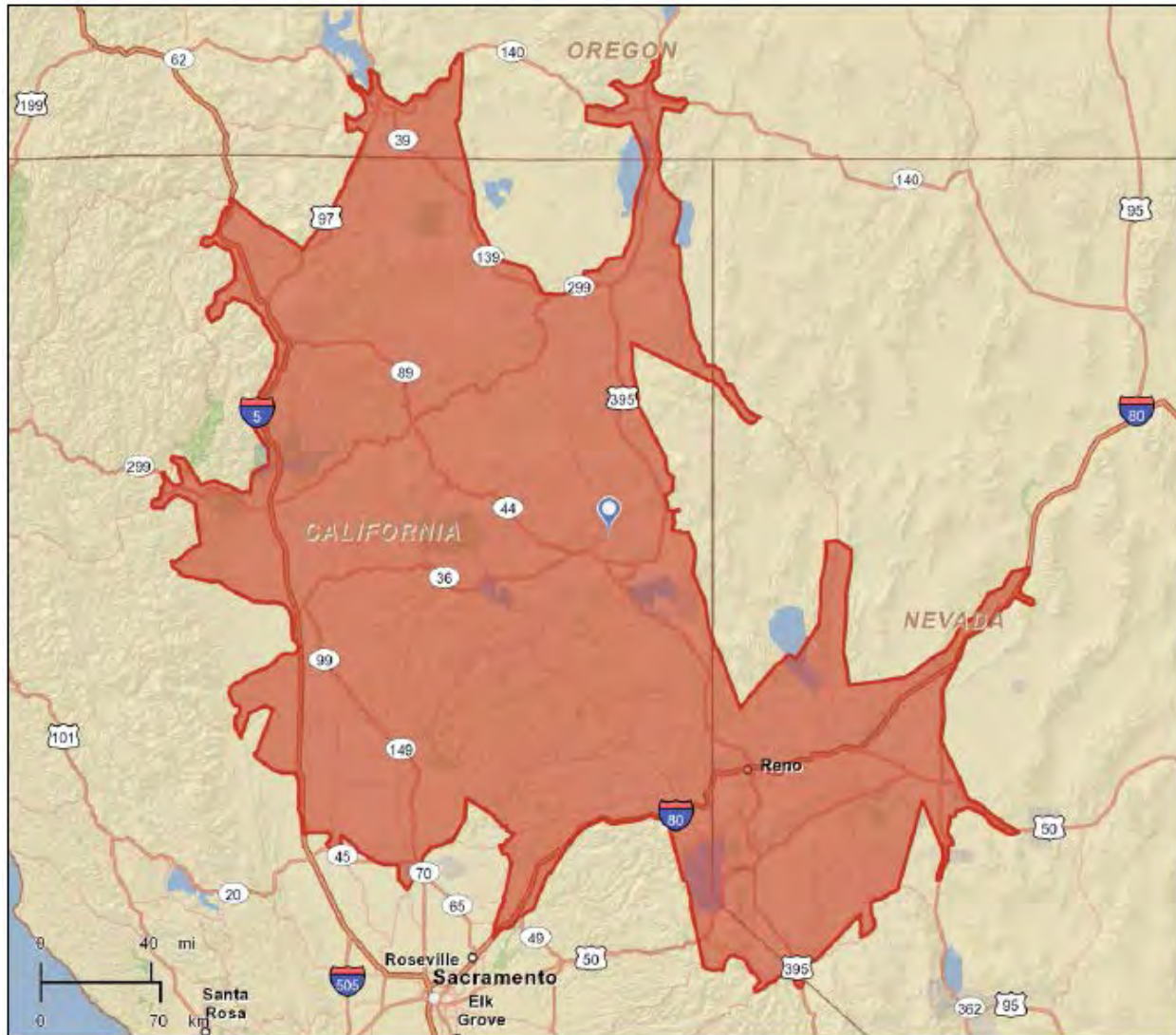
Exhibit H23: Lake County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



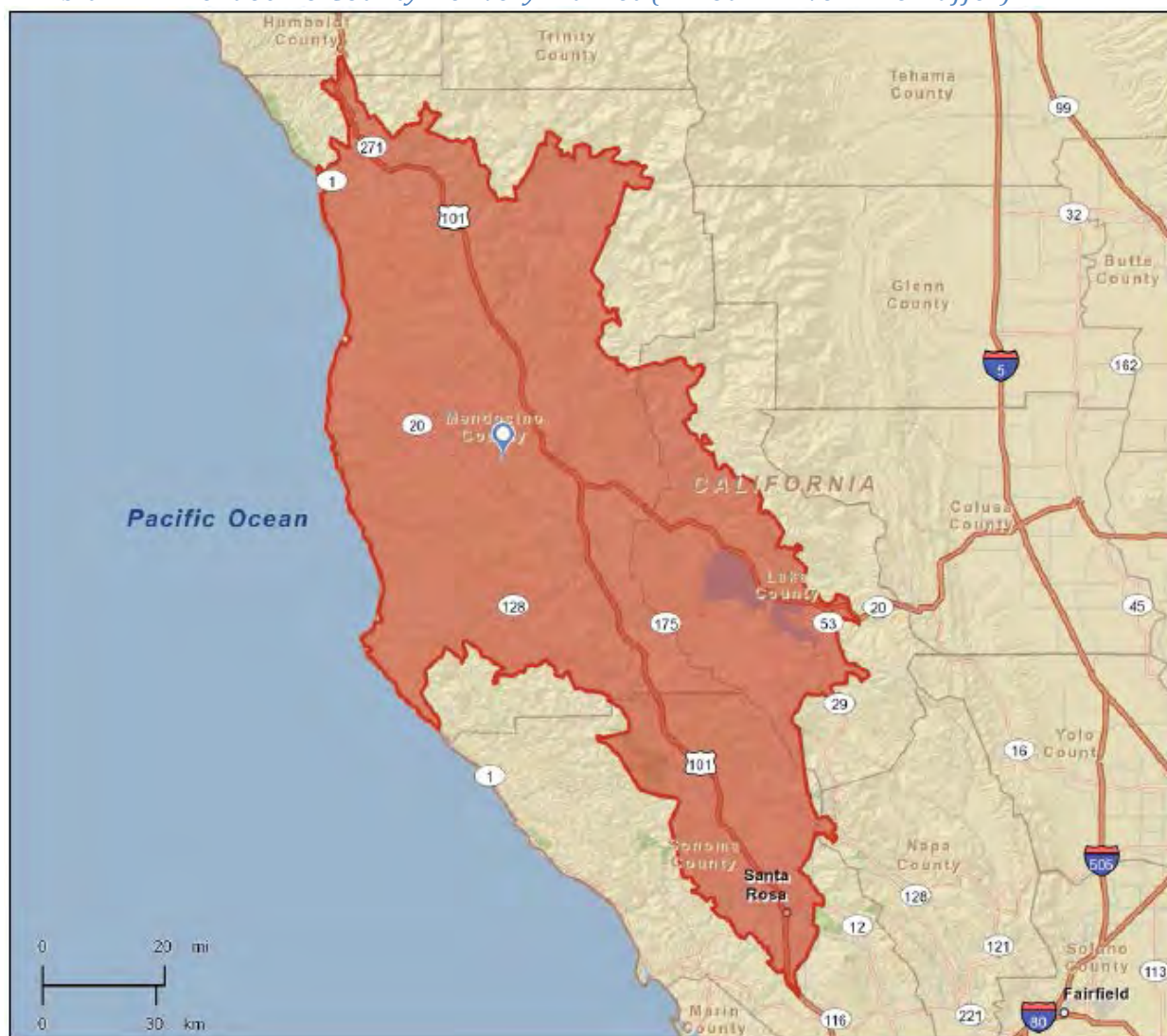
Exhibit H24: Lassen County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis

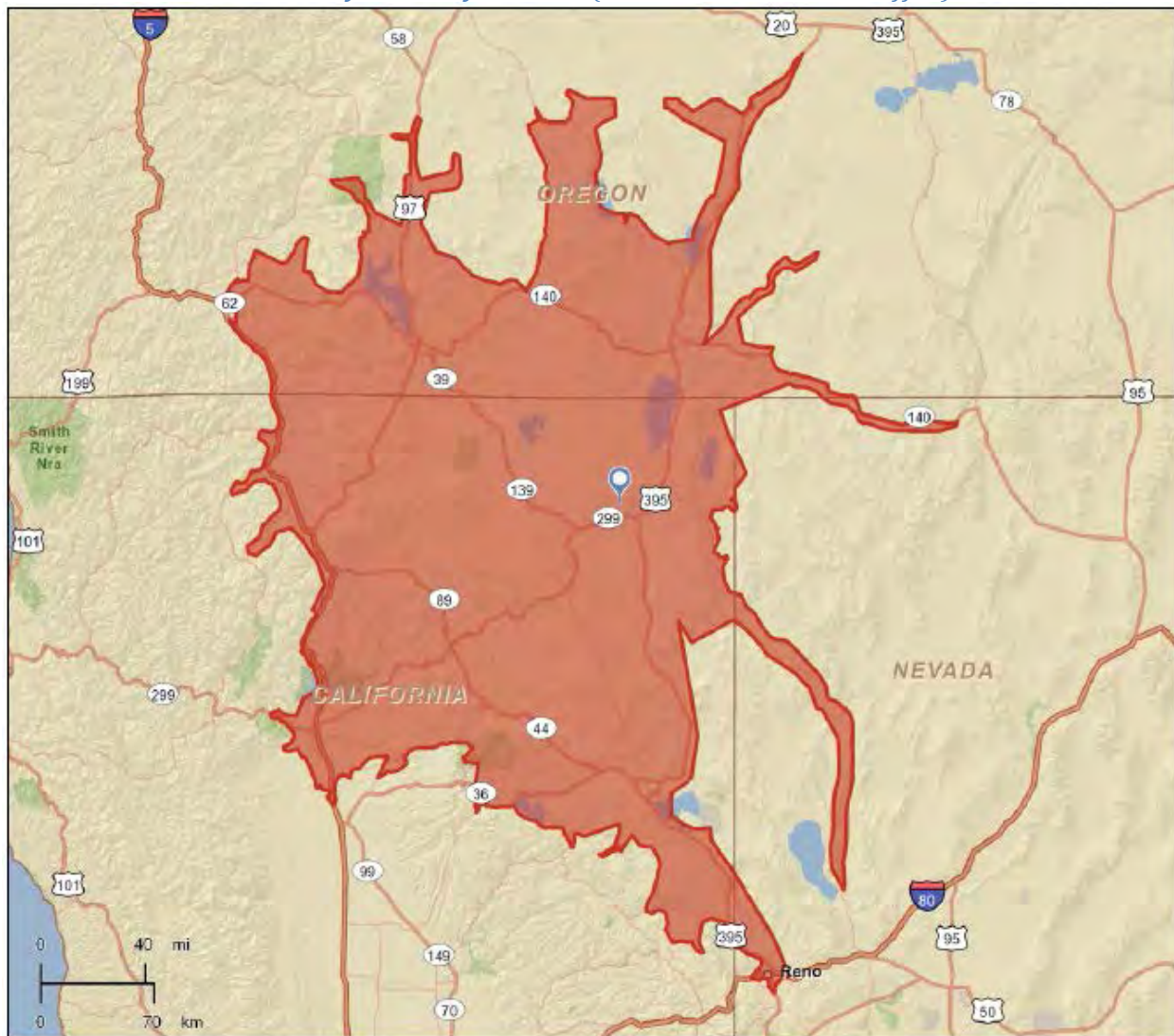


Exhibit H25: Mendocino County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis

Exhibit H26: Modoc County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Exhibit H27: Eastern Nevada County Delivery Market (3-Hour Drive Time Buffer)



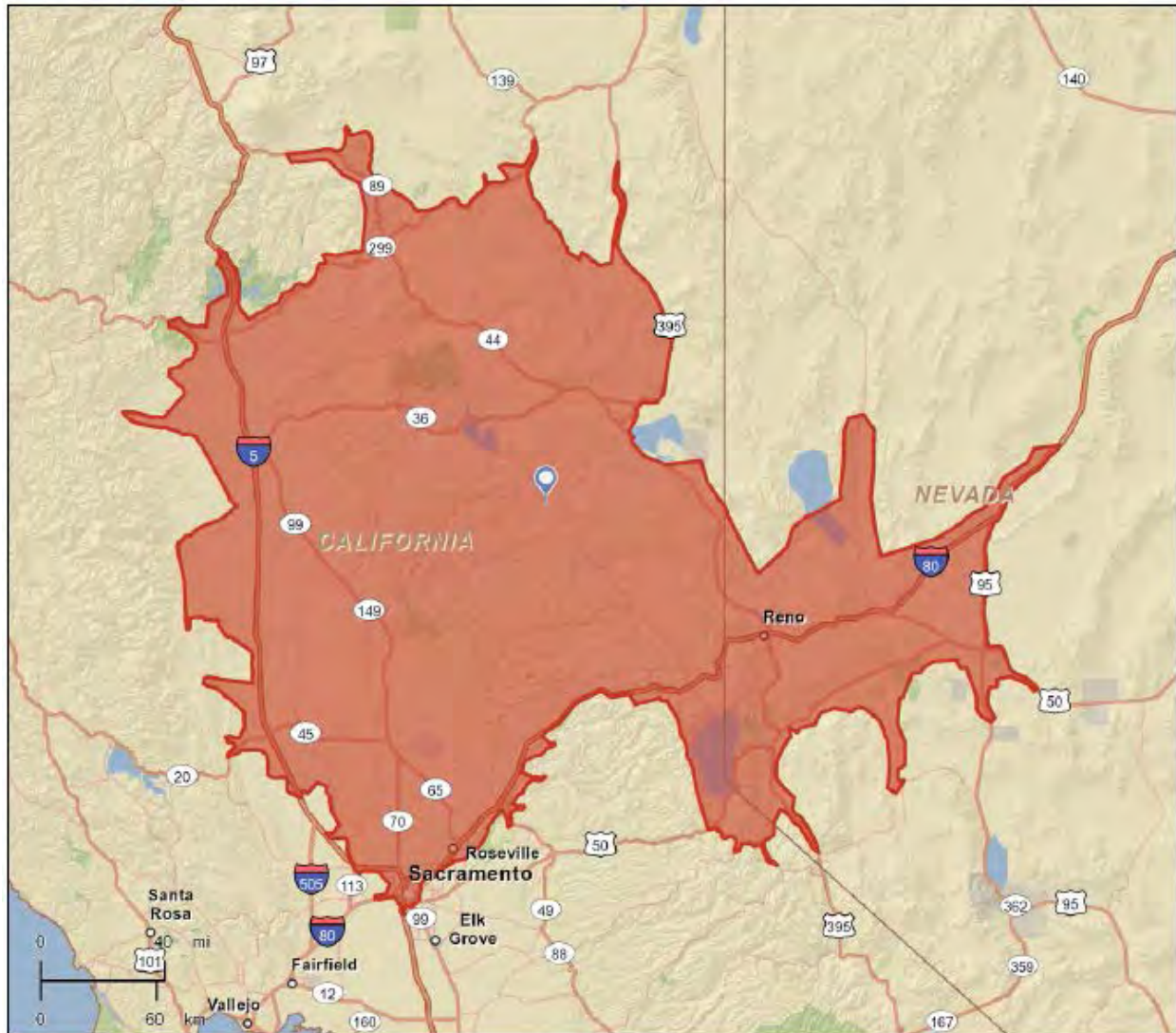
Source: LEAP Analysis using ESRI Business Analysis

A map of California with the Central Valley highlighted in red. The map shows major cities, highways, and geographical features. The Central Valley includes Sacramento, Roseville, Elk Grove, Stockton, Modesto, Fresno, and Visalia. The San Francisco Bay Area includes San Francisco, Oakland, and San Jose. The map also shows the Pacific Ocean to the west and the states of Oregon, Idaho, and Nevada to the north and east. A scale bar in the bottom left corner indicates distances in miles (0 to 50) and kilometers (0 to 80).

Appendix: Labor Market and Delivery Market Maps



Exhibit H29: Plumas County Delivery Market (3-Hour Drive Time Buffer)



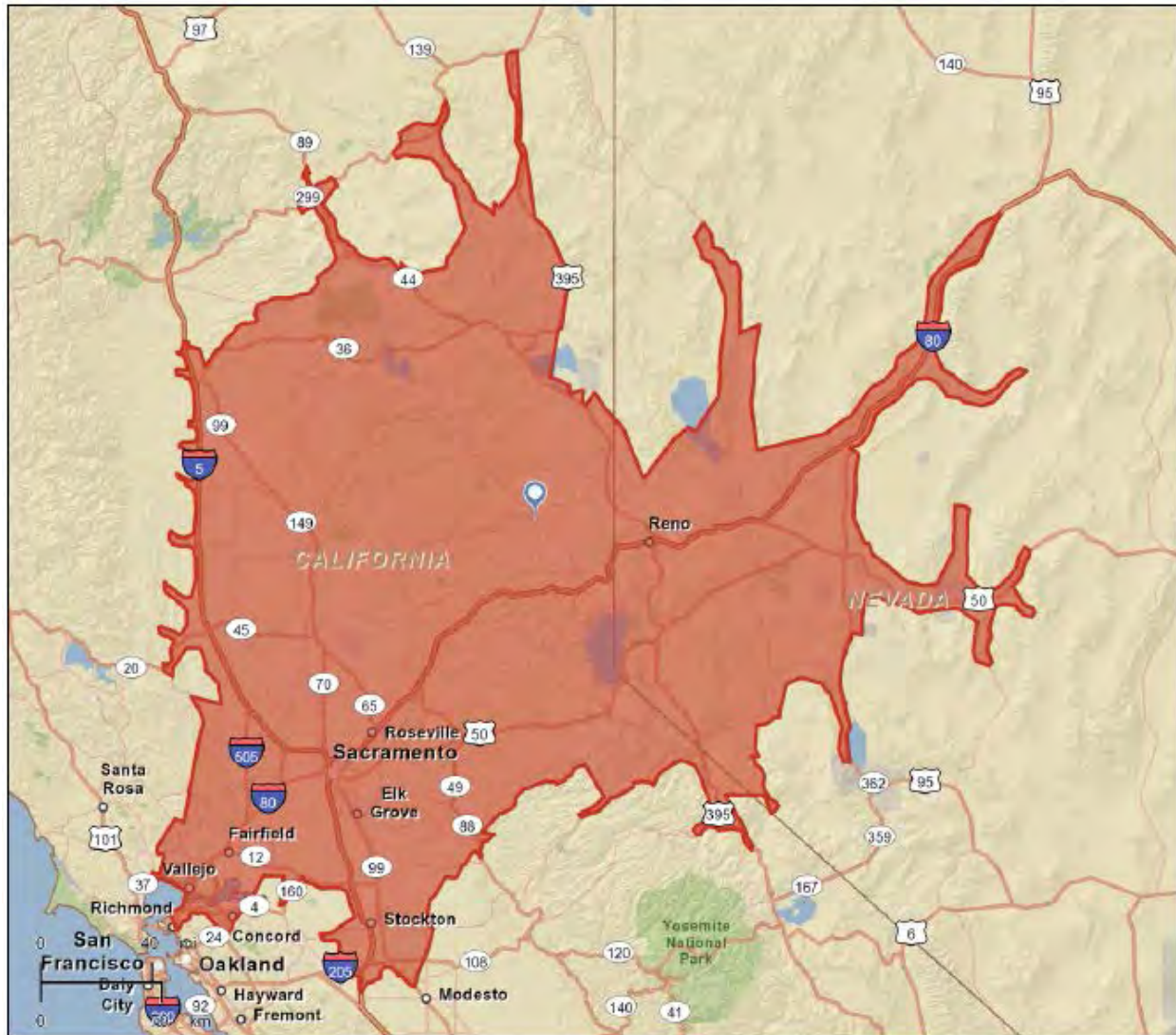
Source: LEAP Analysis using ESRI Business Analysis

A map of California with major highways highlighted in red. The map includes labels for neighboring states (Oregon, Nevada), the Pacific Ocean, and various cities (San Francisco, Sacramento, Reno, etc.). A scale bar in miles and kilometers is located in the bottom left corner.

Appendix: Labor Market and Delivery Market Maps



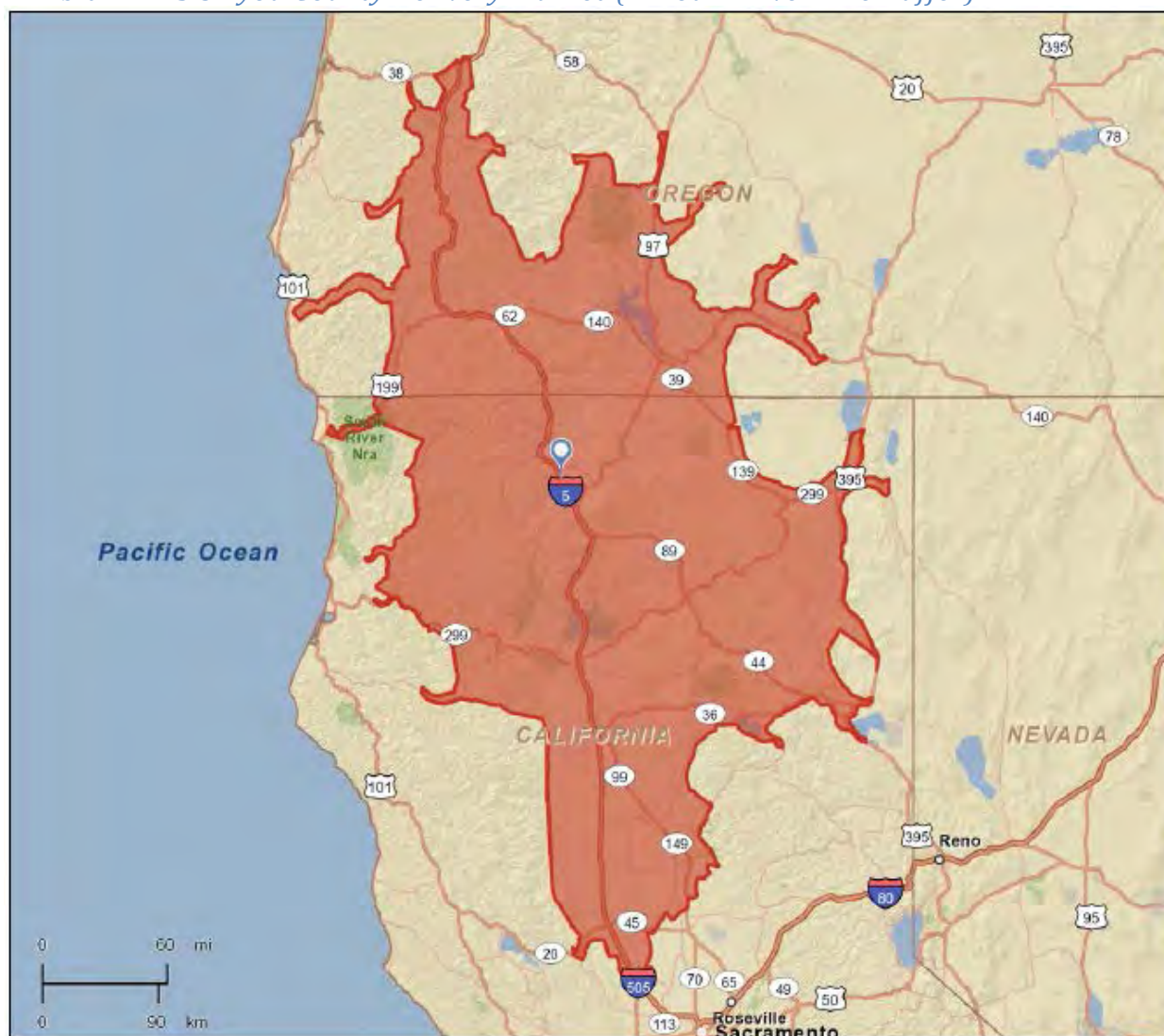
Exhibit H31: Sierra County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



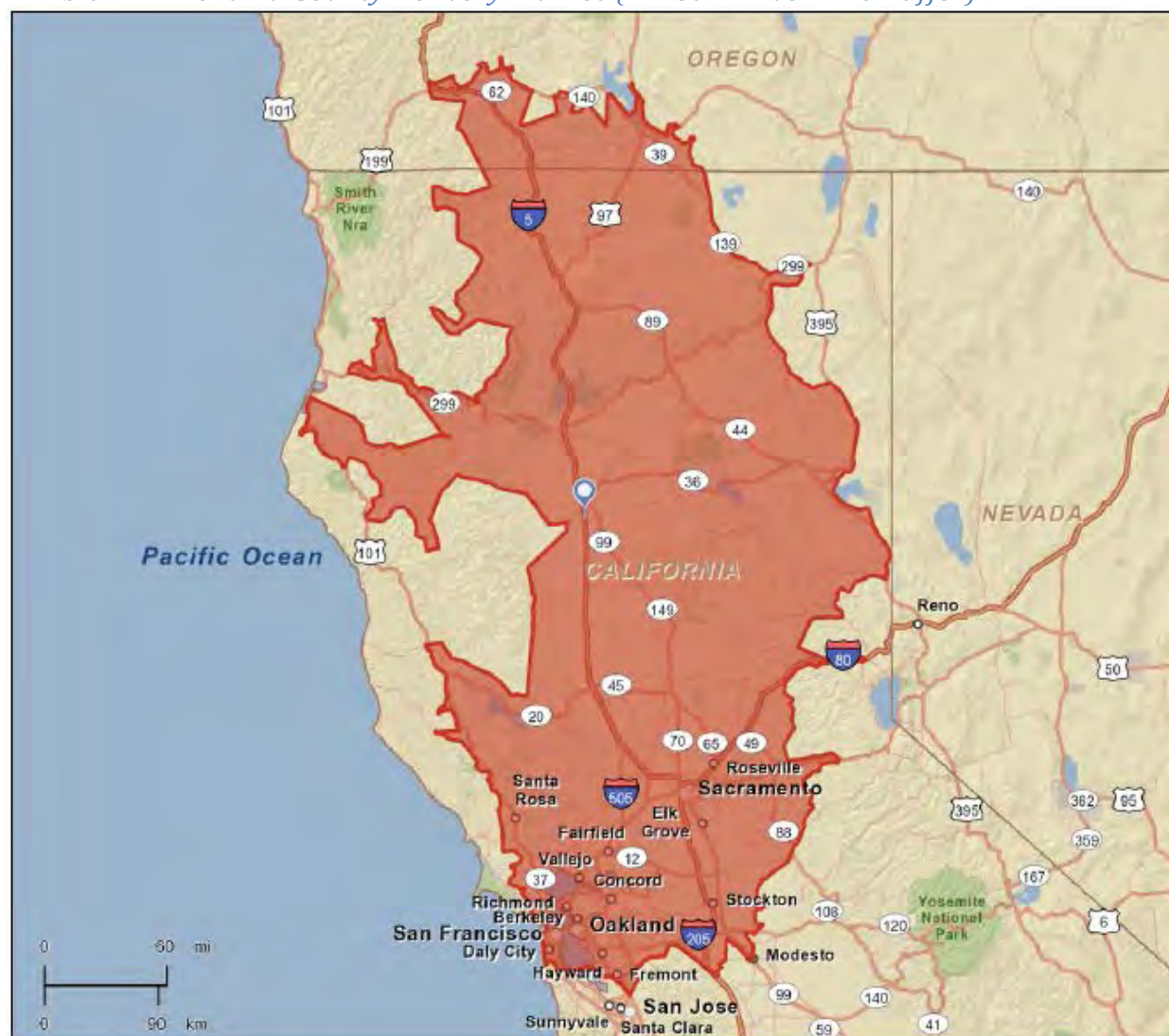
Exhibit H32: Siskiyou County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



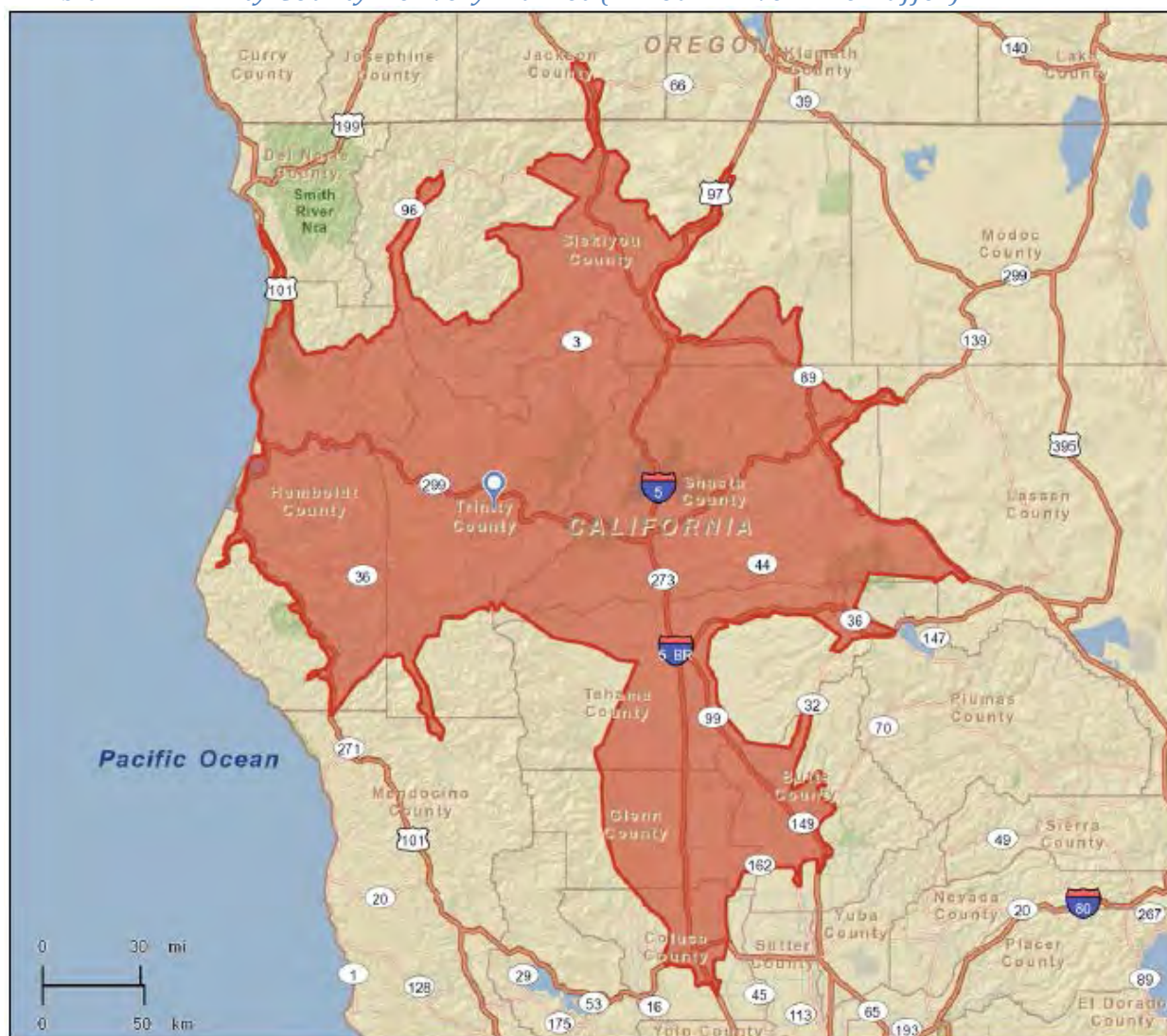
Exhibit H33: Tehama County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Exhibit H34: Trinity County Delivery Market (3-Hour Drive Time Buffer)



Source: LEAP Analysis using ESRI Business Analysis



Appendix I: Economic Development Initiatives

This appendix provides details on economic development plans and local government initiatives to expand and diversify the economy of 16 North State counties and the incorporated cities within each county. Information is presented about past economic and demographic trends, written plans and strategies, implementation capacity, and current economic development initiatives. The project team collected the information by downloading available reports from the internet and communicating with various County Administrative Officers (CAOs), city managers, and economic development staff.

Local stakeholders provided information through phone interviews or in response to questions submitted by email to:

- Identify the primary point of contact for potential investors and business prospects
- Determine if the area is actively engaged in business attraction efforts, and identify which individual or organization leads the effort
- Request information about stakeholder perspectives on economic development constraints within each jurisdiction
- Find agencies that lead the tourism promotion efforts and funding mechanisms
- Summarize the current and planned economic development initiatives within each jurisdiction
- Identify transportation improvement projects that might generate positive local economic impacts.

The appendix highlights the transportation improvement projects that were identified by the CAOs, city managers, and economic development staff as potentially facilitating economic development in each county. These projects can be compared to the projects identified by transportation professionals in their Regional Transportation Plans (RTPs). The RTP projects are highlighted in the chapter on the transportation landscape.

Humboldt County's Economic Development and Transportation Needs

The decline of Humboldt County's resource extraction industries caused by international competition, pressures to reduce labor costs, technology changes, and environmental constraints have been ongoing for nearly three decades. Since 2000, the number of jobs generated by area employers has declined along with the aggregate value of timber production, fishing, and agriculture. The average inflation-adjusted income has declined by \$25,000 per household. Twenty percent of households live below the federal poverty level.

Sixty percent of new Humboldt County residents are Hispanic, which is an historical demographic shift. In addition, the presence of Humboldt State University and the College of the Redwoods generates a more highly educated workforce, which helps keep the population relatively young and creative.



Written Economic Development Plans and Strategies

Humboldt County has drafted a current economic development action plan known as Prosperity 2012, which identifies seven strategies or actions intended to strengthen the local economy along with 16 implementation steps for each action.¹ The goals are summarized below:

- Encourage specific action steps to strengthen the eight target industry clusters that were studied in 2007.² The current strategy indicates that industry leaders should be convened to become a voice for business and implement the 2007 work plans.
- Build a community culture that nurtures business to support start-up and expansion efforts, encourage the expansion of specialty agriculture, and improve the welcoming experience at gateway towns.
- Stimulate and nurture entrepreneurship by encouraging the continued operations of Humboldt County businesses post owner retirement. The strategy also encourages training and access to capital to support business start-up and expansion efforts, business-to-business mentoring, and the alignment of regional marketing efforts.
- Regulatory complexity should be reduced and permitting certainty should be improved. In addition, infrastructure should support specialty agriculture in rural areas, new aquaculture facilities in the bay and on land, and the restoration of watersheds and other natural areas.
- Build an infrastructure of connectivity to move people, goods, and resources into the global marketplace. The County should advocate for truck that complies with the Surface Transportation Assistance Act (STAA), and smoother, faster movement of goods. The County also needs improved telecommunications connectivity including broadband, fiber optics, and increased mobile coverage. Better passenger air service should be supported along with a study of developing an air freight terminal. Docks, harbors, and marinas should be modernized to support import, export, and tourist serving activities.
- Local products and services should be encouraged and used more intensively to improve the economic multipliers by reducing out of county imports. Additional food processing should be encouraged along with alternative energy sources, reuse of underutilized waste products, and value-added manufacturing.
- Improve the regional capacity to train, attract, and retain quality workers. This would include career adults, college students, and youth. Up to 16 implementation actions were identified to execute this strategic initiative.

¹ The creation of Prosperity 2012 included public input. The report has not been officially released. County staff provided a draft report.

² Industry cluster targets include health care, specialty food products, building and systems construction, investment support services, management and innovation services, niche manufacturing, forest products, and tourism.



Arcata Economic Development Strategy

The City of Arcata prepared a five-year Economic Development Strategic Plan in 2009.³ Goals and strategies are based on socioeconomic and industry trends, stakeholder input, and current development trends. The plan identifies partnerships, strategies, and implementation measures. Many of Arcata's economic development goals are congruent with the Prosperity 2012 report:

- Create new jobs
- Retain jobs and strengthen existing businesses
- Assure new economic activity will have a good community or cultural "fit"
- Increase disposable income for households and individuals
- Diversify Arcata's economy
- Improve City government fiscal stability
- Maintain and enhance the Downtown Arcata/Plaza area as the community focal point
- Maintain and enhance neighborhood commercial and business centers
- Create community qualities and image attractive to businesses, residents, and visitors
- Increase the amount of housing and encouraging mixed-use developments with commercial and residential space
- Establish a local economy characterized by resilience, creativity, innovativeness and initiative.

The Plan includes nearly 20 pages of implementation measures that identify industry targets, partner agencies, target geographic areas, and a timeline.

Eureka Economic Development Strategy

A three-page economic development strategy that includes the seven economic development goals listed below is posted on the City's website:

- Retain and expand local businesses to increase the region's median income
- Attract new employers to create jobs for local residents, diversify the economic base, and increase the region's median income
- Support the industry clusters identified in Prosperity 2012 and the North Coast Strategy
- Support efforts to provide local employers with a skilled workforce
- Encourage the maintenance, improvement, and rehabilitation of the existing housing stock and an increased housing supply, especially affordable units
- Support and encourage arts, cultural, entertainment, and recreational activities that improve the quality of life and create jobs for local residents
- Develop relationships with Federal and State funding agencies as well as legislative representatives to assist the City in accessing financial and technical assistance.

Current Economic Development Implementation Initiatives

Humboldt County and its cities focus their economic development initiatives on business retention, entrepreneurship, and the expansion of established business and industries that have the assets,

³ Arcata Economic Development Strategic Plan: 2009-14. Prepared by Planwest Partners.



knowledge, and commitment to thrive. The County and the incorporated cities collaborate with 11 agencies that comprise the North Coast Prosperity Network and the broader economic development community.⁴ The County and its cities do not engage in business attraction marketing efforts to attract new firms.

Arcata's economic development initiatives are listed below:⁵

- Establish a new business park at Happy Valley. This project follows up a Community Development Block Grant (CDBG) that studied project feasibility
- Establish a wellness center at Mad River hospital, which is in the early planning stages, to expand medical, social, and educational services on land adjacent to the existing Mad River Hospital
- Implement the Samoa Gateway Improvement Project, which involves replacing and repairing sidewalks, adding bicycle lanes, landscaping, public art, architectural wayfinding signs, and enhanced lighting
- Implement the Aldergrove Industrial Condominium Project on two acres of City-owned land that would be developed to support condominium style business uses.

Implementation Capacity

Humboldt County and the incorporated cities have a substantial amount of capacity to implement various economic development initiatives including the presence of economic development staff with implementation capabilities. Prosperity 2012 and the Arcata Economic Development Strategic Plan were empowered with input from citizen groups and non-profit organizations. In addition, the formation of target industry cluster groups created a strong network of business leaders that has at least five years of experience advocating for their industries and collaborating with the public sector. The industry cluster groups play a central role in implementing Prosperity 2012 and the Arcata Economic Development Strategy. Other organizations with implementation capacity are described below:

- The Redwood Region Economic Development Commission was created in 1977 to mitigate the expansion of Redwood National Park. To date, this fund has approved more than \$18 million in loans to local small businesses that do not qualify for traditional financing.
- The Headwaters Fund was established in 2002 to mitigate the removal of the Headwaters Forest from timber production. Approximately \$5 million was allocated to an endowed "Liquidity Fund" that generates \$200,000 to \$300,000 per year of interest earned for economic development grants. Allocated grants are typically in the \$30,000-\$70,000 range, and mini grants range between \$1,000 and \$3,000. Another \$8 million was allocated to a "Revolving Loan Fund" which is to be used as gap financing for businesses unable to obtain traditional

⁴ The North Coast Prosperity Network Partners include: Arcata Economic Development Corporation, College of the Redwoods Community and Economic Development, Humboldt County Economic Development Division, Humboldt Area Foundation, Humboldt County Office of Education, Humboldt State University Office of Community & Business Development, North Coast Small Business Development Center, Redwood Coastal Rural Action, Redwood Region Economic Development Commission, and Humboldt County Workforce Investment Board.

⁵ The list of priority projects was provided by Larry Oetker, Community Development Director, City of Arcata.



financing. The final \$5 million was allocated to a “Community Investment Fund” which makes grants and loans available to fund large infrastructure projects. There is no set annual amount for the grant expenditures, which are decided on an ongoing, case-by-case basis. The current balance in this fund is approximately \$2.3 million.⁶

- The Humboldt County Convention and Visitors Bureau was established to promote the region as a visitor’s destination. The Agency offers travelers information about tours, lodging, and support businesses. Special events are promoted, and visitors can download apps from the website.
- The North Coast Small Business Development Center provides technical assistance to small businesses and non-profit organizations in Humboldt and Del Norte Counties. Their success stories range from small entrepreneurs that produce one-of-a-kind products and services to small businesses with 20 to 50 employees.
- In 1983, the Small Business Administration (SBA) recognized the Arcata Economic Development Corporation as a “Certified Development Company” that could package SBA 504 loans in coordination with participating lending institutions. Loans of between \$10,000 and \$250,000 are available for business expansion. Loans that range from \$50,000 to \$2 million are available to purchase commercial real estate or construction equipment. Up to 25 businesses per year received \$4.22 million in loans since 2005. Another \$2.8 million of micro-loans were made between 1992 and the end of FY2009.

Transportation Improvement Projects

The transportation improvement priorities identified by County staff and discovered within related documents are listed below:⁷

- Advocate and encourage improved STAA truck access and smoother, faster movement of goods along US 101, SR-299, and US 199
- Evaluate and study Humboldt County’s transportation needs and strategies to reduce costs and increase the efficiencies of truck, air, port, and rail transport services
- Encourage the development of multi-use trails and paths around the bay, between cities, and in rural areas across the coastal mountains from Willow Creek to the coast
- Expand commuter air service to airports beyond San Francisco International Airport (SFO)
- Support the study and development of an air freight terminal
- Study the feasibility of developing an east-west rail line.

Del Norte County’s Economic Development and Transportation Needs

Del Norte County has a slowly expanding population that is fueled by births exceeding deaths counterbalanced by the out-migration of residents from the area. Caucasians are leaving and being

⁶ Information provided by Dawn Elsbree with the Headwaters Fund.

⁷ Jacqueline Debets, Humboldt County’s Economic Development Coordinator, is the primary source of information along with the Prosperity 2012 document.



replaced by Hispanics, Asians, and others. In addition, the County's population is aging but remains younger than other counties in the North State region.

Timber production has virtually stopped, but commercial fishing production has remained steady since 2000. No alternative legal commodity has emerged to replace timber production's value to the local economy.

Jobs expanded between 2000 and 2006, but declined since 2006. The high percentage of adults that did not graduate high school, and the low percentage of adults that did not graduate college remains one of Del Norte County's most significant economic challenges. Relatively low education levels constrain the area's ability to encourage new technology reliant and professional service businesses that require educated workers. In addition, average inflation-adjusted income declined by \$25,000 per household consistent with regional income declines. More than 50 percent of Del Norte County's households earn less than \$35,000 per year and 25 percent of households live below the federal poverty level. The County also suffers from the lowest labor force participation rate in the North State region.

Written Economic Development Plans and Strategies

A five-year Comprehensive Economic Development Strategy (CEDS) was prepared in 2011 that identified five economic development goals along with three to 15 implementation action steps for each goal. The goals and action steps summarized below represent the combined economic development strategy for Del Norte County, Crescent City, and the Harbor District:⁸

- Improve local critical infrastructure at the Harbor and Airport by advocating for Federal support for dredging, renovating the Harbor-owned seafood processing facilities, and other investments that make the Harbor more attractive to visitors and businesses. Airport improvement projects are in the design phase with implementation funding yet to be identified. The CEDS also supports up to five Crescent City infrastructure improvement projects and improvements to SR-197 and US 199.
- Promote successful tourism industry expansion by supporting a regional marketing and branding effort identifying Del Norte County as a preferred tourist destination, supporting the development of new visitor serving businesses at the Harbor, and improving the appearance of the US 101 corridor. A CEDS action also seeks to improve cross border regional tourism promotion partnerships between Del Norte County and Humboldt County, as well as Curry County and Josephine County, Oregon.
- Support business recruitment, retention, and expansion by providing technical assistance and business training programs as well as efforts to improve workforce skills that are responsive to business needs. Implementing public/private partnerships with the City of Crescent City will also expand business activity.

⁸ Comprehensive Economic Development Strategy for Del Norte County. Prepared by the Tri-Agency Economic Development Authority and adopted in August 2011.



- Enhance regional interagency and intergovernmental communication coordination by supporting the Chamber's efforts to cooperate with the America's Wild Rivers Coast branding efforts, and provide support to Tribal economic development efforts initiated by the Smith River Rancheria, the Elk Valley Rancheria, and the Yurok Tribe.
- Provide opportunities for continuing employee support through workforce education, basic literacy services, and cultural diversity training. The delivery of college-level long distance learning programs should be continued. Assistance should be provided to local non-profit organizations that benefit area residents. Small business technical assistance should be retained.

Current Economic Development Implementation Initiatives

The March 2011 tsunami caused major damage to the Harbor including an immediate loss of moorage fee revenue. Many of the fisherman relocated to other ports after access to the Crescent City Harbor was no longer viable. This created a domino effect that rippled through the regional economy. Fueling facilities, equipment suppliers, ice suppliers, seafood processors, boat maintenance businesses, restaurants, and many others saw substantial numbers of their clientele leave the community.

Currently, the Harbor is being reconstructed and there has been a continuous flurry of economic development change and activity. Both a federal Presidential disaster declaration and a State emergency declaration were made. The Federal Emergency Management Agency (FEMA) coordinates the Federal response, and the California Emergency Management Agency (Cal EMA) coordinates the State response. In addition to the tsunami recovery-related programs, other economic development and revitalization activities that are at various planning stages within the region have begun and are listed below:

- Removal of a downtown covered walkway, Tsunami Landing
- Improvements to Beach Front Park
- An interagency visitors' center
- Redesign and improvements to Front Street in Crescent City
- Destination resort and casino.

The Tri-Agency Development Authority (Tri-Agency) was awarded a Resource Advisory Committee grant, funded by the US Forest Service, to investigate the feasibility of an ethanol production facility in the region. That grant is for Parts 1 and 2 of the study only. A separate grant to complete the final part of the study, Part 3, was applied for through the County for Planning and Technical Assistance funds through the Department of Housing and Community Development CDBG program.

The economic focus of the community has been informally labeled HAS199 with the emphasis on the harbor, airport, and the Crescent City sewer, which has now been refurbished. In addition, STAA access on US 199 is programmed and construction is anticipated to be complete by 2015.

However, the lack of staff capacity at the Tri-Agency and other local government agencies makes the area unable to engage in effective business recruitment, expansion, and retention.



Implementation Capacity

The Tri-Agency was established to lead the regional economic development efforts of Del Norte County, Crescent City, and the Harbor District. However, Tri-Agency is currently without any staff and the agency is in a state of transition, which severely constrains the regional economic development implementation efforts. The County, Crescent City, and the Harbor District do not have economic development staff. Other entities that can assist the business retention, expansion, and attraction efforts are described below:

- The Del Norte Economic Development Corporation is a non-profit corporation formed in 1976 to be a lender of last resort and a gap-filler for business initiatives that cannot access market rate financing. Loans of up to \$250,000 are available per project.
- The Crescent City/Del Norte County Chamber of Commerce is funded to promote tourism to the region. The website offers information about special events and a few destination businesses, but there is no information about the area's outdoor recreational assets, access to National or State Parks or other related information.
- The North Coast Small Business Development Center provides technical assistance to small businesses and non-profit organizations in Del Norte and Humboldt Counties. Their success stories range from small entrepreneurs that produce one-of-a-kind products and services to small businesses with 20 to 50 employees.

Transportation Improvement Projects

The transportation improvement priorities identified by County staff and discovered within related documents are listed below:⁹

- The top priority project is STAA access on SR-197 and US 199, which would allow larger, industry standard-sized trucks access to the North Coast from the east. The proposed project will improve seven spot locations on SR-197 and US 199 in Del Norte County so that two STAA trucks passing in opposite directions can be accommodated. This project is in the advanced planning stages with a draft EIR completed.
- US 101 at Last Chance Grade needs significant repair because of a landslide. Currently, it is a signalized one-lane road. Storm damage emergency funding of \$4.8 million will only return US Highway 101 to a two-lane roadway.
- Calm traffic along US 101 from Sand Mine Road northward to the downtown Crescent City grid at Front Street, as well as from the Washington Boulevard interchange on the north, southward

⁹ Tamera Leighton with the Del Norte County Local Transportation Commission is the primary source of information along with various plans and studies.



to Cooper Avenue. A study has been completed but funding is needed to improve pedestrian/bicycle safety and the attractiveness of Crescent City as a visitor destination.¹⁰

- Other transportation improvement projects identified as local priorities are not necessarily connected with the economic development priorities of attracting, retaining, and expanding business in Del Norte County.¹¹

Trinity County's Economic Development and Transportation Needs

Trinity County's population is in decline. Deaths exceed births and are counterbalanced by domestic immigration of new residents. The median age of the aging population is currently 48 compared to the median age of 45 in 2000.

The timber industry has collapsed as the 2011 value of timber production amounts to only 17 percent of the 2000 timber production value. No alternative legal commodity has emerged to replace timber production's value to the local economy. The production of fruits, nuts, and vegetables is the next largest crop value, but production amounts to only 18 percent of the value of timber production.

Trinity County's job base has declined steadily with nearly 700 jobs lost since 2001. The county suffers from high unemployment rates (15.7 percent, compared to a 12.5-percent regional average). In addition, average inflation-adjusted income declined by \$22,000 per household, which was less severe than the income declines in the North State overall. Approximately 61 percent of Trinity County's households earn less than \$35,000 per year.

Written Economic Development Plans and Strategies

Trinity County lacks a written economic development plan or strategy. However, a multi-county regional Comprehensive Economic Development Strategy (CEDS) is being prepared by the Redding-based Superior California Economic Development District (SCEDD). The regional CEDS will allow Trinity County to be eligible for federal grants. An Economic and Demographic Profile (2009-2010) was prepared by the Center for Economic Development, but this report lacks any information about economic development initiatives, plans, or projects.

Current Economic Development Implementation Initiatives

Trinity County's priority economic development initiatives are located in the remote community of Hayfork.¹² The Watershed Research and Training Center (WRTC) was established in 1995 to promote a healthy forest and to rebuild the Hayfork area economy based on an ethic of land stewardship and restoration. The WRTC re-trained woods workers, built local contracting capacity, and implemented landscape restoration strategies across the Klamath-Siskiyou bioregion.

¹⁰ US Highway 101 Traffic Calming and Gateway Study, 2010. Prepared for the Del Norte Local Transportation Commission. Prepared by LSC Transportation Consultants.

¹¹ Del Norte County Regional Transportation Plan, 2011. Prepared for the Del Norte Local Transportation Commission. Prepared by LSC Transportation Consultants.

¹² Priority projects were identified by Wendy Tyler, the Trinity County Administrator.



For more than ten years, the WRTC focused their efforts on restoring the Trinity Forest while developing local wood products enterprises as a means to create local jobs and instill stewardship values in the Hayfork area. More recently, the goals have broadened to include fisheries, watershed restoration, and research on how ecological and social needs can be met in the context of watershed management.

The WRTC also manages the Trinity Business Incubator in Hayfork with 5,000 square feet of available warehouse and manufacturing space offered at subsidized rental rates. Currently, only one tenant occupies half of the building.

Trinity County does not engage in any business attraction or retention efforts due to lack of staff capacity, poor roadway access into and out of the county, and the lack of infrastructure systems available to support significant growth.

Implementation Capacity

The Trinity County Administrator is responsible for economic development since the County does not have an economic development staff person. Of course, the Administrator is very busy and has minimal time available to implement initiatives. The Trinity County Economic Development Corporation has a website with a contact person, but lacks funds to hire staff and relies on volunteer board members who have full-time jobs or manage businesses. Individual board members have little time to implement projects or initiatives.

The Trinity County Chamber of Commerce leads the tourism promotion effort by operating a tourism promotion website with information on what to do and where to stay. The Redding-based Shasta Cascade Wonderland Association promotes tourism in seven counties including Trinity.

SCEDD provides small business training and technical assistance, offers economic development information, and operates a business development loan program for qualifying businesses in Trinity County.

Transportation Improvement Projects

The transportation improvement priorities identified by County staff are listed below:¹³

- The top priority project is to remove Surface Transportation Assistance Act (STAA) trucking access constraints on SR-3 between Weaverville and Hayfork. This would allow larger, 53-foot trucks access into Hayfork, which is needed in order to diversify the economy of the area.
- Support the maintenance and rehabilitation of local roads, which is necessary to support ongoing visitor activities and farm-to-market commerce. Maintenance of existing roads has been deferred too long.
- Review the feasibility study to develop an east-west rail line that connects the Port of Humboldt Bay to Tehama through Hayfork. Potential rail traffic would open new markets and land development opportunities.

¹³ Richard Tippet with the Trinity County Department of Transportation is the primary source of information.



Siskiyou County's Economic Development and Transportation Needs

Siskiyou County's population is stagnant with virtually no population growth since 2000. The population is aging with the average age of 46. Deaths exceed births and the outmigration of existing residents is counterbalanced by an in-migration of Spanish speaking immigrants.

Nearly 40 percent of the fruits, nuts, and vegetables produced in the North State are from Siskiyou County. Production in the timber industry has remained steady, but the value of the timber harvest has declined significantly since 2000. Livestock production has remained steady since 2006.

Siskiyou County has lost nearly 1,400 jobs since 2001. The County suffers from high unemployment rates (14.4 percent compared to 12.5 percent North State average) and low labor force participation rates (54 percent compared to 56 percent North State average). In addition, average inflation-adjusted incomes declined by \$24,000 per household since 2000, which was less severe than the average income decline in the North State. Fifty-seven percent of Siskiyou County's households earn less than \$35,000 per year.

Written Economic Development Plans and Strategies

Siskiyou County lacks a written economic development plan or strategy. However, a multi-county regional Comprehensive Economic Development Strategy (CEDS) is being prepared by Siskiyou County Economic Development Council (SCEDC), which will allow Siskiyou County to be eligible for federal grants. An Economic and Demographic Profile (2009-10) was prepared by the Center for Economic Development, but this report lacks any information about economic development initiatives, plans, or projects.

Current Economic Development Implementation Initiatives

Siskiyou County and the cities within the county have numerous economic development initiatives despite the lack of a written strategy or plan. The initiatives described below are organized by the lead agency with the information obtained through phone interviews and email communications with Siskiyou County stakeholders.¹⁴

Siskiyou County Economic Development Council (SCEDC) Initiatives

SCEDC's efforts are focused on business retention and expansion. Two business roundtable forums per year are organized. The Enterprise Zone tax credits are important retention tools. Other SCEDC initiatives are listed below:

- SCEDC submitted a grant application and secured funding from the US Environmental Protection Agency to clean up and prepare brownfield sites for new commercial or industrial development. The City of Yreka was awarded \$400,000 from this grant in 2009 to clean up an old mill site, which eventually became the home of the Belcampo Butchery. The City of Mount Shasta received \$800,000 in 2011 and 2012 to complete an assessment and cleanup a portion of a former lumber mill site in Mount Shasta.

¹⁴ Information about economic development initiatives was provided by Jason Darrow with the SCEDC, Weed City Manager Ron Stock, Dunsmuir City Manager Brenda Baines, and Mt. Shasta City Manager Ted Marconi.



- A marketing campaign and branding effort was initiated to increase the direct sales volume of small farmers in Siskiyou and Shasta counties by creating a database of producers and products, building a website, and creating a printed map showing the locations of farms, farmers markets, farm stands, and U-pick operations.
- SCEDC is studying the feasibility of supporting electric and alternative fuel vehicles by establishing charging stations or similar support facilities. Siskiyou County would collaborate with Tehama and Shasta counties on this effort within the confines of the West Coast Green Highway initiative.¹⁵

City Economic Development Initiatives

- The City of Weed recruited Crystal Geyser water bottling company two years ago. The town is currently recruiting a full-service grocery store, a dollar store, a restaurant, two hotels, a gas station, and a truck stop.
- Crystal Geyser is in the process of expanding by purchasing a closed Coca-Cola bottling plant in Mount Shasta.

Tourism Initiatives

- A “Visit Siskiyou” website was established with information on things to do and places to stay.¹⁶ The Shasta Cascade Wonderland Association promotes tourism in seven counties including Siskiyou.
- Weed, Mount Shasta, Dunsmuir, and McCloud are trying to secure a \$200,000 Caltrans grant to plan a network of hiking trails within a 20-mile radius around Mount Shasta.¹⁷ The grant would require a \$20,000 local match.
- In spring 2012, an agreement was signed to purchase the railroad right-of-way between McCloud and Burney to create the Great Shasta Rail Trail, an 80-mile recreation trail connecting the two mountain communities and local attractions.
- The City of Dunsmuir would like to attract a whitewater park, but it is not clear how this initiative will be implemented.
- Siskiyou EDC is administering a tourism strategy grant for several cities. Efforts are ongoing to attract bicycle tourism.

Implementation Capacity

The SCEDC has staff to initiate and implement the economic development initiatives described above. Neither the County nor the Cities of Weed, Dunsmuir, Mount Shasta and Yreka have economic

¹⁵ <http://www.westcoastgreenhighway.com>

¹⁶ <http://visitsiskiyou.org>

¹⁷ Redding Record Searchlite. October 12, 2012.



development staff. The City Managers are very busy and have minimal time available to plan or implement economic development initiatives.

Tourism promotion is somewhat fractured among the various cities, but steps are being made to coordinate efforts countywide. The emergence of a Chamber Alliance and the potential that a California Welcome Center will be sited in the county are leading to a more collaborative approach. Additionally, the SCEDC is implementing a tourism strategy grant for several cities, which has served to act as a focal point for planning.

SCEDC is attempting to develop a working tourism board. The City of Weed has a Visitor Occupancy Tax that provides about \$60,000 per year to operate the Weed Tourist Information Center, which promotional items and holds tourism events and activities. The City of Mount Shasta funds its Visitors Bureau with TOT funds of about \$65,000 per year.

Non-Profit Small Business Lenders and Technical Assistance Providers

The SCEDC and the City of Dunsmuir offer CDBG loan programs for start-up and expansion businesses located in Siskiyou County. Loans range between \$35,000 and \$200,000. They can be used to purchase an existing business, acquire land or a building, or purchase machinery, equipment, and inventory. The state and SCEDC require that certain criteria be met in order to qualify for the loans.

The Superior California Economic Development District (SCEDD) provides small business training and technical assistance, offers economic development information, and operates a business development loan program for qualifying businesses in Trinity County.

The Great Northern Corporation operates a well-seasoned Economic Development Business Loan Program that is available throughout Siskiyou County. The nonprofit organization has secured more than 100 business loan applications in the amount of \$8 million dollars from the California Department of Housing and Community Development. Loan funds are used for start-ups, expansion projects, or job retention. Projects include operating capital, real property acquisition, equipment, furniture, fixtures, and remodeling.

Transportation Improvement Projects

The transportation improvement priorities identified by the SCEDC and individual cities within Siskiyou County are listed below:¹⁸

- Preserve and increase the State Transportation Improvement Program (STIP) and Federal Highway Administration (FHWA) funding for local roads to remedy past deferred maintenance of local roads.¹⁹
- Improve signage and streetscapes to make the back roads of Siskiyou County more attractive to visitors.

¹⁸ Jason Darrow with the SCEDC, Weed City Manager Ron Stock, Dunsmuir City Manager Brenda Baines, and Mt. Shasta City Manager Ted Marconi are the primary sources of information.

¹⁹ STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other funding sources.



- Improve freeway interchanges to allow for full on/off functionality and replace the half interchanges that were constructed in many locations when the freeway was built in the 1960s.
- Integrate the multimodal transportation systems of air and rail.
- Upgrade local airports to handle corporate jet traffic.
- Reconstruct Vista Drive from the I-5 (South Weed) Interchange to the Pilot Travel Center. Due to heavy truck traffic, the City of Weed cannot maintain the asphalt surface despite resurfacing the road three years ago. This project would help retain the viability of the Pilot Travel Center, which generates significant sales and tax revenues.

Modoc County's Economic Development and Transportation Needs

Modoc County's population growth is stagnant with fewer than 10,000 residents. Births exceed deaths, but permanent residents are moving out of the county. The median age is currently 45 compared to a median age of 42 in 2000.

Modoc County's economy generates fewer than 2,600 jobs. Four hundred (400) jobs were lost during the recession. A high percentage of adults that did not graduate high school (23 percent) and a low percentage of adults that are college graduates (9 percent) remain as significant economic development challenges in Modoc County. Relatively low education levels constrain the area's ability to encourage new business start-ups that need access to technology and educated workers. In addition, average inflation-adjusted income has declined by \$19,000 per household since 2000, but this decline was significantly lower than the average income decline in the North State. Nearly 60 percent of Modoc County's households earn less than \$35,000 per year and 20 percent of households live below the federal poverty level.

Written Economic Development Plans and Strategies

Modoc County lacks a written economic development plan or strategy. However, a multi-county regional CEDS is being prepared by the Superior California Economic Development District (SCEDD), which will allow Modoc County to be eligible for federal grants. An Economic and Demographic Profile (2009-2010) was prepared by the Center for Economic Development, but this report lacks any information about economic development initiatives, plans, or projects.

In 2006, an Economic Vitality Plan was prepared for the Modoc Economic Development Corporation (MEDC). The plan identified organizational and economic development goals for Modoc County as envisioned by private MEDC board members. It is unknown whether or not the 2006 plan remains relevant.

Current Economic Development Implementation Initiatives

No information is available about Modoc County's current economic development initiatives. County Staff has not responded to related questions and no economic development information is available on the internet.



Implementation Capacity

The Modoc County lacks an economic development staff person, which leaves the County Administrator responsible for economic development tasks. Of course, the County Administrator is very busy and has minimal time available to implement initiatives.

The Modoc County Economic Development Corporation (founded in 1985) has a website. Individual board members provide input on economic development issues, but they have little time to implement projects or initiatives. The organization lacks funds to hire staff and relies on volunteer board members, who have full-time jobs or manage businesses.

The Shasta Cascade Wonderland Association promotes tourism in seven counties including Modoc. However, Modoc County lacks an organized and effective effort to promote itself as a visitor destination. Existing websites operated by the Alturas, Surprise, and Big Valley Chambers of Commerce lack good information about places to stay and things to do. Recently, a new tourism group was formed to promote outdoor recreation.

Nonprofit Small Business Lenders and Technical Assistance Providers

Small businesses and start-ups in Modoc County that are not eligible for conventional loans can utilize the resources of the nonprofit small business lenders described below:

- The MEDC manages a Revolving Loan Fund that can assist new start-ups and established businesses in the area.
- The Small Business Development Center at Shasta College can offer Modoc County entrepreneurs access to Small Business Administration (SBA) loans.
- SCEDD can provide Modoc County small business with training, technical assistance, and loans for qualifying businesses.

Transportation Improvement Projects

The transportation improvement priorities identified by the Modoc County Administrative Officer are listed below:²⁰

- Preserve and increase STIP and FHWA funding for local roads to remedy past deferred maintenance of local roads.
- Support the Lake County Railroad improvement project that connects Alturas to Lakeview, Oregon with 54 miles of track. Rail operations run once per week, hauling mining materials and lumber, eventually connects to a national market through Tulelake.²¹ The line suffers from deferred maintenance and the continuation of service will retain jobs.
- Establish broadband service to the rural areas of Modoc County, which requires cooperation from Caltrans.

²⁰ Chester Robertson, County Administrative Officer, is the primary source of information.

²¹ <http://www.trainweb.org/highdesertrails/lcr.html>



Lassen County's Economic Development and Transportation Needs

Lassen County's population growth is stagnant. The population is among the youngest in the North State with a median age of 36. This is nearly the same as California's median age of 34. Births exceed deaths given the demographics, but permanent residents are moving out of the county. Job growth is stagnant. Incomes declined by \$32,000 per household since 2000 after adjusting for inflation, which was greater than the income declines in the North State as a whole.

Written Economic Development Plans and Strategies

Lassen County completed a new Comprehensive Economic Development (CED) Plan in 2012, which focused on three initiatives summarized below.²²

Priority Visitor Attraction Efforts

- Promote outdoor activities
- Operate a single visitors bureau that gets on visitors' "radar screens" in a consistent manner
- Generate more financial return from 40 organized special events
- Create and promote new bike trails
- Capitalize on underutilized assets such as Susanville Ranch Park and a Main Street rest stop and visitor's center

Priority Growing Local Efforts

- Encourage the production and sale of food products and services
- Establish a commercial kitchen
- Encourage a cluster of technology workers to locate in Lassen County
- Build a community swimming pool
- Improve business assistance and entrepreneurial training
- Ensure a quality education

Priority Trading Sector Enhancement Efforts

- Be ready to assist new business prospects
- Create a red team that can respond to business prospects
- Enhance water, sewer, and other infrastructure systems
- Focus on business retention and expansion

Susanville Economic Development Plans

No economic development plan exists for Susanville. However, the City participated in preparing the Lassen County CEDS.

²² Lassen County Comprehensive Economic Development Strategy, 2012.



Current Economic Development Implementation Initiatives

No information is available about Lassen County's current economic development initiatives. County staff has not responded to related questions and no economic development information is available on the internet.

Implementation Capacity

Both Lassen County and the City of Susanville lack economic development staff. As in other jurisdictions, the County Administrator and City Manager have minimal time available for economic development tasks.

The Lassen County Economic Development Corporation has no staff and relies on volunteer board members who have full-time jobs or manage businesses, and, as elsewhere, individual board members have little time to implement projects or initiatives.

The Shasta Cascade Wonderland Association promotes tourism in seven counties including Lassen. In addition, a tourism page is included on the Lassen County website that has a substantial number of links about places to stay and things to do. However, the County website lacks the robustness of websites operated by other visitor associations, such as Cascade Wonderland.

Non-Profit Small Business Lenders and Technical Assistance Providers

Small businesses and start-ups in Lassen County not eligible for conventional loans can utilize the resources of the non-profit small business lenders described below:

- Lassen County's Economic Development and Housing Department manages Community Development Block Grants (CDBG) and business loans. They operate a microenterprise financial assistance program.
- The Small Business Development Center at Shasta College can offer Lassen County entrepreneurs access to Small Business Administration (SBA) loans.
- The Superior California Economic Development District (SCEDD) can provide Lassen County small business with training, technical assistance, and loans for qualifying businesses.

Transportation Improvement Projects

No information is available about the transportation improvement projects that Lassen County leaders believe would have positive economic impacts.

Shasta County's Economic Development and Transportation Needs

Shasta County was one of the few North State counties to experience population growth during the recession. Between 2006 and 2012, the Shasta County population increased by more than 3,000 people, which was fueled by natural growth (more births than deaths) and domestic in-migration. However, the population has also aged over the past decade with median age rising to 41 compared to a median age of 37 in 2000.



Despite the population growth, the Shasta County employment base lost nearly 8,000 jobs during the recession. In addition to job losses, average inflation-adjusted incomes have declined by \$28,000 per household, which is consistent with the North State average. Other economic measures (e.g., income distribution, unemployment, labor force participation, and educational levels) are consistent in Shasta County with averages across the North State.

Written Economic Development Plans and Strategies

The Economic Development Corporation of Shasta County (Shasta EDC) has completed a strategic plan and conducted a significant amount of research on business retention, expansion, and recruitment, as described below.

Shasta EDC Strategic Plan

The Shasta EDC Strategic Plan outlines the vision, mission statement, principles, and core values of the Shasta EDC.²³ The organization's strategic goals are:

- Work towards a diverse mix of small to midsize companies that will create a balanced economy as measured by sector type
- Prioritize job creation in business recruitment and expansion projects
- Improve Shasta County's competitive business climate advantages to maximize opportunities for business to thrive
- Leverage the tax credits available through the Shasta Metro Enterprise Zone to assist business in expansion and job creation
- Develop a marketing plan that focuses on California, the East Coast, and Asia.

Strategies and actions that can be utilized to implement these goals include:

- Identify industry clusters suited to Shasta County
- Create a system to feed information to companies through electronic contact systems, website information, target industry trade shows, and direct prospecting by phone
- Maintain a comprehensive client tracking system
- Leverage the network of existing businesses to develop new prospects
- Continue to manage and market the benefits of the Shasta Metro Enterprise Zone to local businesses
- Coordinate a menu of services available to existing businesses from labor, finance, technology, and local government
- Maintain and strengthen a database of regional business information including a directory of manufacturers and retention surveys
- Maintain relationships and leverage resources with local business groups, such as the chambers of commerce, Shasta Builders Exchange, and Shasta Association of Realtors,
- Build an awareness of innovative ability in the area.

²³ The Shasta L.E.A.D. Strategic Plan was prepared in 2012 by the Shasta EDC.



Shasta County EDC Business Retention and Expansion Program

The Shasta EDC Business Retention and Expansion Program defines the EDC's business retention and expansion mission.²⁴ Retention of Shasta County's existing job base maintains stability and displays that it is a good place to do business. The goal of the agency is to maintain job stability by ensuring companies have access to all available resources. A partnership with Shasta Biz also allows the EDC to connect companies with needed resources. The EDC has committed to the following deliverables:

- The EDC will contact 200 companies in the Shasta County area through outreach at business resource seminars, business expos and Chamber events over the next year.
- Businesses directly contacting the EDC will receive direct inquiry assistance based on their specific needs.
- The EDC will conduct outreach through marketing tools, such as the Shasta Biz Business Resource Guide, Shasta Incentives, Enterprise Zone brochures, and the EDC website.
- The EDC will submit quarterly reports to local jurisdictional partners on economic trends.
- The EDC will hold quarterly meetings with the ShastaBiz group.
- The EDC will continue outreach and support of the Shasta Metro Enterprise Zone.

Shasta Recruitment Marketing Plan

The Shasta Recruitment Marketing Plan articulates the EDC's business recruitment effort, the economic context, and the progress that has been made.²⁵ Currently, Shasta County's manufacturing sector comprises just 3.5 percent of the existing job base. Manufacturing jobs have been in decline for several reasons:

- Successful companies sold to larger corporations based in other regions
- Closures due to a shrinking general economy
- A lack of new companies coming into the market
- Limited expansion of existing companies.

Significant improvements that have been made to the economic infrastructure during the past few years are listed below:

- Stillwater Business Park has been completed.
- Local permitting and regulatory oversight systems have become dramatically more business friendly.
- Simpson University and Bethel Church have brought a new group of well-educated youth into the workforce.
- The business cost structure has remained competitive.
- The region is now offering local incentives, such as free land.

The industry recruitment targets include technology, medical manufacturing, green technology, light manufacturing, recreational manufacturing, and insurance and financial processing. The Shasta

²⁴ Shasta County EDC Business Retention and Expansion Program, 2011-12. Prepared by Michele Peterson.

²⁵ Shasta L.E.A.D. Recruitment Marketing Plan, 2011-12. Prepared by the Shasta EDC.



Recruitment Marketing Plan also describes the EDC's marketing objectives and marketing programs. Refer to the plan for additional information.

Redding General Plan Economic Development Element

The City of Redding does not have an economic development strategy. However, visitors to the City's website are referred to the 2000 General Plan Economic Development Element.²⁶ Five goals and 35 policies are articulated in this document. The economic development goals are listed below:

- Attract new industries with multipliers that generate higher paying jobs
- Facilitate the retention and expansion of existing business
- Utilize economic incentives to generate substantial benefits to city residents
- Preserve and enhance the community assets and character which make Redding an attractive place to live, work, and invest
- Maintain and enhance Redding's influence as a regional retail center.

Other Local Economic Development Strategies

The cities of Shasta Lake and Anderson do not have current economic development strategies outlining the policies and actions to be pursued by city staff.

Current Economic Development Implementation Initiatives

Shasta County and the cities within the county have numerous economic development initiatives. The initiatives and information described below were obtained through phone interviews and email communications with Shasta County stakeholders and are organized by the lead agency.

Shasta County Economic Development Corporation Initiatives

The Shasta EDC's marketing, attraction, and retention efforts are articulated in written reports. During the past year, the EDC has focused its energy on organic growth from within the county, entrepreneurship, and business infrastructure.

City Economic Development Initiatives

- The City of Redding utilizes local brokers to market the Stillwater Business Park, which offers large "shovel-ready" office and industrial sites from five to 100 acres in size. This site is serviced by utilities like water, wastewater, electric, natural gas, and fiber optic cable.²⁷ The marketing of these sites has been a long-term process backed by a significant amount of studies and planning efforts.²⁸
- Brokers are also utilized in marketing the 43-acre Redding Airport Business and Industrial Park, which includes eight individual one-acre to five-acre parcels with infrastructure such as streets, sidewalks, and utilities for sale.²⁹

²⁶ Redding General Plan Economic Development Element. October 3, 2000.

²⁷ <http://www.stillwaterbusinesspark.com/sites.php>

²⁸ Stillwater Industrial Park Market and Target Industry Analysis Update. Prepared by Chabin Concepts. May 2003.

²⁹ <http://www.ci.redding.ca.us/TransEng/airports/induspark.htm>



- There is also an existing business retention program oriented towards assisting local companies with their expansion needs within the City of Redding. The City designed a business retention questionnaire to collect data each year about business issues and trends. Further, the City's Economic Development Director acts as a liaison to the business community in cooperation with the Economic Development Corporation of Shasta County and the Redding Electric Utility.
- The City of Shasta Lake is attempting to market commercial properties originally owned by the disbanded Redevelopment Agency. The key properties include a 9-acre commercial parcel and potential hotel near the I-5 interchange.
- Shasta Lake continues to own and market the Shasta Gateway Industrial Park with 50 acres subdivided into 15 lots. The remaining acreage is reserved for future expansion. Two three-acre lots are currently available.
- Shasta Lake also operates a business incubator building located in the Shasta Gateway Industrial Park. The business incubator facility helps start-up businesses and qualifying entrepreneurs with low-cost lease rates. Three office and light manufacturing spaces are available in sizes that range from 600 to 1,300 square feet.
- The City of Anderson just completed a plan that delineates commercial and industrial properties. City staff plans to attend the International Council of Shopping Centers Convention and market available properties this year.
- Anderson is also constructing a new I-5 off-ramp and roundabout that will accommodate a lot of vacant commercial and industrial land as well as existing commercial and industrial sites.

Tourism Marketing

Multiple websites are available to educate visitors about local accommodations and attractions in Shasta County. The Shasta Cascade Wonderland Association promotes tourism in seven counties, including Shasta.³⁰ A Shasta County website provides useful visitor information.³¹ Visit Redding operated by the Chamber of Commerce includes additional useful information.³²

Implementation Capacity

Shasta County local governments have some staff capacity to initiate and implement economic development initiatives as described below:

- The Shasta EDC has three staff members available to implement its business attraction, retention, and expansion initiatives. EDC staff also manages the Enterprise Zone.
- The City of Redding has an Economic Development Manager.
- The City of Shasta Lake has a Project Manager with time available to work on economic development initiatives.

³⁰ <http://www.shastacascade.com/home>

³¹ <http://www.shastacounty.com/attractions.htm>

³² <http://www.visitredding.com/home>



- The City of Anderson has a Development Services Manager.

Non-Profit Small Business Lenders and Technical Assistance Providers

Shasta Biz is a web-based portal that provides information about available business services, including small business loans. Small businesses and startups in Shasta County not eligible for conventional loans can utilize the resources of the non-profit small business lenders described below:

- The Small Business Development Center at Shasta College can offer Shasta County entrepreneurs access to Small Business Administration (SBA) loans.
- The Superior California Economic Development District (SCEDD) is able to provide Shasta County small business with training, technical assistance, and loans for qualifying businesses.

Transportation Improvement Projects

The transportation improvement priorities identified by the Shasta EDC and individual cities within Shasta County are listed below:³³

- Improve roadway and infrastructure to remove congestion through downtown Redding
- Rebuild the Oasis Road interchange in North Redding to accommodate additional commercial development around Costco
- Improve Cascade Boulevard, which parallels I-5 and intersects with Shasta Dam Boulevard in Shasta Lake. Curb, gutter, sidewalk and drainage improvements are needed.
- Maintain and improve landscaping along the SR-273 right-of-way through the City of Anderson
- Construct a bicycle and pedestrian trail along SR-273 from Anderson to Redding
- Construct a pedestrian/city center and vehicle-crossing overpass at SR-273 extending from North Street to South Street (length of three city blocks) in the City of Anderson
- Provide a park-and-ride facility in the City of Anderson.

Tehama County's Economic Development and Transportation Needs

Tehama County was one of the few counties in the North State to increase in population over the last decade. Since 2001, Tehama County has grown by more than 7,000 people. The majority of this growth is attributable to natural growth (births exceeding deaths) and domestic in-migration. Nearly 70 percent of the new population growth is Hispanic, most of which speaks Spanish as a first language. Tehama County has a relatively young population with a median age of 39. On an inflation-adjusted basis, average incomes declined by \$24,500 per household, which is less severe than the North State average. Forty-eight (48) percent of households earn less than \$35,000 per year.

The Tehama County economy shed nearly 2,000 jobs during the recession. A large percentage of residents have not completed high school (24 percent), and a small percentage of residents are college

³³ Mark Lascelles with the Shasta EDC, Shasta Lake Project Manager Fred Castagna, Redding Economic Development Manager Pat Keener and Anderson Development Services Manager Kristen Maze are the primary sources of information.



graduates (8 percent). Fruit, nut and vegetable producers generate more than \$150 million of sales per year. The value of crops produced has steadily increased since 2000.

Written Economic Development Plans and Strategies

Tehama County has written four plans or studies, described below, to guide the local economic development initiatives.

Tehama County Action Road Map

The Tehama County Action Road Map is a business attraction and retention plan completed in 2009 that identifies actions and implementation steps to assist stimulating economic growth.³⁴ The recommended actions are summarized below:

- Rename and restructure the Tehama Economic Development Corporation to create a brand that is attractive to both visitors and business prospects. The new organization should focus on small business incubation, business retention and expansion, and green business initiatives. A business attraction team should be formed to ensure that Tehama County is “location-ready” to compete for new business investment.
- Collaborate with regional partners, such as the Job Training Center, 3Core, and Golden Capital Network.
- Organize teams of private-sector volunteers that can plan and implement initiatives focused on visitor attraction, business development, and business attraction. The volunteer approach is necessary due to a lack of economic development funding.
- Create a marketing campaign that will build support within Tehama County for private and public economic development funding to plan and implement an economic development vision, goals, and strategic initiatives.
- Create a brand identity for Tehama that is used universally for visitor attraction and supported by a unified visitor attraction strategy. The brand should distinguish Tehama County from other Northern California locations as a destination to visit.

Tourism Assessment Findings

In a tourism assessment for Tehama County, a national tourism expert concluded that “Tehama County could be a hidden gem, full of possibilities, but someone looking for visitor information about the area isn’t going to find that.”³⁵ The existing promotional materials were found not to be compelling to potential visitors. Alterations to the promotional materials were suggested.

³⁴ Tehama County Action Roadmap for Economic Growth, 2009. Prepared by Chabin Concepts.

³⁵ Assessment Findings and Suggestions Report. Tehama County, September 2010. Destination Development International.



Tehama Branding Project – Phase 1 Assessment

The Tehama Branding Project – Phase I Assessment describes the process of creating a brand and the efforts within Tehama County to initiate the branding effort.³⁶

Tehama Demographic Profile (2009-10)

The Center for Economic Development prepared the Tehama Demographic Profile. While the report contains a vast amount of information about the residents of the county, it lacks information relevant to economic development initiatives, plans, and projects in the region.

Current Economic Development Implementation Initiatives

Within Tehama County, current economic development initiatives include the following:

- A citizen-driven effort funded by private contributions (including the local Tribal Council) has created a sustained movement to develop tourism and destination marketing through the Tehama Branding Project. This effort initiates implementation of the 2010 Tourism Assessment report and elements of the 2009 Economic Development Study.³⁷
- Continued emphasis on agricultural tourism has resulted in positive impacts on farms and Tehama County communities with olive and wine establishments.
- A push toward green technologies encouraged Wal-Mart to install a power-generating windmill at their distribution center. It also encouraged schools to install solar power at several sites.
- Tehama County supports the feasibility study of a freight line to connect Humboldt Bay to Tehama.

Implementation Capacity

Tehama County currently lacks an economic development staff person. Efforts to implement economic development projects or initiatives rely on the County Administrator and two Board of Supervisors members. These individuals lack the necessary time available to implement projects and initiatives effectively. The cities of Red Bluff and Corning also lack economic development staff. In these communities, the city managers are responsible for implementing economic development tasks, but the time commitments necessary for city managers often impedes the ability to focus on and successfully implement economic development initiatives.

The Tehama Economic Development Corporation does not have a salaried staff and relies on volunteer board members who have other full-time jobs or manage businesses. Individual board members have minimal time to dedicate to implementing projects or initiatives. The Tehama County Job Training Center is now staffing EDC initiatives.

³⁶ Tehama Branding Economic Prosperity Project. Press Releases 2010 and 2011.

³⁷ <http://destinationtehamawordpress.com/tag/branding-tehama-county/>



The Shasta Cascade Wonderland Association promotes tourism in seven counties including Tehama. In addition, a Tehama County visitor website was established to identify local lodging accommodations and activities. However, the website lacks a compelling message to attract visitors to Tehama County.

The Tehama Branding project relies on volunteer board members and lacks staff capacity to implement tourism initiatives.

Non-Profit Small Business Lenders and Technical Assistance Providers

Small businesses and start-ups in Tehama County not eligible for conventional loans can utilize the resources of the non-profit small business lenders described below:

- The Small Business Development Center at Chico's Butte College can offer Tehama County entrepreneurs one-stop business management assistance through business consulting, entrepreneur training, referrals, and a wide variety of information and guidance to small business owners and potential entrepreneurs.
- 3Core, based in Chico, can provide Tehama County small business with training, technical assistance, and loans for qualifying businesses.

Transportation Improvement Projects

Tehama County and the individual cities within the county identified transportation improvement initiatives that may improve the local and regional economy. Suggestions made by the County Administrator and the Corning City Manager are summarized below:³⁸

- Establish parallel routes or frontage roads along I-5
- Improve all I-5 interchanges in Tehama County
- Support the east-west rail line that connects Tehama County to Humboldt Bay
- Widen the South Avenue overpass at I-5 in Corning. The overpass improvements should include conduits for sewer and water utilities.

Butte County's Economic Development and Transportation Needs

Butte County's population growth rates exceeded the average growth rates in the North State as the county's population expanded by nearly 7,000 people between 2006 and 2012. The majority of this population growth is attributable to natural growth (more births than deaths) as well as domestic and international in-migration. Chico State University contributes a significant population of younger individuals to the local economy, contributing to a median age of 36 – one of the youngest median ages in the North State.

Despite the population growth, the Butte County employment base lost nearly 8,000 jobs during the recession. In addition to job losses, average inflation-adjusted incomes declined by \$28,000 per household. This decline is consistent with the North State average. Butte County is a large producer of

³⁸ Bill Goodwin, the Tehama County Chief Administrative Office and John Brewer, the Corning City Manager are the primary sources of information.



fruits, nuts, and vegetables crops that generate more than \$530 million in sales per year. This amounts to 25 percent of the production within the North State.

Other economic measures, like income distribution, unemployment, and labor force participation are consistent with the North State averages in Butte County despite a higher percentage of college graduates than the North State as a whole.

Written Economic Development Plans and Strategies

Six written plans or studies to guide local economic development initiatives have been prepared in Butte County.

Butte Regional Economic Development Strategy

The regional economic development strategy was approved in 2011. It identifies three specific initiatives and 13 implementation steps. The initiatives are summarized below:³⁹

- Ensure Butte County is a competitive location for new investment. The recommended actions include: create a business ombudsman, reinstate the development review committee, streamline the project review and approval process, develop an industrial database, evaluate the county fee structure, brand Butte County, and market the area to prospective businesses.
- Expand the key existing industry sectors of manufacturing/clean technology, agriculture and agriculture-related production, healthcare, information technology, and tourism. The recommended actions include: create a business development council, continue to support business incubation and innovation, assist with the identification of business financing, and enhance regional tourism.
- Coordinate business development services on a regional basis. The recommended actions include: develop a business retention program, consider having a regional permitting process, update the business resources webpage, and develop a business attraction team to respond to business inquiries within Butte County and to act as the lead in following up on the status of inquiries.

Economic Development Element

The Economic Development Element of the Butte County General Plan is a policy document that guides the actions and policies of the County staff, the Planning Commission, and the Board of Supervisors.⁴⁰ Three goals, 18 policies, and 11 actions are described in the document. The Economic Development Element actions are outlined below:

- Create a bold, powerful, forward-looking countywide economic development strategy that identifies key sectors and sites for business expansion and programs to achieve that expansion
- Create a comprehensive countywide tourism development strategy

³⁹ Butte County Regional Economic Development Strategy, 1-25-2011.

⁴⁰ Butte County General Plan 2030.



- Create an innovative, progressive and robust countywide strategy to support the local manufacturing, office, and commercial sectors
- Work with the five incorporated municipalities and economic development entities to jointly develop and maintain a countywide inventory of available industrial and commercial land and buildings
- Establish a program for regional coordination of economic development to focus on job creation and expansion
- Review and update the list of sites suitable for developing a regionally focused agricultural center
- Include agricultural marketing in the countywide economic strategy to coordinate private and public initiatives and integrate them with County-led business attraction efforts
- Support opportunities to promote agricultural products that are grown or processed in Butte County and develop a “brand recognition” for these products
- Initiate talks on a countywide basis to have municipalities collaborate with the County on generating funds to help pay for a share of County public improvement costs that are attributable to existing development within the municipalities
- Pursue blanket agreements with each municipality whereby the municipalities would collect impact fees on the County’s behalf from all new development in their jurisdiction that generate demand for County public facilities
- Pursue grant funds, such as funds from the State Small Cities CDBG (General Allocation) program, to help pay for existing development’s share of new public improvement costs.

Entrepreneur Action Plan

The goal of the Entrepreneur Action Plan is to recommend actions and discuss with a network of high-impact entrepreneurs the business assistance resources and services available within Butte County.⁴¹ The study found that not all businesses have the same impact on job creation or the regional economy. Micro-enterprises (less than five employees) accounted for 75 percent of all businesses, yet nearly 80 percent of the entrepreneurs interviewed were not aware of the services available to them or of the business assistance organizations in Butte County.

The study also included an action plan to build a strong entrepreneurial ecosystem in Butte County and assist participating service providers and entrepreneurs achieve prosperity. The primary activities in the Action Plan are focused on filling the identified service gaps that identify, connect, and celebrate entrepreneurs.

Oroville Economic Development Strategy

Oroville completed an Economic Development Strategy in 2009.⁴² The strategy identified four key areas of the City to revitalize or develop more intensely. The final report identified goals, strategies, and tasks

⁴¹ Action Plan for Connecting Butte County Entrepreneurs and Knowledge based Enterprises with Resources and Services. Chabin Concepts, June 2012.

⁴² Oroville Economic Development Strategy, 2014. Prepared by RSG.



associated with revitalizing each area. Actions, responsibilities, cost, and funding source were also identified.

Other Oroville Economic Studies

Oroville recently completed additional economic studies that inform City staff, policy makers, and elected officials concerning the City's economic development potential and constraints. These studies include:

- A marketing and business development road map completed in 2009⁴³
- A business and industry profile prepared in 2009⁴⁴
- A tourism marketing report prepared in 2007⁴⁵
- A whitewater feasibility study prepared in 2012.⁴⁶

Biggs Economic Development Element and Other Relevant Studies

The City of Biggs has in its General Plan an Economic Development Element that identifies six goals, six policies, and 19 actions. The actions are listed below:⁴⁷

- Prepare a business retention and attraction plan
- Establish and maintain a presence with the California Trade and Commerce Agency to initiate all reasonable efforts to promote the economic development interests of the City of Biggs
- Strengthen the City's relationship with other economic development agencies and local governments and leverage these relationships towards seeking new economic opportunities
- Pursue new clean technology, clean energy, and agriculturally supportive commercial and industrial uses
- Periodically review the industrial and commercial land-use designations to ensure that there is an adequate mix of parcel sizes, zoning, and infrastructure to accommodate new development
- Continue to pursue and leverage State and Federal funding options for economic development activities and infrastructure improvements that promote economic growth opportunities
- Consider the use of economic incentives or other direct benefits to businesses to encourage the development of new commercial and industrial enterprises in the city
- Explore opportunities to partner with existing businesses in the city and region to provide expanded services and employment options
- Periodically review the General Plan, zoning code, and permit processing requirements to ensure that the City is not inadvertently limiting or delaying opportunities for new economic development
- Actively explore options to annex land that would provide enhanced opportunities for economic development opportunities

⁴³ Oroville Marketing and Business Development Road Map, 2009. Prepared by Chabin Concepts.

⁴⁴ Oroville Business and Industry Profile, 2009. Prepared by the Center for Economic Development.

⁴⁵ Tourism Marketing Coordination and Implementation Plan, 2007. Prepared by the Pacific Group.

⁴⁶ Oroville Whitewater Project Feasibility Study, 2012. Prepared by Plei.

⁴⁷ Biggs General Plan, July 2011.



- Commit the use of City resources to facilitate and support economic development opportunities that would strengthen the City's commercial and non-residential base
- Proactively engage local property owners in discussions regarding the use of existing commercial and industrial properties and actively encourage landowners to reinvest in the city
- Partner with willing commercial and industrial land owners to actively market and promote available locations for business in the city
- Explore opportunities for the City to participate in efforts to remove dilapidated and obsolete structures to create new opportunities for non-residential growth and economic expansion on existing sites
- Consider the development and implement of programs to include non-residential design guidelines, and property maintenance codes that encourage the productive use of under-utilized non-residential properties in the city
- Identify and plan for suitable and desirable locations for appropriate public facilities through the development and implementation of a capital Improvements and infrastructure development program
- Promote the City as being a willing partner for other local and regional government entities and services providers looking to expand services or establish new service delivery locations
- Promote Biggs as a city that actively works to maintain and upgrade its utility and infrastructure systems to provide efficient, cost-effective, and reliable services for its business partners
- Leverage the City's position as an electric power provider to encourage new commercial and industrial land uses that require reliable and cost-effective electric power.

Biggs also prepared a downtown revitalization plan that describes specific actions to improve the downtown, attract more business, and encourage pedestrian activity.⁴⁸

Other Economic Development Strategies or Studies

Currently, the cities of Chico, Paradise, and Gridley do not have economic development strategies outlining the policies and actions to be pursued by City and staff. Additional economic studies are not available on the web or through communications with City staff.

Current Economic Development Implementation Initiatives

Butte County and the cities within the county have numerous economic development initiatives that are described below. The information below was obtained through phone interviews and email communications with Butte County stakeholders.

Butte County Initiatives

- The County is currently working on the preparation of a commercial, industrial land, and building database that will be placed on a website.
- The County is also creating a list of business resources and that will be incorporated into a new County economic development webpage to be launched soon.
- The County is preparing a regional tourism plan that should be completed in early 2013.

⁴⁸ See Biggs Downtown Action Plan, May 2010. Prepared by Marketek.



- A business retention and attraction team is being organized to implement the County's business retention priority.
- A business incubator program was established in 2007 to assist entrepreneurs locate anywhere in Butte County.⁴⁹

Butte EDC Initiatives

The Butte EDC has initiated an effort to market agricultural products and to connect agricultural producers and construction contracts with markets. The EDC organized agriculture and construction "speed-dating" events to help connect producers and suppliers.

Oroville Economic Development Initiatives

- Oroville hired a consultant to engage in retail recruitment.
- City is collaborating with the Federal Aviation Administration (FAA) to create new industrial land at the airport.
- Oroville is seeking to attract an Olympic training whitewater center.⁵⁰

Other City Economic Development Initiatives

Information about ongoing economic development initiatives in the cities of Chico, Gridley, Paradise, and Biggs was not provided.

Tourism Marketing

A few websites have been established to assist visitors in locating places to stay and activities to enjoy in Butte County.⁵¹ However, these websites are not aesthetically pleasing and fail to communicate a compelling message that attracts visitors.

In the broader perspective, Butte County does not maintain a lead agency to coordinate tourism promotion activities. The County is currently coordinating efforts with the local jurisdictions and other tourism stakeholders. A Countywide Tourism Strategy and Marketing Plan is being prepared, which will include a specific implementation roles and responsibilities as well as a funding strategy. The strategy should be completed during the summer of 2013.

Implementation Capacity

The local governments in Butte County maintain staff capacity capable of initiating and implementing the economic development initiatives described below:

- Butte County retains an Economic Development Manager with the time and capacity to implement projects and initiatives.
- The Butte EDC, which is the countywide lead agency for regional collaboration, marketing, and business attraction, maintains a staff-person that coordinates efforts between Butte County and the cities in implementing business attraction, retention, and expansion initiatives.

⁴⁹ Information provided by Jennifer Macarthy, Butte County Economic Development Manager.

⁵⁰ Information provided by Sam Driggers, Oroville Economic Development Manager.

⁵¹ <http://www.experiencebuttecounty.com> and <http://www.buttecounty.com>



- The City of Chico has a Senior Planner and a former Redevelopment Project Manager capable of initiating new projects and responding to business location inquiries. However, this person must spend a significant amount of time unwinding the former Redevelopment Agency. The Chico Economic Planning Corporation (CEPCO) is a non-profit organization of local stakeholders that assist Chico in planning and implementing new projects.
- The City of Oroville has an Economic Development Manager with resources available to contribute to economic development initiatives. The Oroville Economic Development Corporation (OEDCO) is a volunteer non-profit private corporation comprised of local business people working together to ensure Oroville's economic strength and vitality. City staff is supported by OEDCO to recruit businesses for locating in the Oroville area
- The cities of Paradise, Gridley, and Biggs rely on their city managers to initiate and implement economic development projects.

Non-Profit Small Business Lenders and Technical Assistance Providers

Small businesses and start-ups in Butte County ineligible for conventional loans can utilize the resources of the non-profit small business lenders described below:

- The Small Business Development Center at Butte College offers entrepreneurs one-stop business management assistance through one-on-one business consulting, entrepreneur training, referrals, and a wide variety of information and guidance to small business owners and potential entrepreneurs.
- 3Core can provide Butte County small business with training, technical assistance, and loans for qualifying businesses.

Transportation Improvement Projects

Butte County and the cities within the county have identified transportation improvement initiatives that may enhance the local and regional economy. Recommendations provided by Economic Development staff at Chico and Oroville are summarized below:⁵²

- Widen SR-99 or SR-70 to provide four-lane transportation access to the Sacramento Region
- Upgrade SR-162 between SR-99 and I-5
- Extend freeway on-ramps and off-ramps throughout Butte County
- Improve the SR-99 and Skyway Road interchange in Chico to open up new lands for commercial development
- Improve the SR-32 Eaton Road extension, which would allow the City of Chico to assume control of 8th, 9th, and Walnut Streets to improve traffic flow through downtown Chico.

⁵² Shawn Tillman with the City of Chico and Sam Driggers with the City of Oroville are the primary sources of information.



Plumas County's Economic Development and Transportation Needs

Plumas County has a population of less than 20,000. The area has lost 1,100 people since 2006. The median age is 49, which is 8 years older than the North State average. The population decline is attributable primarily to negative natural growth (fewer births than deaths) as well as an out-migration of residents.

The timber industry has suffered a dramatic decline. The value of timber production in 2011 amounts to only 8 percent of the value realized in 2000. No alternative legal commodity has emerged to replace timber's value to the local economy. Since the decline of the local timber industry, the combined value of fruits, nuts, vegetables and livestock produced in Plumas are now four times the value produced by timber production.

The Plumas County economic base has lost 1,200 jobs during the recession. The \$31,000 per household income decline (adjusted for inflation) was more severe than the average income decline of \$28,000 per household in the North State. Despite these negative economic indicators, Plumas County's unemployment rate and labor market participation rate is consistent with the North State average.

Written Economic Development Plans and Strategies

Plumas County wrote an Economic Development Strategy, which was approved by the Board of Supervisors in 2002. The strategy included a work plan for 2003 and 2004.⁵³ However, a great deal of time has passed since approval and this strategy is no longer relevant to County staff and policy makers as a policy and strategy guide.

Current Economic Development Implementation Initiatives

Plumas County no longer has an economic development or tourism promotion mission and the County's economy relies entirely on decisions by private investors and business.⁵⁴

Implementation Capacity

Plumas County has no capacity to initiate or implement economic development projects. The County has eliminated the Chief Administrative Officer position, which means the County lacks an individual who can respond to inquiries by new investors and business prospects.

Historically, the County contracted with the Plumas Corporation to lead economic development efforts. However, the County no longer funds economic development and the Plumas Corporation shifted its mission to watershed restoration.

The Plumas County Tourism, Recreation, and Hospitality Council was formed to promote visitor services and provide information about sites and activities. This privately funded organization operates a website and Facebook page.⁵⁵

⁵³ Plumas County Economic Development Strategy, 2002-03.

⁵⁴ Interview with Jim Wilcox of the Plumas Corporation and email correspondence with John Mannle, Plumas County Department of Public Works.

⁵⁵ <http://www.plumascounty.org/>



Transportation Improvement Projects

No information is available about prioritized transportation improvement projects that Plumas County leaders believe would have positive economic impacts.

Sierra County's Economic Development and Transportation Needs

Sierra County contains a population of only 3,200 and is in decline due to the outmigration of existing residents. The median age of 50 makes Sierra the oldest county in the North State.

The Sierra County job base contains only 760 jobs after losing 100 jobs since 2001. The county's unemployment and labor market participation rates are consistent with the North State averages. The decline in average inflation-adjusted household income of \$30,500 was more severe than the average decline experienced in the North State of \$28,000 per household.

The lumber industry has suffered an extreme decline with only \$3.8 million of timber produced. Livestock generates \$3.8 million of revenue. Fruits, vegetables and nuts generate \$1.8 million of revenue.

Written Economic Development Plans and Strategies

Sierra County does not currently have a county-specific economic development strategy, but the Auburn-based Sierra Economic Development Corporation (SEDCorp) prepared a multi-county Comprehensive Economic Development Strategy (CEDS) in 2012.⁵⁶ The CEDS outlined very general economic development goals for a four-county region, which are listed below:

- Promote regional collaboration
- Maximize rural employment
- Promote year-round tourism
- Develop adequate infrastructure to support growth.

Current Economic Development Implementation Initiatives

Although County staff did not identify specific economic development initiatives, the few Sierra County initiatives that were incorporated into the CEDS are listed below:

- Market 13 industrially zoned parcels with utilities located in the Loyalton Business Park
- Promote the Kentucky Mine Historical Park as a visitor destination⁵⁷
- Upgrade the Loyalton Wastewater Treatment System.

Implementation Capacity

Sierra County has minimal capacity to initiate or implement economic development projects. The County has eliminated the Chief Administrative Officer position, and the Planning Department has absorbed the economic development functions.

⁵⁶ Comprehensive Economic Development Strategy (CEDS): A Five-Year Plan for the Sierra Economic Development Corporation, 2013 – 2017. Report includes the Counties of Sierra, Nevada, El Dorado and Placer

⁵⁷ <http://www.sierracountyhistory.org/kentucky-mine-historic-park-and-museum>



Transportation Improvement Projects

No information is available about transportation improvement projects that Sierra County leaders believe would have positive economic impacts.

Nevada County's Economic Development and Transportation Needs

The Nevada County population growth rates have exceeded the North State average and statewide growth rates throughout the 1990s and in the new millennium until 2006. Prior to the Great Recession, the county experienced significant growth management challenges. However, the growth trends have reversed since 2007, resulting in a net population decline of 1,000 persons. This decline is attributable primarily to an aging population (median age of 47) that has coincided with a negative natural growth rate (deaths exceeding births). The in-migration of new residents and the outmigration of existing residents has been a non-factor in the population decline. In addition to the population decline, the Nevada County economic base has lost approximately 2,300 jobs since 2006.

Nevada County has the most educated population in the North State. Seventeen (17) percent of adults graduated from college while only 10 percent of adults have not completed high school. Unemployment is relatively low and the area has high labor force participation rates.

However, Nevada County incomes have declined by \$40,000 per household since 2000 (after adjusting for inflation). This represents the largest decline in average household income in the North State. Despite the steep decline in household incomes, Nevada remains the most affluent county in the North State with an average household income of \$59,400. Only 37 percent of Nevada County households earn less than \$35,000 per year, which is the lowest among all North State counties.

Written Economic Development Plans and Strategies

Nevada County lacks a County-specific Economic Development Strategy. However, SEDCorp prepared a multi-county regional Comprehensive Economic Development Strategy (CEDS) that included Nevada County.⁵⁸ The economic development goals for a four-county region covered by the CEDS are listed below:

- Promote regional collaboration
- Maximize rural employment
- Promote year-round tourism
- Develop adequate infrastructure to support growth.

A more dated Nevada County economic development study was prepared and approved by the Board of Supervisors in 2007, but it failed to gain traction as a document guiding County policy.⁵⁹

⁵⁸ Comprehensive Economic Development Strategy (CEDS): A Five-Year Plan for the Sierra Economic Development Corporation, 2013 – 2017. The report included the Counties of Nevada, Sierra, Placer and El Dorado.

⁵⁹ Western Nevada County Economic Development Strategy. Prepared by Seifel Consulting, 2007.



Truckee Economic Development Strategy

The Town of Truckee's General Plan includes an Economic Development Element. In addition, an economic development strategy was prepared in 2009. The strategy identifies ten economic development implementation actions:

- Retain, expand, and recruit businesses that “fit” Truckee
- Utilize new media and traditional outlets to promote Truckee
- Position Truckee to thrive in the new economy
- Build on existing town assets to ensure ongoing competitiveness and viability
- Work with Sierra College to link education to economic development
- Tap business expertise and networks of local entrepreneurs, second homeowners, and retirees
- Expand the local housing supply so people who work in the community have the opportunity to live in the community
- Build and promote tourism events calendar
- Continue to develop infrastructure to support tourism
- Partner to develop/create new public facilities/attractions that support tourism and benefit local residents.

Grass Valley and Nevada City Economic Studies

Grass Valley has completed a number of economic studies, but not an economic development strategy. Meanwhile, Nevada City lacks an inventory of economic studies and plans.

Current Economic Development Implementation Initiatives

Nevada County's economic development projects and initiatives are described below:⁶⁰

- The current focus is on business retention and expansion. Business attraction efforts were discontinued a few years ago.
- Grass Valley and Nevada City are engaged in wastewater treatment expansion projects.
- Rincon Del Rio is a proposed assisted living facility project in southern Nevada County that has been approved and should be implemented soon. The proposed project includes a lodge, group homes, commercial facilities, and a hospital to be located on 225 acres along the Bear River.⁶¹
- Loma Rica Ranch proposal would develop 185 housing units and more than 700,000 square feet of business space on 452 acres straddling the border of Grass Valley and unincorporated county land. The planning effort has been ongoing for a decade and will require a portion of the site to be annexed into the City. Project approval will require significant more time. Given the recent trends of the declining population and job base, it is unclear when the project will be implemented.

⁶⁰ Information below was collected from phone interviews and email exchanges with Tim Corkins with the Nevada County Economic Resource Council and Jeri Amendola with the City of Grass Valley. Initiatives were also selected from the Truckee Economic Development Work Plan, 2011-12.

⁶¹ <http://rincondelrio.com/>



- The City of Grass Valley is attempting to recruit new retailers, but is constrained by the lack of sites available to expand commercial space. A retail leakage study was recently completed and the City is facilitating a discussion among residents about attracting new stores into the city.
- The Town of Truckee utilizes their strategy to prepare an annual economic development work plan. The most recent available work plan identified six action items. The only project described in the work plan was to redevelop the West River site in Truckee, which would provide a mix of land uses, including a commercial and/or residential component, and a public park/plaza.

Other initiatives included in the Truckee work plan include:

- Continue ongoing regulatory-based and opportunity-driven economic development and redevelopment efforts.
- Partner with local businesses and non-profits in local economic development efforts including marketing Truckee to the general public and to businesses.
- Continue to develop physical infrastructure, public facilities, and attractions to support tourism that also benefits local residents.
- Partner with Sierra College and other organizations to link education and training to local economic development efforts.
- Tap expertise from business entrepreneur networks and second homeowners to help make Truckee a more business-friendly environment.

Implementation Capacity

The Nevada County Economic Resource Council (ERC) is the primary contact point for business prospects and investors interested in Western Nevada County. The ERC is under contract with Nevada County to deliver economic development services. However, the ERC is in transition with a series of interim Executive Directors and Board Member changes. A new interim Executive Director is starting in early 2013. This person could become permanent after a performance review in the summer of 2013.

The ERC is also under contract with Nevada County to promote tourism. Private sector marketing managers implement the promotional initiatives.

The City of Grass Valley currently has an Economic Development Manager capable of initiating and implementing new projects. The Town of Truckee's Assistant Town Manager serves as the economic development point-person. The Community Development Director and the Redevelopment and Housing Coordinator, who is responsible for unwinding the former Redevelopment Agency, supports the Assistant Town Manager with economic development projects.



Transportation Improvement Projects

Nevada County and the City of Grass Valley identified transportation improvement initiatives that may enhance the local and regional economy. Recommendations provided by the Nevada County ERC and Grass Valley are summarized below:⁶²

- Widen and improve the SR-49 Corridor between Nevada City and Auburn to ease and reduce transportation costs for travel to the Sacramento Region.
- Improve the Crestview Interchange to open up new land adjacent to the proposed South Hill Village development project. The interchange would allow for additional business development in the area.
- Improve the roads that serve Grass Valley's Loma Rica Industrial Park.

Glenn County's Economic Development and Transportation Needs

Glenn County was one of the few counties in the North State that has experienced population growth since 2000. The increase in population was the result of natural growth exceeding the significant outmigration of residents. The county also has the lowest median age (34) in the North State.

A significant demographic shift in Glenn County has occurred over the past decade. Since 2000, the Hispanic population has experienced a net gain of an estimated 2,700. As a result of this growth and a decline of approximately 800 in the Caucasian demographic, Hispanics account for nearly 40 percent of the Glenn County population. The share of Glenn County households that identify Spanish as their primary language has increased to 27 percent.

Glenn County maintains one of the lowest average incomes in the region, most recently estimated to be approximately \$40,000 per household. Despite stagnant job growth, Glenn County did not experience the severe loss of jobs during the recession that afflicted several other North State counties. Approximately one-third of Glenn County adults have not finished high school, which is roughly double the California average.

Written Economic Development Plans and Strategies

An up-to-date economic development strategy is currently being prepared, but findings are not yet available. Until the report is completed, Glenn County can utilize the 2009 regional Comprehensive Economic Development Strategy (CEDS) prepared by Tri-County (now 3Core) to cover the counties of Glenn, Tehama and Butte. The CEDS identifies economic development projects that should be implemented by Glenn County and the cities of Orland and Willows.

Current Economic Development Implementation Initiatives

Glenn County and the cities of Orland and Willows initiated a collaborative effort to actively market the region and create a Universal Permit Process. The three jurisdictions established a single point of contact capable of promptly and effectively responding to business location and investment inquiries.⁶³

⁶² Tim Corkins with the Nevada County ERC and Jeri Amendola with the City of Grass Valley are the primary sources of information.

⁶³ The agreed upon contact person is Yassi Lam with the Glenn County Human Resources Agency



The Universal Permitting Process is also available in each jurisdiction, which local leaders believe is likely to achieve the objective of streamlining the process and removing barriers for potential businesses relocating the Glenn County.⁶⁴

Implementation Capacity

Glenn County lacks an economic development staff member, which limits the capacity of the County to implement economic development initiatives. Glenn County's economic development point person is employed within the Human Resource Agency, which maintains a mission to provide residents with public services. This is a different mission from economic development.

The cities of Willows and Orland possess limited capacity to implement local initiatives because they rely on the city managers to act as the leads. The city managers have a wide spectrum of duties and limited time to implement economic development initiatives.

Transportation Improvement Projects

Glenn County and the City of Willows identified transportation improvement initiatives that may enhance the local and regional economy:

- Retain maintenance and repair funding for existing roads
- Initiate an I-5 interchange beautification project that would encourage travelers to stop in Glenn County's commercial areas
- Fund a SR-162/Wood Street median strip beautification project to attract more visitors and business interests along Willows entryway.

Colusa County's Economic Development and Transportation Needs

Colusa is the most rapidly growing county in the North State. The County's population growth has exceeded the statewide growth rate and, unlike other North State counties, Colusa's population growth continued during the recession. The expansion of population is the result of natural growth that greatly exceeded the number of Colusa residents relocating out of the county. The source of this population growth has been a higher percentage of younger families in child-bearing years. With a median age of 34, Colusa County maintains the youngest population in the North State.

A significant demographic shift in Colusa County has occurred over the past decade. The Hispanic community has increased by an estimated 3,000 while the Caucasian cohort declined by about 500. Hispanics now account for more than half of Colusa County population and Spanish is the primary language for 40 percent of Colusa County households.

Colusa County maintains relatively low educational attainment rates. Approximately 36 percent of adults have not finished high school, which is twice as high as the state average. Inflation-adjusted incomes declined by \$32,000 per household since 2000. This is a significantly larger decline than the

⁶⁴ Steve Holsinger, Manager the City of Willows and are the primary sources of information and John Linhart, Glenn County Director of Planning and Public Works is the direct source of information.



North State average. Despite this decline, Colusa County household incomes are similar to the North State average since they had been higher than the average a decade ago.

The Colusa County economic base has expanded by approximately 1,000 jobs since 2001. This is the fastest job growth in the North State. The County is the largest producer of fruits and vegetables, accounting for 27 percent of the North State's total production.

Written Economic Development Plans and Strategies

Colusa County has a current economic development strategy (prepared in 2009)⁶⁵ and a current General Plan Economic Development Element (prepared in 2011).⁶⁶ The economic development strategy covers the unincorporated county plus the cities of Colusa and Williams. It is effectively a menu of strategies for business attraction, retention, downtown revitalization, and tourism development. However, the document does not provide strategic direction or specific policies to pursue. It simply provides general tools that the jurisdictions can use to pursue economic development.

The Economic Development Element identifies six objectives and 26 policies to help achieve the objectives. The objectives are as follows:

- Encourage commercial and industrial development to diversify the local economy
- Promote and expand agriculture
- Promote a positive business climate that retains existing business and attracts new companies
- Attract recreation and tourism visitors
- Capitalize on existing economic development resources
- Identify and procure additional funding.

City Economic Development Plans

The City of Colusa recently completed the first phase of preparing a downtown revitalization plan. The City of Williams will soon complete a revitalization plan for the downtown Seventh Street and E Street corridors.

Current Economic Development Implementation Initiatives

Colusa County and the cities of Colusa and Williams are engaged in the following economic development projects and initiatives.⁶⁷

- Colusa County submitted a \$5 million grant to assist with the expansion of the Premier Mushroom Plant at the Colusa Industrial Park. The expansion will create 50 new jobs and generate business revenue to be recirculated through the local economy.
- The County is trying to attract a \$100 million biomass-to-electricity plant that is awaiting final approval from Pacific Gas and Electric (PG&E) for hookup into the grid system.

⁶⁵ Economic Development Strategic Action Plan. Prepared for the County of Colusa and the cities of Colusa and Williams. December 2009. Chabin Concepts.

⁶⁶ Colusa County General Plan, 2011. Prepared by De Novo Planning Group.

⁶⁷ Stephen Hackney, Colusa County Planning Director, Randy Dunn, the Interim City Manager for Colusa and Gary Price, Planning Consultant are the primary sources of information.



- A \$1 million grant was obtained to expand the Maxwell wastewater treatment plant.
- A new Education Village is being constructed on the east side of Williams that mixes government, education, commercial and industrial uses.
- City of Colusa is building a boat ramp and a public dock on the Sacramento River at the edge of the state park.
- City of Williams is trying to create a new business and industrial park on the east side of I-5.

Implementation Capacity

Colusa County lacks an economic development staff and possesses minimal capacity to implement economic development initiatives, despite the presence of an updated Economic Development Strategy and General Plan Economic Development Element. The County Planning Director is responsible for the economic development staff duties. Given full-time planning responsibilities, the Planning Director has minimal time available to pursue new economic development initiatives effectively.

The City of Williams has no economic development staff and relies on its city manager to initiate and implement economic development projects and initiatives. The Assistant City Manager and a planning consultant are available to assist the City Manager with economic development projects.

The City of Colusa terminated its contract with an economic development consultant, leaving the City Manager to lead economic development projects and initiatives. The City Manager has many other duties and minimal time available for economic development.

Colusa County operates a visitor's webpage. A private sector visitor's promotional presence does not exist on the internet.

Transportation Improvement Projects

Colusa County and the cities of Williams and Colusa identified transportation improvement initiatives that may enhance the local and regional economy:

- Maintain and repair existing roads to address deferred maintenance
- Widen SR-20 in Williams to accommodate fruit stands
- Improve the I-5 and SR-20 interchange in Williams to facilitate the new development of a business and industrial park. The project would include a new at-grade intersection with SR-20 and an extension of Marguerite Drive from SR-20 south to Ella Street.
- Improve I-5 signage directing traffic to the City of Colusa.

Lake County's Economic Development and Transportation Needs

Lake County's population growth is stagnant. Over the last decade, deaths have exceeded births, but this trend is counterbalanced by more people moving into the county than leaving it. The county is also experiencing a significant demographic shift with Hispanics comprising 70 percent of all new residents.

More than 1,000 jobs were lost during the recession. Income declines of \$28,000 per household in inflation-adjusted terms since 2000 are consistent with the North State averages.



A high percentage of Lake County adults did not finish High School (23 percent) and a low percentage completed college (8 percent). Only 50 percent of adults are participating in labor force, which is well below the North State average.

Written Economic Development Plans and Strategies

Lake County has a current tourism marketing strategy with an economic development strategy cover page.⁶⁸ The marketing plan was a collaborative effort with tourism industry stakeholders in government, lodging, food services, wine, events, venues, and business associations. Recommendations covered several broad topics:

- Overall structure and governance of the marketing program
- Funding strategies
- Marketing recommendations
- Stakeholder communication
- Community and economic development.

The tourism marketing goals described in the final report are listed below:

- Target 50,000 people to receive visitor promotion materials and information
- Book over 3,000 rooms annually by 2013
- Attract more than 50,000 visits per month to a new content-rich website
- Organize a minimum of 500 special events per year
- Sell 5,000 tourism packages through multiple channels between hotels, wineries, and the newly developed County Concierge
- Increase “friends and followers” to over 1,000 Facebook members in the first year and over 10,000 by the third year
- Issue one new press release each week
- Target an ad equivalency goal of \$250,000 in the first year and over \$500,000 by the third year
- Generate 2,600 annual room nights in the first year and 5,000 room nights in the third year through group sales.

Other economic development goals listed on the Lake County website that should guide economic diversification efforts are related to employee training, infrastructure improvements, marketing, technical assistance, and governmental efficiency. The broader economic development goals are listed below:

- Market Lake County and attract businesses
- Prepare land for economic development through the construction of infrastructure and the provision of public services
- Coordinate and support a network of service providers to assist business owners and entrepreneurs

⁶⁸ Lake County Economic Development Marketing Strategic Plan, 2012-13. Prepared by the Strategic Advisory Group.



- Expand and improve job training and related services
- Provide a productive regulatory environment to support business growth
- Strive to improve and maintain the high quality of life in Lake County.

City Economic Development Plans

On its website, the City of Lakeport has an economic development page that describes the importance of Lakeport as a regional economic center and the city's role in the regional economy. The page includes links to vacant commercial land and buildings.

Economic studies or plans prepared for the City of Clearlake are unknown and unavailable on the City's website.

Current Economic Development Implementation Initiatives

Lake County and the City of Lakeport have the ongoing economic development projects and initiatives described below:⁶⁹

- The County started a Development Opportunity Initiative that waves planning fees and defers water and wastewater expansion fees. The purpose of this effort is to reduce development costs, shorten the approval time, and turn Lake County into a more business friendly climate that encourages proposed projects.
- With two Southern California campuses, Marymount College will establish a new campus at a 50,000 square foot historic hotel in Lucerne. The County purchased the facility. It is currently being remodeling and will be leased to Marymount College for 15 years with an attractive purchase option. The new campus will be a four-year college that should have a significant impact on the quality of life and workforce readiness.
- The County operates a Visitor Center in partnership with the Lake County Chamber of Commerce, the Winegrape Commission, and the Winery Association. Lake County no longer operates a Visitor Bureau due to the decline in Transient Occupancy Tax (TOT) revenues.
- The City of Lakeport plans to undertake a branding initiative and to improve the quality of economic development information on its website.
- Lakeport is also organizing an Economic Development Advisory Committee.

Implementation Capacity

Lake County's staff capacity to implement economic development initiatives is in transition. The County no longer has an economic development staff member. However, a part-time employee may be hired to focus on business expansion and retention. Until a new person is hired, the Deputy County Administrative Officer is the economic development point of contact. The loss of staff seriously reduces Lake County's ability to implement economic development initiatives.

⁶⁹ Matt Perry, Lake County Chief Administrative Officer, Margaret Silveria, Lakeport City Manager and Wilda Shock, Economic Development Consultant are the primary sources of information.



The City of Lakeport has an economic development consultant that is the point of contact to initiate and implement economic development projects. This new position increases the City's capacity to engage in economic development projects and initiatives.

The City of Clearlake has no economic development staff and relies on its city manager to initiate and implement economic development projects and initiatives.

Transportation Improvement Projects

Lake County and the City of Lakeport identified transportation improvement initiatives that may enhance the local and regional economy. Suggested projects are summarized below:

- Maintain and repair existing roads to address deferred maintenance
- Install traffic calming measures, streetscape improvements, and other urban design elements in Middletown
- Establish a business highway designation for routes through Kelseyville and Lakeport
- Fund a roundabout on Lakeport's Main Street to improve traffic flow
- Improve signage on Business 29 in Lakeport to encourage traffic to stop at local businesses.

Mendocino County's Economic Development and Transportation Needs

Mendocino County's population growth is stagnant. Significant natural population growth is counterbalanced by outmigration of existing residents. In addition, a significant demographic shift has occurred over the past decade with a net in-migration of 5,300 Hispanics and an outmigration of 4,300 Caucasians. Hispanics now comprise 22 percent of Mendocino County's population. Spanish is the primary language for 13 percent of households.

More than 4,500 jobs have been lost since 2001. The value of fruits, nuts, and vegetables produced is currently four times the timber crop value. Mendocino County's logging and timber industry has virtually collapsed. However, the unemployment rate is the lowest in the North State and labor force participation is the highest.

Written Economic Development Plans and Strategies

Mendocino County has a current economic development strategy (prepared in 2010) that covers unincorporated areas, but it can also be used by the cities within the county to apply for federal and state funding.⁷⁰ The Comprehensive Economic Development Strategy (CEDS) identifies four general categories of goals: sustainability through localization, travel and tourism, sustainable utilization of natural resources, and infrastructure. Strategies identified to implement the goals are listed below:

- Increase networks among local businesses and support cluster development to develop and expand local markets
- Increase local food production

⁷⁰ 2010 Comprehensive Economic Development Strategy (CEDS). Prepared by Mendocino County. The Workforce Investment Board was the lead agency for the CEDS.



- Produce and distribute a consistent message regarding the community benefits realized through utilization of local resources
- Add value to county products by branding a local identity
- Support the expansion of the manufacturing base
- Increase the use of alternative power vehicles
- Educate the public regarding the benefits of locally produced, renewable energy
- Advocate for responsible, local production and utilization of alternative energy, including woody biomass, solar (photo voltaic), hydroelectric, and wind
- Increase the number of people traveling to Mendocino County, the average length of stay, and overnight visitor spending per day
- Preserve the economic and environmental benefits to the community that are associated with having an adequate supply of local natural resources permitted for harvesting and use
- Promote the utilization of recycled materials and environmentally preferable technologies in construction
- Support the local natural resource based industry and other businesses that want to modernize and expand
- Analyze groundwater supply and increase water-use efficiency and water-storage capacity
- Increase availability, capacity, and efficiency of sewer treatment
- Expand the availability of and access to adequate centralized sewer and water systems for existing communities
- Expand the availability of and access to broadband internet service throughout the county
- Increase the number and value of local roadway projects
- Work to restore regular, regional rail service and other means of transportation for both freight and passengers
- Maintain a basic level of transit services for county residents.

City Economic Development Plans

The City of Fort Bragg has an economic development strategy that is dated, but still relevant for guiding local government policies.⁷¹ The final report identifies seven economic development goals and 32 strategies to be used to implement the goals. The goals are listed below:

- Create an environment where local businesses can flourish
- Actively facilitate the mill site reuse process
- Improve community amenities and quality of life
- Improve integration between residents and job opportunities
- Ensure effective infrastructure and public services
- Promote and support Fort Bragg as a sustainable community
- Provide and support Fort Bragg as a tourist destination.

⁷¹ City of Fort Bragg Economic Development Strategy, 2007.



Economic studies or plans prepared for the cities of Ukiah and Willits are unknown and unavailable on the city websites.

Current Economic Development Implementation Initiatives

Mendocino County and the cities of Ukiah and Fort Bragg are engaged in several economic development projects and initiatives. These are described further below.⁷²

Mendocino County Initiatives

- The County is focused on business retention and expansion. No initiatives are in place to attract new business.
- County has initiated an effort to revitalize Noyo Harbor. It is intended to improve the business environment and attract new investment into the Harbor District.
- The area plans for the Village of Mendocino and Ukiah Valley are being updated. These plans should add certainty and improve the investment climate for both areas.
- The Mendocino County Broadband Alliance established a \$40,000 challenge grant to plan the development of broadband accessibility in various areas in Mendocino County, specifically targeting projects that expand broadband services for education, health and safety, and economic development.⁷³
- The County established a Microenterprise Loan Fund.

City of Ukiah Initiatives

The City of Ukiah is engaged in a downtown business recruitment program, an extension of Airport Park Boulevard, and the completion of the Mendocino Brewing Company and Maverick Enterprises business expansion projects.

City of Fort Bragg Initiatives

- The City of Fort Bragg is wrapping up a long-term planning effort to redevelop and reuse the Georgia Pacific mill site, which is located in a highly desirable area on a cliff with ocean views. The City hopes to obtain approval from the California Coastal Commission to implement the Mill Site Specific Plan.
- The City of Fort Bragg is partnering with the arts community to study the feasibility of a proposed Industrial and Fine Arts Center (IAC) in Fort Bragg. The initial vision includes a variety of individual and shared artist studios and workshops, an art gallery, and an event space.
- The City is pursuing the establishment of the Noyo Center for Science and Education (Noyo Center), which will be a cold-water marine research center for the community college and state

⁷² Steve Dunicliff, Director of Mendocino County Planning and Building Services and Jim Moorehead with the Mendocino Broadband Alliance are the primary sources of information.

⁷³ <http://www.mendocinobroadband.org/>



university system. The City recently acquired 11½ acres from Georgia Pacific for the facility. The proposed complex includes a Marine Research Laboratory, support facilities, temporary housing for marine researchers, and exhibit space for a 72-foot blue whale skeleton that has been entrusted to the City.

Implementation Capacity

Mendocino County lacks an economic development staff and possesses insufficient capacity to implement economic development initiatives. The County is in the transition of shifting the economic development functions from the Chief Administrative Officer to the Planning and Building Services Department. The County Planning Director is now responsible for the economic development staff duties, and given the full-time planning responsibilities, the Planning Director has insufficient amount of time available to effectively pursue new economic development initiatives.

The cities of Ukiah, Willits and Fort Bragg have no economic development staff and rely on their city managers to initiate and implement economic development projects and initiatives.

Visit Mendocino is well funded by the County, a Tourism Business Improvement District (BID), the Wine Industry Association, and other business groups to promote Mendocino County as a destination. They have an attractive website to draw people to the area and provide information about activities, special events, and lodging options.⁷⁴

Transportation Improvement Projects

Mendocino County suggested the following transportation improvements initiatives that it believes will facilitate economic development:

- Design and install streetscape and landscape improvements in Hopland (modeled after Laytonville's successful improvements) along the US 101 corridor
- Implement streetscape and urban design improvements in Calpella consistent with the downtown improvement plan recommendations
- Widen South State Street in Ukiah
- Widen and improve Bush Street contiguous to Ukiah to open up new land for business uses.

In addition, the Mendocino Council of Governments suggested that the following additional projects will stimulate economic development:

- Improve US 101 interchanges at Talmage Road, Perkins Street/Vichy Springs Road, and North State Street
- Widen East Side Potter Valley Road
- Make improvements on State Street and Main Street in downtown Ukiah
- Improve Gualala Streetscape
- Support development at the former mill site in Fort Bragg.

⁷⁴ <http://www.visitmendocino.com/>



Appendix J: Performance Measures Research

This appendix provides details about research conducted to develop an economic performance measurement framework for the North State Transportation for Economic Development Study (NSTEDS). Before developing this framework, the project team reviewed performance measures found in existing North State Regional Transportation Plans (RTPs). The project team found that the current set of performance measures do not fully capture the impact of transportation on the economy.

The project team then reviewed economic measures used by Caltrans as well as the requirements for performance measures in the latest Federal transportation funding bill - Moving Ahead for Progress in the 21st Century (MAP-21). The project team found some direction from Caltrans practices and MAP-21 guidance for economic performance measures that could be applied to planning at North State regional transportation planning agencies (RTPAs). In addition, the project team reviewed related ongoing efforts, such as the Performance Monitoring Indicators Technical Group being led by the San Diego Association of Governments (SANDAG). The resulting performance measurement framework is based on this review and the project team's knowledge of the linkages between transportation and the economy.

This appendix is organized into the following sections:

- RTP Performance Measures
- Performance Measures Used by State and Federal Agencies
- Related Ongoing Efforts
- Framework for Economic Performance Measures
- Potential Measures of Need.

RTP Performance Measures

In developing the framework, the project team reviewed measures found in existing North State RTPs. These RTPs were collected to help highway level of service (LOS) measures and identify planned transportation system enhancements. Roughly two thirds of the RTPs have been completed since 2010, but a few are currently due for renewal. Exhibit J1 lists the RTPs included in the review.



Exhibit J1: Latest North State Regional Transportation Plans (RTPs)

Regional Transportation Planning Agency (RTPA)	Regional Transportation Plan (RTP)	Planning Period
Butte County Association of Governments (BCAG)	Butte County 2008 Regional Transportation Plan	2008 to 2035
Colusa County Local Transportation Commission (LTC)	2008/09 Colusa County Regional Transportation Plan Update	2010 to 2030
Del Norte Local Transportation Commission (DNLTC)	Del Norte 2011 Regional Transportation Plan Final Report	2011 to 2030
Glenn County Transportation Commission (CTC)	2009/10 Glenn County Regional Transportation Plan Update	2010 to 2030
Humboldt County Association of Governments (HCAOG)	2008 Humboldt County Regional Transportation Plan	2008 to 2028
Lake County Area Planning Council (APC)	2010 Lake County Regional Transportation Plan	2010 to 2030
Lassen County Transportation Commission (CTC)	2005/6 Lassen County Regional Transportation Plan	2005 to 2025
Mendocino Council of Governments (MCOG)	2010 Mendocino County Regional Transportation Plan	2010 to 2030
Modoc County Transportation Commission (MCTC)	Modoc County 2005 Regional Transportation Plan	2005 to 2025
Nevada County Transportation Commission (NCTC)	2010 Nevada County Regional Transportation Plan	2010 to 2030
Plumas County Transportation Commission (PCTC)	Plumas County Regional Transportation Plan - 2010	2010 to 2030
Shasta Regional Transportation Agency (SRTA)	Final 2010 Regional Transportation Plan for Shasta County	2010 to 2030
Sierra County Transportation Commission (SCTC)	Sierra County 2010 Regional Transportation Plan	2010 to 2030
Siskiyou County Local Transportation Commission (LTC)	2010 Regional Transportation Plan	2010 to 2035
Tehama County Transportation Commission (TCTC)	2006 Tehama County Regional Transportation Plan (RTP)	2006 to 2025
Trinity County Transportation Commission (TCTC)	Final 2010 Trinity County Transportation Plan	2005 to 2030

Most RTPs use performance measures based on guidance found in the June 2006 *Performance Measures for Rural Transportation Systems Guidebook*. Caltrans developed this guidebook to provide a standardized performance measurement process that can be applied to rural transportation systems. It is meant to assist in measuring roadway-related performance and to provide information on selecting appropriate measures and collecting supporting information. The guidance is user-friendly and has examples for basic, intermediate, and advanced applications of performance measurement.



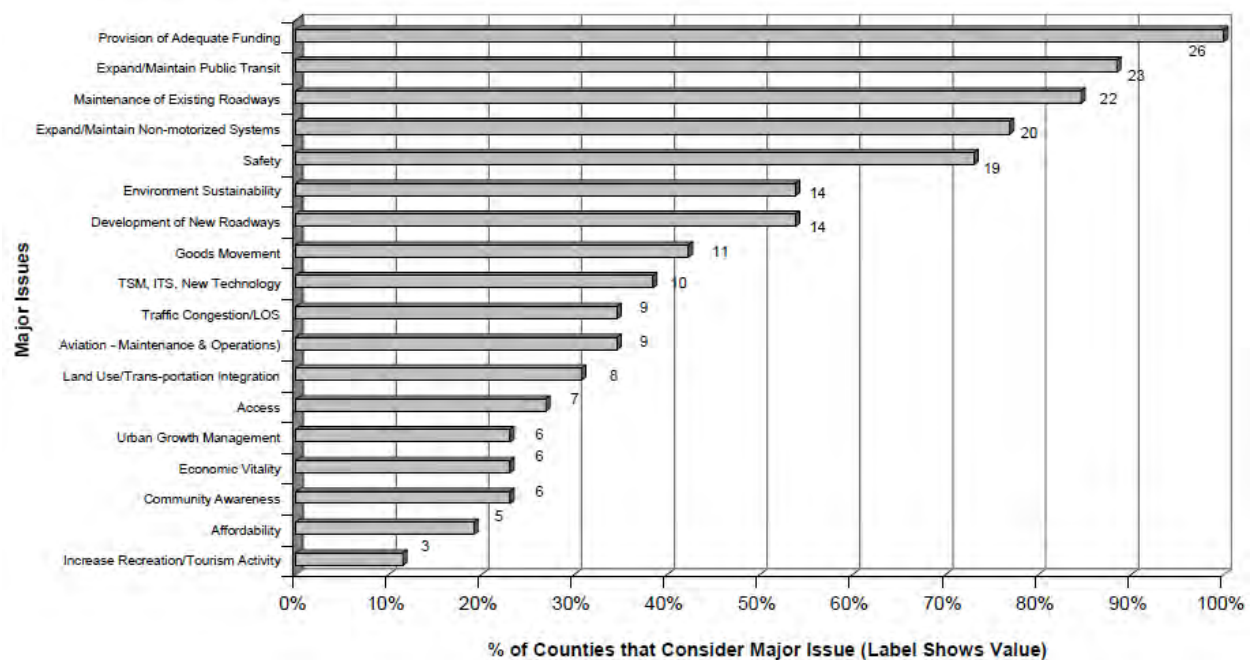
The rural performance measurement guidebook describes seven performance measurement categories:

- Safety, which refers to the frequency and severity of accidents
- System preservation, which refers to maintaining the condition of the roadway network
- Mobility, which refers to the ease or difficulty of travel from origins to destinations
- Accessibility, which refers to the opportunity and ease of reaching desired destinations
- Reliability, which refers to the consistency or dependability of travel times
- Productivity, which refers to the utilization of transportation system capacity
- Return on investment, which refers to the value the public receives from planned investments.

The guidebook does not include a category for measuring the impact of transportation on the economy, which reflects the needs expressed by rural RTPAs. It is also due in part to a perceived difficulty in measuring the economic impacts of transportation projects.

While developing the guidebook, Caltrans conducted a survey of rural RTPAs. The survey revealed that the most pressing transportation issues for rural agencies were the provision of adequate funding, maintenance of existing roadways, and the expansion or maintenance of public transit. Goals related to the economy ranked much lower. Out of 26 agencies, six (or 23 percent) rated economic vitality as a major issue, while three (or 12 percent) rated increasing recreational tourism and 11 (or 42 percent) rated goods movement as important issues. Exhibit J2 summarizes the major issues found in the Caltrans survey.

Exhibit J2: Major Issues Identified by Rural Counties in Caltrans Survey



Source: Caltrans, *Performance Measures for Rural Transportation Systems, Technical Supplement*, June 2006.



Although the technical supplement to the Caltrans guidebook contains a summary of performance measures included in rural RTPs, this summary is now out of date. In addition, the summary does not cover the two Metropolitan Planning Organizations (MPOs) included in the North State. The project team decided to conduct its own summary based on a review of current RTPs.

Exhibit J3 summarizes the performance measures found in the most recent North State RTPs. As can be seen in the exhibit, the majority of North State RPTAs do not include a performance measure related to the economy or economic development. This is consistent with the Caltrans rural performance measures guidebook, which does not cover economic performance measures.

Seven of 16 North State RTPs include a performance outcome called “economic well-being.” This is one of nine performance measures listed as examples in the *2010 California Regional Transportation Plan Guidelines* written by the California Transportation Commission (CTC). Six counties (i.e., Colusa, Glenn, Lassen, Modoc, Siskiyou, and Trinity) measure economic well-being as maintaining an acceptable level of service during peak months when state highways experience significant traffic. The economic tie is that disruptions in mobility can impact the movement of goods (e.g., flows of agriculture and wood products) and recreational travelers. Both disruptions can be detrimental to the North State economy.

Unlike the other six counties, Sierra County measures economic well-being as the increase in sales tax revenues. This measure has an economic tie by recognizing the impact tourist spending can have on the local economy. Better roads can facilitate tourist access and increase tourism spending. In addition, Glenn County conducts a telephone survey of commercial interests during RTP updates to gauge economic well-being.

Exhibit J3 lists two other performance outcomes that might be related to the economy – mobility/accessibility and cost effectiveness. Accessibility is related to the economy if it is defined as access to jobs, key intermodal facilities, markets, and commerce. All of the current North State RTPs have at least one mobility/accessibility performance measure. However, these measures focus on mobility rather than accessibility and quantity performance in terms of travel time and speed.

Seven North State RTPs include a measure of cost effectiveness or return on investment. This measure captures the value of benefits that the public receives compared to the cost of providing these benefits. The benefits include only the direct impacts on users, such as reductions in travel time or improvements in safety. They do not include the less direct impacts on the economy, such as employment or retail sales. However, as described later in the framework for economic performance measures, the calculation of user benefits is an input to regional economic models that can be used to measure the economic impact of transportation projects.



Exhibit J3: Summary of Performance Measures Included in North State RTPs

County	Mobility/ Accessibility	Safety	Maintenance/ System Preservation	Environment/ Air Quality/ Quality of Life	Reliability	Economic Well-Being	Return on Investment/ Cost Effective	Equity	Productivity	Transit Cost Effectiveness	Other
Butte	●	●	●		●				●		
Colusa	●	●	●	●		●		●		●	
Del Norte	●	●	●		●		●				
Glenn	●	●	●	●		●		●		●	
Humboldt	●	●	●	●	●				●		
Lake	●	●	●								
Lassen	●	●		●		●	●	●		●	
Mendocino	●	●		●	●						
Modoc	●	●		●	●	●	●	●			●
Nevada	●	●			●		●				●
Plumas	●	●	●	●			●				●
Shasta	●	●	●		●				●		
Sierra	●	●		●		●	●		●		●
Siskiyou	●	●	●	●		●		●		●	
Tehama	●	●	●		●				●	●	
Trinity	●	●		●		●	●	●			



Performance Measures Used by State and Federal Agencies

The project team conducted a brief and selective review of performance measures used or required by other agencies. Rather than engage in an exhaustive review of “peer agencies,” the project team focused on performance measures used or required by State and Federal agencies, since these are the ones most likely to affect the selection of performance measures by North State RTPAs. The project team used its own knowledge of performance measures used by other agencies to develop the performance measurement framework.

Caltrans Transportation System Performance Measures

Caltrans has been involved in the development of performance measures for more than 15 years. In the late 1990s, Caltrans led a statewide performance measurement initiative on behalf of the Bureau of Transportation and Housing (BT&H) in response to the Intermodal Surface Transportation Efficiency Act (ISTEA) and California Senate Bill 45. This effort addressed two broad goals:

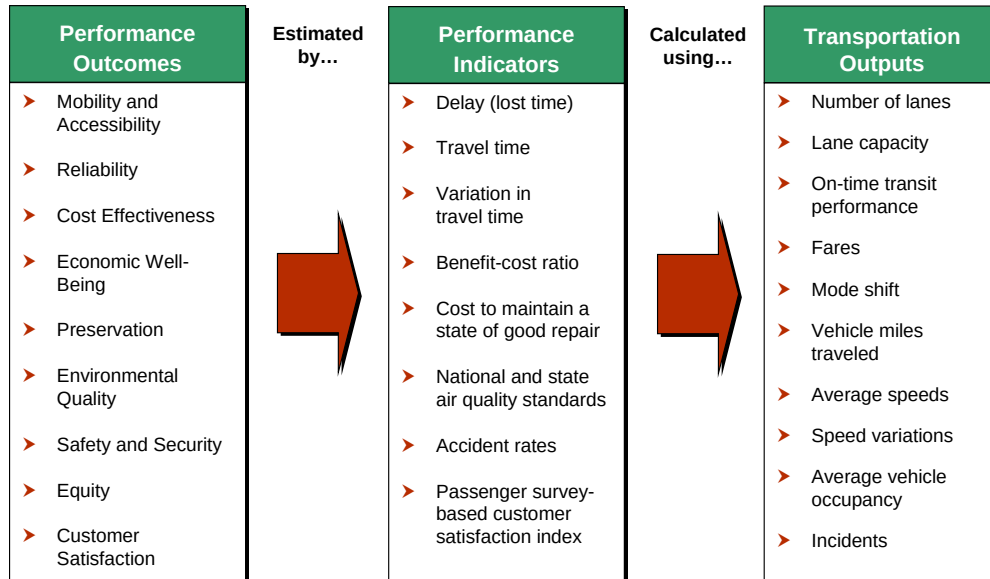
- To develop indicators and measures to assess the performance of California’s multi-modal transportation system and support informed transportation decisions by transportation officials, operators, service providers, and systems users
- To establish a coordinated and cooperative process for consistent performance measurement in California.

Caltrans worked with stakeholders throughout California to create a framework that focuses on outcomes (what users experience) rather than outputs (what agencies can measure). Caltrans and its partners identified nine performance outcomes for inclusion in multi-modal performance evaluation (see Exhibit J4). Each of these outcomes can be measured using one or more performance indicators with available data. For each measure, Caltrans conducted significant proof-of-concept testing.

Caltrans and its partners defined economic well-being as contributing to California’s economy. Several indicators for economic well-being were identified, such as Gross Regional Product (GRP), economic output, and personal income. During proof-of-concept testing, Caltrans showed that these indicators could be measured using regional economic models, but that it was difficult to tie specific projects to changes in the economy. The Bureau of Transportation Statistics (BTS) released its Transportation Satellite Accounts (TSA) near the end of the proof-of-concept testing. These accounts have since been used in many states and regions to tie transportation projects to economic impacts and their use has become standard practice.



Exhibit J4: Performance Outcomes in the Caltrans Transportation System Performance Measures Initiative



The statewide performance measures have continued to be refined and form the basis of the performance measures presented in the CTC's RTP Guidelines. Caltrans included an updated version of these performance measures in the 2025 California Transportation Plan (CTP) and the 2030 addendum. As shown in Exhibit J5, Caltrans retained the economic well-being goal in the 2025 CTP. It further defined economic development and return on investment outcomes related to this goal. However, specific performance indicators were still being developed as of the last CTP.

Exhibit J4: Relationship among CTP Goals, Performance Measures, and Indicators

CTP GOALS	SYSTEM PERFORMANCE MEASURE/OUTCOMES	KEY INDICATORS (Data to Collect and Report On)
PRESERVE THE TRANSPORTATION SYSTEM	■ System Preservation	Highways, Streets, and Roads • Pavement — smoothness and distressed miles • Bridges — structurally deficient or functionally obsolete • Roadside Transit and Passenger Rail • Vehicle fleet age • Miles between service calls Aviation • General aviation runway pavement condition
SUPPORT THE ECONOMY	■ Economic Development ■ Return on Investment	<i>Measures Under Development</i>

Source: Caltrans, California Transportation Plan 2025, April 2006.



SHOPP Funding

The California State Highway Account (SHA) provides money to both the State Transportation Improvement Program (STIP) and the State Highway Operation and Protection Plan (SHOPP). The STIP funds new construction projects that add capacity to the transportation system and is split into regional and interregional programs. Rural areas in California generally receive very little regional STIP funding, so many projects are funded through the SHOPP or the interregional portion of the STIP.

The SHOPP provides funds for maintaining, preserving, and operating the State Highway System and receives funding from the SHA before the STIP receives funding. The SHOPP is currently broken into eight different funding categories: (1) major damage restoration, (2) collision reduction, (3) legal and regulatory mandates, (4) mobility improvement, (5) bridge preservation, (6) roadway preservation, (7) roadside preservation, and (8) facility improvement. Major damage restoration responds to unanticipated closures and other emergencies. Such closures commonly occur on North State roads due to landslides and other natural emergencies. Major damage restoration projects are funded as soon as needs are identified.

Two other SHOPP categories are often used to fund transportation system enhancements – collision reduction and mobility improvement. For both of these categories, projects are selected using a cost-effectiveness measure that compares user benefits to the costs of projects providing benefits.

Safety Index. Caltrans calculates a traffic safety index (SI) for projects proposed for funding in the 010 Collision Reduction Program. The SI is essentially a benefit-cost calculation that compares only the safety benefits of a project to its construction costs. Caltrans uses a threshold score that corresponds to a 1.0 benefit-cost ratio to select projects.

Priority Index Number. The 310 Operational Improvement program is a part of the mobility improvement category. The goal of the 310 program is to reduce traffic congestion and associated traffic collisions through improvements addressing operational deficiencies related to the flow and movement of traffic without increasing design capacity. Examples of 310 program improvements include:

- Interchange modifications
- Ramp modifications
- Auxiliary lanes for merging or weaving between adjacent interchanges
- Curve corrections or alignment improvements
- Signals or intersection improvements.

Caltrans calculates a Priority Index Number (PIN) for projects proposed for 310 funding. Like the SI, the PIN is essentially a benefit-cost calculation. The PIN adds a delay index to the SI, so the PIN compares both travel time and safety benefits to the cost of providing a project.

As can be seen in this description, SHOPP projects are funded by maintenance or operating need and may be prioritized by cost-effectiveness measures. The impacts of SHOPP projects on the economy or economic development are not part of the standard SHOPP evaluation process.



Cal-B/C Benefit-Cost Model

Caltrans developed its benefit-cost model, Cal-B/C, in the mid-1990s to facilitate the rapid assessment of multiple projects using a standardized approach. The 1993 CTP recommended the establishment of the Commission on Transportation Investments to review transportation funding and investments. The commission recommended that Caltrans assess proposed projects using economic analysis. Benefit-cost analysis was chosen as the best way to compare projects.

Caltrans used Cal-B/C for the first time to evaluate capital improvement projects for the 1996 State Transportation Improvement Program (STIP). Cal-B/C was quickly incorporated into project planning and programming for future STIP cycles. Benefit-cost evaluation was firmly established as one of several performance measures used to evaluate projects.

Cal-B/C has since been used in several applications. The California Transportation Commission (CTC) required Caltrans to evaluate projects submitted for funding under many of the funding categories established under Proposition 1B. Examples of funding categories requiring benefit-cost analysis include the Corridor Mobility Improvement Account (CMIA), the Corridor, Trade, Infrastructure and Freight (CTIF) Account, and the SR-99 Account. CTC has also required Caltrans and other sponsoring agencies to conduct benefit-cost estimates using Cal-B/C in High Occupancy Toll (HOT) lane project nominations. In addition, Caltrans uses Cal-B/C to conduct benefit-cost analysis (when required) for value engineering analyses. Cal-B/C is also frequently used as part of TIGER discretionary grant applications.

The original Cal-B/C model is a sketch planning tool implemented in an Excel spreadsheet. The tool includes rules of thumb derived from literature reviews and simulation models as well as demand-volume curves and queuing theory to help planners estimate the benefits of projects with very little data. The tool supports using more detailed data when available. As part of a recent update, companion tools were developed to calculate and aggregate benefits after projects are evaluated using regional travel demand or simulation models.

As shown in Exhibit J5, Cal-B/C calculates several different types of cost-effectiveness measures. The most commonly used measure is the benefit-cost ratio. Other related measures include net present value, return on investment, and payback period. All of these measures compare the user benefits of a project to the cost of providing the project.

Since projects in rural areas, like the North State, cost roughly the same as projects in urban areas, but impact fewer people, these measures tend to show lower results for rural areas than urban areas. One potential solution would be to consider the value of the benefits per person. This measure would reflect the relative benefits that the average person receives. Projects with larger benefits per person are likely to be perceived as more beneficial by the traveling public, so the results of this measure may correspond more closely to public priorities.

3		INVESTMENT ANALYSIS		
		SUMMARY RESULTS		
Life-Cycle Costs (mil. \$)	\$6.0			
Life-Cycle Benefits (mil. \$)	\$16.2			
Net Present Value (mil. \$)	\$10.2			
Benefit / Cost Ratio:	2.7			
Rate of Return on Investment:	13.6%			
Payback Period:	9 years			
		ITEMIZED BENEFITS (mil. \$)		
		Average Annual	Total Over 20 Years	
		Travel Time Savings	\$0.7	\$13.2
		Veh. Op. Cost Savings	\$0.1	\$2.2
		Accident Cost Savings	\$0.0	\$0.5
		Emission Cost Savings	\$0.0	\$0.2
		TOTAL BENEFITS	\$0.8	\$16.2
		Person-Hours of Time Saved	50,350	1,006,998
		CO ₂ Emissions Saved (tons)	666	13,324
		CO ₂ Emissions Saved (mil. \$)	\$0.0	\$0.2

The *Project Development Procedures Manual* (PDPM) describes the process for conceptualizing, studying, and designing projects on the State Highway System. Caltrans continually updates the PDPM to reflect incremental changes in policies and procedures. Chapter 9 of the PDPM describes the process for initiating a new state highway project, including preparing a project initiation document (PID).

According to Chapter 9 of the PDPM, a project “need” is an identified transportation deficiency. Typical transportation deficiencies are related to safety, congestion relief, connectivity of the highway system, multi-modal connectivity, access, operation, facility preservation, and legal mandates. While economic development and supporting the California economy are not specifically listed as potential needs, several of the listed needs are related to the economy. For example, access can be construed as access to markets or jobs. Connectivity can refer to connectivity to inter-modal freight facilities that support the economy.

The PDPM notes that the project objectives should be quantified during the project initiation phase and that performance measures should be used to develop, evaluate, and compare reasonable solutions. In all of these areas, the PDPM does not specifically address economic needs. If the PDPM is not modified



to include economic needs specifically, then agencies need to have the forethought to consider economic development issues at the time of project initiation.

Caltrans develops Transportation Concept Reports (TCRs) as part of its long-range planning process for state highways. TCRs evaluate current and projected conditions along routes and communicate the vision for the development of the routes. While most of the data reported in TCRs relate to transportation system performance, they do include demographic and economic base information in the section on community characteristics. The TCR guidelines do not mention supporting economic development activities. However, a TCR may discuss the importance of the corridor to regional economic activities (e.g., moving cattle from Sierra County to markets in the Central Valley).

MAP-21

Federal transportation funding was reauthorized under Moving Ahead for Progress in the 21st Century (MAP-21). The bill was signed into law on July 6, 2012. It is the first long-term Federal highway bill since Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) expired in 2009. MAP-21 covers only a two-year period, but its provisions are expected to form the basis of the next major highway bill.

A key feature of MAP-21 is its emphasis on accountability and performance measurement. MAP-21 establishes a performance and outcome-based investment program to encourage state and local funding to make progress towards national goals. As shown in Exhibit J6, MAP-21 establishes seven national goals in seven performance areas.

Exhibit J6: National Goal Areas Established Under MAP-21

Performance Area	National Goal
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
Infrastructure Condition	To maintain the highway infrastructure asset system in a state of good repair
Congestion Reduction	To achieve a significant reduction in congestion on the National Highway System
System Reliability	To improve the efficiency of the surface transportation system
Freight Movement and Economic Vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
Environmental Sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduced Project Delivery Delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

Source: Federal Highway Administration, MAP-21 Performance Measurement Fact Sheet.



The Freight Movement and Economic Vitality performance area emphasizes transportation impacts on the economy. The description of the national goal includes several levers by which the economy can be impacted:

- National freight movement
- Rural community access to trade markets
- Regional economic development.

All three levers are directly related to the NSTEDS, but the last two are particularly applicable to the North State.

MAP-21 requires the United States Department of Transportation (USDOT) to establish performance measures within 18 months of the bill's passage (by January 6, 2014). USDOT must establish its performance measures in consultation with states and MPOs. The MAP-21 legislation lists the areas in which performance measures are to be established and prohibits USDOT from creating additional performance measures. The legislation lists freight movement on the Interstate System, but it ignores freight movement on other roads as well as the other two components of the Freight Movement and Economic Vitality performance area (i.e., rural community access to trade markets and regional economic development). These two areas remain important, but USDOT is not establishing measures to address them.

Once USDOT has established its performance measures, States must set their targets in support of these measures in tandem with MPOs. States are allowed to set different targets for urbanized and rural areas, but it is unclear whether the State of California could establish targets in rural community access to trade markets and regional economic development if USDOT does not establish performance measures in these areas. MPOs are expected to establish their targets 180 days after state targets are set. These targets must be incorporated into RTPs and the Federal STIP.

As part of MAP-21 implementation, USDOT is also designating a National Freight Network. USDOT outlined its planned process for designating the network in the Federal Register on February 6, 2013. The purpose of the National Freight Network is to assist states in "strategically directing resources" to improve freight movement. The network includes the National Highway System, freight intermodal connectors, and aerotropolis systems (i.e., economic development near airports). Designating the National Freight Network is part of MAP-21 policy to improve the condition and performance of the national freight system.

The National Freight Network includes three components:

- Primary Freight Network - 27,000 miles based on Federal Highway Administration (FHWA) analysis of certain factors
- Additional Miles - 3,000 additional miles critical to "future efficient movement of goods on the primary freight network" selected using factors such as supply chain and connection to major intermodal connectors



- Rural Freight Corridors – States can suggest additional miles for USDOT consideration, but the routes must be classified as at least principal arterials and carry at least 25 percent trucks.

The initial designation of the National Freight Network is expected to be completed by December 2013. In related efforts, FHWA is providing interim guidance on increased Federal funding shares for freight projects and interim guidance on the development of state freight plans.

TIGER Discretionary Grants

In 2009, USDOT established the first Transportation Investment Generating Economic Recovery (TIGER) discretionary grant program, which was authorized under the American Recovery and Reinvestment Act (ARRA). The program establishes a competitive funding process to support projects that achieve important national objectives. USDOT gives priority to projects that are ready to proceed quickly and are likely to have desirable long-term benefits for the nation or region.

Like MAP-21, TIGER helps to establish a performance-based project selection process. Each round of TIGER funding has been very competitive and required applicants to demonstrate project benefits in critical long-term outcome areas. The desired outcome areas have changed slightly over the funding rounds, but they have generally included the following priorities:

- State of Good Repair
- Economic Competitiveness
- Livability
- Environmental Sensitivity
- Safety
- Project Readiness.

In addition, the TIGER discretionary grant program requires all applications to include detailed benefit-cost analyses that demonstrate the transportation user benefits of projects outweigh the costs of constructing them.

A key legacy of the TIGER discretionary grant program is that transportation agencies have become considerably more interested in the economic analysis of transportation projects. This includes both benefit-cost analysis and economic impact analysis. Economic impact analysis allows applicants to demonstrate how projects contribute to economic competitiveness. For the TIGER V round, USDOT defines economic competitiveness as:

"Contributing to the economic competitiveness of the United States over the medium- to long-term by improving the national transportation system while creating and preserving jobs. DOT will assess whether the project will (i) Improve long-term efficiency, reliability or cost-competitiveness in the movement of workers or goods, with a particular focus on projects that have a significant effect on reducing the costs of transporting export cargoes; (ii) increase the economic productivity of land, capital or labor at or between specific locations, particularly in Economically Distressed Areas; or (iii) result in job creation and practicable opportunities, particularly for low-income



workers or for people in Economically Distressed Areas, and practicable opportunities for small businesses and disadvantaged business enterprises, including veteran-owned small businesses and service disabled veteran-owned small businesses.”

Most TIGER applicants use commercially available regional economic models, such as IMPLAN, TREDIS, or REMI to estimate the economic impacts of transportation projects.

Related Ongoing Efforts

The project team also examined related ongoing performance measurement efforts in California and two national research projects related to the development of economic performance measures.

Performance Monitoring Indicators Technical Group

The San Diego Association of Governments (SANDAG) recently initiated a project to help California MPOs establish a common set of performance indicators to meet the requirements of Senate Bill 375 (SB 375) and MAP-21. SB 375 was enacted by the California Legislature to reduce greenhouse gas emissions from vehicles through integrated transportation, land use, housing, and environmental planning. As part of SB 375, MPOs must develop Sustainable Community Strategies (SCS) that establish plans for meeting emission targets as part of their RTPs. The SANDAG Performance Monitoring Indicators Technical Group is helping to establish common indicators among MPOs and is coordinating with the MPO/State Agency SB 375 Implementation Working Group.

The Performance Monitoring Indicators Technical Group held an initial conference call on March 19, 2013. During the call, SANDAG presented an overview of the project framework and schedule. Participants reviewed more than 200 existing performance indicators used by Caltrans, MPOs, and state agencies as well as indicators suggested in research reports. The technical group narrowed this list into the ones most commonly used by MPOs and state agencies and identified 11 indicators for further consideration.

During a second conference call, the technical group discussed initial calculation methodologies and potential data sources for the initial performance measures. Further discussions led to a final list of nine proposed performance measures. As shown in Exhibit J7, the proposed indicators have been connected to SB 375 and MAP-21 performance categories. The technical group identified two performance measures for current monitoring related to “economic vitality” – transit accessibility and travel time to jobs.



Exhibit J7: Common Indicators Identified in SANDAG Project

Table 1: Proposed Performance Monitoring Indicators					
ID	Inventory Ref. (Appendix B)	MAP-21 Category	Statewide Performance Monitoring Observed Data	Performance Measure (Model Based)	Referenced In
Congestion Reduction					
1	A-8 / A-1	VMT	√	√	SB 375 & MAP-21
		a. VMT per capita* b. Percent of Congested Freeway/ Highway Vehicle Miles [PeMS]	√	√	SB 375 & MAP-21
2	A-16/A-18	Mode Share (Travel to work)*	√	√	SB 375 & MAP-21
Infrastructure Condition					
3	-	State of Good Repair a. Highways b. Local Streets c. Highway Bridges d. Transit Assets	√		MAP-21
System Reliability					
4	A-65	Freeway/Highway Buffer Index [PeMS]	√	√	MAP-21
Safety					
5	A-39	Fatalities/Serious Injuries a. Fatalities/Serious Injuries per capita* b. Fatalities/Serious Injuries per VMT*	√	√	MAP-21
Economic Vitality					
6	C-33	Transit Accessibility (Housing and jobs within 0.5 miles of transit stops with frequent transit service)*	√	√	SB 375
7	A-84	Travel Time to Jobs	√	√	SB 375 & MAP-21
Environmental Sustainability					
8	B-1/B-5	Change in Agricultural Land*	√	√	SB 375
9	E-5	CO ₂ Emissions Reduction per capita (modeled data)*		√	SB 375 & MAP-21
* Indicator relates to Public Health			[PeMS]	Indicator for MPOs that have access to PeMS data	

Source: SANDAG, Statewide Performance Monitoring Indicators for Transportation Planning, Final Report, June 28, 2013.

As shown in Exhibit J8, the technical group identified a number of other indicators to be considered as data sources become available in the future. Two of these measures were tied to economic vitality – residential and employment densities as well as housing/transportation affordability index. In addition to these measures, the following economic vitality indicators were proposed for future consideration:

- Labor market access (measured by population within 40-minute drive time)
- Delivery market access (measured by employment within a 3-hour drive time)



- Access to transportation hubs (e.g., maritime port, rail intermodal loading facility, and freight airport measured in drive time)
- Change in employment
- Change in personal income.

These additional measures are more closely linked to the three levers identified in MAP-21 (i.e., national freight movement, rural community access to trade markets, and regional economic development). The technical group discussed gross regional product and unemployment rate as potential indicators. However, the technical group decided that these indicators were too broad to be used as transportation-specific indicators.

Exhibit J8: Additional Indicators Identified in the SANDAG Project for Future Consideration

Table 2: Proposed Performance Monitoring Indicators for Future Consideration		
ID	Inventory Ref. (Appendix B)	MAP-21 Category
		Congestion Reduction
1	A-1	Congested Arterial VMT
2	A-8	Bike and Walk Miles Traveled
3	A-16/A-18	Non-Work Mode Share
		System Reliability
4	A-65	Transit/Rail travel time reliability
		Economic Vitality
5	B-25	Residential and employment densities (new growth) - (by Environmental Justice (EJ) and Non-EJ areas)
6	C-33	Housing/Transportation Affordability Index

Source: SANDAG, *Statewide Performance Monitoring Indicators for Transportation Planning, Final Report*, June 28, 2013.

California Regional Progress Report

SB 732 established the Strategic Growth Council in September 2008. The council is a cabinet-level committee that coordinates the activities of state agencies in several areas including transportation, public health, land use, air quality, and natural resource protection. The council also assists state and regional agencies in planning sustainable community strategies.

The Strategic Growth Council is currently conducting a scoping process to identify priority policy issues and indicators to include included in its 2013 California Regional Progress Report. As part of the scoping



process, the council conducted an inventory of MPO indicators and performance measures. This inventory provided the basis of the SANDAG effort, which was funded by the Strategic Growth Council.

In its inventory, the Strategic Growth Council segmented economic competitiveness and opportunity measures into two categories:

- Economically Disadvantaged/Gentrification/Reinvestment
- Jobs (Employment)/Economy/Productivity.

In the first category, three of the large MPOs (i.e., the Metropolitan Transportation Commission - MTC, the Sacramento Association of Governments - SACOG, and the Southern California Association of Governments - SCAG) identified gentrification measures and housing growth in disadvantaged areas as potential measures. The Butte County Association of Governments (BCAG) also included a measure related to low-income housing density.

In the second category, the same three large MPOs provided measures in terms of Gross Regional Product (GRP) and job growth. The Shasta Regional Transportation Agency (SRTA) included performance indicators that measure net commuter savings in time and money. It is unclear why the Strategic Growth Council counted these last indicators in the Jobs (Employment)/Economy/Productivity category, but they do have the potential to turn into economic benefits if commuter savings translate into reduced business costs or increased labor productivity.

Related National Research Projects

The project team also looked at two ongoing national research efforts:

- Second Strategic Highway Research Program (SHRP 2) Reliability Focus Area
- National Cooperative Highway Research Program (NCHRP) 02-24.

SHRP 2 Reliability Focus Area. Since 2006, the Federal government has sponsored extensive research travel time reliability as part of the Second Strategic Highway Research Program (SHRP 2). The reliability focus area is intended to provide transportation agencies with tools to reduce non-recurrent congestion and improve travel time reliability through incident reduction, management, response and mitigation. A related capacity focus area is tackling recurrent congestion issues.

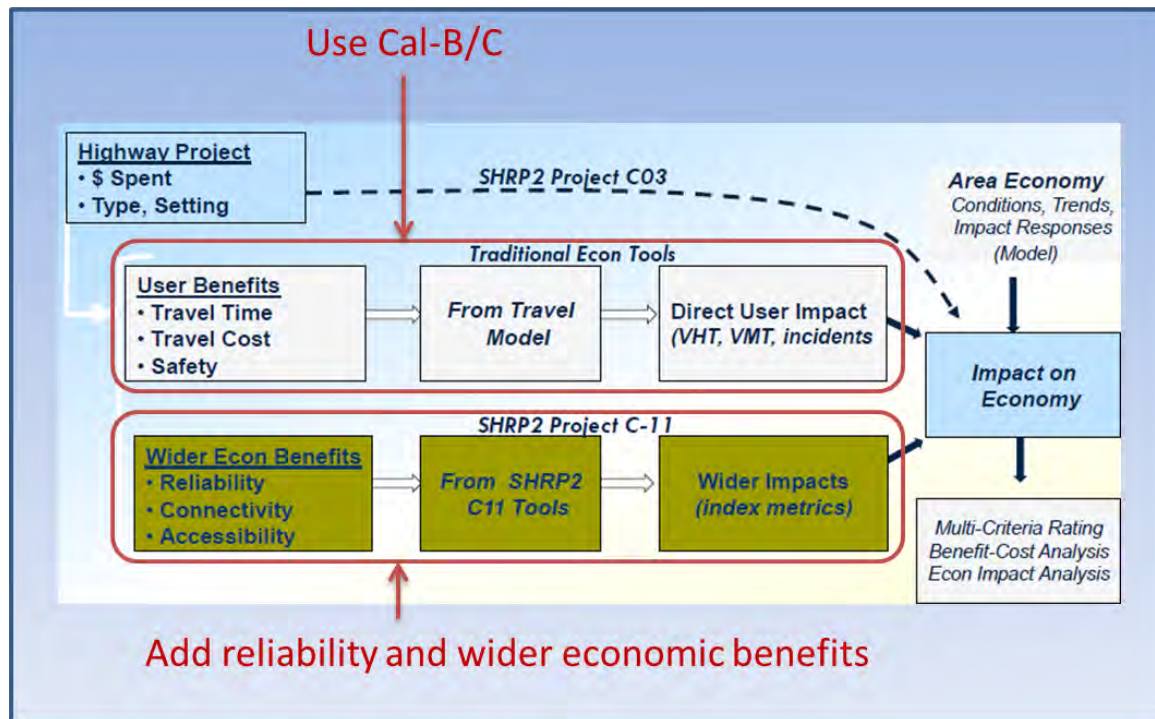
Travel time reliability has the potential to impact the economy through a number of different mechanisms. Individuals can respond to unreliability by planning for delays and adding extra buffer times to their schedules. This extra time reduces labor productivity, the size of the labor pool accessible to particular businesses, and personal consumption. Businesses can respond to unreliability by changing their pattern of operations, such as holding additional safety stock, increasing warehouse space, or investing in systems that provide traffic flow information to reduce the impact of unreliability. These additional investments may help businesses cope with unreliable travel times, but they reduce the return on capital.

The SHRP 2 Program has developed a number of tools for modeling travel time reliability and estimating the impacts of projects. These tools are currently being tested at four pilot sites across the country to

see if incorporating travel time reliability considerations affects project priorities. One pilot site is located in Southern California.

The SHRP 2 Project C11, in particular, has focused on how wider economic benefits associated with travel time reliability, connectivity, and accessibility can be better included in economic impact modeling. Exhibit J9 provides an example of how these impacts may be incorporated in estimating the impact of projects on the economy. These methods are being tested in the Southern California pilot site and being further refined in NCHRP 02-24.

Exhibit J9: Incorporation of SHRP 2 C11 Methods into Economic Impact Analysis



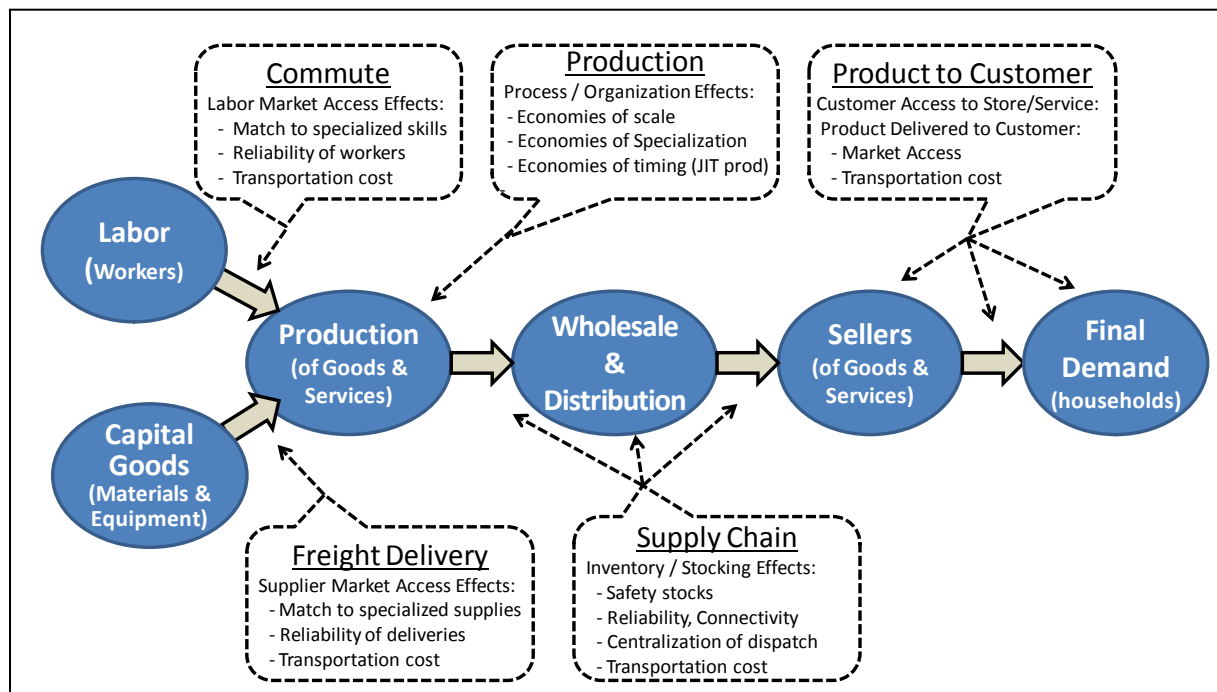
Source: Adapted from SHRP 2 Project C11 presentation

NCHRP 02-24 Economic Productivity and Transportation Investment Priorities. This research project is examining how transportation projects can affect travel time reliability. The first part of the project includes a critical review of literature on the links between transportation system performance and economic productivity. From this research, a methodology and guide will be produced for analyzing the productivity impacts of transportation projects. The methodology will consider data needs and availability as well as consider the characteristics of regional economies that make them susceptible to influence by transportation improvements.

NCHRP 02-24 is building on the framework established in SHRP 2 Project C11 and is considering three primary effects: travel time reliability, market access, and intermodal connectivity. Exhibit J10 shows the specific mechanisms through which transportation projects can impact economic productivity. All of these transportation system changes lead to productivity effects by changing the costs of acquiring goods, costs of acquiring workers, direct costs of transportation or changes in business operations.



Exhibit J10: Transportation Effects on Economic Productivity

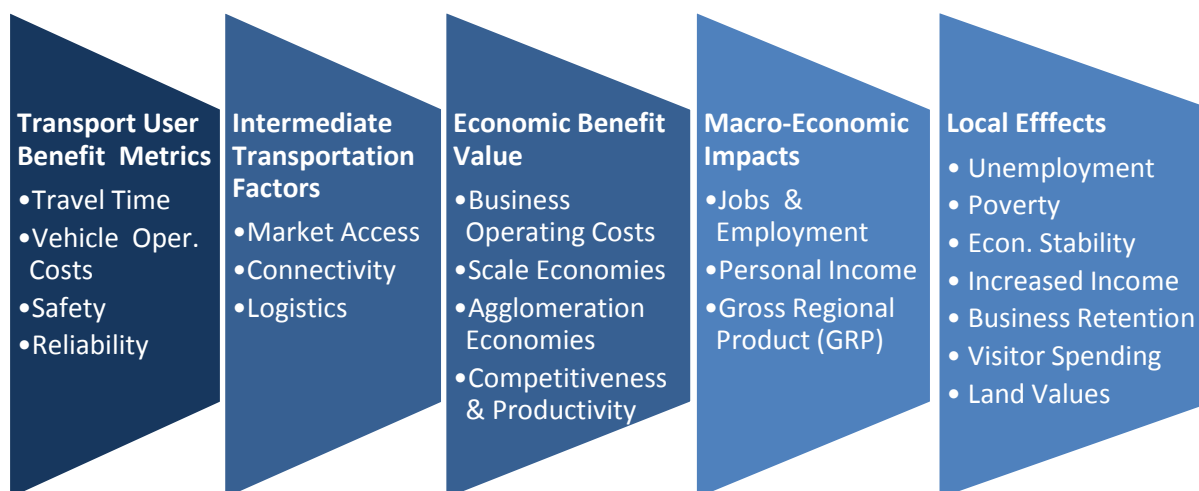


Source: NCHRP Project 02-24, Task 2 Draft Interim Report.

Framework for Economic Performance Measures

The project team developed an economic performance measurement framework based on the previous review and its knowledge of the linkages between transportation and the economy. The framework follows the hierarchical approach illustrated in Exhibit J11.

Exhibit J11: Progression of Themes for Economic Performance Measures





This approach recognizes the following linkages between transportation and the economy:

- Transportation user and system performance measures, such as travel time, vehicle operating costs, safety, and reliability lead to business and personal cost savings as well as increased consumption.
- Intermediate transportation factors, such as accessibility to markets and jobs, connectivity to intermodal terminals, and logistics costs are enhanced. These, in turn, create a number of economic benefits, such as increased economic productivity, competitiveness, scale economies, and agglomeration effects.
- These impacts lead to the final economic outcomes that can be measured in terms of macro-economic impacts, such as jobs, personal income, and Gross Regional Product (GRP). They can also be tied to local economic development goals, such as reducing unemployment, increasing wages, promoting tourism, and retaining existing businesses.

The layers of performance measurement are described further below.

Transportation User Benefit Metrics, such as travel time, vehicle operating costs, safety, and travel time reliability, capture impacts that occur directly on the transportation system. Many of these performance measures are already included in North State RTPs. For example, every North State RTP includes measures for mobility and safety benefits. The most common mobility measure in North State RTPs is the LOS on State Highways. This measure can easily be translated into or supplemented by other measures that capture travel times, vehicle-hours of delay, or speeds on highways.

Intermediate Transportation Factors, such as such as accessibility to markets and jobs as well as connectivity to ports, airports, and intermodal terminals tie transportation performance measures to the way the transportation system is used to achieve specific goals. Some North State RTPs already include some non-economic accessibility measures, such as the population within walking distance of transit stops. However, most focus on mobility rather than accessibility. Both measures are important for capturing the impacts of transportation on the economy. Accessibility measures can be calculated using existing GIS tools. Appendices G and H provides several examples of measures calculated using a commercial product, ESRI Business Analyst, but they could also be calculated using in-house GIS tools.

Economic Benefit Values, such as increased economic productivity, competitiveness, scale economies and agglomeration effects, can be captured in regional economic models. In the economic impact modeling, the project team used the TREDIS regional economic model to demonstrate how different bundles of projects can affect the North State's economy. Caltrans has recently acquired a license to use TREDIS and may be willing to help North State RTPAs conducted further economic impact analyses. Other regional economic models, such as REMI and IMPLAN, are also available and used by other California transportation planning agencies.

The final result from regional economic models can be presented in terms of the *Macro-Economic Impacts*, such as jobs, personal income, and GRP as well as in progress meeting *Local Economic*



Development Goals, such as changes in unemployment and wages. Regional economic models can estimate these effects for specific projects or bundles of projects for economic impact studies. It makes sense for the North State to estimate macro-economic impacts during project development and include these impacts in project PIDs.

Economic development stakeholders are more interested in measures that track economic development goals. Regional economic models can estimate the impacts on measures such as unemployment and wages. However, contingent development impacts, such as jobs retained or attracted, and increased visitor spending need to be estimated outside regional economic models using local knowledge available from economic development stakeholders. Appendix E provides demographic tables that capture the baseline for a number of these measures. Economic development stakeholders can help to identify the expected change in these measures due to specific projects.

The measures included in *Macro-Economic Impacts* and *Local Economic Development Goals* can be tracked over time and reported in RTPs. If North State RTPAs choose to include macro-economic measures, such as GRP, in their RTPs, they must recognize that these measures are also affected by factors other than transportation. Similarly, the achievement of economic development goals often requires collateral activities, such as recruitment, marketing, tax incentives, and complementary policies.

Since economic development stakeholders are likely to track the achievement of economic development goals in their own plans, it makes sense for RTPs to focus on *Intermediate Transportation Factors*. The North State should also consider conducting economic impact studies for projects that matter to the region. For example, Butte County is developing an “economic transportation study” as part of the Project Study Report for SR-70. The change in measures related to *Macro-Economic Impacts* and *Local Economic Development Goals*, such employment, personal income, and taxes, can be estimated using regional economic tools and reported in these studies.

The North State should also keep in mind that the transportation-intensiveness of different industries varies, so the promotion of economic activities does not always require transportation investment. In another study, members of the project team examined the sensitivity of various industries to the types of accessibility measures described in the economic performance measurement framework. The access of every county in the United States was compared to employment, output, and exports in various industrial sectors. As shown, in Exhibit J12, some industries are less dependent on transportation access than others.



Exhibit J12: Industry Sensitivities to Accessibility Measures

			Sensitivity to Access Measure (1-10 scale)				
		NAICS	Sector	40-min Market	3-hr Delivery Market	Commercial Airport	Rail Intermodal
Resource	{	212-213	Mining	3	0	4	5
		311	Food	3	0	0	0
		312	Beverage	10	0	0	3
Resource Based-Mfg	{	313	Textile Mills	5	5	2	3
		314	Textile	5	10	0	0
		315	Apparel	5	5	0	0
		316	Leather	5	3	2	5
		321	Wood	0	5	0	5
		322	Paper	0	5	0	5
Durables Mfg	{	323	Printing	10	5	7	0
		324	Petroleum	5	0	0	0
		325	Chemical	5	3	4	3
		326	Plastics	8	10	0	3
		327	Nonmetal Mineral	5	5	2	0
		331	Primary Metal	3	5	4	0
		332	Fabricated Metal	10	5	2	0
		333	Machinery Mfg	0	5	2	0
		334	Computer	3	5	2	3
		335	Elec Appliances	0	10	3	0
Trade & Distrib	{	336	Transport Equip	5	5	3	3
		337	Furniture	5	10	3	0
		339	Miscellaneous Mfg	5	5	5	0
		420	Wholesale Trade	10	0	3	0
		441-454	Retail Trade	8	3	3	5
Tech/ Services	{	481-487	Transportation	5	0	3	0
		491-493	Del & Warehousing	10	0	2	3
		511	Publishing	10	0	10	0
		512	Movie & Sound	10	3	9	0
		513	Broadcasting	10	0	5	0
		514	Internet & DP	8	3	5	0
		521-531	Finance, Insurance	10	0	3	0
	541-551	Prof. Scien Tech	10	3	10	0	

Source: Altstadt, Weisbrod and Cutler (2012), *The Relationship of Transportation Access and Connectivity to Local Economic Outcomes: A Statistical Analysis*, Transportation Research Record #2297, pp. 154-162.

Exhibit J12 illustrates that the labor market access measure (40-minute drive time) is important for trade and service industries (particularly high technology), but it is a less important factor for manufacturing, construction, and utilities sectors. This reflects the fact that these industries are more dependent on supply chain factors, such as the movement of commodities, and the cost of utilities. The delivery access measure (3-hour drive time) is more important for agriculture and manufacturing industries (including wood products manufacturing). Commercial airport access is more important for professional and technical services as well as recreational industries, because these industries require employee or customer travel. It is also important to some specialized manufacturing industries. Rail intermodal freight terminal access is important to natural resource industries, including wood and paper products.

For less transportation-sensitive industries, the North State will need to address related barriers, such as broadband internet access and speed. In this area, the North State can take advantage of efforts, such as the California Emerging Technology Fund. Established by the California Public Utilities Commission (CPUC), this fund is providing seed money to advance broadband deployment and adoption throughout rural California in order to promote economic competitiveness, access to essential services, and improve quality of life. In the North State, there are three such efforts – Upstate California Connect, Northeastern California Connect, and Redwood Coast Connect. Advanced broadband deployment and



other activities could help support travel demand management strategies, such as increases in telecommuting, for industries that can take advantage of these services.

The economic performance measurement framework shown in Exhibit J11 is able to accommodate many different performance measures. However, the North State needs to focus on the most critical criteria for its industries. The project team suggests that the North State starts by incorporating the following indicators in its performance measurement processes:

- For monitoring regional performance, such as in the RTPs, the North State should consider using GIS or travel demand models to estimate:
 - Labor market access (measured by population within 40-minute travel time)
 - Delivery market access (measured by employment within a 3-hour travel time)
 - Access to transportation hubs (e.g., maritime port, rail intermodal loading facility, and freight airport measured in drive time)
- For measuring the benefits of projects, such as in economic impact studies, the North State should consider using regional economic models to estimate:
 - Change in Gross Regional Product (GDP)
 - Change in employment
 - Change in personal income.

Potential Measures of Need

The project team identified several potential measures that the North State can use to demonstrate various aspects of economic need. These measures are arranged using four categories found in the hierarchical framework presented earlier:

- Transportation User Benefit Metrics
- Intermediate Transportation Factors
- Macro-Economic Impacts
- Local Effects.

The sections that follow describe the measures along with examples taken from other sections of the report. North State RTPAs and economic development stakeholders should select measures that are relevant to the local economy and economic development goals.

Transportation User Benefit Metrics

The North State already uses several user benefit measures, such as travel times and accidents rates. This section highlights some transportation network characteristics specific to the North State that can demonstrate economic need.

Availability of Multiple-Lane Roads

High-capacity roadways are necessary for easy movement of goods and people. Multiple lane roadways also generally have higher safety and perceived better ease of use by travelers. Exhibit J13 shows that



*North State Transportation for Economic Development Study (NSTEDS)
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the North State has a high percentage of two-lane roads and very little roadway mileage with more than four lanes.

Exhibit J13: Distribution of Roadway Mileage by Number of Lanes

Dist	County	Percent of Mileage		
		Lanes		
		2	4	6
1	Del Norte	83.2%	16.8%	0.0%
1	Humboldt	65.2%	34.2%	0.5%
1	Lake	92.3%	7.7%	0.0%
1	Mendocino	83.2%	16.8%	0.0%
2	Lassen	99.4%	0.6%	0.0%
2	Modoc	100.0%	0.0%	0.0%
2	Plumas	99.3%	0.7%	0.0%
2	Shasta	70.9%	29.1%	0.0%
2	Siskiyou	80.3%	17.8%	1.9%
2	Tehama	78.4%	20.8%	0.8%
2	Trinity	100.0%	0.0%	0.0%
3	Butte	81.3%	18.7%	0.0%
3	Colusa	69.5%	30.5%	0.0%
3	Glenn	73.8%	26.2%	0.0%
3	Nevada	63.4%	36.6%	0.0%
3	Sierra	95.3%	4.7%	0.0%
	Total	82.8%	16.9%	0.3%

Source: Caltrans

Roadway Topography

Roadways in rolling and mountainous terrain are more difficult to traverse, more difficult to maintain, and can impede travel. Exhibit J14 shows that nearly two-thirds of the State Highways in the North State cross rolling hills or mountainous terrain.



Exhibit J14: Distribution of Roadway Mileage by Terrain Type

Dist	County	Percent of Mileage		
		Terrain		
		Level	Rolling	Mountain
1	Del Norte	28.3%	46.6%	25.0%
1	Humboldt	19.4%	54.3%	26.3%
1	Lake	33.1%	39.7%	27.2%
1	Mendocino	9.7%	47.2%	43.1%
2	Lassen	57.9%	35.8%	6.3%
2	Modoc	68.1%	10.2%	21.7%
2	Plumas	17.8%	59.1%	23.0%
2	Shasta	38.0%	27.3%	34.7%
2	Siskiyou	40.1%	12.6%	47.3%
2	Tehama	40.1%	9.0%	50.8%
2	Trinity	0.9%	2.7%	96.4%
3	Butte	75.5%	6.3%	18.2%
3	Colusa	75.8%	24.2%	0.0%
3	Glenn	76.3%	23.7%	0.0%
3	Nevada	6.4%	45.1%	48.5%
3	Sierra	17.9%	16.9%	65.2%
	Total	35.4%	30.1%	34.5%

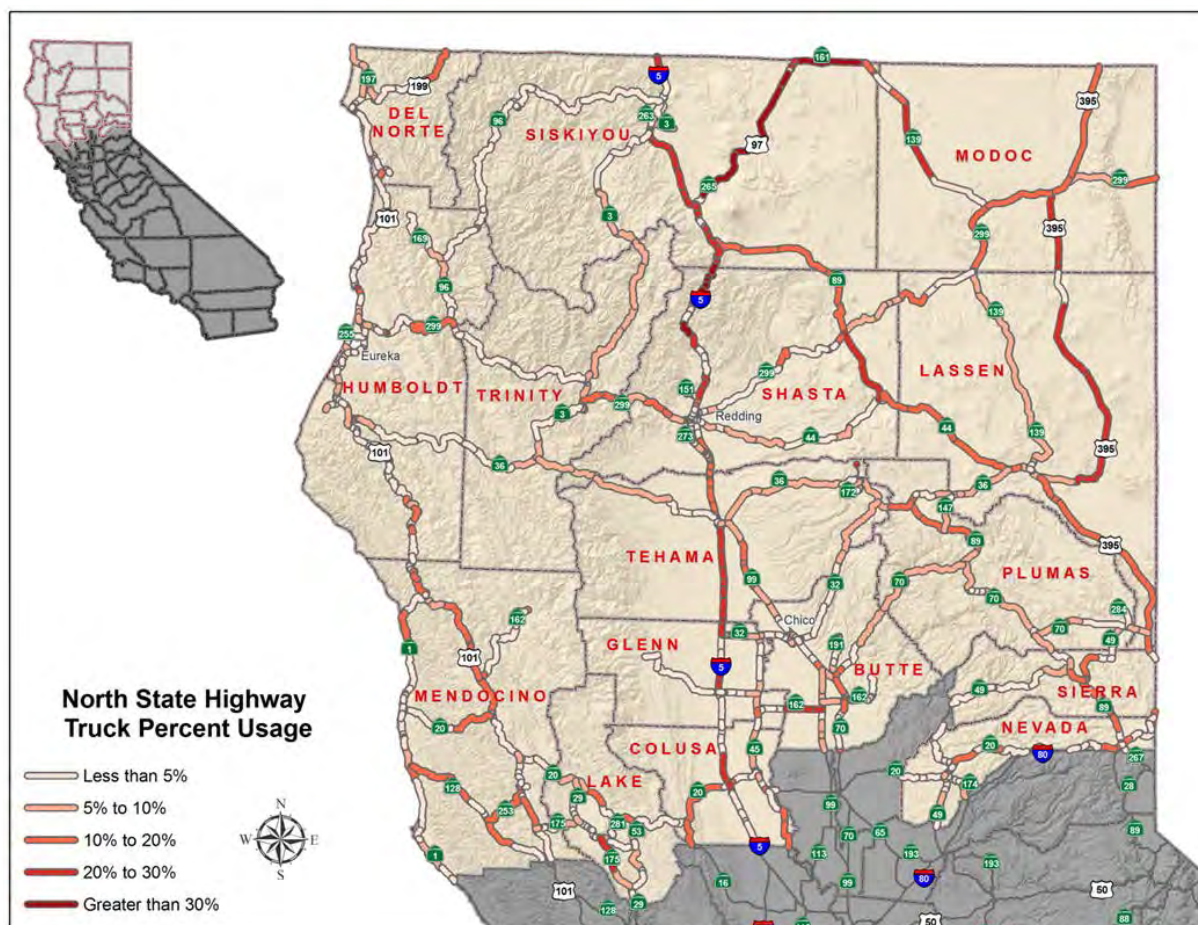
Source: NSTEDS LOS Database

Percent Trucks on Roadways

The percent of traffic comprised of trucks indicates the importance of individual roadways for goods movement. A high truck percentage may also indicate actual or perceived safety concerns for person movement, since trucks and automobiles have different operating characteristics. As shown in Exhibit J15, State Highways have very high truck percentages in the North State.



Exhibit J15: Truck Percentage on North State Highways



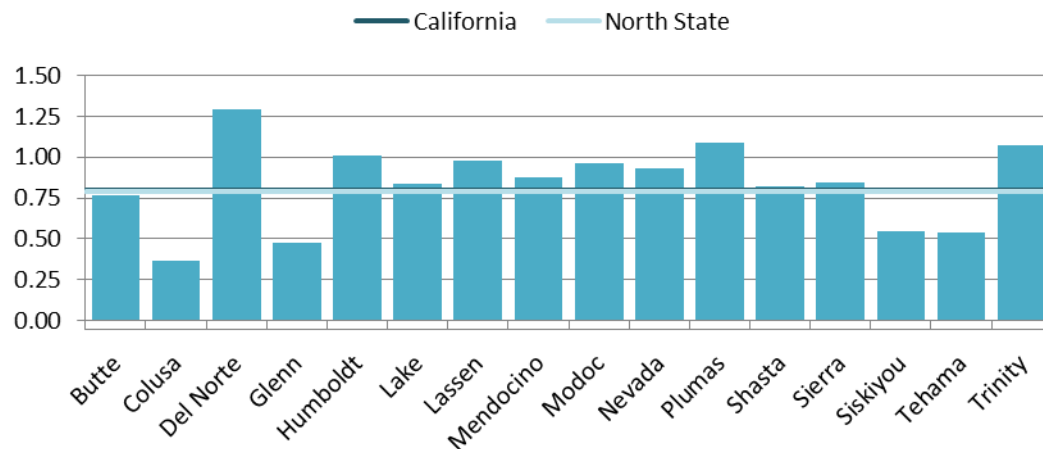
Source: Caltrans

Collision and Fatality Rates

Collision rates relative to the statewide average indicate the relative safety of roadways. As shown in Exhibit J16, the State Highways have roughly the same average crash rate in the Super Region as highways statewide. However, many rural counties have crash rates higher than the statewide average.



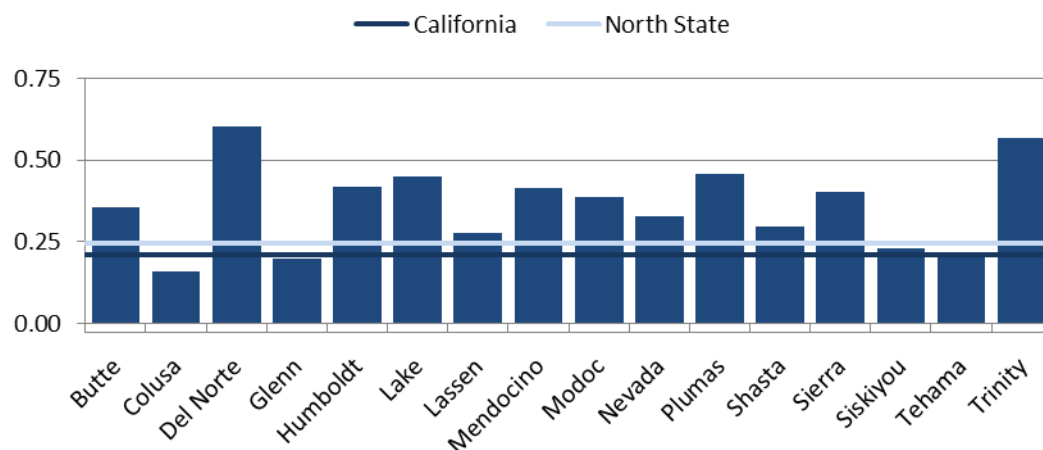
Exhibit J16: Collisions per Million Vehicle Miles Traveled (MVM)



Source: Caltrans, 2009 Collision Data on California Highways

Collisions in the North State tend to be more severe than those in California overall. As shown Exhibit J17, nearly every county in the North State has a fatal plus injury collision rate above the statewide average. The only counties with lower fatal plus injury collision rates are located along I-5, which has higher design standards than other North State roadways.

Exhibit J17: Fatality and Injury Collisions per Million Vehicle Miles Traveled (MVM)



Source: Caltrans, 2009 Collision Data on California Highways

STAA Truck Access

The Surface Transportation Assistance Act of 1982 allows large trucks, referred to as STAA trucks, to operate on routes that are part of the National Network. If an area does not have STAA truck access, shipments must be transferred from STAA trucks to smaller trucks, which can lead to higher shipping costs. Areas without STAA truck access are at an economic disadvantage. Several locations in the North State (e.g., Eureka, Arcata, and Trinity County) currently do not have STAA truck access.



Intermediate Transportation Factors

Intermediate transportation factors include access to labor, delivery markets, and transportation hubs. This section shows examples of all three types of measures.

Labor Market Size

The size of the labor market within a reasonable drive determines the labor pool available to employers. Larger labor pools promote better job matching and higher labor productivity. The population within a 40-minute travel provides an approximation of the labor market size.

Exhibit J18 estimates the labor market with 40-minute accessibility to the centroid of each county in the North State. As can be seen in Exhibit J19, labor market accessibility varies widely across the North State and is less than in the average California county.

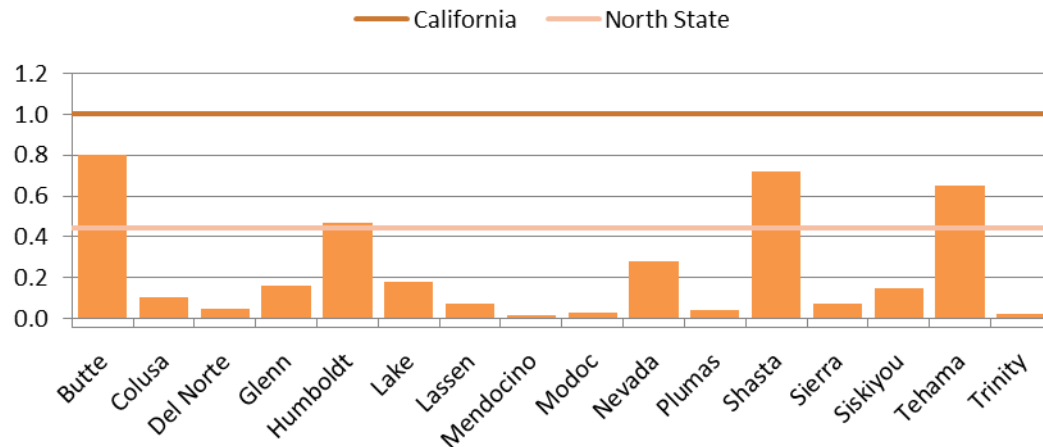
Exhibit J18: Approximate Labor Market Access in North State

Geographic Area	Population within 40-Minute Drive of County Centroid
California	85,418
North State	37,747
Counties	
Butte	68,198
Colusa	9,120
Del Norte	3,924
Glenn	13,689
Humboldt	40,104
Lake	15,394
Lassen	6,142
Mendocino	1,331
Modoc	2,404
Nevada	24,183
Plumas	3,567
Shasta	61,198
Sierra	6,304
Siskiyou	12,852
Tehama	55,535
Trinity	1,725

Source: LEAP analysis using US Census, Current Population Survey, ESRI, and NAVTEQ data



Exhibit J19: Relative Access to Labor Market in North State



Source: LEAP analysis using US Census, Current Population Survey, ESRI, and NAVTEQ data

Delivery Market Size

Access to customers is a critical factor for companies deciding where to locate. Employment within a 180-minute drive approximates the size of the same-day delivery market. As shown Exhibits J20 and J21, the North State has a much smaller delivery market than California as a whole.

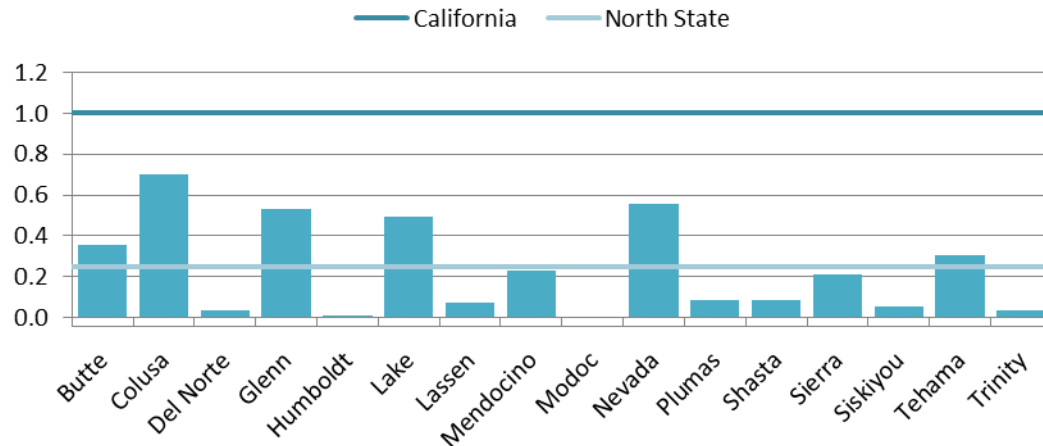
Exhibit J20: Approximate Delivery Market Access in North State

Geographic Area	Employment within 180-Minute Drive of County Centroid
California	9,540,836
North State	2,364,354
Counties	
Butte	3,392,627
Colusa	6,671,667
Del Norte	355,653
Glenn	5,095,389
Humboldt	88,570
Lake	4,709,235
Lassen	681,406
Mendocino	2,219,674
Modoc	57,270
Nevada	5,316,956
Plumas	839,017
Shasta	801,416
Sierra	2,017,559
Siskiyou	516,264
Tehama	2,917,851
Trinity	339,099

Source: LEAP analysis using US Census, Current Population Survey, ESRI, and NAVTEQ data



Exhibit J21: Relative Access to Delivery Market in North State



Source: LEAP analysis using US Census, Current Population Survey, ESRI, and NAVTEQ data

Commercial Airport Access

Access to airports is a critical issue for residents and business. There are four commercial airports in the North State. All four are non-hub airports and relatively remote – only Redding Municipal Airport is near an Interstate. Each airport is served by only one carrier (i.e., SkyWest operating as United Express) and all offer limited service:

- Arcata/Eureka (ACV) to Crescent City, Sacramento, and San Francisco
- Chico Municipal (CIC) to San Francisco
- Jack Mc Namara Field (CEC) to Arcata/Eureka and San Francisco
- Redding Municipal (RDD) to San Francisco.

There are three non-hub airports near the North State: Charles M. Schulz - Sonoma County Airport (STS), Klamath Falls (LMT), and Rogue Valley International/Medford (MFR). There are no major hub airports in North State counties. As Exhibit J22 shows, the drive time to the nearest commercial airport is long in the North State.



Exhibit J22: North State Airport Access

Counties	Nearest Commercial Airport	Avg. Drive Time to Airport (min.)	Driving Distance to Airport
Butte	Chico Municipal (CIC)	57	27
Colusa	Sacramento Int'l. (SMF)	61	55
Del Norte	Jack Mc Namara Field (CEC)	14	6
Glenn	Chico Municipal (CIC)	64	37
Humboldt	Arcata/Eureka (ACV)	44	24
Lake	Sacramento Int'l. (SMF)	149	109
Lassen	Reno/Tahoe Int'l. (RNO)	116	98
Mendocino	Sacramento Int'l. (SMF)	170	159
Modoc	Klamath Falls (LMT)	173	99
Nevada	Sacramento Int'l. (SMF)	83	70
Plumas	Chico Municipal (CIC)	176	99
Shasta	Redding Municipal (RDD)	14	7
Sierra	Reno/Tahoe Int'l. (RNO)	83	64
Siskiyou	Klamath Falls (LMT)	103	89
Tehama	Redding Municipal (RDD)	39	36
Trinity	Redding Municipal (RDD)	123	72

Sources: Federal Aviation Administration, ESRI, and NAVTEQ

Major Airport Access

A better measure of airport access is drive time to major hub airports. There are four medium or large hub airports near the North State Super Region: Oakland International (OAK), Reno/Tahoe International (RNO), Sacramento International (SMF), and San Francisco International (SFO). Drive time to these airports has not yet been calculated for the North State counties.

Airport Enplanements

Airport enplanements measure the relative amount of passenger service available at nearby commercial airports. As shown in Exhibit J23, the commercial airports in the North State carry very few people compared to the medium and large hubs outside the North State. Enplanements for most nearby commercial airports declined in double-digit percentages from 2010 to 2011.

Exhibit J23: Total Enplanements at North State and Neighboring Airports

Rank	State	Location ID	City	Airport Name	Hub Size	2010 Enplanements	2011 Enplanements	Percent Change
North State Airports								
247	CA	ACV	Arcata	Arcata/Eureka	Non-Hub	93,402	70,455	-24.57%
342	CA	CIC	Chico	Chico Municipal	Non-Hub	23,272	20,881	-10.27%
368	CA	CEC	Crescent City	Jack Mc Namara Field	Non-Hub	14,341	14,887	3.81%
291	CA	RDD	Redding	Redding Municipal	Non-Hub	54,420	38,290	-29.64%
Smaller Airports Outside Super Region								



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Rank	State	Location ID	City	Airport Name	Hub Size	2010 Enplanements	2011 Enplanements	Percent Change
221	CA	STS	Santa Rosa	Charles M. Schulz - Sonoma County	Non-Hub	92,778	102,414	10.39%
366	OR	LMT	Klamath Falls	Klamath Falls	Non-Hub	21,353	15,856	-25.74%
154	OR	MFR	Medford	Rogue Valley International - Medford	Non-Hub	310,824	301,742	-2.92%
Medium/Large Hub Airports Outside Super Region								
36	CA	OAK	Oakland	Metropolitan Oakland International	Medium	4,673,417	4,550,526	-2.63%
64	NV	RNO	Reno	Reno/Tahoe International	Medium	1,857,488	1,821,051	-1.96%
40	CA	SMF	Sacramento	Sacramento International	Medium	4,424,279	4,370,895	-1.21%
7	CA	SFO	San Francisco	San Francisco International	Large	19,359,003	20,056,568	3.60%

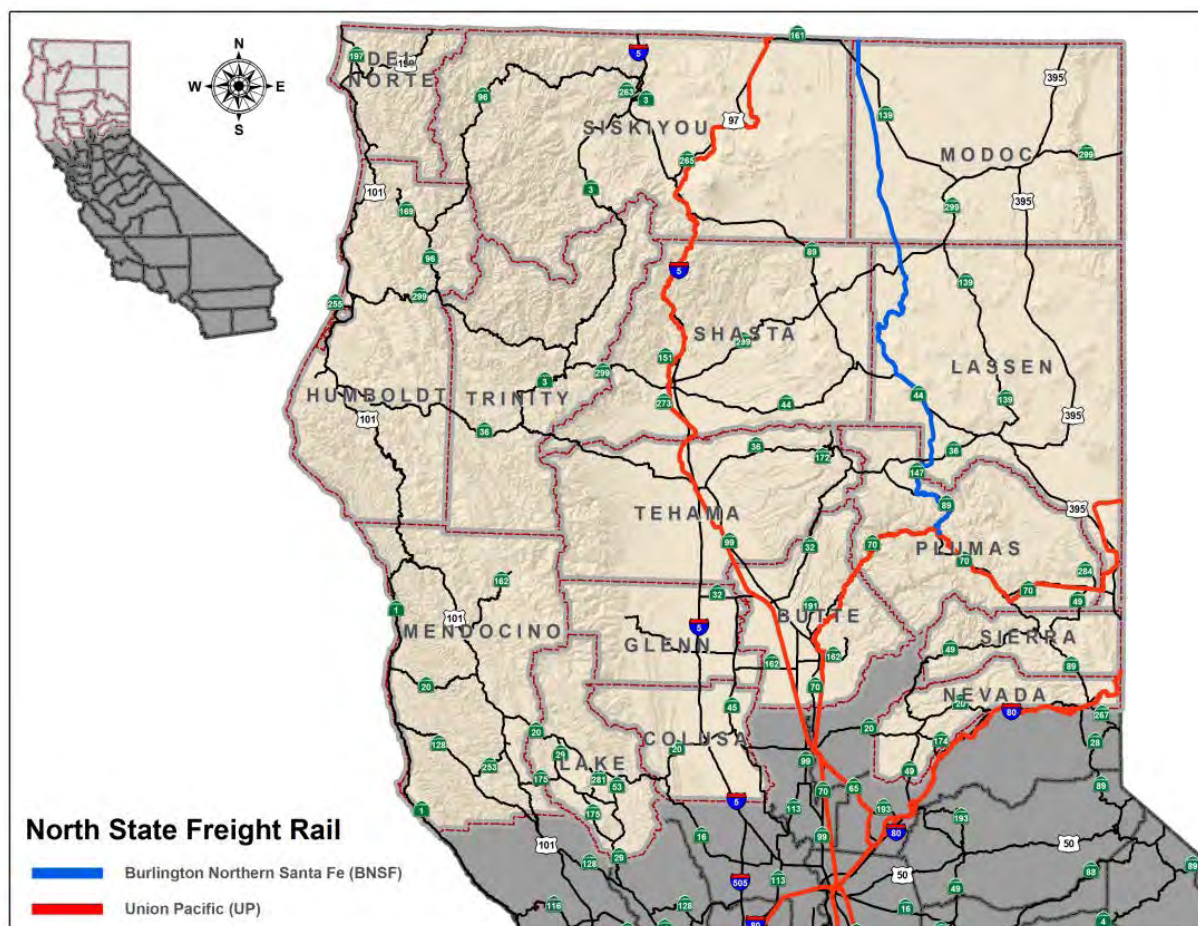
Source: Federal Aviation Administration (FAA)

Rail Access

Many businesses rely on rail for accessing materials and shipping final products. As shown in Exhibit J24, two Class I railroads serve the North State: Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UP). The counties along the North Coast have no rail access.



Exhibit J24: Class I Freight Railroad Service in North State



Source: Caltrans Office of Goods Movement and System Planning, August 2010

The average travel time in minutes from the county centroid to nearest rail intermodal loading terminal can serve as a proxy of the relative rail access. This measure has not been calculated yet for North State counties.

Port Access

Many businesses need access to marine gateways, which provide connections to international trade. The closest marine ports to the North State are:

- Port of Humboldt Bay, a bulk port formerly specializing in wood products
- Port of Oakland, a major container port
- Port of Stockton, an inland port for both bulk and containerized cargo
- Port of West Sacramento, an inland port.

The average travel time in minutes from the county centroid to the nearest marine terminal can serve as a proxy of the relative port access. This measure has not been calculated yet for North State counties.



Macro-Economic Impacts

Regional economic models can produce several macro-economic measures, such as jobs, personal income, and GRP. Many of these measures can also be tracked using published sources. This section shows an example using household income.

Household Income

Average household income indicates the relative prosperity of residents in a region. Lower household income means less money available for retail purchases. As shown in Exhibit J25, inflation-adjusted household income has declined further in the North State than in California as a whole over the last decade.

Exhibit J25: Trends in Average Real Household Income (in 2012 Dollars)

Geographic Area	Real Income (2012\$)			Avg. Rate of Income Change 2000 - 2006	Avg. Rate of Income Change 2006 - 2012
	2000	2006	2012		
California	\$87,500	\$93,400	\$79,500	1.1%	-3.9%
North State	\$73,200	\$64,600	\$45,000	-2.1%	-8.6%
Counties					
Butte	\$72,000	\$63,700	\$44,100	-2.0%	-8.8%
Colusa	\$78,000	\$69,700	\$45,000	-1.9%	-10.4%
Del Norte	\$64,200	\$56,500	\$39,100	-2.1%	-8.8%
Glenn	\$66,700	\$59,000	\$39,800	-2.0%	-9.4%
Humboldt	\$66,600	\$58,400	\$41,700	-2.2%	-8.1%
Lake	\$68,000	\$60,500	\$39,800	-1.9%	-9.9%
Lassen	\$76,200	\$67,900	\$44,400	-1.9%	-10.1%
Mendocino	\$75,900	\$66,500	\$49,500	-2.2%	-7.1%
Modoc	\$62,200	\$54,400	\$42,300	-2.2%	-6.1%
Nevada	\$98,500	\$86,900	\$59,400	-2.1%	-9.1%
Plumas	\$75,500	\$66,900	\$44,600	-2.0%	-9.6%
Shasta	\$73,200	\$64,500	\$45,200	-2.1%	-8.5%
Sierra	\$74,300	\$65,800	\$43,800	-2.0%	-9.7%
Siskiyou	\$65,500	\$57,600	\$41,500	-2.1%	-7.9%
Tehama	\$65,900	\$57,800	\$41,400	-2.2%	-8.0%
Trinity	\$60,600	\$53,000	\$38,400	-2.2%	-7.7%

Sources: Claritas and the US Census American Community Survey

Local Effects

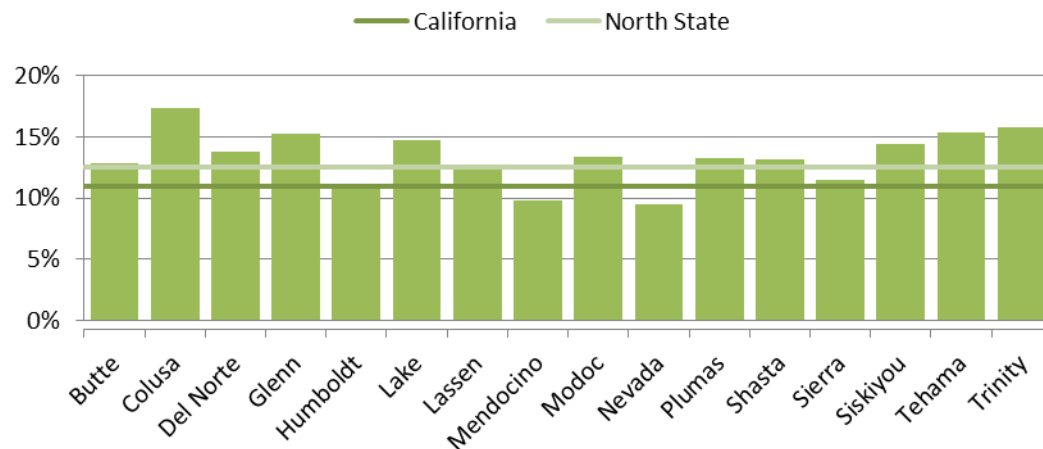
This section provides a few examples of performance measures that can measure the extent to which economic development plans have been achieved. Specific measures should be developed in consultation with economic development professionals.



Unemployment

Unemployment rates help measure the relative economic health of the region. As shown in Exhibit J26, most of the North State has unemployment rates higher than the statewide average.

Exhibit J26: Unemployment Rate in 2012

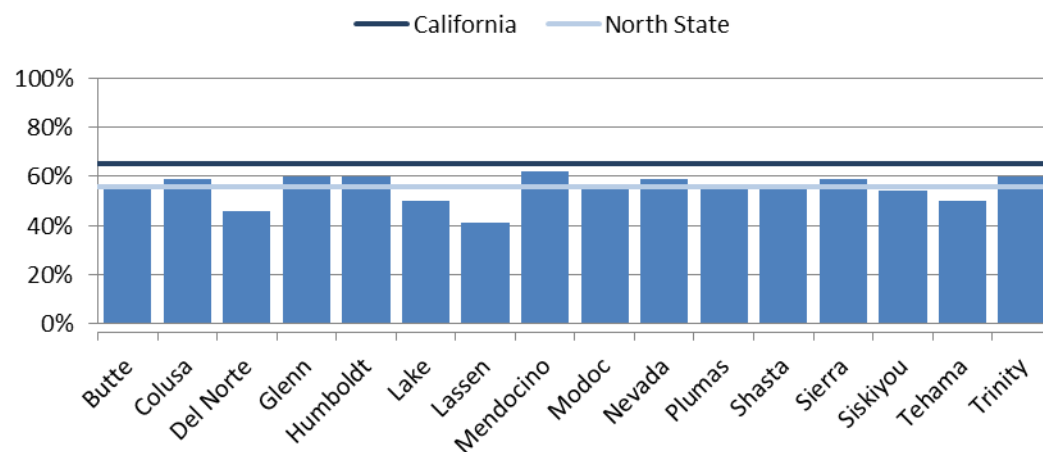


Sources: California Employment Development Department and Claritas

Labor Force Participation

The labor force participation rate shows the percentage of the population that is currently employed or seeking work. A low labor force participation rate may indicate a larger proportion of retirees or people receiving government transfer payments. As shown in Exhibit J27, all counties in the North State have labor force participation rates below the statewide average.

Exhibit J27: Labor Force Participation Rate in 2012



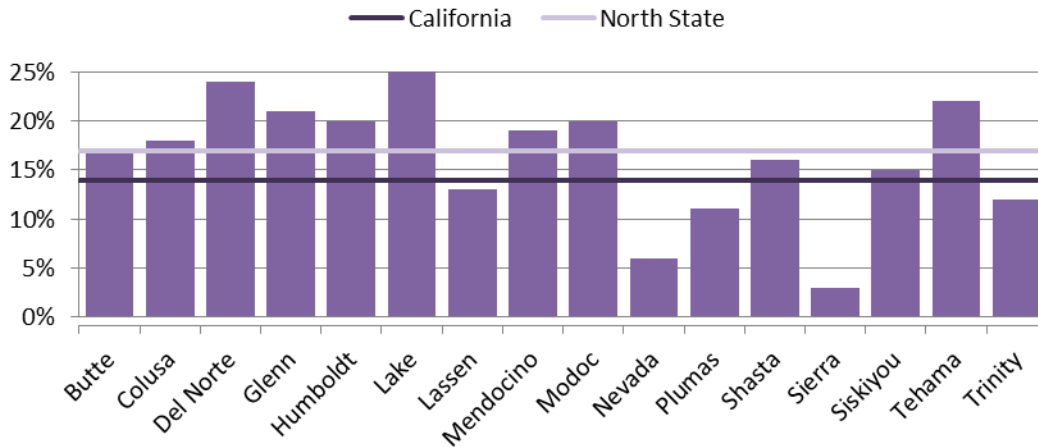
Sources: California Employment Development Department and Claritas



Poverty

A high poverty rate indicates the need for economic. As shown in Exhibit J28, the North State has a higher average poverty rate than California as a whole. Many North State counties have poverty rates above the statewide average.

Exhibit J28: Percent of Households below Poverty Line in 2010

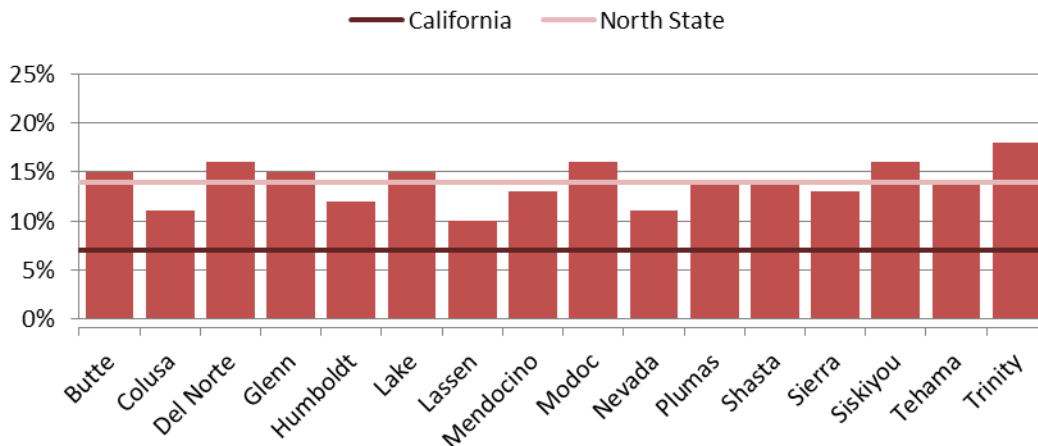


Sources: Claritas, US Census American Community Survey, and California Department of Finance

Government Transfer Payments

A large percentage of income derived from government transfer payments indicates a high level of government support through unemployment, disability, or retirement programs. As shown in Exhibit J29, North State residents receive a larger portion of their income from government transfer payments than does the average California resident.

Exhibit J29: Government Transfer Payments as a Percent of Total Income in 2012



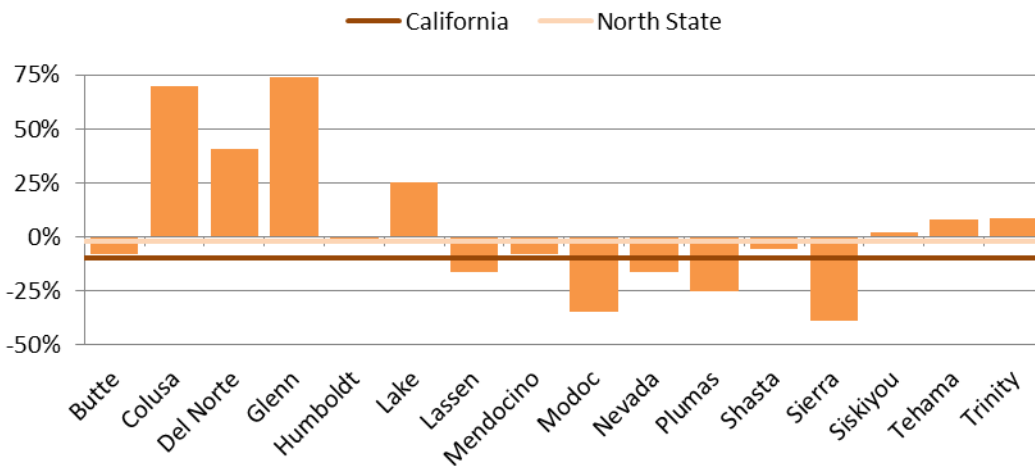
Sources: Claritas and US Bureau of Economic Analysis



Taxable Sales

A change in taxable sales shows the relative health of retail establishments. As shown in Exhibit J30, retail taxable sales declined in most North State counties from 2000 to 2010. However, the decline in the Super Region was less than in California overall.

Exhibit J30: Percent Change in Taxable Retail Sales, 2000 to 2010

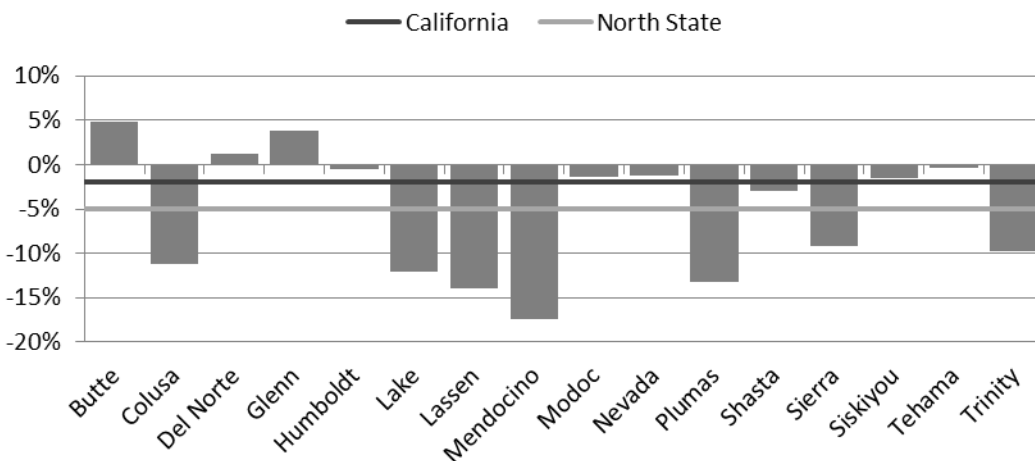


Source: California Board of Equalization

Visitor Spending

Visitor spending can be an important part of a local economy, particularly in a rural area dependent on tourism and recreation. As shown in Exhibit J31, visitor spending declined more in the North State than in California as a whole from 2000 to 2010.

Exhibit J31: Percent Change in Visitor Spending, 2000 to 2010



Sources: California Travel Impacts by: 1992 - 2010



Appendix K: Economic Impact Modeling Assumptions

This appendix lists the assumptions that were used to model each of the project bundles identified in the main body of the report:

- Enable Truck Access
- I-5 Improvements
- State Highway Expansion
- Bridge Replacements
- Freeway Interchanges

The project team made a few broad assumptions for each project group because project details were not available for the conceptual projects and detailed project analysis was beyond the scope of the NSTEDS. The North State should consider conducting more detailed economic impact studies for projects that matter to local stakeholders. The section on economic impact modeling lists the more detailed data needed to improve the modeling results.

Enable Truck Access

- 1) To estimate the *vehicle operating cost and travel time savings due to road realignments along US 101 and the removal of STAA barriers on SR-299* to permit 53-foot trucks instead of smaller trucks, the project team assumed that vehicle-miles traveled (VMT) and vehicle-hours traveled (VHT) are reduced by a factor of 1.5. This results in approximately \$6 million per year in transportation costs savings, which is consistent with the findings of a survey of Humboldt and Del Norte County businesses conducted by the Humboldt County Workforce Investment Board and reported in the Richardson Grove Draft Environmental Impact Report (DEIR).
- 2) To estimate the *vehicle operating cost and travel time savings due to bridge replacements and shoulder widening at Patrick Creek on US-199*, the project team assumed a low range (10 percent) and a high range (30 percent) of truck diversions to bypass the bridge. This reduces both VMT and VHT on the corridor.
- 3) To estimate the *increase in recreation and tourism if access is improved*, the project team estimated the excess employment in the recreation, retail, amusement, hotel, and restaurant industries, which currently have high location quotients. The high estimate assumes that this excess employment increases by another 10 percent. The low estimate assumes that the excess employment increases by only 5 percent.
- 4) To estimate the *business productivity improvements resulting from improved access to buyers and suppliers*, the project team assumed that both supplier and delivery market access increase



commensurate with the greater accessibility offered by the speed improvements. These improvements drive economies of scale for businesses.

- 5) To estimate the *project costs*, the project team used the costs (\$49.2 million) available in the Humboldt and Del Norte RTPs.

I-5 Freeway Improvements

- 1) To estimate the *travel time savings associated with additional lanes on I-5 and parallel corridor investments*, the project team based speed improvements on the level of service (LOS) changes expected in the Fix Five Partnership Tehama County Impact Fee Nexus Study. The LOS improvements reported in this study were calculated by Caltrans System Planning. The project team assumed a range of speed improvements on I-5 from 5 mph (low estimate) to 10 mph (high estimate).
- 2) To estimate the *reliability improvements associated with the investments*, the project team assumed that there is a decrease in the percentage of traffic that has a volume-capacity (v/c) ratio greater than 0.9. The TREDIS regional economic model estimates reliability from relationships developed in the SHRP 2 research (see Appendix J).
- 3) To estimate the *project costs*, the project team used estimates (\$314 million) from the Fix Five Partnership Tehama County Impact Fee Nexus Study and the Shasta County RTP.

State Highway Expansion

- 1) To estimate the *travel time savings due to additional lanes and operational improvements on state highways*, the project team assumed that speeds increase by 5 mph (low estimate) and 10 mph (high estimate). Two-thirds of the traffic volume on the affected state highways was assumed to occur during the peak period.
- 2) To estimate the *reliability improvements associated with the investments*, the project team assumed that reliability is affected by increased v/c ratios using the relationships built-in to the TREDIS regional economic model.
- 3) To estimate the *business productivity improvements due to improved access to buyers and suppliers*, the project team increased supplier and delivery market sizes commensurate with the speed increases. These lead to economies of scale for businesses.
- 4) To estimate the *project costs*, the project team used a per mileage cost of \$931,373. Detailed costs were collected as available in RTPs and planning documents, but costs were not available for every project. The per mileage cost was derived from a project on SR-20 to improve the highway to 4 lanes from SR-49 to Pleasant Valley Road (\$11.4 million for 35.6 miles) found in the Nevada County RTP. This resulted in a total cost estimate of \$469.77 million.



Bridge Replacements

- 1) To estimate the *vehicle operating cost and travel time savings associated with bridge replacements*, the project team assumed a probability of diversion to alternative routes in order to bypass deficient bridges. This probability is intended to reflect the likelihood of bridges being unavailable without replacement at some point over the lifecycle of the analysis. The probability ranges from 10 percent diversion (low estimate) to 30 percent diversion (high estimate). Changes in VMT and VHT were estimated based on diversion routes calculated using Google maps.
- 2) To estimate the *negative recreation and tourism impact due to reduced access due to bridge deficiencies*, the project team assumed that employment in industries related to retail, hotels, food and beverages, and amusements with high location quotients reduces to national levels (high estimate). The low estimate of the impact assumes that employment shifts only halfway to national levels.
- 3) To estimate the *project costs*, the project team collected bridge replacement costs from RTPs. Since few costs were available and they covered a wide range, the project team picked the estimate for the Jellys Ferry Bridge (\$12 million) from the Tehama County RTP and applied this estimate to all other bridge projects without cost estimates. The total cost estimated for the projects was \$268.5 million.

Freeway Interchanges

- 1) To estimate the *increased safety on freeways due to interchange improvements*, the project team assumed that accident rates on the associated freeways decrease by 10 percent due to better traffic flow.
- 2) To estimate the *negative development impact due to the loss of interchange access*, the project team examined development that has been linked to freeway access. For a high estimate of the impact, the project team assumed that none of the gas station, retail, hotel, manufacturing, restaurant, food and beverage, warehousing, education, and health care development linked to interchange access occurred. For a low estimate of the impact, the project team assumed that half of the impact did not occur.
- 3) To estimate the *project costs*, the project team collected cost estimates when available from North State RTPs. For interchange projects without project estimates, the project team used the average cost for projects with estimated costs (\$16.9 million). This resulted in a total project cost estimate of the \$220.53 million.