## Bishop Area Access \& Circulation Feasibility Study



July 13, 2007


California Department of Transportation District 9
500 South Main Street
Bishop, CA 93514

## FEASIBILITY STUDY REPORT

This document can NOT be used for programming purposes. A Project Study Report will need to be written to serve as the programming document.


In Enyo County on Route 395 from 1.2 miles south of Sunland Road to 0.04 miles south of Pleasant Valley Dam Road and on Route 6 from the Junction of Route $\mathbf{6}$ and 395 to 0.25 miles north of Jean Blanc Road.

## APPROVAL RECOMMENDED:



Project Manager

APPROVED:


District Director / District 9

This Feasibility Study Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.


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## ABBREVIATIONS

| AADT | Annual Average Daily Traffic |
| :--- | :--- |
| ADT | Average Daily Traffic |
| BAACS | Bishop Area Access and Circulation Study |
| Bishop Airport | Eastern Sierra Regional Airport |
| CBD | Central Business District |
| CEQA | California Environmental Quality Act |
| DDHV | Directional Design Hourly Volume |
| FAP | Federal Aid Primary |
| FHWA | Federal Highways Administration |
| IMT | Inyo Mono Transit |
| IRRS | Interregional Road System |
| LADWP | Los Angeles Department of Water and Power |
| LOS | Level of Service |
| LTC | Local Transportation Commission |
| MHP | Mobile Home Park |
| MVM | Million Vehicle Miles |
| NB | Northbound |
| NEPA | National Environmental Policy Act |
| PA/ED | Project Approval and Environmental Document |
| PCIA | Preliminary Community Impact Assessment |
| PDT | Project Development Team |
| PID | Project Initiation Document |
| PM | Post Mile |
| R/W | Right of Way |
| SB | Southbound |
| SCE | Southern California Edison |
| SHELL | Subsystem of Highways for the Movement of Extra-Legal Permit Loads |
| STAA | Surface Transportation Assistance Act |
| TCR | Transportation Concept Report |
| TI | Traffic Index |
| WWF | Waste Water Facility |
|  |  |

## Executive Summary

In 2003 the Inyo County Local Transportation Commission, with the support of the City of Bishop and Inyo County, requested that Caltrans District 9 conduct the Bishop Area Access and Circulation Study. The study was developed in a collaborative fashion with the project proponents mentioned above, the Bishop Paiute Tribe, local Chamber of Commerce and businesses, local public service entities, local schools, the general public, and others. Five Study Objectives were defined at the beginning to guide the process:

- Improve circulation and safety for all modes of transportation in the downtown area.
- Accommodate commercial truck traffic for US 395 and US 6.
- Plan for downtown improvements (i.e. landscaping, parking, pedestrian facilities, etc.) along with the rerouting of truck traffic.
- Facilitate ground access improvements to the airport and its associated development improvements.
- Keep services in Bishop visible for through-traffic on any route and have easy on/off connections.

The process employed to develop the study included: a project development team, which included key stakeholders; research on history, similar studies, and other related subjects; data collection and analysis; an extensive public participation program involving public meetings, surveys, consultation, presentations, a focus group, and continual public input; alternatives developed for both alternate truck routing and local circulation improvements; development of a traffic simulation model for the entire study area (used to assist in determining problem areas and the effect certain solutions might have on them); initial scoping of alternative costs, environmental concerns (including a Preliminary Community Impact Assessment), other considerations; and final report development with recommendations.

A large amount of information and data have been developed during this study to assist those with the responsibility of insuring safe and efficient access and circulation in the Bishop area. The information contained in this study should aid in the decision-making process so that investments of public funds solve real problems with viable solutions benefiting the local community and traveling public alike.

The recommendation of this study includes three main concepts to meet the goals set forth by the study (refer to pages 45 through 49 for further details on recommendations):

1. A two-lane eastern alternative truck route beginning somewhere between Gerkin Road and Schober Lane and connecting back to US 6 and US 395 at the Wye Road location. This new route should be developed as a City/County road to Caltrans standards in order to allow the City and County the option to exchange this route for Main Street/US 395 at sometime in the future. This would accomplish reducing the amount of commercial truck traffic downtown, accommodate access to the airport, and minimize negative economic impacts.
2. Improved access between the City and the housing areas to the west (i.e. South Barlow, Manor, McLaren, Highlands/Glenwood, Meadow Creek, Bishop Reservation, etc.). This recommendation includes the development of new local roads to provide options other than SR 168/West Line Street and US 395/North Sierra Highway to get into town. This would accomplish alleviating some traffic congestion on West Line Street, Main Street, and at the intersection of Main and Line, particularly at periods of peak congestion.
3. Improved City street alternatives to Main Street/US 395 that accommodates north/south movements of local traffic on either side of Main Street. Besides the development of a "B Street" along the canal, this concept is the most difficult to implement due to potential impacts to private property. However, this would accomplish reducing locally generated traffic on Main Street, particularly related to short trips between Main Street corridor establishments.

Some other interim recommendations include: better alignment of the Wye Road/US 6 intersection and the eventual reconfiguration of the US 6/US 395/ Wye Road intersection; the aligning of side streets off of Main Street/US 395 to create at least one more full four way intersection; extending See Vee Lane north of US 395; signalizing the See Vee/US 395 intersection; and defining access along the North Sierra Highway corridor with sidewalks and driveways.

As noted in the Potential Constraints (pg. 25) and Environmental Determination (pg. 50) sections, some major obstacles associated with environmental clearance/mitigation and right of way costs challenge the ability to implement the recommended eastern alternative truck route with a Wye Road connection. The ability to mitigate wetland impacts and gain environmental clearance for the new roadway alignment is subject to great uncertainty due to the current lack of opportunities to create suitable mitigation wetlands. In addition, right of way costs for the Wye Road connection could be significant due to the private/commercial land acquisitions that may be required in order to reconfigure the Wye Rd./US 6/US 395-intersection for the increased traffic an eastern alternative with Wye Road connection would bring to that area.

Since one of the study goals was related to improving circulation and safety for all modes of transportation, it should be noted that many of the surveys and other activities conducted indicated a high level of community support for bicycle facilities around town that connect to western housing nodes, schools, work, shopping, etc. These sources also indicated a high degree of support for transit services as an option. Improvements in these areas could act as a measure to provide modal options and relieve locally generated traffic congestion.

It is likely that a staged, multi-pronged approach, combining several of these recommendations, could accomplish most of the goals set forth by the study. However, it is unlikely that significant operational changes to Main Street, such as on street parking or median landscaping, can occur until the alternate route for US 395/US 6 is the primary route for through traffic.

## Introduction

In 2003 the Inyo County Local Transportation Commission, with the support of the City of Bishop and Inyo County, requested that Caltrans District 9 conduct the Bishop Area Access and Circulation Study. The LTC asked that Caltrans study US 395 from the junction of Schober Lane to the junction of Barlow Lane in order to reduce motorized congestion, create a more livable/walkable downtown area, improve safety to traffic, bicyclists and pedestrians, and improve ground access to the Eastern Sierra Regional Airport (Bishop Airport). Of special interest was the routing of interregional commercial vehicles away from Bishop's downtown core. This document examines six build alternatives for a truck route around the City of Bishop. Two alternatives are to the west of Bishop and four alternatives are to the east. There are two connection possibilities for the eastern alignments. All alternatives proposed are for a two-lane facility. However, right of way (R/W) to build a full four-lane controlled access facility would be acquired at the outset. This will protect the R/W needed for future expansion and provide the City and County the option to exchange this route for Main Street/US 395. When the City and County are ready for the transfer, the State can relinquish the old US 395 corridor to the City and the County in exchange for the new facility. The seventh alternative is the no build. Also included in this document are recommendations for local street improvements.

Any eventual truck route would likely be funded jointly with the City of Bishop, County of Inyo and the State. Total current cost estimates for western alternatives range from $\$ 38$ to $\$ 44$ million. Eastern alternatives with a Wye Road connection range from $\$ 27$ to $\$ 49$ million. Eastern alternatives with a north connection range from $\$ 44$ to $\$ 71$ million. The LTC indicates that this project's priority would be high after the completion of the four-laning of US 395 in Inyo County.

## Background

## History

The idea of routing traffic around the downtown core of Bishop is not new. The California Division of Highways did a study for a bypass of Bishop in the 1960's (See Appendix 1). At the time of this early study the Bishop community was in strong opposition to all the proposed alternatives due to economic and development considerations. Fearing loss of tourism dollars, the community did not support a route that would remove any of the traveling public from the Main Street/US 395 corridor. Additionally, the proposed alternatives required large amounts of either tribal lands or scarce private lands slated for development. None of the six alternatives proposed by the California Division of Highway’s 1966 study could be built now, as they crossed lands that have been heavily developed. The costs associated with the R/W acquisition of heavily developed lands would make the construction of any of the 1966 alignments prohibitive. Additionally, the current environmental justice process would prevent the construction of all of these old alignments because there is not enough private land available to replace the lands and homes that would be acquired to construct any of these old alignments.

Of the six alternatives proposed, three crossed through tribal lands. All three of these alternatives would have resulted in large losses of tribal lands. The 1966 Engineer's
recommendation was one of these alternatives. This alternative had a cloverleaf interchange for US 395 and US 6 just south of the tribal lands boundary with both the new US 395 and the new US 6 alignments crossing through tribal lands. The next alternative was similar but had the cloverleaf interchange on tribal lands near See Vee Lane. The third alternative crossed through Bishop City Park, then continued west through the center of tribal lands along Diaz Lane.

Initially the Board of Trustees for the Owens Valley Paiute-Shoshone Band had requested that Tribal lands be used for the bypass of Bishop. After this request, a dissenting group developed that was in strong opposition. This group protested locally and in Sacramento and circulated a petition, obtaining a large number of tribal member signatures, opposing any "Federal or State Freeway or Highway project passing through the Reservation land". In 1966 most of the tribal lands necessary to construct the new highway alternatives were undeveloped. Now these same lands are developed to the point that the Tribe is actively seeking new lands as there is little undeveloped land left for new Tribal members.

Another route proposed in 1966 went through a large parcel of privately held land that was in the process of getting approvals for the development of a new subdivision. This alternative received a great deal of local resistance as private property was (and is now) very scarce, making housing difficult to find and expensive. Indeed, that parcel of land has been developed to its full extent creating the Highlands and Glenwood Mobile Home Parks and the Lazy A and Meadow Farms subdivisions. These developments are now the most densely populated areas of the greater Bishop area. The only western alignment proposed in 1966 went through what is now the Sunland Solid Waste Disposal Site. In the end, the Division of Highway's dropped the bypass of Bishop due to statewide funding constraints and a lack of immediate need.

A 1965 economic study done by Inlandia and sponsored by the Bishop Merchants Association, in response to the Division of Highway's bypass study, concluded that Bishop was not ready for a bypass in 1965. See Appendix 2 for the full study. The right time for the bypass recommended by this study would be when: parking was removed from Main Street/US 395, Main Street/US 395 was marked for four-lane traffic with a center turn lane, and annual average daily traffic (AADT) on Main Street/US 395 reached 18,000. Two of these indicators have already occurred. Main Street/395 was marked for four-lane with a center turn lane and parking was removed in 1994. The AADT on Main Street/US 395 in 2004 was at 17,300. At the current estimated growth rate, the 18,000 AADT the Inlandia study recommended for bypass of Bishop will be reached by 2009. If this current feasibility study moves forward as a Caltrans project, with current funding schedules for the remaining four-laning of 395, the recommended truck route would not be built until 2025. In 2025 the AADT on Main Street/US 395 is projected to be 21,320 . If this truck route were a County project time lines may be different.

Local Governmental agencies have recognized the need for, at minimum, a truck route around the Bishop Central Business District (CBD) for many years. Most recently the concept of a truck route around Bishop has been identified in the 1993 City of Bishop General Plan, the 2001 Inyo County General Plan, and the 2001 Inyo County Regional Transportation Plan. With Main Street/US 395 being the only route for transport of hazardous materials through Bishop, emergency response crews have often expressed concern over the potential for incidents due to the proximity of truck traffic and the population centers of Bishop.

With growth anticipated in California as a whole and specifically in Mono County in Benton, Hammil and Chalfant Valleys, and in Inyo County in Wilkerson and the Rovana area, the anticipated traffic growth rate of $1 \%$ per year used to predict future growth in this document is reasonable assuming current conditions. However, anticipated increases in truck traffic on the US 395/US 6 corridors due to growth and development of warehousing in the Reno/Carson area of Nevada along with increased tourism to Bishop and development of the Mammoth area may make this estimate on the low side for predicting future traffic growth (see Attachment 1 for a Reno Gazette-Journal article on Nevada's new warehousing development).

Many local residents have voiced concerns for the safety of pedestrian and bicycle users in Bishop's CBD, specifically mentioning trucks as being a problem. Much of the community seems ready to support an alternative route to remove trucks and reduce congestion in the downtown area. However, Bishop merchants in general are still not supportive of an alternative route due to fears of losing interregional traveler business. In a public opinion survey sponsored by this study, the solution to downtown congestion with the greatest support by the general public was the construction of an alternative truck route with $55 \%$ of those surveyed. However, when this same solution was offered to a business focus group session, only $38 \%$ were in support of this method (see Appendix 3, Section E, 2003 Public Opinion Telephone Survey, and Section G, 2004 Business Survey).

## Existing Facility

Main Street/US 395 in the Bishop CBD is a five-lane all-paved facility. There are two southbound lanes, two northbound lanes, and a center turn lane. Shoulder and sidewalk widths vary greatly. On Main Street/US 395 between Line Street and East Elm Street the R/W is the most restrictive. In the narrowest section of this segment there is only a $10-\mathrm{ft}$ center turn lane and number 1 lane, and a $12-\mathrm{ft}$ number 2 lane. Shoulders in this segment are less than 3 ft to the flow line of the gutter. This narrow shoulder does not allow for use of the shoulder for bicycles in the CBD. Most bicyclists ride in the traffic lane through the CBD. In order to keep the existing sidewalk widths, a design exception was required to allow the lanes, shoulders, and center turn lane to be less than the Caltrans design standard of 12 ft for lane widths and 14 ft for center turn lanes. The narrowness of the existing R/W through downtown, and the development of storefronts at the edge of the R/W, results in sharp turning radii and short sight distances to/from side streets.

The sharp turning radius at the corner of Main Street/US 395 and Line Street is one of the reasons the City and County requested this current study. Trucks, and vehicles pulling trailers, cannot make the turn off of US 395 onto East Line Street without using a portion of west bound East Line Street. Even though East Line Street is the most direct access to the Bishop Airport, trucks use other streets off of US 395, all of which are mostly residential, in order to avoid the sharp turning radius on East Line Street. The County’s development of the Bishop Airport for light industrial uses will require good truck access for deliveries. The Main Street/US 395/Line Street corner is not sufficient for truck access. Another access for trucks must be developed for the County's future plans for the Bishop Airport to move forward.

Expansion of the existing US 395 facility to provide for the future's increased capacity is not possible without additional R/W. Currently Main Street/US 395 is operating with non-standard
reduced lane and shoulder widths in order to provide a center turn lane and keep historic sidewalk widths. While this does maximize the capacity of the narrow R/W currently available, it leaves no way to increase capacity. The only way to increase the capacity of the existing facility, or to satisfy Caltrans desire for standard lane and shoulder widths and maintain the wider sidewalks the locals desire is to acquire additional R/W. Additional R/W would necessitate the partial demolition of structures on one side of Main Street. Rather than destroy the character of an early California town in order to provide the additional R/W needed for a safe facility capable of handling all modes of traffic and future uses of the Bishop CBD, a truck route on a new R/W seems the better choice.

Downtown Bishop has two arteries that feed in traffic from the west Bishop area. They are West Line Street/SR 168 and North Sierra Highway/US 395. West Line Street/SR 168 is a four-lane facility from Pa Ha Lane to See Vee Lane, a three-lane facility with center turn lane from See Vee Lane to Pioneer Lane and a two-lane facility with center turn lane from Pioneer Lane to Main Street/US 395. West Line Street/SR 168 has sidewalks from Pioneer Lane to Main Street/US 395. West Line Street/SR 168 from Sunland Drive into Main Street/US 395 has problems similar to the Bishop CBD. Existing R/W is narrow with storefronts built at the edge of the R/W line. Turning radii to/from side streets are sharp and sight distances are short. North Sierra Highway/US 395 is an all paved four-lane facility with center turn lane. The existing R/W is narrow with several store fronts built on the R/W line. There are discontinuous sidewalks, and undefined driveways. Some businesses along this stretch are encroaching on the States limited R/W to provide for customer parking.

US 395 and US 6 are included in the Subsystem of Highways for the Movement of Extra-Legal Permit Loads (SHELL). The Federal Highway Administration has designated US 395 and US 6 as Surface Transportation Assistance Act (STAA) routes. This designation authorizes the system's use by larger than normal trucks and gives them access to off-route facilities. Currently, over width loads take both the travel lanes to traverse Bishop’s CBD. Over height loads block traffic in both directions to weave through the traffic signals along the Main Street/US 395 corridor. Due to high turn movements from side streets additional traffic signals are anticipated for Main Street/US 395. Each new signal will be another obstruction for over height loads to weave through.

It can be anticipated that as traffic volumes on Main Street/US 395 increase, the "green time" for Main Street/US 395 will increase while the "green time" for side streets will decrease. This means that side street users will have longer delay times. This extra waiting time will create an even greater sense of congestion to side street users wishing to enter Main Street/US 395.

One of these affected side streets is West Line Street/SR 168. West Line Street/SR 168 functions as a major collector for the City of Bishop. It is the only direct access to downtown services for developments in the areas of South Barlow, Manor Market, McLaren, Rocking K, Starlight and Bishop Creek. Traffic already backs up considerably on West Line Street/SR 168 at the intersection of SR 168/US 395. Caltrans has increased the number of turn lanes on West Line Street/SR 168 to the maximum that the existing R/W can hold. An increase in the queue length because of shortened "green times" for West Line Street/SR 168 could cause gridlock west of the intersection. With the main access to the post office and schools located off of West

Line Street/SR 168, this additional time would further degrade an already congested area, especially during school start and end times.

## Figure 1: West SR 168 Housing Nodes



East Line Street has many similarities to West Line Street/SR 168. East Line Street is the only reasonably close signalized intersection available for controlled left turns onto Main Street/US 395 for the vast majority of residents on the east side of Bishop. Traffic volumes are already high on this street resulting in long queues. The City has increased the number of lanes available on East Line to the maximum the existing R/W can allow. A decrease in "green time" for East Line Street could result in longer queues. While this won't cause gridlock because the next north/south street is fairly far away, it may prevent eastbound cars from accessing the City parking lot as the queue could easily cover the entrance.

Another location on US 395 with potential for back up is the junction of US 6 and US 395. This signalized, at grade intersection has a split alignment using Wye Road west of US 6 for US 395 southbound (SB) left turns onto US 6 northbound (NB) (See Figure 2). Wye Road is also used for most of the US 6 SB right turns onto US 395 NB as the angle of intersection at the US 395/US 6 junction for this movement is very sharp. Left turns from US 395 SB onto US 6 NB are not allowed at the signal location. The total queuing length for the US 395 SB to US 6 NB movement on Wye Road is about 500 ft and requires a non-signalized left turn at the Wye

Road/US 6 intersection. The short queuing length combined with the potential for backup at the stop sign will eventually cause the Wye Road/US 6 intersection to fail due to backup onto US 395. The development of housing in Mono County will not only increase the number of vehicles on US 6 but also will also increase the number of vehicles using Wye Road west of US 6. These increasing volumes will eventual result in the failure of the Wye Road intersections. So far, traffic volumes have been low enough to allow the Wye Road intersections to function acceptably.

North Sierra Highway/US 395 (between See Vee Lane and Pa Ha Lane) is experiencing collisions at a higher rate than the statewide average for a similar facility (See Table 5). Most of these collisions can be attributed in some way to the randomness and mix of development and to high turn movements along this corridor. Development along North Sierra Highway occurred much later than the Bishop CBD and is more random in nature. Business storefronts are built at variable distances from the R/W line. Some are built to the edge and are utilizing the shoulder of the highway for parking, while others are set further back allowing parking to be completely out of the R/W. The randomness of parking locations, in addition to the lack of sidewalks and undefined driveways, make it more difficult for drivers to anticipate when and where cars from these businesses might decide to enter the highway. Lack of sidewalks makes it difficult for drivers making turn movements to see pedestrians and bicyclists. North Sierra Highway/US 395 is the only direct access to the Bishop CBD for the largest population in the unincorporated area of Bishop. The areas two largest, most densely populated, mobile home parks have their only access point directly onto North Sierra Highway/US 395. These mobile home park driveways are not clearly defined and have high turn movements.

Figure 2: Existing US 395/US 6 Junction


## Existing City of Bishop Facility

Usually when congestion occurs on one route, local users will choose another route, leaving the congested areas to users who are unfamiliar with the area. This normal shifting of local traffic to side streets to reduce Main Street/US 395 congestion has only limited potential given Bishop's current traffic circulation patterns. Bishop's city street layout has inherent problems that would require radical change for most locals to choose the use of a city side street over Main Street/ US 395. Main Street/US 395 divides east and west Bishop and is the only through street connecting south to north Bishop. Line Street divides south and north Bishop and is the only through street connecting most of east Bishop to west Bishop. This lack of through streets crossing Main Street/US 395 and Line Street makes east/west and north/south connections in Bishop inefficient.

South Street, Line Street and Yaney Street are the only east/west through streets crossing Main Street/US 395. South Street only serves the residents of southeast Bishop. Line Street is the only east/west access for residents who live north of Line Street in east Bishop. Yaney Street does not serve east Bishop residents, as access to it requires traveling a considerable distance, off route, east of the Bishop City Park. All other east/west Bishop streets end in a "T"
intersection at Main Street/US 395. Most of these "T" intersections have another side street across from them that is offset. These offset distances are close enough that conflicting turn movements occur not only in the center turn lane but also from side street left turn movements. However, the offsets are large enough that the intersections must be treated separately making the placement of traffic signals on Main Street/US 395 inefficient and problematic. Inefficient because signals placed at a "T" intersections will only provide turn movement relief to one side of Bishop. Problematic since the offset side streets make signal placement, timing and triggering on Main Street/US 395 difficult. These offset side streets also force travel on US 395 in order for local traffic to make an east/west crossing of Main Street/US 395.

North/south connections in Bishop are also limited, forcing local traffic to use Main Street/US 395 for these connections. There are no through streets parallel to Main Street/US 395 connecting the full length of Bishop's business corridor. The " T " intersections, offset side streets, and the lack of parallel side streets running the full length of Bishop, along with the concentration of businesses along Main Street/US 395, make it virtually impossible for local traffic to avoid Main Street/US 395. The same can be said for Line Street/SR 168, as it has similar issues. The high use of these two facilities by local traffic puts particular pressure near the intersection of these two roads.

The dependence of Bishop’s local traffic circulation patterns on the Main Street/US 395 and Line Street/SR 168 intersection can be seen in Figure 3, Average Daily Traffic (ADT) Volumes from March 11 and 12, 2004, and from the Bishop Area Access and Circulation Study (BAACS) Preliminary Community Impact Assessment (PCIA) (Appendix 4, Table 1). Figure 3 shows ADT's of 19,500 just north of the Line Street/SR 168/Main Street/US 395 junction, and nearly 7,300 just south of Bishop. This means that local traffic generates about 12,200 ADT. Coincidentally, the greater Bishop area has a total population of approximately 12,200 (Table 1 in BAACS PCIA). From these numbers it would appear that every man, woman, and child living in the Bishop area drives to the corner of Line and Main at least once a day. That of course is not true, but these numbers do show the dependence and importance of local traffic circulation on the junction of Line Street/SR 168 and Main Street/US 395. So much so, that the equivalent of the entire Bishop area population uses this intersection, and Main Street/US 395 north of it, at least once a day. The CoNexus survey from the January 15, 2004 public meeting revealed that 65 \% of those participating said they take 1 to 4 one-way trips on Bishop’s Main Street on a typical weekday and $20 \%$ said they take 5 to 9 one-way trips (see Appendix 3, Section F, January 2004 Public Workshop). This survey, along with the observed high traffic volumes, certainly indicates that the access choices available to those needing downtown services are limited.

Figure 3: Average Daily Traffic (ADT) Volumes from March 11 and 12, 2004


## Current Study

## Overview of Traffic Findings

When the Inyo County LTC approached Caltrans with the request to consider making a truck route around the Bishop CBD, their hope was that the removal of truck traffic from Main Street/US 395 would significantly reduce traffic volumes. This reduction would then allow improvements to be made to the Bishop CBD to make it more pedestrian friendly, and thus more enticing not only to the local population, but also to area visitors and interregional travelers. Desired improvements included: the return of parking on Main Street, wider sidewalks, landscaping, bike lanes, and median improvements such as raised islands with landscaping.

Caltrans, in cooperation with Inyo County and the City, collected traffic count data at several locations in and around Bishop. The results were surprising to many. It was immediately apparent that truck traffic is not the main cause of downtown congestion (see Figure 3). Traffic
counts south and north of Bishop were significantly less than counts within the city itself. Even if all interregional traffic were removed from Main Street/US 395, traffic volumes would not be reduced to the point that significant operational changes could be made, such as the return of parking to Main Street/US 395. Even taking into account that trucks are a greater impediment than cars, (one truck being equivalent to about 4 cars), volumes would still not be reduced to a level that would allow for significant operational changes. The high volumes in the Bishop CBD are generated by local traffic and not truck or interregional traffic. This realization was a disappointment to many who had hoped the truck route would be an easy, quick solution to the perceived problem. Now it appears that even if a full bypass of Bishop were made, the City and County would still have to modify the local street system in order to make the significant operational changes to Main Street they desire.

Another surprising discovery was the high traffic volumes on East Line Street. High volumes on East Line Street are virtually all locally generated. The reasons for these high volumes are similar to the reasons for the high volumes on Main Street/US 395, and can be mostly attributed to the lack of access choices and the existing offset configurations of local streets. Another reason that volumes on East Line Street are high is that Line Street/US 395 is the only reasonably close, signalized intersection available for controlled left turns onto Main Street/US 395 for the vast majority of residents on the east side of Bishop. Many locals choose to go to East Line Street to make a left turn or cross Main Street/US 395, even though this intersection may be off their most direct route, because this intersection has a signal.

High volumes on West Line Street/SR 168 were not a surprise. West Line Street/SR 168 is a major collector for Bishop's CBD. Most locals can attest to the high traffic volumes, especially between Sunland Avenue and Main Street/US 395. These volumes are also almost all locally generated traffic. Once again, the reasons for these high volumes are similar to those for East Line Street and Main Street/US 395 and can be mostly attributed to the lack of access choices and the existing offset configurations of local streets. Additionally, some responsibility for these high volumes can be placed on the schools. All of Bishop's schools are located near Bishop's central core just off of West Line Street/SR 168. These schools contribute significantly to West Line Street/SR 168 traffic counts in the morning and the afternoon at school start and end times.

As previously stated in the existing facilities section of this document, increased traffic volumes on Main Street/US 395 will reduce "green time" to Line Street/SR 168 at the junction of Main Street/US 395 and Line Street/SR 168. This will increase congestion by increasing queue length on both West Line Street/SR 168 and East Line Street. Additionally, as traffic volumes on Main Street/US 395 increase, wait time for entry onto Main Street/US 395 from uncontrolled city side streets increases and gaps will be shorter, which will make the signal at the junction of Line Street/SR 168 and Main Street/US 395 even more attractive to local traffic. This additional traffic will also add to queue length on Line Street/SR 168 and East Line Street.

Not only do lack of access choices and local driver behavior affect Line Street/SR 168, they also affect Main Street/US 395. As Figure 4 clearly shows, the Bishop area’s traffic volumes are significantly larger than volumes along US 395 at other locations. Locally generated traffic is a significant factor in the operational working of US 395 in the Bishop area. Due to high traffic
volumes, the basic operational characteristics of US 395 through the Bishop CBD cannot be changed and still maintain its safety and function as a major interstate highway. The constraints mentioned previously: limited R/W, misaligned intersections, "T" intersections and existing development prevent the expansion or significant alteration of the current system.

Figure 4: Comparison of US 395 Traffic Counts in Bishop to Other US 395 Locations


## Congestion Effects

Based on calculations from the 1998 Highway Capacity Manual and current observations of the operation of the Main Street/US 395 at Line Street/SR 168, the existing system within Bishop's CBD is capable of handling about 580 vehicles per lane per hour. On holiday weekends the volume of traffic often exceeds this capacity, resulting in queuing of traffic on Main Street/US 395 from the Main Street/Line Street intersection north toward the US 395/US 6 intersection. In approximately 2025, at an anticipated growth rate of $1 \%$, similar traffic conditions to those currently occurring on holidays will be experienced on a daily basis in the CBD of Bishop. As volumes increase and access to the CBD becomes more difficult due to congestion, other less congested areas may become more attractive to local and interregional travelers. Eventually businesses that can afford it may move to a new, less congested location. This could result in the loss of businesses in Bishop's historic CBD and could result in the eventual migration of the main Bishop business district to a new, less congested location. The beginnings of this
potential trend can already be seen in the move of the old downtown Vons and old Kmart to their new north Bishop location. This new location still has commercially developable property, and ample parking. This relatively newer, less congested area may eventually attract current and potential future CBD businesses away from the historic CBD.

In order to provide a facility that would meet the future’s increased traffic needs, provide full service to all users of the highway system, and address all the stated goals of this study, the separation of Main Street and US 395 would eventually need to be accomplished as one step in a multi-phased approach. This would allow US 395 to function for what it truly is, an interstate highway. It could also allow the City to develop Main Street for what it truly is; the center of local commerce, and an early western town situated in a beautiful area that is a destination location in its own right. While the separation of US 395 and Main Street alone may not allow for all the improvements the City desires, it is one step in a multi-phased approach that could eventually lead to the City's vision for Main Street.

## Alternate Route Concerns

The discussion of the separation of Main Street and US 395 (or the bypass of Bishop) is still a very emotional one. The emotional response is certainly understandable since a bypass of Bishop may negatively impact the livelihoods of some of Bishop’s traveler dependant businesses. However, the 1966 Inlandia Socioeconomic Study (See Appendix 2) funded by Bishop businesses at the time of the 1960's Division of Highways Bishop Bypass indicated that at 18,000 AADT a Bishop Bypass could be considered. We are rapidly nearing 18,000 AADT for US 395/Main Street, and with current projections, should reach 18,000 AADT by 2009.

While the recommended alternate truck route proposed in this document is not a bypass, careful consideration should be given to the alignment selection of this truck route. A portion of its alignment could potentially be used for a future bypass of Bishop should the City/County desire to exchange the truck route with the State for Main Street/US 395. The importance of having full cooperation of the City of Bishop, Inyo County and Caltrans in the decision process, timing, and development of the proposed alternative location cannot be overly stressed. Reserving the lands needed to build the possible future four-lane bypass at the time of the construction of the proposed truck route will help the City, County, and State plan for a efficient transportation system that will not only work for future traffic needs, but will also efficiently and affectively help with current local and interregional traffic needs. Not preparing for the future's increased traffic volume needs will most likely result in a randomly constructed, inefficient transportation system with housing and business development not properly located for best use of that system.

An alternate truck route is likely to bring forth strong opposition from the owners of Bishop's traveler-dependent businesses. Some of these business owners believe that any removal of the interregional traveler from Main Street/US 395 will result in a significant reduction in revenue, or even the failure of their business. Studies conducted on the economic effect of full bypasses on smaller communities have shown that careful development of an alternate route is critical. A summary of the effects of "bypassed" communities in several states can be found in Attachment 3. In general, cities with populations over 2,000 considered bypasses to be beneficial, with some dissent among traffic-serving business owners along the bypassed routes. These studies are for a full bypass and not for a subservient truck route such as the alternatives proposed in
this report. A subservient route leaves the through route with a turn movement and requires the conscious
decision by the driver to make that turn. A subservient truck route should dampen the effect to interregional traveler reduction (as compared to a bypass).

One concern that traveler-dependent business owners have is the development of competing businesses along the new corridor. Interregional travelers will usually not leave their route if the services they need are already on the route. Uncontrolled development of the new corridor could result in the closure of some businesses along the old corridor (see Attachment 3 for a further explanation of this phenomenon). The best way to prevent the migration of the CBD to the new corridor is to limit development and access on the new corridor. The Los Angeles Department of Water and Power (LADWP) owns nearly all the lands needed for the routes. The only privately held lands along any of the alternatives are a small amount of commercial property located along Wye Road. An access agreement between Inyo County, the City of Bishop, Caltrans and the LADWP could effectively prevent any development along the truck route and keep the CBD in its current location.

With the proposed alternate truck route subservient to Main Street/US 395, and the prevention of commercial development along the route, there would be little incentive for the interregional traveler to choose the truck route over Main Street/US 395. Furthermore, the next full services located on US 395 and US 6 are so many miles distant that, even when the time comes for a full bypass, many interregional travelers will need to leave the bypass to obtain services. Table 1 shows the distances to services on US 395 and US 6 from Bishop. The options and availability of services in Bishop make it attractive, and the distances involved, and the limited availability of services at other towns on US 395 and US 6, make them less attractive to the interregional visitor. While some interregional visitor business may be lost due to their use of the truck route, Bishop's services and unique remoteness will likely continue to keep most interregional travelers on Main Street/US 395.

## Table 1: Distances to Services from Bishop on US 395 and US 6

| On US 395 North | Distance to Services in Miles |
| :---: | :---: |
| June Lake Junction (Limited Services) | 53 |
| Lee Vining | $\mathbf{6 4}$ |
| On US 395 South | $\mathbf{1 2}$ |
| Big Pine |  |
| On US 6 North | $\mathbf{1 5}$ |
| Chalfant Valley (Limited Services) | 15 |
| Benton (Limited Services) | 33 |
| Tonopah Nevada | $\mathbf{1 1 5}$ |

## Alternate Route Development

In the past, Caltrans has developed parallel facilities such as truck routes while still maintaining the existing mainline in the State highway system. The State no longer builds or accepts the
maintenance of parallel facilities. It is recommended that the truck route proposed in this document be a County owned and maintained two-lane facility, subservient to the existing US 395, and built to Caltrans standard. This route can be signed as either Bishop Airport access, and/or truck route. While this recommendation does not meet all the goals of the study, it should remove most of the truck traffic, thereby reducing the sense of congestion in the CBD and providing truck access to the Bishop Airport. Traffic counts will continue to rise and eventually these increases may prompt the City to request the construction of a full bypass. Since the City and County will be the owners of the proposed truck route they will also be the lead in the timing of the transfer of facilities. If that time comes, pending concurrence with the State, the City and County would take over the operation and maintenance of existing US 395/Main Street. Caltrans would then take over maintenance and responsibility of the truck route, upgrade it to a four-lane facility, realign the interchanges south and north of Bishop (making existing US 395/Main Street the subservient route), and possibly build the North Connection and the new US 395/US 6 junction, thereby creating a full US 395 four-lane bypass. Signage could be placed on the new US 395 directing travelers to "Business 395".

Part of this exchange process would include a new route adoption. When the exchange process begins, current route adoption procedures will need to be followed. Route adoption procedures are described in the Project Development and Procedures Manual, Chapter 23, Article 5. Additionally, route continuity for SR 168 would need to be addressed. This could be accomplished by the adoption of East Line Street as an extension of SR 168 to the new US 395 alignment, or by retaining South Main Street to the new US 395, designating and adopting it as an extension of SR 168.

## Study Development Guidance

A project development team (PDT) was created at the initiation of this project and it was the PDT that developed the purpose and need statement. Members of the PDT included representatives from the following organizations: City of Bishop, City of Los Angeles, County of Inyo, Bishop Paiute Indian Tribe, Bishop Chamber of Commerce, Inyo County LTC and Caltrans. During the two-year study process, regular meetings were held with the PDT in order to provide information and gather direction. The PDT decided at the initiation of this project to include the public in the information process early and continuously. Input has been incorporated into the alternatives from local agencies and all sectors of the public.

Caltrans used Jones and Stokes, an outside consultant firm, to assist with public outreach, data gathering, and information distribution. The details of Caltrans public outreach efforts are documented in Appendix 3. These efforts included four public meetings, an information booth at the Tri-County fair that included a short public survey, telephone surveys of the local population and of Bishop business owners, a focus group of local business owners, and a survey of Mammoth visitors. Several letters and comment cards were received during the course of the study and are also included in Appendix 3.

In addition to public outreach, Jones and Stokes was contracted to write a Preliminary Community Impact Assessment (PCIA). The full document is located in Appendix 4. The findings of this assessment showed no significant adverse impacts by any of the proposed BAACS truck routes to land use planning, population and housing, or community facilities and services. However, there may be an impact to businesses that are highly dependent on
interregional travelers (i.e. fast food, service stations, souvenir shops, etc.). This impact would result from of the loss of travelers who would possibly have decided to stop, but chose the truck route rather than going through town.

## Potential Traffic Diversion Estimates

Caltrans assembled a team to estimate the possible reduction in traffic counts to Main Street/US 395 should a truck route be built. Truck routes can be enforced to require all through trucks use them, but cannot exclude private vehicles. Since some private vehicles may choose to use the truck route, some reduction of interregional travelers on Main Street/US 395 can be anticipated. The potential use of the truck route by interregional travelers is highly dependent on the location and design of the truck route's intersection with the existing facility. For the purposes of this diversion estimate, at-grade intersections -- with the truck route being the subservient route -- were used to estimate potential diversion numbers. Using the most recent traffic counts available and the destination study done in 2001, rough estimates of the percentage of traffic diverted were made for each of the truck route alternatives proposed.

Western alternatives would have a larger diversion of traffic from Main Street/US 395 as compared to eastern alternatives with a Wye Road connection. Estimates of diversion for western alternatives are about $20 \%$ of total AADT. If the eastern alternatives included a north connector, then they would have the largest diversion of traffic at about $24 \%$ of total AADT. Western alternatives divert about 39\% of total truck AADT and eastern alternatives divert about $67 \%$ of total truck AADT from the CBD. Figure 5 illustrates these diversion estimates for all alternatives.

Eastern alignments remove the greatest amount of truck traffic from the CBD and provide the truck access to the Bishop Airport that the County desires. Only an eastern alignment with a north connection can remove truck traffic from both the CBD and the North Sierra Highway area. Most of the community wants to remove trucks from Main Street/US 395 to reduce the sense of congestion and noise they are currently experiencing and make the CBD more pedestrian friendly. However, the community is concerned that a service facility for these same trucks be included in any project that removes them from the CBD.

Figure 5: Estimate of US 395 and US 6 Diversion Counts


## Concerns Regarding Commercial Trucks

A State rest stop at the north end of Bishop was often suggested for these truck drivers. Caltrans policy to not compete with local service industries does not allow for rest stops to be located near towns. Currently, many truck drivers use the wide dirt shoulders of US 6 near Wye Road for parking, and then walk into town. Bishop's approximate four hour drive time from the LA and Reno areas, combined with it being the last full service town with truck parking available on US 395 and US 6 for many miles, makes it a popular stopping point for many truck drivers. Another suggestion was to include a truck stop/parking facility with the proposed future Bishop Airport development. Shuttle service from the Bishop Airport to Bishop downtown businesses could then be provided.

A suggestion to reduce truck noise and make the CBD more pedestrian friendly without creating a new truck route was to restrict trucks to the number 1 lane through the Bishop CBD. This suggestion was received several times, often from those who were in strong opposition to any kind of traffic removal from Main Street/US 395. Currently the shoulder between the sidewalk and the number 2 travel lane is as little as 3 ft in some areas of the CBD. Restricting truck traffic to the number 1 lane through the CBD would provide a greater separation between trucks
and pedestrians. This has been used on US 395 in Gardnerville, NV with some success. As is often the case, one size doesn't fit all, and Gardnerville's solution to truck traffic doesn't work as well in Bishop. The restriction of trucks to the number 1 lane in Bishop would not only significantly reduce the safety for trucks but it would also create its own set of problems that do not offset the small advantages gained.

Currently Main Street/US 395 is signed to allow truck usage to both lanes. Restricting trucks to the number 1 lane would require NB trucks destined for US 6 to change lanes from the number 2 lane south of town, to the number 1 lane through the CBD, then back to the number 2 lane, in order to make the turn onto US 6. With the high traffic counts in the CBD, in addition to the short distance the maneuver must be accomplished in, truck restriction to the number 1 lane is not only impractical but also difficult to enforce. Additionally, each imposed lane change would decrease the safety of the truck and of any vehicles nearby. Attachment 2 has a more in depth discussion of truck lane restrictions specific to the Bishop CBD.

## Alternatives Removed From Consideration <br> Alternatives along Bishop Creek Canal just easterly of Bishop's City limit:

The 1960's bypass study easterly alternatives followed along Bishop Creek Canal just east of the city limit. These alternatives were included in early versions of potential alternatives in this current study. The PDT removed these alternatives early on because of the proximity to east Bishop's residential areas and narrowness of the undeveloped area between the canal and the Johnston Drive area.

## Alternatives easterly of the Bishop Airport:

These were removed from consideration because of wetland issues, bridge construction, and excessive length. These alternatives were very long as compared to existing US 395. This extra length would make these routes unappealing to truck drivers due to the extra drive time. Without strong enforcement it is unlikely that US 395 through trucks would use these alternatives as a mandatory truck route.

## Easterly alternatives departing existing US 395 at South Street and Jay Street:

These were removed from consideration because of their use of residential streets. Also, because they are so close to Bishop’s CBD, truck drivers would be less likely to take these alternatives since they would be significantly longer than existing Main Street/US 395.

## Need and Purpose

Caltrans, in cooperation with the City of Bishop, the County of Inyo, and the Inyo County LTC, propose improvements in and around the City of Bishop to reduce congestion in the CBD and provide commercial vehicle access to the Bishop Airport.

The goals of this project as developed by the Project Development Team are to:

- Improve the circulation and safety for all modes of transportation in the downtown area.
- Accommodate commercial truck traffic for US 395 and US 6.
- Plan for downtown improvements (i.e. landscaping, parking, pedestrian facilities, etc.) along with rerouting of truck traffic.
- Facilitate ground access improvement to the Bishop Airport and its associated development improvements.
- In order to encourage potential downtown commerce visitation, keep services in Bishop visible for through traffic on any route and have easy on/off connections.

US 395, from approximately PM (Post Mile) 115 to PM 117, is also the City of Bishop’s Main Street. In order to promote business use in the Bishop downtown district, the City of Bishop strongly desires to make the Bishop CBD a more walkable and livable area. Increasing levels of truck traffic in the Bishop area on US 395 have resulted in traffic congestion, a sense of hazard to pedestrians and bicyclists, and a perceived increase in noise and air pollution. These factors have combined to give the impression the downtown district is less pedestrian-friendly and have made commercial deliveries difficult. In addition, the direct access to the Bishop Airport on East Line Street requires trucks make the turn at Main Street/US 395 and East Line Street. The turn radius at this intersection is insufficient for large commercial vehicles to make the turn without occupying a portion of the opposing traffic lane. This deficiency results in large commercial vehicles taking indirect routes along residential streets in order to access the Bishop Airport.

It is proposed to redirect through truck traffic away from the Bishop CBD between the intersection of Schober Lane/US 395 and Barlow Lane/US 395 and provide commercial access to existing County airport services and the proposed airport light industrial development by the addition of an access controlled alternative route. If an alternative route alone does not reduce traffic congestion to desired levels, the addition, improvement, and/or extension of existing local streets should be considered to reduce local Main Street/US 395 traffic to the point that on-street parking, landscaping and aesthetic treatments can be placed to encourage business use in the Bishop CBD. The proposed new access controlled alternate route around the City of Bishop could be a mandatory truck route. All other traffic would have the choice to continue on existing US 395 or take the alternate route.

A mandatory truck route would require that the route be constructed to Caltrans standard and that an agreement between the City, County, and Caltrans be developed in order to establish the route as a mandatory route. Trucks needing services and/or making deliveries in Bishop would still be allowed to use Main Street/US 395. The effectiveness of a mandatory truck route is highly dependent of the enforcement efforts of local enforcement agencies and the location and design of the truck route intersection. Additionally, private vehicles cannot be prohibited from using the mandatory truck route.

Traffic counts collected as a result of this study clearly show that the majority of traffic on the CBD originates in the City and surrounding areas of Bishop (See Figure 3). A route around Bishop alone will not alleviate the congestion in the downtown core. The project sponsors (City of Bishop, Inyo County, and the Inyo County LTC) initially believed that if the majority of commercial trucks were removed from downtown onto an alternative route, the downtown corridor could then be enhanced with pedestrian friendly improvements such as landscaped
center medians, and on-street parking. These enhancements, if done now with current traffic counts, would negatively impact the operation of the highway.

To obtain the team's goal of downtown improvements, significant changes to local circulation patterns (City and County roads) would be required in order to reduce local traffic volumes on Main Street to the point that operational changes could be made. Since local circulation on City and County roads is not under Caltrans’ jurisdiction and the alternate truck route alone will not provide enough of a decrease in traffic volumes downtown, the third bulleted goal is not explicitly addressed by the alternatives in this study. This goal is still something to strive towards, but will require efforts on multiple organizational fronts. For the purposes of the study, this goal will remain as originally crafted with the understanding that an alternate truck route alone cannot attain it.

## Traffic

Traffic volume forecasts in the tables below are estimated with a $1 \%$ growth rate. Based on California growth rates, and on local development anticipated in Inyo and Mono Counties, this is a conservative estimate and may be on the low side in predicting future growth in the Bishop area. Table 2 shows US 395 current and forecasted traffic counts beyond the estimated construction year of 2025, and Table 3 shows US 6 current and forecasted traffic counts beyond the estimated construction year of 2025.

Table 2: Current and Future Traffic Data US 395

| Inyo 395 | $\mathbf{2 0 0 4}$ | Construction <br> Year <br> $\mathbf{2 0 2 5}$ | $\mathbf{1 0}$ Year <br> $\mathbf{2 0 3 5}$ | $\mathbf{2 0}$ Year <br> $\mathbf{2 0 4 5}$ |
| :--- | :---: | :---: | :---: | :---: |
| Annual Average Daily <br> Traffic (AADT) | 17,300 | 21,320 | 23,550 | 26,010 |
| Peak Hour | 1,750 |  |  |  |
| Peak Month ADT | 19,000 |  |  |  |
| \% Trucks | $6 \%$ |  |  |  |
| Traffic Index (TI) | - |  | 10.5 | 11.5 |
| Growth Rate | $1 \%$ |  |  |  |

Table 3: Current and Future Traffic Data US 6

| Inyo 6 | $\mathbf{2 0 0 4}$ | Construction <br> Year <br> $\mathbf{2 0 2 5}$ | $\mathbf{1 0}$ Year <br> $\mathbf{2 0 3 5}$ | $\mathbf{2 0}$ Year <br> $\mathbf{2 0 4 5}$ |
| :---: | :---: | :---: | :---: | :---: |
| Annual Average Daily <br> Traffic (AADT) | 3,750 | 4,160 | 4,380 | 4,600 |
| Peak Hour | 360 |  |  |  |
| Peak Month ADT | 4,000 |  |  |  |
| \% Trucks | $12 \%$ |  |  |  |
| Traffic Index, TI | - |  | 10.0 | 11.0 |
| Growth Rate | $0.5 \%$ |  |  |  |

Based on calculations from the 1998 Highway Capacity Manual and current observations of the operation of Main Street/US 395 at Line Street/SR 168, the existing system within Bishop’s CBD is capable of handling about 580 vehicles per lane per hour. The Directional Design Hourly Volume (DDHV) in 2025 is forecasted to be 1260 vehicles per hour (both lanes) or approximately 630 vehicles per lane per hour (see the attached Traffic Study Report, US 395, Attachment 4). This exceeds the 580 vehicles per lane per hour the existing CBD system can handle. The overburdening of the system will result in some delay to users on Main Street/US 395, but will mostly affect City street users attempting to enter or cross Main Street/US 395. Shortened "green time" will increase queue lengths on signalized City side streets. Shortened gaps between vehicles on Main Street/US 395 will make signalized intersections more attractive to City side street users adding to that queue length even more.

See the attached Traffic Study Report, US 395, Attachment 4, for the nine different speed zones located within the project area on US 395. In the CBD speeds were observed from 22 mph to 40 mph . The $85^{\text {th }}$ percentile was 34 mph . The posted speed limit in the CBD is 25 mph . The posted speed limit on North Sierra Highway/US 395 is 45 mph . North Sierra Highway speeds were observed from 33 mph to 64 mph . The 85th percentile was 52 mph .

See the attached Traffic Study Report, US 6, Attachment 5, for the four different speed zones located within the project area on US 6. At the Wye Road area the posted speed limit is 35 mph . Speeds were observed from 31 to 43 mph with the $85^{\text {th }}$ percentile being 42 mph .

For the entire length of the project on US 395, between PM 111.10/PM R 122.30, collision rates with injury/fatality were below the State wide average for a comparable facility. Figure 6 shows the areas of collision concentration over a five-year period in the Bishop area. When these collision concentration areas are examined individually, one area with a greater than expected collision rate with injury/fatality was observed. Table 4 shows collision data broken down into more specific areas along the US 395 corridor. Table 5 compares these more specific areas along the US 395 corridor to the Statewide average for a comparable facility.

Only North Sierra Highway/US 395 has a higher than expected collision with injury/fatality rate. Even though the total collisions were nearly as high in the Bishop CBD, North Sierra Highway's higher speeds are associated with increased collision severity and resulted in a higher injury/fatality rate per collision.

Figure 6: Collision Density US 395 in and Near Bishop, 1997 to 2002


The specific areas of collision concentration on Main Street/US 395 broken out for Tables 4 and 5 are:

Bishop CBD--Main Street/US 395 between PM 115.05 and 116.28. Mandich Street to the junction of US 6.

Bishop Downtown Core--Main Street/US 395 between PM 115.25 to 115.52. Clark Street to Willow Street. This area is defined in the City Plan as the area of parking exceptions. It is also an area of Main Street/US 395 with restricted R/W and less than standard lane width.

North Sierra Highway--Main Street/US 395 between PM 117.30 and PM 118.10. See Vee Lane to Pa Ha Lane.

Table 4: Collision Data US 395

| Location | Number of Collisions - US 395 <br> (04/01/02 to 03/31/05) |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Fatal | Injury | Property | Total |
| BAACS Limits <br> PM 111.1/122.3 | 4 | 37 | 64 | 105 |
| Bishop CBD | 0 | 8 | 22 | 30 |
| Bishop Downtown Core | 0 | 0 | 7 | 7 |
| North Sierra Highway | 2 | 21 | 14 | 37 |

Table 5: Collision Rate State Wide Comparisons US 395

| Location | Collision Rate/Million Vehicle Miles - US 395 <br> (04/01/02 to 03/31/05) |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fatal |  | Fatal+Injury |  | Total |  |
|  | Actual | State <br> Averag | Actual | State <br> Averag | Actual | State <br> Averag |
| BAACS Limits <br> PM 111.1/122.3 | 0.026 | 0.027 | 0.27 | 0.47 | 0.70 | 1.04 |
| Bishop CBD | 0.000 | 0.036 | 0.39 | 0.82 | 1.45 | 1.93 |
| Bishop Downtown Core | 0.000 | 0.044 | 0.00 | 0.97 | 0.84 | 2.27 |
| North Sierra Highway | 0.169 | 0.026 | 1.94 | 0.42 | 3.13 | 0.90 |

To a much lesser degree, collisions are also concentrated on US 6 near the US 395/US 6 junction. Table 6 shows collision data and Table 7 shows the collision rate with injury/fatality in comparison to the statewide average for a similar facility. From Table 6 it can be seen that over half of the collisions that occurred within the project limits occurred within 1.15 miles of the junction. The total actual collision rate is above what would be expected in a similar facility, however these collisions did not result in any injuries or fatalities.

Table 6: Collision Data US 6

| Location | Number of Collisions - US 6 <br> (04/01/02 to 03/31/05) |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Fatal | Injury | Property | Total |
| BAACS Limits <br> PM 0.00/5.60 | 0 | 1 | 9 | 10 |
| Junction 395 to Dixon Lane <br> PM 0.00/1.15 | 0 | 0 | 6 | 6 |

Table 7: Collision Rate State Wide Comparison US 6

| Location | Collision Rate/Million Vehicle Miles - US 6 <br> (04/01/02 to 03/31/05) |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fatal |  |  | Fatal+Injury |  | Total |  |
|  | Actual | State <br> Average | Actual | State <br> Average | Actual | State <br> Average |  |
| BAACS Limits <br> PM 0.00/5.60 | 0.000 | 0.038 | 0.06 | 0.50 | 0.62 | 1.02 |  |
| Junction 395 to Dixon Lane <br> PM 0.00/1.15 | 0.000 | 0.032 | 0.00 | 0.47 | 1.36 | 0.96 |  |

## Potential Constraints

Initial environmental surveys indicate that all proposed alternatives might affect wetlands. The western alternatives disturb fewer potential wetland acres than the eastern alternatives. Currently in Inyo County it is difficult to obtain lands for wetland mitigation. If the wetland mitigation requirements stay as currently defined, the environmental clearance process for any alternative may be difficult.

Laws Railroad Museum is currently developing an environmental document to create a narrow gauge rail line from Laws into Bishop for the Brill Car. The proposed destination is the east side of the Bishop City Park. The Brill Car would only be operated on weekends during the summer, the main tourist season. All eastern alternatives will cross the current proposed alignment of the narrow gauge rail. Since the Brill Car would be a manually driven, intermittent trolley, it is possible that an at-grade intersection could be constructed that would maintain the truck route as the through route and a device requiring a stop would be placed on the Brill Car alignment. However, the Public Utilities Commission must clear all railroad grade crossings and they may have the final say in whether or not an at-grade intersection will be allowed. A separate grade intersection for the Brill Car crossing was not included in the cost estimates for the eastern alternatives.

The future plans and expansion of the Bishop Airport have been considered in the selection of the eastern alignments. If separate grade interchanges are proposed at or between East Line Street and Wye Road/US 6, airspace elevation restrictions will need to be considered.

Some Bishop businesses that are traveler dependent are in opposition to any diversion of traffic from the existing Main Street/US 395 corridor. However, if forced to choose, business owners preferred an eastern alternative. There are also some in the general public who are not opposed to a truck route but do not want it in their "backyard". Most of the lands surrounding Bishop are owned by the LADWP and are available for public use. Bishop residents tend to view these lands as their own personal "backyard" and don’t want their "backyard" developed. In general, Bishop residents that live on the east side favor a western alternative, and residents on the west side favor an eastern alternative.

## Regional and System Planning

This study is consistent with local planning and land use policies and concepts. Both the Inyo County Regional Transportation Plan (2001) and the City of Bishop General Plan Circulation Element (1993) generally and specifically mention many of the concepts explored and analyzed in this study. This study and its associated reports will likely be key resources for the County and City when updating their planning documents.

As to consideration of local land-use and development patterns, developed areas within or affected by the study area are well defined and unlikely to significantly change, considering the unique land ownership situation. Almost all of the land surrounding the currently developed areas is owned and managed by LADWP. Most of this land is designated open space or agricultural, and is unlikely to be transferred into private ownership. The Bishop Paiute Tribe holds the largest amount of potentially developable land to the west of the City of Bishop and has plans for housing and commercial development, but not on a significant scale. Any growth to the west of the City limits will further impact not only the States highway system, but also County, Tribe and City traffic circulation systems, compounding the issues addressed in this study and further emphasize the need to address them.

The concept facility for US 395 is a four lane, operating at Level of Service (LOS) B. Within the BAACS study area US 395's LOS varies greatly. South of Jay Street and north of Brockman Lane, the four-lane conventional US 395 operates at LOS A with little or no congestion. US 395 through the Bishop City limits and north to Brockman Lane operates at LOS E, according to the 2000 US 395 Transportation Concept Report (TCR). This congestion is a product of recreational commuters and locally generated traffic (17,300 AADT 2004 traffic count), numerous access points, signalization and speed restrictions. The US 395 TCR Concept LOS of B is unattainable given the present facility. The communities along the US 395 are dependent on it for the delivery of all goods, materials and services with trucks comprising $16.6 \%$ of the traffic volume. The Eastern Sierra's main economic generator is tourism. The 2000 Origination and Destination Study indicates that $54.7 \%$ of the traffic stream is recreation based and $2 \%$ is recreational vehicles.

US 395 is functionally classified as a Rural Principal Arterial and is included in the Federal Aid Primary (FAP) highway system. It is included in the State Freeway and Expressway System, and the State Scenic Highway Master Plan. This route is also considered a High Emphasis Focus Route as part of the Interregional Road System (IRRS), and connects transportation systems across four states. US 395 is included in the SHELL system, and is a STAA route which authorizes use for larger trucks and gives them access to facilities off the route.

US 6 is a route of increasing significance in District 9. It is an alternate route for Nevada bound travelers and goods movement during winter storm episodes and regularly serves the communities of Laws, Chalfant, Hammil Valley, Benton and those of west central Nevada. It currently operates at LOS B from its origin at the US 395 Junction and Wye Road PM 0.0 to PM 5.6. The US 6 TCR Concept LOS is C.

SR 168 is functionally classified as a major collector and has a junction with US 395 at the south end of Bishop. It provides access to much of the area's housing and recreational activities in the Sierra Nevada Mountains. The route is two-lane conventional with a four-lane section from PM 16.1 to PM 17.8. The two-lane section within the City of Bishop is highly commercialized. SR 168 operates at LOS A within the outer parts of the study area, but nearer to downtown (PM 17.8 to PM 18.3) it operates at LOS C.

## Alternatives

Initially the PDT envisioned Caltrans as the owner/sponsor of the alternative route. As previously stated, Caltrans policy no longer allows for parallel facilities. Any of the following alternatives would therefore need to be a County/City facility until the City of Bishop and the County of Inyo accepted responsibility for the maintenance of the portions of the old US 395/US 6 within their jurisdictional area. All alternatives propose the reservation or acquisition of R/W for a full 4-lane facility.

None of these alternative routes would provide enough of a decrease in traffic volumes to allow for downtown improvements that would result in significant operational changes to Main Street/US 395. The City and County would need to make significant changes to local circulation patterns in order to reduce local traffic volumes on Main Street/US 395 to the point that operational changes could be made. Caltrans has no jurisdictional control of County and City road facilities. As part of this study, City and County traffic circulation was studied. Recommendations for improvements to the County and City traffic circulation follow the alternative route descriptions.

Figure 7 shows the proposed alternatives, including the two proposed connection locations for the eastern alternatives. Although Figures 7 through 15 depict each alternative as a single line, alternatives are not locked into this fixed location. These lines should be viewed as a corridor for a potential alignment. When more specific information is available, engineering, topographic or environmental concerns may cause an alignment to shift.

An important consideration between western and eastern alignments is the ability of the alignment to remove truck traffic from Bishop’s downtown core. It is unlikely that western
alignments can remove SB US 6, or NB 395 to US 6 trucks from the downtown core. Eastern alignments however have the ability to remove nearly all through trucks from Main Street/US 395 from the alignments departure point up to the US 395/US 6 junction. The possibility exists to use a western alignment with a North Connection, however, a western alignment with a North Connection would increase the distance traveled for US 6 trucks by so great a distance that strict enforcement would be required in order to obtain compliance, as the existing Main Street/US 395 route would be significantly shorter. Building a western alignment would almost certainly require the construction of an eastern alignment to remove the US 6 truck traffic from Main Street/US 395. Building an eastern alignment with a North Connection would disturb less land and be less lane miles to maintain than a combined eastern and western alignment.

All alternatives proposed have some wetland impact. Currently there are no available lands for wetland mitigation in Inyo County. If wetland mitigation is required, the existing Federal policy of zero wetland loss may significantly impact the construction of any of these proposed alternatives. As can be noted in viewing the aerial map provided in the Figure 7, eastern alternatives have more wetland impact than western alternatives. Though some efforts are being made to resolve the wetland mitigation issue, in general, for this area, no currently known opportunities exist to mitigate wetland impacts.

Figure 7: Alternatives 1-6 with Wye Road and North Connection


## Western Alternative Common Concerns

It is anticipated that western alignments can only remove approximately half of the truck traffic from Main Street/US 395. Trucks using US 6 would still travel through the CBD of Bishop. Western alignments do not improve access to the Bishop Airport.

Western alternatives leave existing US 395 further south of Bishop than most of the eastern alternatives. Sunland Solid Waste Disposal Site (the only landfill facility between Independence and Mammoth) and the Bishop Golf Course (potentially protected by section 4 f of the Department of Transportation Act of 1966) abut the west side of existing US 395, and block the departure of any western alignments north of the Gerkin Road/US 395 intersection. A truck route with an at-grade " T " intersection could be made between Sunland Reservation Road and the south side of the Bishop Golf Course. However, this narrow strip is not sufficient to allow for future development of the truck route to a four-lane facility with an interchange/intersection. The connection of western alternatives to US 395 to the north occurs
west of the Bishop Gun Club. A connection to US 395 easterly of the Gun Club would result in extensive condemnation of the areas limited housing.

Both western alignments will have an intersection with West Line Street/SR 168. Though a grade-separated intersection is a possible choice, it seems unlikely that would be the selected type of intersection as the truck routes currently proposed would be county facilities. Only atgrade crossings were used to analyze all alternatives initially for phased development. High speed at-grade intersections have the potential for higher than expected collision with injury/fatality rates. The North Lake and South Lake areas attract many interregional visitors. These areas can only accommodate a limited number of overnight visitors, so many of these visitors stay in Bishop and drive out each day. In addition, there is a fairly large local population living east of this proposed intersection. All these individuals would need to cross through this proposed intersection. This would reduce the safety of many who now have little risk associated with travel on SR 168 into and out of Bishop.

The only mid-alternative connection to Bishop for both western alignments is West Line Street/SR 168. Use of West Line Street/SR 168 for connection to Bishop would increase traffic volumes on West Line Street/SR 168 between the proposed at-grade intersection and the City of Bishop. Currently West Line Street/SR 168 between the proposed at grade intersection and Meadow Lane is a two-lane facility. Should a western alternative be built, at minimum, West Line Street/SR 168 would likely need to be upgraded with a center turn lane between the new intersection and Meadow Lane.

Both western alternatives have a great deal of utility involvement. The areas the western alternatives cross are dotted with power lines making utility relocation highly likely. There is a large LADWP power substation and Southern California Edison’s (SCE) Plant 6, with its associated facilities, that will need to be avoided.

The LADWP, the majority landholder, is not supportive of a western alignment. In general, Bishop businesses are unsupportive of western alignments as western alternatives are a more direct route for US 395 and therefore have the greatest potential for removing the interregional traveler from Main Street/US 395. Based on comments received, the community as a whole prefers the eastern alternatives.

It is highly unlikely that the City and County would take the initiative to develop a western alignment, not only because of the greater potential for interregional traveler removal, but also because western alignments do not provide access to the airport. In the unlikely event that the City and County developed a western alignment and wished to trade a western alternative alignment for ownership of Main Street, route continuity for US 6 and SR 168 would need to be addressed. A western alignment for US 395 would create a "gap" in state facilities between US 395 and US 6, unless existing North Sierra Highway/US 395 is designated as an extension of US 6. While on paper this would create route continuity for US 6 to US 395, in reality as previously stated, trucks using US 6 would still likely travel through the CBD of Bishop for US 395/US 6 connection because of the shorter distance. Additionally, the portion of SR 168/West Line Street east of the western alternative would no longer be needed for SR 168 continuity. This portion of SR 168/West Line Street currently owned and maintained by the State could then be given over to the City and County within their jurisdictional areas.

## Alternative 1

Alternative 1 proposes a new 2-lane facility with a design speed of not less than 65 mph , west of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading westerly, then heading northerly, west of Red Hill and east of Ed Powers Road, re-connecting to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 would direct through trucks along this new route. Figure 8 illustrates Alternative 1.

In addition to the comments in the "Western Alternative Common Concerns" section above, disadvantages specific to this alternative are: the perpetuation of several road crossings, the need for a bridge over SCE's Plant 6 pipeline, and expected opposition from Rocking K area residents.

Advantages associated with this alternative are: least amount of wetland involvement, excellent visibility to Cerro Coso College, and it is shorter than existing US 395 by approximately one mile.

## Figure 8: Alternative 1



## Alternative 2

Alternative 2 proposes a new 2-lane facility with a design speed of not less than 65 mph , west of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading westerly, then heading northerly east of Red Hill and Ed Powers Road and west of Otey Road, re-connecting to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 would direct through trucks along this new route. Figure 9 illustrates Alternative 2.

In addition to the comments in Western Alternative Common Concerns section above, other disadvantages specific to this alternative are: the perpetuation of several road crossings, significantly more wetland involvement than Alternative 1 (but less than eastern alternatives with a north connection), the need for 5 bridges or large culverts to make the creek crossings, and expected opposition from western Bishop area (South Barlow, Manor, McLaren, and Shepard Lane housing nodes) residents.

An advantage associated with this alternative is that it is shorter than existing US 395 by approximately 1.5 miles.

## Figure 9: Alternative 2



## Eastern Alternative Common Concerns

Should an eastern alignment be chosen, the main north connection into Bishop will more than likely be Wye Road. Further discussion of the Wye Road connection can be found at the end of the eastern alternatives descriptions in the "Wye Road Connection" section of this document. Unless a new connection is developed, it is likely the primary midway connection to Bishop's services will be East Line Street. The further south the take off point for the truck route is, the more likely a driver may change his/her mind and decide to go into Bishop for services. East Line Street will have an intersection with all the proposed eastern alignments, making East Line Street the midway access point for users of the alternate truck route that wish to access the services of Bishop. However, because of the offset and tight radius of the intersection of East Line Street and Main Street/US 395, the existing right turn north from East Line Street onto Main Street/US 395 cannot easily accommodate vehicles longer than a standard car. This corner would need to be reconstructed to allow for the turning radius of longer vehicles or signage would be needed to redirect vehicles towing trailers, motor homes and trucks to a different connection to Main Street/US 395 with a larger turning radius. With the City's current street configuration, this different connection would involve residential streets. A solution that would avoid impacting residential streets and the businesses on the northeast corner of Line Street and Main Street/US 395 is the development of a new primary connection to Main Street/US 395 from the proposed truck route. This could be accomplished by constructing a brand new street parallel and south of Jay Street or by extending Jay Street east to the new truck route and developing it as the new primary southern connection to Bishop.

The extension of Jay Street may be a good choice for a new primary southern connection to Bishop, since currently Jay Street only has commercial development and is the first street at the south end of Bishop. The Jay Street connection to Main Street/US 395 would allow alternate route users right turn access to all of Bishop’s downtown services whereas the East Line Street connection necessitates a left turn to access the businesses south of Line Street. Other reasons to develop Jay Street as the new primary southern connection include: mitigating potential added congestion to East Line street, which east Bishop local traffic is heavily dependent upon, and the possible extension of Jay street west of Main Street/US 395 to Sunland or further as part of a Bishop beltway to better facilitate local circulation around the City.

All eastern alternatives would provide excellent access to the Bishop Airport at the current access off East Line Street and at the proposed future access point at Wye Road. The future plans and expansion of the Bishop Airport have been considered in the selection of the eastern alignments. If separate grade interchanges are proposed at or between East Line Street and Wye Road/US 6, airspace elevation restrictions will need to be considered. In general, eastern alternatives are more acceptable to the local population.

All eastern alternatives impact agricultural lands under lease from the LADWP. These agricultural lands, while not privately held, are still highly valued and their preservation is important to Inyo County and the general population. Cattle ranching in the Owens Valley has a long history as an important part of the County's heritage, culture, and economy. Beef production is the County's primary commodity, followed by field crops such as alfalfa. These ranches with their irrigated fields provide the majority of green areas that surround Bishop. These green areas contribute to the park-like feel of the lands surrounding Bishop.

In the future, if the City and County wish to trade an eastern alternative to the State in exchange for ownership of Main Street, route continuity for SR 168 would need to be addressed, as the new eastern alternative alignment for US 395 would not connect to SR 168. There are two ways to reconnect SR 168. One would be the State designating and adopting, as an extension of SR 168, South Main Street south to the new US 395 eastern alternative intersection. The other would be the acceptance, designation and adoption of East Line Street by the State as an extension of SR 168 to the new US 395 alignment. If the North Connection alternative is selected, a portion of US 6 currently owned and maintained by the State could be given over to the City and County within their jurisdictional areas.

## Alternative 3

Alternative 3 proposes a new 2-lane facility with a design speed of not less than 65 mph , east of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading easterly, then heading northerly east of the City and Eastern Sierra Community Services District (ESCSD) Waste Water Facilities (WWF) to East Line Street, turning westerly along East Line Street, then heading northerly west of the Bishop Airport. Connecting back to US 395 and US 6 with a Wye Road Connection (See Figure 15 for one possible alignment) or the North Connection (See Figure 16). Signage on US 395 and US 6 would direct through trucks along this new route. Figure 10 illustrates Alternative 3.

In addition to the comments in the Eastern Alternative Common Concerns section above, other disadvantages specific to this alternative are: the alignment is on the downstream side of the City and ESCSD WWF possibly restricting future expansion of these facilities, a wetland east of the WWF would require a special drainage design and possible wetland mitigation, and the angle of intersection with existing East Line Street would be skewed requiring realignment of East Line Street to intersect the new alternative at the safer 90 degree angle. LADWP, the major landholder, does not support this alignment. This alternative is three miles longer than existing US 395. This extra three miles may result in the need for strong local law enforcement in order for this alternative to be used as a mandatory truck route.

## Figure 10: Alternative 3



## Alternative 4

Alternative 4 proposes a new two-lane facility with a design speed of not less than 65 mph , east of Bishop. Beginning south of Bishop near the intersection of US 395 and Gerkin Road, heading easterly then northerly east of Johnston Drive, west of the WWF, and west of the Bishop Airport. Connecting back to US 395 and US 6 with a Wye Road Connection (See Figure 15 for one possible alignment) or the North Connection (See Figure 16). Signage on US 395 and US 6 would direct through trucks along this new route. Figure 11 illustrates Alternative 4.

In addition to the comments in the Eastern Alternative Common Concerns section above, other disadvantages specific to this alternative are the proximity to the residential neighborhoods of southeast Bishop and open space areas used by those residents.

The advantages associated with this alternative are that the East Line Street intersection with this alternative is a 90-degree angle and truck traffic will be inclined to use this route, since the
mileage is similar to existing US 395 but driving speeds will be faster. This is the alternative preferred by the majority of the PDT members. It is also the preferred alternative of the LADWP, the majority landholder.

Figure 11: Alternative 4


Alternative 5
Alternative 5 proposes a new two-lane facility with a design speed of not less than 45 mph , east of Bishop. The existing Schober Lane/US 395 intersection would be improved and signalized. Beginning south of Bishop at the new Schober Lane/US 395 intersection, heading easterly, then northerly east of Johnston Drive, west of the WWF, and west of the Bishop Airport. Connecting back to US 395 and US 6 with a Wye Road Connection (See Figure 15 for one possible alignment) or the North Connection (See Figure 16). Signage on US 395 and US 6 would direct through trucks along this new route. Figure 12 illustrates Alternative 5.

In addition to the comments in the Eastern Alternative Common Concerns section above, other disadvantages specific to this alternative are: it is closer to the residential areas and local recreational areas of east Bishop than Alternatives 3 and 4, it requires improving and
signalization of the existing Schober Lane/US 395 intersection in order to provide the gaps necessary for trucks to make the southbound left turn, and unless it is connected to US 395 and US 6 with the north connection, this probably would have a design speed of less than 65 mph because of its tighter curves and shortened length as compared to Alternatives 1 through 4. This alternative is 1.5 miles longer than existing US 395.

Advantages associated with this alternative are: the East Line Street intersection with this alternative is a 90-degree angle, this alternative departs existing US 395 within view of Bishop's business district, and because this alternative utilizes existing Schober Lane, it disturbs the least amount of land as compared to all other alternatives.
Figure 12: Alternative 5


## Alternative 6

Alternative 6 proposes a new two-lane facility with a design speed of not less than 45 mph , east of Bishop. A new signalized intersection would be constructed just south of the existing Inyo County Yard facility. Beginning south of Bishop at the new intersection, heading easterly, then northerly east of Johnston Drive, west of the WWF, and west of the Bishop Airport. Connecting back to US 395 and US 6 with a Wye Road Connection (See Figure 15 for one possible alignment) or the North Connection (See Figure 16). Signage on US 395 and US 6 would direct through trucks along this new route. Figure 13 illustrates Alternative 6.

In addition to the comments in the "Eastern Alternative Common Concerns" section above, other disadvantages specific to this alternative are: it is closer to the residential areas and local recreational areas of east Bishop than alternatives 3, 4, and 5; it requires construction and signalization of a new intersection in order to provide the gaps necessary for trucks to make the southbound left turn; and unless it is connected to US 395 and US 6 with the north connection, this would have a design speed of less than 65 mph because of its tighter curves and shortened length as compared to Alternatives 1 through 5. This alternative is 1.4 miles longer than existing US 395. Additionally, the west/east portion of this alternative at the south departure point is too close to the developed areas of the city for this portion of the alternative to be included in a future exchange with Main Street. Only the north/south portions of this alternative would be suitable for exchange with the State.

Advantages associated with this alternative are: the East Line Street intersection with this alternative is a 90-degree angle, this alternative departs existing US 395 within view of Bishop's business district, and it provides the best visual connection to Bishop’s business district as compared to any other alternative. This alternative could abut an existing sewer line easement south of the county maintenance yard. The new road could provide access to the sewer line for maintenance and possibly utilize the existing sewer easement for some of the right of way.

Figure 13: Alternative 6


## Eastern Alternative Connections

As there is little development on the eastern side of US 395 south of Bishop, the departure point for an eastern alignment can be located almost anywhere between the intersection of Gerkin Road and US 395 north to Bishop itself. The connection location back to US 395 is more restricted because of existing development. Connecting back to US 395 east of the Gun Club could result in extensive condemnation of the area's limited housing and/or additional wetland disturbance. Connecting north of the Wye on US 6 would result in through US 395 trucks having to travel out direction and navigate through two additional intersections to make the connection to the truck route or US 395. The greater the distance from the existing Wye, the longer the drive time and the more unlikely that US 395 through trucks would choose to use the truck route without strict enforcement.

A connection at the Wye would remove truck traffic from the Main Street/US 395 but would not remove trucks from the North Sierra Highway/US 395 area. Current geometrics of the US 395/US 6/ Wye Road junction are insufficient to support a mandatory truck route. Modeling shows that this junction is nearing failure with just locally generated traffic. Significant improvements would be required to allow for the increased use of this junction should a truck route be connected to it. The North Connection with any eastern alternative would provide a complete truck route around the Bishop CBD and the North Sierra Highway/US 395 corridor. This North Connection could eliminate the need to extensively rebuild the US 395/US 6/ Wye Road junction.

## Wye Road Connection

As previously stated, current geometrics of the US 395/US 6/Wye Road junction are insufficient to support a mandatory truck route. Currently, Wye Road west of US 6 is the only US 395 SB to US 6 NB connection. Left turns from US 395 SB to US 6 at the signalized intersection are not permitted (see Figure 2). The continued use of existing Wye Road for this turn movement, with the increased volumes the truck route would bring, will cause queuing back to US 395 from the stop sign at the US 6/Wye Road intersection. Additionally, the angle of intersection at US 395 and the existing Wye Road west of US 6 creates prolonged exposure to SB vehicles as they cross NB US 395, thus decreasing safety for these vehicles. Sight distance for SB US 395 vehicles turning onto Wye Road is limited because of the 90-degree curve. The current configuration of the US 395/US 6/Wye Road junction has only functioned because of the low volume of vehicles using Wye Road west of US 6.

Eastern alternatives with a Wye Road Connection can remove trucks from the Bishop CBD, but not from North Sierra Highway/US 395. As any truck route will increase traffic volumes on Wye Road, any configuration selected will require not only the improvement of the US 395/US 6/Wye Road intersection, but also the improvement of Wye Road east of US 6. The existing segment of Wye Road east of the US 6 intersection would need to be widened requiring additional R/W along Wye Road. The R/W acquisition along Wye Road would include LADWP lands and privately held commercially zoned land. Then, as previously stated, the US 395/ US 6/Wye Road junction would need to be reconfigured. Figure 15 illustrates one idea for a possible new connection. Figure 15 is just one potential design option for a new US 395/ US 6/Wye Road junction. This report does not recommend this design. This design option was used to estimate R/W costs associated with the reconfiguration of the US 395/US 6/Wye Road junction. Some other possible configurations for the Wye Road Connection can be seen in Attachment 8.

Figure 14: Wye Road /US 395 /US 6 DWP Land Ownership


No easy solution exists for an improved reconfiguration of the US 395/US 6/Wye Road junction. The geometrics of US 395/US 6/Wye Road junction at its existing location are inherently insufficient due to the angle of intersection at US 395 and US 6 and limited R/W. The truck route would bring yet another route to this junction. The intersection design of the confluence of three roads is never easy, but the vastly different vehicle volumes associated with these three roads compounds the difficulty. Because the majority of traffic volumes are on US 395, a simple 4-way intersection design is not the best configuration. US 395 traffic volumes are significantly higher than US 6 volumes and predicted volumes for the Wye Road/truck route. A 4-way intersection design in the Wye area would have the majority of NB vehicles making a left turn at the intersection and the majority of SB vehicles making a right turn. This would require that the recall signal phase for NB Main Street/US 395 be a dedicated left turn, which is undesirable for safety reasons.

Another solution would be to move the junction of US 395 and US 6 further north and west along the curve from its current location, improving the angle of intersection of US 6 and US 395. This would provide for truck turning radii at the US 395/US 6 junction and therefore eliminate the segment of Wye Road west of US 6 currently needed for the SB 395 to NB 6 turn movement. However, the truck route/Wye Road intersection with US 6 would be then be north of the US 395/US 6 junction. This short distance from the intersection of the new truck route/Wye Road with US 6 and the new US 395/US 6 intersection will require US 395-bound
vehicles using the truck route/Wye Road to make a zigzag movement. It would also require that NB US 395 vehicles traveling NB on the truck route/Wye Road make a left at the new US 6/Wye Road intersection. The proximity of the new US 6/Wye Road intersection to the signalized intersection at the new US 395/US 6 junction may not allow for needed queue length on US 6.

In addition to the comments above, other disadvantages specific to this connection are: it will take two bridges to take this connection from south of Wye Road over to US 6. It may also require the realignment of the Bishop Creek Canal as it crosses Wye Road. Additionally, it should be noted that the Wye Road portion of this alternative connection east of the US 6/Wye Road junction would not be suitable for future trade to the State unless additional R/W is acquired. This R/W acquisition would include what is now privately held commercially zoned land. See Figure 14 for an illustration of land ownership at the US395/US 6 junction.

Figure 15: Possible Wye Road Connection


## North Connection

The North Connection proposes a two-lane facility with a design speed of not less than 65 mph , connecting to any of the eastern alternatives. This connection continues north of Wye Road, connecting to US 6 north of Dixon Lane and south of Five Bridges Road, where a new North Connection/US 6 junction would be constructed. It then continues westerly parallel to Riverside Road, north of Dixon Lane and south of the Owens River, re-connecting to existing US 395
westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. See Figure 16, North Connection.

Eastern alternatives with a North Connection provide a full truck route around both the Bishop CBD and North Sierra Highway/US 395. A new intersection/interchange would be built at the intersection of the North Connection and US 6. This intersection would be north of the current Dixon Lane/US 6 intersection and could incorporate the existing curve on US 6 near Five Bridges Road. This connection would be at a better angle than the existing US 395/US 6 junction. Additionally, there would be enough right of way to improve the junction connection to allow for free right turns. US 6 would remain the subservient highway and continue into Bishop.

With development expected in the Tri-Valley area (i.e. Chalfant, Hammil, \& Benton Valleys), the North Connection would provide a more direct access to the Mammoth area for Tri-Valley residents. Currently these residents use North Sierra Highway (or Dixon Lane). Removal of this local traffic, in addition to the removal of most of the truck traffic, from both the US 395/US 6 junction, and North Sierra Highway/US 395 could eliminate the need to reconfigure the existing US 395/US 6/Wye Road junction and would improve the safety of North Sierra Highway/US 395. North Sierra Highway/US 395 is an area of concern for Caltrans as collision rates in this area are not only higher than in the Bishop CBD but are also higher than the statewide average for a similar facility. See Tables 4 and 5 for collision data on North Sierra Highway/US 395.

Development of the North Connection may result in the need to improve Brockman Lane from the new alignment south to the existing US 395/Brockman junction. Some of the lands north of Wye Road and east of US 6 have the potential to be classified as wetland. As no lands for wetland mitigation currently exist in Inyo County, finding lands suitable for wetland mitigation may be problematic.

Figure 16: North Connection


## Alternative 7-No Build

The "No Build" option does not meet the need and purpose of this study. If this option is selected, congestion will increase, and truck traffic will remain in Bishop’s CBD and on North Sierra Highway/US 395. As traffic counts on US 395 and US 6 continue to rise, congestion will increase, creating longer wait times for entry onto Main Street/North Sierra Highway/US 395, not only from signalized locations, but also from uncontrolled city side streets. Gaps for entry onto US 395 will be less frequent. Speeds for vehicles on US 395 will decrease, and travel time for vehicles to pass through Bishop will increase. Without a reduction in vehicle volumes, it is unlikely that there will be a reduction in collisions on the existing Main Street/US 395 downtown area since the current configuration has utilized the available R/W to its fullest. Collisions on North Sierra Highway/US 395 will increase, but collision severity should go down as speeds are reduced due to increased traffic volumes. Increased traffic volumes due to development in the Tri-Valley area and Nevada will result in the failure of the US 395/US 6/Wye Road junction. Development of the Bishop Airport for commercial use will result in increased truck traffic on east Bishop's residential streets.

## Recommendations

## Recommendations on US 395 and US 6

Because of the long time lines involved in the development of the proposed new route, incremental improvements to the state highway should occur prior to the construction of the alternative route. Recommendations are:

- Improvements to North Sierra Highway/US 395 such as sidewalks; and improved driveway definition. Consideration should also be given to the installation of raised curb median to control left turn movements. With the City/County's extension of See Vee Lane across North Sierra Highway/US 395, the placement of a signal at the intersection of See Vee Lane and US 395.
- Improvements to the Wye Road/US 395/US 6 junction including improvement to the southbound turn movement from US 395 to US 6, increased queuing length or a signal or 4-way stop at the Wye Road/US 6 intersection, and the alignment correction of Wye Road west of, and east of, the US 6 intersection.


## Recommendation for an Eastern Alternative Truck Route

This study recommends a County/City owned and maintained, access controlled, two-lane truck route (with four-lane R/W), built to Caltrans standards, east of Bishop. The recommended truck route would start south of Bishop and connect back to US 395 and US 6 with a Wye Road connection. The route would be subservient to US 395 with an at grade intersection. If this eastern route is built to Caltrans standards, an agreement between the City, County and Caltrans could allow it to be designated and signed as a truck route and/or Bishop Airport access. If the departure point from US 395 is at, or south of, Schober Lane, an extension of Jay Street should be made connecting it to the truck route. This extension would provide access into Bishop for vehicles with trailers since the current turning radius of the northeast corner of West Line Street/Main Street is insufficient for these vehicles. While this recommendation does not meet all the goals of this study, it does remove truck traffic from Bishop's CBD, reducing the sense of congestion, and provides access to the Bishop Airport.

Traffic volumes will continue to increase and eventually these increases may prompt the City to request a full bypass. At that time, pending State concurrence and route adoption, the City and County would accept the operation and maintenance of the existing portions of US 395 and US 6 that fall within their jurisdictional areas and Caltrans would take over maintenance and operation of the truck route. Caltrans would then realign the connection south of Bishop, making existing Main Street/US 395 subservient to the new US 395, add two additional lanes to create the four-lane facility, build the north connection with its new junction to US 6 and connection back to US 395 near Ed Powers Road, completing the access controlled US 395 bypass of Bishop.

This recommendation does not address the goal of operational changes to the CBD such as the return of parking to Main Street/US 395. A truck route alone cannot reduce traffic volumes sufficiently to accomplish this goal. Only significant change to City and County streets can reduce local traffic volumes to the point that Main Street/US 395 operation could be
significantly changed. Following are recommendations for City and County Streets that may reduce local traffic volumes to Main Street/US 395.

## Recommendations for Improved City/County Circulation

No simple solution exists that will reduce local traffic volumes enough to allow for the return of parking, wider sidewalks, landscaped medians or other improvements to Main Street/US 395 that would alter its current operation. The "T" intersections, lack of parallel streets to -- and the concentration of businesses on -- Main Street/US 395 necessitate travel on Main Street/US 395 for the majority of local user destinations in Bishop. The following recommendations attempt to provide local users with new connections in order to reduce local user dependence on Main Street/US 395. Even if all of these recommendations were constructed, it may be the reduction in local traffic volumes on Main Street/US 395 would still be insufficient to provide for the significant operational changes desired by the project sponsors. It will take a strong, concerted effort in planning by the City and the County, in cooperation with Caltrans, to reduce local traffic volumes to the point that the desired changes to Main Street/US 395 can be made. Initial traffic modeling of the individual recommendations below result in reduction to traffic counts on Main Street. Though Caltrans has no jurisdiction or control of City/County facilities the following are some suggestions:

1. The extension of Sierra Street to See Vee Lane. Currently, traffic from or through Tribal lands must travel on Line Street/SR 168 or North Sierra Highway/US 395 for access to the Schools and city of Bishop. This extension would connect the Tribal lands to the City using a Tribal/City/County street that will have a slower speed and less traffic volume. This connection is shown in the City of Bishop Master Plan (see Figure 17) as a Sierra Street to Diaz Lane connection but could connect to See Vee Lane closer to US 395 to minimize through traffic on See Vee Lane. Attachment 10, "City/County Circulation Recommendation 1" has an illustration of these two connections.
2. Placement of a signal at the See Vee Lane/US 395 intersection, extension of See Vee Lane north to Choctaw Drive, a new entrance for Highlands Mobile Home Park onto the extended road, and possible closure of the existing US 395 Highlands driveway. Currently, a large percentage of the greater Bishop population lives north of North Sierra Highway/US 395. Their only access to Bishop is North Sierra Highway/US 395 or through Tribal lands/Barlow Lane to Line Street/SR 168. This extension would allow those living in the Dixon Lane, Meadow Creek and Lazy A areas access to the schools and the City of Bishop with a City/County street that would have slower speeds and less traffic volume. Additionally, the extension allows for a new access to Highlands Mobile Home Park (MHP) with access to a signal for those residents. The new signal at See Vee Lane/US 395 would provide a protected left turn for Highlands MHP, and shorten the distance to Bishop for some Meadow Creek subdivision and Dixon Lane residents. This shortened distance will also reduce emergency vehicle response time to the north most Meadow Creek subdivisions and the Dixon Lane area (Attachment 10, "City/County Circulation Recommendation 2" has an illustration of this connection). The components of this recommendation could be developed in independent phases.

Figure 17: City of Bishop Circulation Plan

3. The addition of "B Street", and extension of Jay Street and Wye Road to "B Street", as shown in the City of Bishop's Master Plan (see Figure 17). Currently, Main Street/US 395 is the only through street connecting south and north Bishop on its east side. Hanby Avenue, a residential street with deep surface cross drains, only connects east Bishop from East Line Street to Yaney Street. With the connection of Spruce Street and Yaney Street in 2000, Hanby Avenue began being used by many for access to the businesses located near the US 395/US 6 junction. The addition of "B Street" would give relief to Hanby Street and provide a non-residential through street connecting Bishop from its south most to north most points. Additionally, "B Street" with its connection to Jay Street and Wye Road would provide commercial vehicle access to the Bishop Airport. The Jay Street/"B Street"/Wye Road alignment (along the canal) was rejected as a potential truck route during the course of this Study due to its proximity to Bishop residential areas and would not be suitable for future exchange with Caltrans for a new US 395 alignment. Attachment 10, "City/County Circulation Recommendation 3" has an illustration of these connections. For local circulation improvement purposes, analysis of the Jay Street/"B Street"/Wye Road configuration shows great benefit and could be
considered on its own merits, even if a truck route were not developed. "A Street", as shown on the City's Circulation Plan, could provide north-south connections for the west side of Bishop. There are, however, significant constraints that may prevent the construction of this street. Within the City's jurisdiction, the Bishop Care Center blocks connection to Line Street/SR 168 as it was constructed on the proposed alignment. Additionally, the Tribe, as part of the mitigation process with the Army Corp of Engineers to develop Pa Cu Lane, has created a permanent wetland area that is also blocking the proposed "A Street" alignment. It is unlikely that the Army Corp would allow the construction of a street across this designated wetland area.
4. Extension of Jay Street west to Barlow Lane. Currently, the only direct access to Bishop for the South Barlow area is Line Street/SR 168. This extension would relieve some of the congestion on Line Street/SR 168 by providing another access into Bishop. Additionally, since Jay Street already crosses US 395, its connection to Barlow would provide another street connecting west to east Bishop across Main Street/US 395. This connection is shown in the City of Bishop Master Plan (see Figure 17). Attachment 10, "City/County Circulation Recommendation 4" has an illustration of one possible way to make this connection.
5. Improve the US 6/Wye Road intersection. The current Wye Road/US 6 intersection is misaligned creating some confusion for new users. Aligning this intersection will reduce confusion and increase safety. Increased use of the eastbound portion of Wye Road west of the US 6 and/or increased traffic volumes on US 6 will result in queuing of Wye Road back to US 395 due to the stop sign at the intersection of Wye Road/US 6. With growth anticipated in the Tri-Valley area of Mono County, increased use of Wye Road west of US 6 and on US 6 can be anticipated. Increase queuing length or a more efficient means of clearing the queue on Wye Road west of the US 6 intersection needs to be provided. Attachment 10, "City/County Circulation Recommendation 5" has an illustration of the March 2006 City of Bishop proposal for this intersection, which will help with the confusion factor at this location. However, as previously stated, this intersection is inherently insufficient for future anticipated traffic volumes and needs full reconfiguration of the US 6/US 395/ Wye intersection.
6. Provide through streets parallel to Main Street/US 395 on the west and east sides of Bishop. These streets should be close enough to Main Street in order to provide access to the back of existing businesses along Main Street/US 395. On the west side of Bishop, Warren Street runs from West South Street north to West Elm Street. If Warren could be extended north to Yaney Street, the signal at US 395 and Yaney could be used to access Wye area businesses. Extending Warren Street south to Jay Street would almost provide a complete parallel west side alignment. Another possibility for the west side is to connect North Fowler through the DWP parcel, referred to as Peoples Park, to the Coats/Yaney intersection, where direct access to the fairgrounds and to the Yaney/US 395 signal would be provided. The east side of Bishop does not have a continuous street near Main Street/US 395. The closest possibility would be Third Street. Third Street currently extends from Jay Street at
the south to East Elm Street at the north. Extending Third Street to Spruce Street might be a possibility, however this would require going through Bishop City Park. Bishop City Park would be a "4f" facility as defined by the Department of Transportation Act of 1966. The environmental review process required to connect these streets may restrict their connection. Another disadvantage of using Third Street is that it is currently mostly residential. A through street, west of Third Street but closer to Main Street/US 395, would be preferable in order that most of the development along this street could be commercial. Any alignment between Third Street and Main Street/US 395 will require the acquisition of privately held, developed land. A long term master plan for development of this new road would be required to reserve and prevent development of identified properties necessary for the new road. However, any alignment in this location would also have to cross the Bishop City Park, and as previously stated, the environmental review process may prevent this.
7. Align East/West City Street Connections. Currently the only through street across US 395 for the vast majority of residents living on the east side of Bishop is Line Street. Providing another point of crossing, between Line Street and Yaney, would provide relief to East Line Street. Aligning East and West Pine Street across US 395 to a four-way intersection would provide another signalized east/west crossing of Main Street/US 395. This location would also allow one signal to provide left turn movement onto US 395 for both the east and west sides of Bishop. As proposed in the City of Bishop General Plan the alignment of East Pine Street with Grove Street across US 395 is also an option. Aligning East Pine Street and Grove Street would align the streets the City has designated as neighborhood collectors as shown in the City Master Plan (see Figure 17). Attachment 10, "City/County Circulation Recommendation 7" has an illustration of a West-to-East Pine Street alignment/connection.

## Other City/County Circulation Related Issues

During PDT discussions of potential solutions to maintain existing and future traffic volumes in the CBD and still meet the study objectives, one possibility was a couplet design using Main Street/US 395 and Warren Street. In this couplet configuration, existing Main Street/US 395 would be used for NB US 395 and Warren Street would be used for SB US 395. Warren Street, in addition to being made one way, would require parking removal, widening and other work to bring it up to Caltrans highway standards. Transitions at the south and north end of the couplet would require the acquisition of privately held, developed land. Attachment 10, City/County Circulation Possible Couplet Design has an illustration of one possible design for a Main Street/Warren Street couplet. Because Main Street and Warren Street would become one-way streets, a couplet design would involve significant changes to local circulation patterns in the Bishop CBD, especially to streets that currently connect Warren and Main. This kind of radical change may result in opposition from local residents and businesses. In order for this kind of drastic redesign of Bishop’s downtown to occur, strong local support and cooperation with Caltrans would be required.

The couplet design has many potential benefits, but would require more time and effort to fully analyze than available in this Feasibility Study. The couplet design has the potential to partially meet some of the PDT's original study objectives as proposed in this document. For instance: While it will remove some parking on Warren, it may allow for landscaping and the return of some of the parking on the existing Main Street corridor. It keeps services in Bishop visible, and while these businesses would only have one direction of US 395 traveling past their business, with the inclusion of Warren Street for southbound traffic it would essentially double the existing US 395 frontage available for local businesses. It could also improve access to the airport via Line Street. Since only northbound traffic would be using the current Line Street/Main Street/US 395/SR168 intersection, the two through northbound lanes could be centered on the existing pavement allowing for a larger turn radius for eastbound trucks going to the airport. Southbound US 395 trucks heading for the airport would be accessing that same intersection from the Line Street/SR 168 side and would be coming in straight. While this design would not remove trucks from Main Street, it would essentially cut in half the number of trucks on Main Street, since only northbound trucks will be on Main Street and only southbound trucks will be on Warren Street.

It should be noted that the Bishop community is very supportive of the addition and expansion of existing bicycle paths, particularly paths connecting the unincorporated residential areas of Bishop with downtown services, schools, and parks. A survey conducted in 2003 at the Tri County Fair showed 18\% of those surveyed thought Bishop's top transportation concern was the "Need for bicycle paths in Bishop". The only transportation issue with a higher percentage (at 22\%) was "Too many trucks on Main Street". Figure 18 shows the percentage of responses from the 2003 Fair Survey. Appendix 3, Section D has the complete 2003 Fair Survey. Comments were received at every public meeting favoring improvement and expansion of the bicycle path system.

Figure 18: 2003 Tri-County Fair Survey


The public transit system was another transportation issue brought up in the public surveys. Respondents to a telephone survey conducted in 2003 even went as far as to propose expanded use of public transit as a solution to congestion in the Bishop CBD (see Appendix 3, Section E).

Established in 1988, Inyo Mono Transit (IMT) is responsible for coordinating public transportation needs in the Bishop area. Currently, IMT offers fixed route and dial-a-ride within Bishop and the surrounding area, along with fixed routes to Ridgecrest and Reno. IMT reports ridership in the Bishop area at 55,000 in 2004/2005 and is anticipating a $7 \%$ increase for 2005/2006. While increased use of public transit may reduce local traffic on Main Street/US 395, it is unlikely that increased public transit use would ever reduce traffic volumes enough to allow for the significant operational changes the project sponsors desire for Main Street/US 395.

## Environmental Determination and Environmental Issues

It is anticipated that an Environmental Impact Report/Environmental Impact Statement will be required for any of the six alternative routes proposed in this document, due to potential social and economic impacts to Bishop, the potential for significant impacts to the area's cultural and biological resources and potential hazardous waste conflicts. The environmental determination could vary anywhere between 72 months and 120 months for the full range of alternatives presented. Early elimination of alternatives has the potential to significantly reduce cost and time frames for environmental studies. Attachment 6 is the Preliminary Environmental Analysis Report and contains an analysis of the anticipated significant environmental impacts, costs and timelines. These estimates are based on Caltrans costs and requirements. County/City environmental costs and requirements may be different. If this project proceeds as a joint County/City project, the Federal Highways Administration (FHWA) (or Caltrans under FHWA delegation of authority) and the County of Inyo would likely act as lead agencies in the preparation of a joint California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) environmental document.

All alternatives proposed in this document avoid known potential 4 f facilities. Potential 4 f facilities within the Bishop area include: Bishop Country Club, Elks Park, Bishop City Park, Millpond Recreational Facility, Laws Railroad Museum, Izaak Walton Park, Sunland Indian Cemetery, Pioneer Cemetery, and Line Street Cemetery. Other important facilities avoided include: Sunland Solid Waste Disposal Site, the Bishop Airport (including areas designated for future airport expansion and associated airspace clearance zones), the City of Bishop and ESCSD wastewater facilities, a LADWP power sub-station, and Plant 6 (a SCE power generation facility).

As previously noted, there are currently no available lands for wetland mitigation in Inyo County. All proposed alternatives affect wetlands to some degree. If wetland mitigation is required, Federal policy of zero wetland loss may significantly delay or prevent the construction of any of these proposed alternatives.

A Wye Road Connection may require the acquisition and removal of two gas stations. Caltrans policy is to avoid acquisition of lands with potential hazardous material cleanup. If these lands are acquired, and hazardous material cleanup is necessary, R/W costs could increase significantly.

## Right of Way

Given that the timing for the development of an alternate route is undeterminable at this time, corridor preservation should be pursued. In order to preserve the lands needed for a possible future four-lane, it is recommended that R/W for a full divided four-lane facility be acquired even if a two-lane facility were to be built. Figures 19, 20 and 21 illustrate the proposed typical cross section for each alternative. These cross sections show a 300 -foot R/W corridor, with the two-lane truck route built to one side of the corridor. Acquiring the R/W for the four-lane footprint now will protect the lands needed for a possible future bypass from development. With the acquisition of the full R/W, the City and County can restrict/prevent commercial development near it, and best plan for the locations of future commercial and residential development. With the acquisition of the full R/W, access points can be identified, which will allow the City to identify which lands are best suited for future development and plan for the infilling of undeveloped areas between the City and the new route in a manner best suited to Bishop's unique needs. This is especially important in Bishop because of limited land availability and the political process involved in the acquisition of lands from the LADWP. All R/W cost estimates shown in Attachment 7 and Table 8 are for acquisition of the lands needed for a four-lane with a divided median, except for the departure locations south of Bishop for Alternative 5 and 6 and the Wye Road connection. For the departure locations of Alternative 5 and 6, the cross section is an all paved two-lane section with a 180 -foot R/W corridor. The Wye Road Connection R/W corridor along existing Wye Road would need to be wider than the existing 50 feet. At least another 10 feet would be required; 20 feet would be preferable, allowing for at least a 70 -foot R/W corridor along Wye Road.

The vast majority of lands required for any of the alternative routes are owned by the LADWP. Improvements necessary to make a Wye Road connection for an eastern alignment would require the acquisition of private lands and, depending on the connection selected, possibly privately developed LADWP leased land. All alignments have some utility involvement, but western alignments could have significantly more. Utility agencies involved are SCE, LADWP, City of Bishop, and ESCSD. See Attachment 7 for a summary of R/W cost estimates for each alternative.

## Figure 19: Alternatives 1 and 2



Figure 20: Alternatives 3 and 4, and North-South Portions of Alternatives 5 and 6


Figure 21: East-West Portions of Alternatives 5 and 6


## Funding/Time Lines

It is anticipated that this project would not be programmed in the State Transportation Improvement Program (STIP) until after funding of the Olancha/Cartago Four Lane project. The Olancha/Cartago Four Lane project will complete the four-laning of US 395 in Inyo County. Other funding for City and County components could be sought prior to completion of US 395 four-laning. The next step, should it be decided to continue with this project, would be a Project Initiation Document (PID).

Table 8: Construction and R/W Capital Cost Estimates (Support Costs Not Included)

|  | Roadway Cost in <br> $\mathbf{\$ 1 , 0 0 0 , 0 0 0}$ | R/W Cost <br> Range in <br> $\mathbf{\$ 1 , 0 0 0 , 0 0 0 *}$ | Total Cost Range <br> in \$1,000,000 |
| :--- | :---: | :---: | :---: |
| Alternative 1 | 39.2 | 3.0 to 4.8 | 42.2 to 44.0 |
| Alternative 2 | 35.4 | 2.3 to 5.2 | 37.7 to 40.7 |
| Alternative 3-Wye | 30.2 | 12.1 to 18.7 | 42.2 to 48.9 |
| Alternative 3-North | 45.8 | 13.1 to 25.0 | 58.9 to 70.8 |
| Alternative 4-Wye | 25.4 | 9.6 to 13.5 | 35.0 to 38.9 |
| Alternative 4-North | 41.0 | 10.6 to 21.5 | 51.6 to 62.5 |
| Alternative 5-Wye | 19.7 | 9.3 to 11.9 | 29.1 to 31.6 |
| Alternative 5-North | 36.0 | 10.3 to 21.3 | 46.3 to 57.2 |
| Alternative 6-Wye | 18.6 | 8.4 to 11.0 | 27.0 to 29.5 |
| Alternative 6-North | 33.9 | 9.7 to 21.2 | 43.6 to 55.1 |

The level of detail available to develop these capital cost estimates is only accurate to within the above ranges and are useful for long range planning purposes only.

* Right of Way cost includes mitigation for wetlands. Estimates for wetland impact areas and costs for mitigation lands are uncertain.

Table 9: Tentative Project Time Line
$\left.\begin{array}{|l|c|}\hline \text { Milestone } & \text { Months } \\ \hline \text { Write PID } & 24 \\ \hline \text { PA/ED, Includes Circulate Draft Project Report/ } & 120 \\ \hline \text { Draft Environmental Document, hearings }\end{array}\right]$

All milestones are used to indicate relative time frames for planning purposes only.

## Caltrans District 9 Contacts

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Nancy Escallier, Field Office Chief Right of Way, Central Region - Bishop
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## References

## Attachments

Attachment 1 - "Industrial Boom, Storey County’s next big chapter in development", Reno Gazette-Journal, May 8, 2005, Susan Voyles
Attachment 2 - "Pros and Cons of Restricting Trucks to the Number 1 Lane through the City of Bishop", California Department of Transportation, Project Development, Bishop Design, 2005.
Attachment 3 - "Economic Impact Factors in Rural Community Bypass Scenarios", California Department of Transportation, Division of Planning, November 7, 2003
Attachment 4 - Traffic Study Report, Inyo 395
Attachment 5 - Traffic Study Report, Inyo 6
Attachment 6 - Preliminary Environmental Analysis Report
Attachment 7 - Right of Way Summary Report
Attachment 8 - Possible Wye Road Connections
Attachment 9 - Cost Estimates
Attachment 10 - City/County Recommendations

## Appendices

Appendix 1 - "Bishop Freeway Brief, California Highway Commission-Brief", California Department of Public Works, Division of Highways, District 9, April 1966.
Appendix 2 - "Bishop, An Analysis of the Economic Impact of a Proposed Freeway Bypass of the City of Bishop, Inyo County, California"- Inlandia Economic and Governmental Research, May 1965.
Appendix 3 - Bishop Area Access and Circulation Study Public Participation Process Summary, California Department of Transportation, Division of Planning, 2005
Appendix 4 - "Preliminary Community Impact Assessment-Bishop Area Access and Circulation Study"-Jones and Stokes, June 2005. A study sponsored by the California Department of Transportation, Division of Planning.
Appendix 5 - "Bishop Area Access and Circulation Study (BAACS) Paramics Model Report"California Department of Transportation, Division of Planning, December 28, 2006.

## Attachment 1_Reno Gazette Industrial Boom Article

## Industrial Boom

## Storey County's next big chapter in development

Susan Voyles
RENO GAZETTE-JOURNAL
5/8/2005 12:41 am

PATRICK - Just beyond the Tracy power plant east of Reno, Lance Gilman sounds like a submachine gun as he points out the sights on this high plateau in Storey County's back country.

To the left, the sagebrush-covered land is for an industrial plant. That, over to the right, is sold.

For several miles on the under-construction highway, Gilman ticks off one land sale after another 20, 40, 60 and even 100 acres of industrial sites at the Tahoe-Reno Industrial Center.

The business park sold or has in escrow more than 1,000 acres of industrial land since Wal-Mart announced in December plans to build a major distribution center here, said Gilman, who owns the park with Don Roger Norman. Selling that much industrial land took 11 years at Reno's South Meadows Business Park when the two partners developed it in the 1990s, he said.

Economic development officials say the park will have an impact on business in the Reno-Sparks area. While most of the park's customers are expected to be new businesses to the area, some local businesses can be expected to relocate to the park if they need to build larger facilities. And that will leave empty buildings in town to be filled with new businesses or razed for other uses.

But overall, the monster-sized industrial park is expected to boost the economy as a whole, providing thousands of new jobs.

About 600 trucks a day will leave Wal-Mart's 1 million square-feet distribution center, loaded with goods destined for northern California and Nevada.
"When you walk up and down the aisles of Wal-Mart, you'll see who's coming," Gilman said. "You'll see who's going to be opening manufacturing centers, moving merchandise out one back door and into another."

He expects thousands of new jobs will be created, paying rates of \$15-\$20 an hour.

## First, the road

In landing the 160-acre site for Wal-Mart, construction began on a four-lane highway called USA Parkway that eventually will open up most of the 104,000 -acre private industrial-park, which the developers claim is the world's largest. The back door of the park will be at Silver Springs, 18.5 miles away.

The road's first five miles of the road should be finished by the end of the summer. Construction of Wal-Mart is scheduled to begin Aug. 1 and about six other companies will start work soon after.


Andy Barron/Andy Barron
Workers prepare land for a new road last month at the Tahoe-Reno Industrial Park in Storey County. TAHOE-RENO I NDUSTRI AL
CENTER/ FEATURES

* Redundant electrical power. Sierra Pacific Power Co. operates the Tracy power plant and the Pinion Pines plant. Barrick Gold Corp. is building a natural gas powered plant. And the Naniwa natural gas plant sits ready for use for any emergency on the West Coast.
Natural gas is available in two lines, including a pressurized line. A company in the park refines mixed vehicle fuels from the Sparks Tank Farm and sells it at a discount.
* Water comes from three water wells on site. Two water storage tanks sit on top of hills and one more is being built, for a total of four million gallons. More are planned. A $\$ 1$ million study by the U.S. Geological Survey will determine the extent of a sustainable groundwater supply of the Patrick-Tracy hydro basin, including the industrial park. Results of the six-year study are to be released within a few months. Depending on the results, the state will rule on the park's applications for 18,000 acrefeet of groundwater. About 3,000 acre-feet are now permitted. Water and sewer treatment facilities are paid by for by park users through the TRI General Improvement District. The sewer plant will be expanded this fall to treat one million gallons per day. * A railroad line through the park will be extended another 3.6 miles by this fall. About 2.8 miles of track already has been built as well as a bridge over the tracks. * A mountain top is being leveled for gravel and rock to build the park - and will be sold as a prime office spot when cleared. A cement plant is expected to be built within a year.

By the end of the year, the first 5,000 acres could be sold on the high plateau. So far, 2,000 acres have been sold, Gilman said. The first plants were built around Sierra Pacific Power Co.'s Tracy power plant. That 5,000 acres would eventually be home to 100 million square feet of industrial buildings. That compares with 58.5 million square feet of industrial buildings in Reno and Sparks.

For this first phase, Gilman said Norman will have invested about $\$ 70$ million in building roads and utilities. He bought 102,000 acres for $\$ 20$ million in 1998. Gilman said Norman was the only one of five bidders who brought cash when Gulf Oil Co. offered it for sale. Gulf Oil had planned a big-game preserve.

The park will have two more phases and is mapped for 31,000 acres of industrial space.
"It's 160 square miles. From Interstate 80, nobody would ever dream there was all this developable property up here," Gilman said. Only the highway being built to the high plateau and a future Wal-Mart is visible to motorists passing on Interstate 80.

James Hardie Industries opened six months ago a plant to make concrete-based siding.
"We love the location," plant manager Harv Shelton said. "We love the employees we are getting from Reno, Sparks and Fernley."

The lowest-paid jobs start at $\$ 12.55$ an hour. Shelton's only complaint is a railroad spur for bringing in supplies and shipping product was delayed, partly due to the harsh winter and flooding. The spur should be done by July, he said.

One location advantage is that Nevada Cement Co., its main supplier, is just a few miles away in Fernley.

## Business from Washoe

While most of the companies are new to the region, Gilman also expects to draw businesses from Washoe County. The industrial center, nicknamed the TRI park, offers inexpensive land, lower property-taxes and nobody nearby to bother, Gilman said. As some Reno-area businesses migrate, he expects the abandoned land could be turned into retailing or housing.

Chuck Alvey, Economic Development Authority of Western Nevada executive director, said companies looking to build big buildings are forced to the region's outskirts, such as Stead, northern Spanish Springs, Fernley and the TRI park. Within central Reno and Sparks, he said, sites are unavailable.

Alvey said EDAWN will put together a campaign this fall to fill vacated spaces in Reno and Sparks with offices and hightechnology businesses. The region has a big card to play: It recently was named the No. 1 place to do business by Inc. Magazine. Regionwide, he said, the building and development is unprecedented. He compared it with Phoenix's boom days in the early 1990s.

Dave Simonsen, Alliance Commercial Industrial Group vice president in Reno, said land prices factor into the park's success. TRI is selling land for $\$ 1.95-\$ 2.10$ per square foot versus $\$ 3.34$ per square foot in Stead, $\$ 3.50$ in Spanish Springs and $\$ 2.50$ in Fernley.

He said a drawback could be the drive to the park, about 15-20 miles from downtown Reno.

Warehouses and distributors want to pay workers about $\$ 9$ an hour, but "they have to pay a little more out there," said Simonsen, a local industrial real-estate broker for 15 years.

Alvey doesn't believe the commute will affect wages because of workplace supply-and-demand.

Gilman said the industrial park could absorb hundreds of former Reno casino workers, some now working at convenience stores or in other low-paying jobs. Washoe County has lost 8,400 gaming jobs since 2001.

## An industrial setting

The park is heavy-duty industrial compared with the more stylish South Meadows Business Park, which mixes commercial and industrial space. At TRI, steel buildings and outdoor storage areas are allowed. Gilman also has sold the top of two knolls for offices that are to be built with factories.

Sales at the park were slow at first, Gilman said. The Sept. 11 attacks virtually stopped business expansion for two years. He

Industrial Boom (printable version)
said he quit going to trade association conventions.

Gilman, in charge of sales, is the front man in his partnership with Norman. He detoured into the Harley-Davidson business in the 1990s, opening a Carson City shop that later was sold. He became a minister in 1997 to wed couples on their Harleys in the store's chapel. He opened the Wild Horse Resort \& Spa, next to the TRI park, in 2003. His office is in a house behind the brothel, managed by his girlfriend Susan Austin.

At the Double Diamond Ranch, including the South Meadows park, Norman bought his first 500 acres in Reno in 1988 and then took ownership of all of 2,300 acres in 1994. Norman and Gilman also developed commercial properties in San Diego.

Gilman said the brothel hasn't hurt sales. The land along the road to the brothel is sold and soon will be developed, he said. Working with the Flying J company, he plans to build a truck shop next to the brothel.

Vince Griffith, the project's engineer, said he expects people will live in new housing in Fernley, Dayton and Reno-Sparks

Five national home builders are interested in buying more than 7,000 acres on the park's fringes, Gilman said.
"Everybody is aware Inc. Magazine has named the area No. 1 for business in the nation," he said, including the home builders.

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## Attachment 2_Restricting Trucks to the \#1 Lane

Pros and Cons of Restricting Trucks To The<br>Number 1 Lane Through The City of Bishop

The posted restriction of trucks to the inside lane through Bishop's central business district (CBD) has frequently been raised as a possible way to reduce their perceived impact to pedestrian users of the corridor. In the CBD, the existing narrow right of way (R/W) does not allow for a full shoulder. The proximity of the outside travel lane edge to the sidewalk can make pedestrian activities uncomfortable. Barriers, disguised as planters, have been placed along the sidewalk edge to provide separation between traffic and pedestrians. Additionally, the nearness of traffic combined with the "canyon effect" of Bishops tall buildings, makes traffic noise levels seem excessively loud to pedestrians. The restriction of trucks to the inside lane seems an obvious solution to these problems. However, Bishops narrow R/W and the US 395/US 6 junction proximity to the CBD make this obvious solution just one more option with negative aspects. This paper has been prepared to provide some understanding of the consequences of posting truck lane restrictions within Bishop's CBD.

The existing Main Street/US 395 R/W is very restricted in the Bishop CBD between Line Street and East Elm Street. At one point the R/W is as little as 67 feet. In order to provide a center turn lane and not reduce the existing width of the sidewalk, a design exception was obtained to stripe some lanes less than the 12 ft minimum required by Caltrans design standards. Currently, at the narrowest point of the R/W, the road is striped with a 10 ft center turn lane, 10 ft NB and SB inside lanes, and 12 ft NB and SB outside lanes. Leaving only 6.5 feet for each of the sidewalks and gutters along existing Main Street at that location.

To conform to current minimum Caltrans design criteria for a 5-lane section with sidewalks 96 ft would be needed. This minimum cannot be met without the partial demolition of one side of Bishops downtown corridor. Existing Main Street's roadway is constrained by buildings located at the right of way line on both sides. Many of these buildings are from the early $20^{\text {th }}$ century and were constructed when average daily traffic (ADT) volumes were low and congestion was nonexistent. Building at the edge of the R/W wasn't a problem when Main Street ADTs were low enough to only need one lane of traffic in each direction. With just a 2-lane road it was possible to have parking along each side of the street and room for sidewalks within that 67 feet. Bishop has changed over the decades. With current ADTs nearing 18,000, not only is parking on Main Street impossible, traffic congestion (even with 4 lanes and a center turn lane) is a problem we deal with everyday. The restricted R/W Caltrans currently has in the CBD just cannot do everything being required of it; much less what is desired of it.

As previously stated, it has been suggested, in order to avoid the perception of too narrow sidewalks and to possibly reduce noise levels, that Caltrans restrict truck traffic to the inside lanes. Reversing the existing striping to make the inside lane a full 12 ft and the outside lane 10 ft . This idea, along with re-striping all lanes to 11 ft , has been discussed repeatedly at Caltrans. The issue just is not as simple as it may seem. The overall safety of all users of the CBD needs to be considered before an informed decision can be made to change the existing striping and signing.

The California Vehicle Code requires trucks to use the outside lane except to pass. For trucks to legally travel in the inside lane there must be a sign allowing, or restricting, them to that lane.

Delivery trucks would not be bound by these rules if their deliveries were to a side street within the lane restriction area. Currently, Bishop is posted to allow trucks to travel in either lane through the downtown core. A spot study done on February 24, 2006 showed that $26 \%$ of truck drivers choose to use the inside lane. See tables below. This percentage of use is fairly high considering the inconvenience and difficulty to truck drivers involved in lane changing and that it's a permissive situation. Posting truck lane restriction to the inside lane would certainly obtain higher usage of the inside lane, but to gain full compliance there would need to be strong enforcement. Without extensive enforcement, many trucks will probably continue to do what is easiest, which is to stay in the outside lane. Without full compliance faster cars may "slalom" through truck traffic decreasing the safety of the cars by increasing the lane changes made by them.

Consideration should also be given to the reduction in safety to trucks that may occur with the forced lane changing lane restriction would require. Inside lane restrictions would result in trucks being required to make two lane changes that many normally wouldn't need to make. The reduced safety of lane changing is also compounded with the problem of NB US 6 trucks that would only have a fairly short length to move back to the outside lane to make the US 6 turn at the Wye. With about half of the trucks traveling through Bishop destined for US 6, many trucks would be trying to change back to the outside lane past the Bishop CBD in order to make the turn at US 6. Anyone who has tried to change lanes to make the right turn onto US 6 on a Friday evening during ski season, or fishing season, or mule season, knows the trouble even a car can have in making this movement. To try and do it in a semi using only right side mirrors to check for breaks in the faster moving cars passing them on the right would be much more difficult.

If, in addition to the lane restriction, the lanes are re-striped with the inside lane 12 ft and the outside lane 10 ft , without good truck compliance, the negative result of placing non-compliant trucks even closer to the sidewalk occurs. Even if good compliance is obtained, one result of slower moving trucks traveling in the inside lane would be the shift of the faster moving cars to the outside lanes. Not only are these cars faster but in order to make the inside lane larger the outside lane edge line will have been shifted even closer to the sidewalk. Additionally, since most drivers use the lane lines to center their vehicles, all other vehicles not restricted to the inside lane (including cars, motor homes, and vehicles towing trailers) will center themselves in the narrower outside lane and be even closer to the sidewalk.

Another possibility is to stripe all the lanes 11 ft . This would distribute the limited lane width available equitably. Increasing the inside lane width by 1 foot may make the inside lane more attractive to trucks and perhaps more trucks would choose to use the inside lane even if they aren't restricted to it. Decreasing the outside lane width by 1 foot would also minimize the "centering shift" of all the other vehicles traveling in the outside lane. Distributing the lane widths equally does not however fix the problem of faster cars passing trucks on the right or the reduction in safety that would be experienced by trucks in changing lanes. In fact, by making the inside lane more attractive to trucks, but not restricting them to that lane, trucks may be distributed evenly into both lanes. This could result in faster moving cars "slaloming" through truck traffic decreasing the safety of the cars by increasing the lane changes made by them. As stated previously without strong local enforcement, even if the CBD were posted for truck lane restriction to the inside lane, it is unlikely that full compliance will be obtained and car "slaloming" would happen in this situation also.

Another consideration is that since the sidewalks are so close, it would be best to keep the most experienced drivers closest to the sidewalks and keep less experienced drivers further from the sidewalk. Truck drivers do have stricter licensing requirements and generally have more experience driving than the average car driver. Even though what they are driving is large they spend more time in, and are more familiar with, their vehicles than the average driver. Restricting trucks to the inside lane would put the less "tested", less experienced, and faster drivers closer to pedestrians.

In conclusion, there is no easy answer. The overriding problem of not having enough right of way remains. None of the options available are true solutions. All options have negative aspects that reduce the safety of some users. The only real solution to reducing the impact of trucks to pedestrians in Bishop's CBD is to provide trucks with a separate route away from pedestrians.

Lane Distribution of Trucks on US 395 in Downtown Bishop*
February 24, 2006

| Time | NB \#1 | NB \#2 | NB <br> Total | NB \#1\% <br> Use | NB \#2\% <br> Use | SB \#1 | SB <br> $\# 2$ | SB <br> Total | SB \#1\% <br> Use | SB \#2\% <br> Use |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1320 To 1420 | 8 | 13 | 21 | 38 | 62 | 3 | 13 | 16 | 19 | 81 |
| 1430 To 1530 | 4 | 15 | 19 | 21 | 79 | 9 | 20 | 29 | 31 | 69 |
| 1530 To 1630 | 4 | 9 | 13 | 31 | 69 | 3 | 16 | 19 | 16 | 84 |
| Total | 16 | 37 | 53 | 30 | 70 | 15 | 49 | 64 | 23 | 77 |


| Count All \#1 | Count All \#2 | Total Count | Total \#1\% Use | Total \#2\% Use |
| :---: | :---: | :---: | :---: | :---: |
| 31 | 86 | 117 | 26 | 74 |

*Counts taken between Academy and East Pine Street.

## Attachment 3_Economic Impact Factors in Rural Community Bypass Scenarios

Economic Impact Factors in Rural Community Bypass Scenarios

A compilation of relative points and factors extracted from a variety of study summaries

This list is a compilation of selected relative and key extractions from a variety of reports and studies addressing the issues of bypassing communities/cities. There are a lot of methods used to come to some conclusions in these documents, but all admit that these models and study methods are completely subjective and that no one scenario can be directly applied to another. Fortunately, there are some general conclusions (general being the key word) that may be helpful to observe.

Note: As identified in the 2000 Census, the total population of the incorporated area of the City of Bishop is 3,575 , whereas the total population of the immediate Bishop service area is 10,851 (this is the total population of the study area or the immediate surrounding unincorporated area and the incorporated City area of Bishop combined). Another important factor to note concerning the Bishop Area is the unique land use scenario. Inyo County as a hole has only $4 \%$ of the total land base in private holdings. The vast majority of the land in the valley floor is owned and managed by the Los Angeles Department of Water and Power (LADWP), surrounded then by primarily the Bureau of Land Management, the United States Forest Service, and the United States Parks Service lands. In particular, most of the land in the Bishop Area is owned by LADWP. In the case of a potential Bishop bypass, this land use scenario will prove most advantages. In no other case studies found have bypassed communities had this type of an advantage to fend of the potential for satellite development.

## BYPASS POINTS

## Wisconsin Bypass Study Major Conclusions

- In most communities, highway bypasses have little adverse impact on overall economic activity. The economies of smaller communities [less than 2,000 population] have a greater potential to be adversely impacted by a bypass.
- Very little retail flight has occurred in bypassed communities, meaning that few businesses have relocated or developed new operations in areas adjacent to the bypass route.
- Communities view their bypasses as beneficial overall, while at the same time communities and individual businesses understand that the bypasses presented changes that must be addressed proactively.
- Communities and business districts that have a strong identity as a destination for visitors or for local shoppers are the ones that are most likely to be strengthened due to the reduction in traffic delays through their centers. However, there is also a broad
perception that adequate signing to the bypassed business center is an important need (and concern) for ensuring its continued success.


## Kansas Bypass Study Primary Findings

- In the long term, typical bypasses in Kansas probably do not have significant negative effects on the local economy. Most counties and many towns may have benefited in the long term from the construction of bypasses.
- In the short term, effects on individual firms are different from effects on the aggregate work force. In Kansas towns, bypasses probably did not have negative short-term effects on the town as a whole. Bypasses probably did have transitory negative impacts on selected firms. The negatively impacted firms are concentrated in travel-related businesses, including restaurants, bars, motels, and service stations. However, not all travel-related firms in bypassed towns were negatively impacted.
- Many other factors other than bypasses affect the economy of small towns and individual firms, and these various factors together are substantially more important than bypasses [these other factors may include regional and national economic trends, population movements away from small towns, and shifts in retailing toward large chain stores].


## Iowa Bypass Study Findings

- The results from analyzing the secondary data indicate that the overall levels of retail sales in a community are not significantly affected by the presence of a bypass.
- The benefits of an improved flow of traffic from bypasses around rural communities along a transportation corridor does not appear to be offset by losses of retail sales in the aggregate.... Businesses serving the local trade area and those dependent on repeat customers are actually likely to benefit from an improved downtown shopping environment. A transfer among individual business owners appears to be occurring in these communities where certain businesses along the old highway close and others open along the new bypass. Over time, the majority of merchants appear to be adjusting to the new situation and report being in favor of the bypass.
- The overall majority of respondents favored the bypass. Regardless of [their] location, a majority of merchants agreed that the traffic volume and noise had decreased since the bypass. They thought the shopping environment and accessibility of suppliers and delivery trucks to their places of business had improved or not changed since the opening of the bypass.


## Texas Bypass Study Conclusions

- The economic impact of highway bypasses on small cities in a rural setting is not uniform across cities and in most cases appears to be rather minor. The way in which a social and business community responds to a highway bypass is complex and involves the interaction of several factors.
- Individual case studies show that local communities might not necessarily perceive bypasses as negative. Rather, the construction of a bypass is seen as one of many
factors contributing to the overall economic performance of a city in a rural setting. The initial decreases in certain types of sales were often counteracted by reorientation of local stores. Political and business leadership in a given area seems to play an important role in the evolution of the city after bypass opening.
- The ratio of the distance on the relief route to the distance on the old route has a positive impact on per capita sales for the service sector, but does not significantly impact other indicators. Basically, the closer the bypass route is to the business district or downtown core, the better. This being a potential positive factor, needs to be coupled with good access and signing from the new route to the old route.


## Oregon DOT Bypass Study Conclusion

- This study verifies the importance of supporting bypass facilities through land use planning and of acquiring and maintaining access control.


## National Transportation Research Board Bypass Study Conclusions

- For the most part, bypasses seem to have favorable impacts on rural communities and small urban areas, but evidence in these studies is often weak.
- In most bypass cases adverse effects on otherwise viable bypassed businesses appeared to be largely recouped by improved ambiance for patrons and residents in the community, although individual businesses may suffer when a new bypass is opened.


## United States Chamber of Commerce Bypass Study Notes

- A large share of traffic on the average City Street is local in nature and cannot be bypassed.

Advantages:

- Business activity generally increased due to improved traffic conditions. The loss of tourist trade is usually more than offset by increase in local trade, and truck drivers don't normally shop in the business centers anyway.
- Pedestrian safety and convenience increased through reduced volume of heavy, fast through traffic.
- Parking made more convenient, due to reduced conflicts between parking vehicles and through traffic.
- Fewer traffic accidents and delays on city streets due to separation of local and through traffic.
- Reduced hazards of explosion, fire and gas leaks from trucks (carrying liquefied petroleum gas and other explosive of inflammable products) traveling through crowded streets in business districts.

Disadvantages:

- The principle disadvantage of bypasses occurs where the bypass is installed where or when it is not needed. In this case some business activity may suffer. Disadvantages
to all concerned may be realized, therefore, where inadequate planning result in improper bypass location and design.
- Where bypass construction is justified, about the only drawback, more feared than realized, is the possible loss of revenue from tourists and other through traffic.
- There is no doubt that a certain amount of trade may be lost to some few individuals; however, businessmen point out that this is generally more than offset by benefits to the entire community, assuming, of course, that construction of the bypass is warranted.


## Caltrans Bypass Study Summary

- A bypass can enhance overall economic activity, or a community's perception of economic health, but there is no strong statistical evidence showing bypasses to have this effect, especially in smaller communities.
- Overall, communities generally consider bypasses to be beneficial, with some dissent among traffic-serving business owners along the bypassed routes.
- Local leaders can influence the effects a bypass might have through access management, land use, and development guidelines.
- The geographic location and existing economic health of a community have a large role in determining the effects a bypass might have.
- Small communities (under 2,000 in population) are most likely to be adversely impacted by a bypass.


## Compilation of key points condensed from all studies:

> The main question concerning whether to bypass or not is: Is it needed?
$>$ A large share of traffic on the average City Street is local in nature and cannot be bypassed.
> Bypasses that are warranted are likely to have a positive affect on the community as a whole, in communities with a population of over 2,000 .
$>$ The closer the bypass route can be located to the old route/downtown core, the better the likelihood of economic prosperity.
$>$ Well-planned and designed access from the new route to the old route and downtown is very important for accommodating continued downtown commerce.
> The more of a proactive approach a community and it's leaders take in planning for a bypass the more positive the economic effects will be.
$>$ Communities that are destinations usually experience positive economic effects.
$>$ Communities as a whole usually prosper from the effects of a bypass, while some traffic oriented businesses may suffer.
$>$ The biggest issue with most all bypasses is the socioeconomic impact factor.
$>$ The issues that effect the success or failure of a bypass vary greatly and are too specific to a particular case to directly compare one to another.
$>$ The geographic location and existing economic health of a community have a large role in determining the effects a bypass might have.
> Supporting bypass facilities through land use planning and acquiring and maintaining access control is very important to the success of a bypass.

## REFERENCES

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4. Do Bypasses Hurt Business? Transportation and Communication Department, Chamber of Commerce of the United States, Washington, D.C. (1956).
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7. Yeh, Daniel. The Economic Impacts of Highway Bypasses on Communities - Summary. Wisconsin Department of Transportation, Madison WI (1998).
8. Sabol, Scott. Effects of Highway Bypasses on Rural Communities and Small Urban Areas. Research Results Digest Number 210, National Cooperative Highway Research Program (1996).
9. How Bypasses Affect Business. United States Chamber of Commerce (1956).

## Attachment 4_Traffic Study Report, Inyo US

 395
## Memorandum

Date:

File: $\quad 09-31460 \mathrm{~K}$


Subject: Traffic Index (TI) Calculations and Design Designation

Attached you will find the Traffic Index (TI) Calculations and Design Designation for the above referenced project.

| Data Year | $2004 \mathrm{AADT}=17300$ |
| :---: | :---: |
| Construction Year AADT. | 2025 AADT $=21320$ |
| 5 Year AADT. | 2030 AADT $=22410$ |
| 10 Year AADT. | 2035 AADT $=23550$ |
| 20 Year AADT | 2045 AADT $=26010$ |
| 5 Year TI. | $2030 \mathrm{TI}=9.5$ |
| 10 Year TI. | $2035 \mathrm{TI}=10.5$ |
| 20 Year TI. | 2045 TI = 11.5 |
| Construction Year DDHV. | 2025 DDHV = 1260 |
| 5 Year DDHV.. | 2030 DDHV $=1320$ |
| 10 Year DDHV. | 2035 DDHV = 1390 |
| 20 Year DDHV. | 2045 DDHV = 1540 |
| 2004 Directional Split $=63.23$ \% |  |
| 2004 Trucks $=6.0$ \% |  |

If you have any questions, please do not hesitate to call me. I may be reached at (760) 872-0711 or CALNET 8-627-0711.

Attachment
c: File

# TRAFFIC INDEX and DESIGN DESIGNATION CALCULATION SHEET 

| Iny-395-111/122.3 |  |  |
| :---: | :---: | :---: |
| EA 09-31460K | 09-31460K |  |
| BAACS |  |  |
| : Donna Holland |  |  |
| Design |  |  |
| 11/17/05 |  |  |
| Census Year | 2004 |  |
| Construction Year | 2025 |  |
| Complete Construction Year | 2025 |  |
| 2 Way AADT | 17,300 |  |
| Lane Distribution Factor | 1.0 | (Table 603.3B, Highway Design Manual) |
|  | AM Peak | PM Peak |
| Peak Hour Percent, K | 9.33 | 10.01 |
| Directional Split, D | 63.23 | 58.28 |
| Product of K and D, KD | 5.90 | 5.83 |
| DHV $=$ AADT $\times \mathrm{K} \times \mathrm{D}$ | 1021 | 1009 |
| PERCENT TRUCKS (\%) | 6.0 |  |
| 1 WAY TRUCK VOLUME | 656 |  |
| GROWTH FACTOR, \%/Year | 1.0 |  |

-TRAFFIC INDEX CALCULATIONS
Traffic Index Calculations are based on completion of construction per HDM 103.2

| $\begin{gathered} \hline \text { Vehicle } \\ \text { Type } \\ \hline \end{gathered}$ | Trucks <br> (\%) | $\begin{gathered} \hline \text { Present ADT } \\ \text { One Way } \\ \hline \end{gathered}$ | Expansion Factor | $\begin{array}{\|c\|} \hline \text { Expanded ADT } \\ \text { One Way } \\ \hline \end{array}$ | 5 Year Constant | Lane Factor | ESALs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 axle | 30 | 197.0 | 1.2634 | 249.0 | 345 | 1 | 85,905 |
| 3 axle | 10 | 66.0 | 1.2634 | 83.0 | 920 | 1 | 76,360 |
| 4 axle | 1 | 7.0 | 1.2634 | 9.0 | 1470 | 1 | 13,230 |
| 5 axle | 59 | 387.0 | 1.2634 | 489.0 | 3445 | 1 | 1,684,605 |
| TOTALS | 100 | 657.0 |  | 830.0 |  |  | 1,860,100 |

Five Year TI
9.5

TEN YEAR TRAFFIC INDEX

| Vehicle Type | Trucks <br> (\%) | Present ADT One Way | $\begin{gathered} \hline \text { Expansion } \\ \text { Factor } \\ \hline \end{gathered}$ | $\begin{gathered} \text { Expanded ADT } \\ \text { One Way } \\ \hline \end{gathered}$ | 10 Year Constant | Lane Factor | ESALs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 axle | 30 | 197.0 | 1.2953 | 255.0 | 690 | 1 | 175,950 |
| 3 axle | 10 | 66.0 | 1.2953 | 85.0 | 1840 | 1 | 156,400 |
| 4 axle | 1 | 7.0 | 1.2953 | 9.0 | 2940 | 1 | 26,460 |
| 5 axle | 59 | 387.0 | 1.2953 | 501.0 | 6890 | 1 | 3,451,890 |
| TOTALS | 100 | 657.0 |  | 850.0 |  |  | 3,810,700 |

Ten Year TI
10.5

TWENTY YEAR TRAFFIC INDEX

| Vehicle Type | Trucks <br> (\%) | Present ADT One Way | $\begin{aligned} & \text { Expansion } \\ & \text { Factor } \\ & \hline \end{aligned}$ | $\begin{array}{\|c\|} \hline \text { Expanded ADT } \\ \text { One Way } \\ \hline \end{array}$ | 20 Year Constant | Lane Factor | ESALs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 axle | 30 | 197.0 | 1.3613 | 268.0 | 1380 | 1 | 369,840 |
| 3 axle | 10 | 66.0 | 1.3613 | 90.0 | 3680 | 1 | 331,200 |
| 4 axle | 1 | 7.0 | 1.3613 | 10.0 | 5880 | 1 | 58,800 |
| 5 axle | 59 | 387.0 | 1.3613 | 527.0 | 13780 | 1 | 7,262,060 |
| TOTALS | 100 | 657.0 |  | 895.0 |  |  | 8,021,900 |

SHOULDER TIS
SHOULDER TIs

| Design Life | 2\% ESALs | TI |
| :--- | ---: | ---: |
| 5 Year | 37,202 | $\mathbf{6 . 0}$ |
| 10 Year | 76,214 | $\mathbf{6 . 5}$ |
| 20 Year | 160,438 | $\mathbf{7 . 0}$ |

----------------DESIGN DESIGNATION -----------------

| Construction Year AADT.. | AADT ( 2025 ) = 21320 |
| :---: | :---: |
| Five Year AADT. | AADT ( 2030 ) = 22410 |
| Ten Year AADT. | AADT ( 2035 ) = 23550 |
| Twenty Year AADT. | AADT ( 2045 ) = 26010 |
| Construction Year DDHV.. | DDHV ( 2025 ) = 1260 |
| Five Year DDHV.. | DDHV ( 2030 ) $=1320$ |
| Ten Year DDHV.. | DDHV ( 2035 ) = 1390 |
| Twenty Year DDHV. | DDHV ( 2045 ) = 1540 |
| D = 63.23 \% |  |
| T = 6.0 \% |  |

## TRAFFIC DATA

Project: $\quad$ Bishop Area Access and Circulation Study - Highway 395 - 09-31460K INY - 395 - KP 178.79/KP R 196.82 (PM 111.10/PM T 122.30)

The traffic information was compiled using the following sources:

## Traffic Data/Index:

2004 Traffic Volumes \& 2004 Annual Average Daily Truck Traffic

|  | Data Year <br> $\mathbf{2 0 0 4}$ | 10 Year <br> $\mathbf{2 0 3 5}$ | $\mathbf{2 0}$ Year <br> $\mathbf{2 0 4 5}$ |
| :--- | :---: | :---: | :---: |
| AADT | 17,300 | 23550 | 26010 |
| Peak Hour | 1,750 | - | - |
| Peak Month ADT | 19,000 | - | - |
| Trucks (\% Total AADT) | $6 \%$ | - | - |
| Traffic Index, TI | - | 10.5 | 11.5 |
| Growth Rate (per year) | $1.0 \%$ | - | - |

Notes: Data Year $=2004$
Ten and Twenty Year dates from Year of Construction
Speed:
There are nine different speed zones within the project limits and speed surveys will be addressed heading north.

| Description | Post mile |  | Observed (MPH) | $\underline{85 \%(M P H)}$ |
| :--- | :--- | :--- | :--- | :--- |
| 65 MPH Zone | $111.11-113.90$ | $45-79$ |  | 71 |
| 55 MPH Zone | $113.90-114.08$ | N/A | N/A |  |
| 45 MPH Zone | $114.08-114.83$ | $33-62$ | 52 |  |
| 35 MPH Zone | $114.83-115.20$ | $19-40$ | 34 |  |
| 25 MPH Zone | $115.20-116.20$ | $22-40$ | 34 |  |
| 35 MPH Zone | $116.20-116.51$ | $25-52$ | 42 |  |
| 45 MPH Zone | $116.51-118.55$ | $33-64$ | 52 |  |
| 55 MPH Zone | $118.55-118.81$ | $45-72$ | 62 |  |
| 65 MPH Zone | $118.81-122.30$ | $50-73$ | 66 |  |

## (Continued)

## Accident Data:

3 year Table B - 04/01/02 to 032/31/05
Summary: One hundred five (105) collisions during the three-year period resulted in the total accident rate ( 0.70 ) being below the statewide average rate (1.04).

Thirty-seven (37) injury collisions (62 injured) combined with four (4) fatal collisions (4 fatalities) resulted in the actual F\&I rate ( 0.27 ) being below the statewide average rate (0.47). The actual fatal rate (.026) was below the statewide average rate (.027).
$79 \%$ (83) occurred when the weather was clear
$19 \%$ (20) occurred while cloudy
2\% (2) occurred when snowing
66\% (69) occurred during hours of daylight
$24 \%$ (25) occurred while dark - no lighting
$10 \%$ (11) occurred while dark - lighting
$94 \%$ (99) occurred when the pavement was dry
$4 \%$ (4) occurred when the pavement was snowy/icy
$2 \%$ (2) occurred when the pavement was wet

53\% (56) were multi-vehicle collisions
56\% (59) were traveling S/B
$31 \%$ (33) were hit object type collisions:
(4 each) hitting a:
Utility pole
Cow in roadway
Traffic sign/post
Fence
Dike/curb
(3) Hitting a deer in the roadway
(2) Over embankment
(1 each) hitting a:
Wall
Paddle marker
Embankment
Wood in roadway
Utility box
Light or signal pole
Sign - not traffic
Golf ball
$28 \%$ (29) were broadside collisions

## (Continued)

Summary (cont.):
$15 \%$ (16) were rear end collisions
$8 \%$ (8) were sideswipe collisions
$8 \%$ (8) were auto vs. pedestrian collisions
$5 \%$ (5) were auto vs. bicycle collisions
$3 \%$ (3) were head-on collisions
$3 \%$ (3) was an overturn collision
Primary collision factors were: $30 \%$ (32) Failure to yield R/W
25\% (26) Improper turn
18\% (19) Unsafe speed
6\% (6) Driving under the influence
$4 \%$ (4) Other than driver - vs. cow
3\% (3) Fell asleep
3\% (3) Other than driver - vs. deer
2\% (2) Failure to ride on right side of roadway 2\% (2) Pedestrian failure to yield right-of-way 1\% (1 each):

Failure to ride closest to right shoulder Failure to stop at red light Driving with known medical condition Pedestrian not walking on shoulder Unsafe starting movement Other than driver - vs. golf ball Unsafe lane change Unsafe passing

## Recommendations:

Consideration should be given to the following:
Widen shoulders
Pave
Install rumble strips
Improve clear recovery zones
Remove/relocate fixed objects
Improve access to highway
Provide safe intersection sight distance
Provide adequate truck turning radius
Pave approaches
Preserve/provide appropriate highway delineation
Enhance pedestrian/bike facilities
Provide sidewalks
Provide bike lane

Attachment 5_Traffic Study Report, Inyo US 6

## Memorandum

Date:

File:
09-31460K


Subject: Traffic Index (TI) Calculations and Design Designation

Attached you will find the Traffic Index (TI) Calculations and Design Designation for the above referenced project.

| Data Year | . $2004 \mathrm{AADT}=3750$ |
| :---: | :---: |
| Construction Year AADT. | 2025 AADT $=4160$ |
| 5 Year AADT. | $2030 \mathrm{AADT}=4270$ |
| 10 Year AADT | 2035 AADT $=4380$ |
| 20 Year AADT | 2045 AADT $=4600$ |
| 5 Year TI. | $2030 \mathrm{TI}=9.0$ |
| 10 Year TI. | $2035 \mathrm{TI}=10.0$ |
| 20 Year TI. | 2045 TI = 11.0 |
| Construction Year DDHV. | 2025 DDHV $=420$ |
| 5 Year DDHV. | 2030 DDHV $=430$ |
| 10 Year DDHV. | 2035 DDHV $=440$ |
| 20 Year DDHV. | 2045 DDHV $=460$ |
| 2004 Directional Split = 73.91 \% |  |
| 2004 Trucks = 12.0 \% |  |

If you have any questions, please do not hesitate to call me. I may be reached at (760) 872-0711 or CALNET 8-627-0711.

Attachment
c: File

# TRAFFIC INDEX and DESIGN DESIGNATION CALCULATION SHEET 

| CO-RTE-PM Iny-6-0/5.6 |  |  |
| :---: | :---: | :---: |
| EA 09-31460K |  |  |
| JOB NAME BAACS |  |  |
| Requested by: Donna Holland |  |  |
| Unit: Design |  |  |
| Date: 11/30/05 |  |  |
| Census Year | 2004 |  |
| Construction Year | 2025 |  |
| Complete Construction Year | 2025 |  |
| 2 Way AADT | 3,750 |  |
| Lane Distribution Factor | 1.0 | (Table 603.3B, Highway Design Manual) |
|  | AM Peak | PM Peak |
| Peak Hour Percent, K | 13.67 | 17.83 |
| Directional Split, D | 73.91 | 56.67 |
| Product of K and D, KD | 10.10 | 10.10 |
| DHV = AADT $\times \mathrm{K} \times \mathrm{D}$ | 379 | 379 |
| PERCENT TRUCKS (\%) | 12.0 |  |
| 1 WAY TRUCK VOLUME | 333 |  |
| GROWTH FACTOR, \%/Year | 0.5 |  |

-TRAFFIC INDEX CALCULATIONS
Traffic Index Calculations are based on completion of construction per HDM 103.2

| Vehicle Type | Trucks <br> (\%) | Present ADT One Way | Expansion Factor | $\begin{array}{\|c\|} \hline \text { Expanded ADT } \\ \text { One Way } \\ \hline \end{array}$ | 5 Year Constant | Lane Factor | ESALs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 axle | 12.9 | 43.0 | 1.1244 | 48.0 | 345 | 1 | 16,560 |
| 3 axle | 4 | 13.0 | 1.1244 | 15.0 | 920 | 1 | 13,800 |
| 4 axle | 0 | 0.0 | 1.1244 | 0.0 | 1470 | 1 | 0 |
| 5 axle | 83.1 | 276.0 | 1.1244 | 310.0 | 3445 | 1 | 1,067,950 |
| TOTALS | 100 | 332.0 |  | 373.0 |  |  | 1,098,310 |

Five Year TI
9.0

TEN YEAR TRAFFIC INDEX

| Vehicle <br> Type | Trucks <br> $(\%)$ | Present ADT <br> One Way | Expansion <br> Factor | Expanded ADT <br> One Way | 10 Year <br> Constant | Lane <br> Factor | ESALs |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 2 axle | 12.9 | 43.0 | 1.1385 | 49.0 | 690 | 1 | 33,810 |
| 3 axle | 4 | 13.0 | 1.1385 | 15.0 | 1840 | 1 | 27,600 |
| 4 axle | 0 | 0.0 | 1.1385 | 0.0 | 2940 | 1 | 0 |
| 5 axle | 83.1 | 276.0 | 1.1385 | 314.0 | 6890 | 1 | $2,163,460$ |
| TOTALS | 100 | 332.0 |  | 378.0 |  | $2,224,870$ |  |

Ten Year TI
10.0

TWENTY YEAR TRAFFIC INDEX

| Vehicle Type | Trucks <br> (\%) | $\begin{gathered} \text { Present ADT } \\ \text { One Way } \\ \hline \end{gathered}$ | $\begin{aligned} & \text { Expansion } \\ & \text { Factor } \\ & \hline \end{aligned}$ | $\begin{gathered} \text { Expanded ADT } \\ \text { One Way } \\ \hline \end{gathered}$ | 20 Year Constant | Lane Factor | ESALs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 axle | 12.9 | 43.0 | 1.1672 | 50.0 | 1380 | 1 | 69,000 |
| 3 axle | 4 | 13.0 | 1.1672 | 15.0 | 3680 | 1 | 55,200 |
| 4 axle | 0 | 0.0 | 1.1672 | 0.0 | 5880 | 1 | 0 |
| 5 axle | 83.1 | 276.0 | 1.1672 | 322.0 | 13780 | 1 | 4,437,160 |
| TOTALS | 100 | 332.0 |  | 387.0 |  |  | 4,561,360 |
| Twenty Yr TI 11.0 |  |  |  |  |  |  |  |

SHOULDER TIS
SHOULDER TIs

| Design Life | $2 \%$ ESALs | TI |
| :--- | ---: | ---: |
| 5 Year | 21,966 | $\mathbf{5 . 5}$ |
| 10 Year | 44,497 | $\mathbf{6 . 0}$ |
| 20 Year | 91,227 | $\mathbf{7 . 0}$ |

-------------------DESIGN DESIGNATION
--------------------
Design Designation is based on year of construction per HDM 103.1

| Construction Year AADT.. | AADT ( 2025 ) $\mathbf{4 1 6 0}$ |
| :---: | :---: |
| Five Year AADT. | AADT ( 2030 ) 4270 |
| Ten Year AADT. | AADT ( 2035 ) = 4380 |
| Twenty Year AADT. | AADT ( 2045 ) $=4600$ |
| Construction Year DDHV. | DDHV ( 2025 ) = 420 |
| Five Year DDHV.. | DDHV ( 2030 ) 430 |
| Ten Year DDHV. | DDHV ( 2035 ) = 440 |
| Twenty Year DDHV. | DDHV ( 2045 ) = 460 |
| D = 73.91 \% |  |
| T = 12.0 \% |  |

## TRAFFIC DATA

Project: $\quad$ Bishop Area Access and Circulation Study - Highway 6 - 09-31460K INY - 6 - KP 0.00/KP 9.01 (PM 0.00/PM 5.60)

The traffic information was compiled using the following sources:

## Traffic Data/Index:

2004 Traffic Volumes \& 2004 Annual Average Daily Truck Traffic

|  | Data Year <br> $\mathbf{2 0 0 4}$ | $\mathbf{1 0}$ Year <br> $\mathbf{2 0 3 5}$ | $\mathbf{2 0}$ Year <br> $\mathbf{2 0 4 5}$ |
| :--- | :---: | :---: | :---: |
| AADT | 3,750 | 4380 | 4600 |
| Peak Hour | 360 | - | - |
| Peak Month ADT | 4,000 | - | - |
| Trucks (\% Total AADT) | $12 \%$ | - | - |
| Traffic Index, TI | - | 10 | 11.0 |
| Growth Rate (per year) | $0.5 \%$ | - | - |

Notes: Data Year = 2004
Ten and Twenty Year dates from Year of Construction

## Speed:

There are four different speed zones within this location and speed surveys will be addressed heading north.

| Description | Post mile |  | Observed (MPH) | $\underline{85 \%(\mathrm{MPH})}$ |
| :--- | :--- | :--- | :--- | :--- |
| 35 MPH Zone | $00.00-00.30$ | $31-43$ | 42 |  |
| 45 MPH Zone | $00.30-00.50$ | $44-56$ | 55 |  |
| 55 MPH Zone | $00.50-02.10$ | $54-70$ | $66-\mathrm{N} / \mathrm{B}$ |  |
|  |  |  | $68-\mathrm{S} / \mathrm{B}$ |  |
| 65 MPH Zone | $02.10-05.60$ | $55-74$ | $66-\mathrm{N} / \mathrm{B}$ |  |
|  |  |  | $67-\mathrm{S} / \mathrm{B}$ |  |

## Accident Data:

3 year Table B-04/01/02 to 03/31/05
Summary: Ten (10) collisions during the three-year period resulted in the total accident rate (0.62) being below the statewide average rate (1.02).

## TRAFFIC DATA <br> (Continued)

Accident Data (cont.):
Summary (cont.):
One (1) injury collision ( 1 injured) combined with no fatal collisions resulted in the actual F\&I rate ( 0.06 ) being below the statewide average rate ( 0.50 ) and the actual fatal rate (.000) being below the statewide average rate (.038).
$80 \%(8)$ occurred when the weather was clear $20 \%$ (2) occurred while cloudy
$50 \%$ (5) occurred during hours of daylight
$50 \%$ (5) occurred while dark
$90 \%$ (9) occurred when the pavement was dry $10 \%$ (1) occurred when the pavement was wet
$70 \%$ (7) were solo vehicle collisions
50\% (5) were traveling N/B
60\% (6) were hit object type collisions:
(3) Hitting a deer
(1) Hitting a utility pole
(1) Hitting a dike or curb
(1) Hitting a cow in the roadway
$30 \%$ (3) were broadside collisions
$10 \%$ (1) was an overturn collision
Primary collision factors were:
$30 \%$ (3) Other than driver - vs. deer
20\% (2 each)
Driving under the influence
Failure to yield R/W
Improper turn
$10 \%$ (1) Other than driver - vs. cow

Recommendations:
Consideration should be given to the following:
Improve horizontal alignment
Reduce radius of curves

## TRAFFIC DATA (Continued)

Recommendations (cont.):
Widen shoulders
Pave
Install rumble strips
Improve clear recovery zones
Lessen degree of slopes/embankments
Preserve/enhance safe passing sight distance
Improve access to highway
Provide safe intersection sight distance
Provide adequate truck turning radius
Preserve/provide appropriate highway delineation
Compiled by: Steven Wisniewski/Traffic Operations \& Safety

## Attachment 6_Preliminary Environmental Analysis

Preliminary Environmental Analysis Report

## Project Information

District 09 County Inyo_Route 395/6 Kilometer Post (Post Mile) 181.5/196.9 and 0.0/6.3 (112.8/122.4 and 0.0/3.95) EA $\quad 09-31460 \mathrm{k}$

## Project Title: Bishop Area Access and Circulation Study.

| Project ManagerBrad Mettam Phone \# (8\#) 827-5214 <br> Project Engineer Donna Holland | Phone \# (760) 872-0759 |
| :--- | :--- |

## Environmental (Manager) Office Chief Juergen Vespermann Phone \# (559) 243-8157 <br> Environmental Planner Generalist Matthew Palmer Phone \# (559) 243-8232 <br> Project Description

Purpose and Need: To Reduce vehicular and truck traffic congestion on US 395 in the Bishop area between approximately PM 113 and PM 122. Increasing levels of truck traffic in the Bishop area along US 395 has resulted in traffic congestion, a sense of hazard to pedestrians and bicyclists, and an increase in noise and air pollution. Combined, these factors decrease the sense of a livable, walkable, downtown district, and make deliveries to local businesses difficult for commercial traffic. In addition, the turn radius at the intersection of Main Street (U.S. 395) and Line Street (SR 168), which is the access for the Bishop airport, is deficient for large commercial vehicles. This deficiency results in large commercial vehicles taking indirect routes along Bishop City streets in order to access the Bishop airport.

## Project Goals:

- Improve the circulation and safety for all modes of transportation in the downtown area.
- Accommodate commercial truck traffic for US 395 and US 6.
- Plan for downtown improvements (i.e. landscaping, parking, pedestrian facilities, etc.) along with rerouting of truck traffic.
- Facilitate ground access improvement to the airport and it's associated development improvements.
- In order to encourage potential downtown commerce visitation, keep services in Bishop visible for through traffic on any route and have easy on/off connections.


## Study Background

The Bishop Area Access and Circulation Study (BAACS) was initiated as a result of steady increases in traffic along the U.S. 395 corridor, the perception of congestion in the downtown core, and the removal of on street parking on Bishop's Main Street. In 2002, the Inyo County Local Transportation Commission, with the support from the City of Bishop and Inyo County, requested that Caltrans study transportation in the Bishop area.

Work on BAACS began in spring 2003 to examine traffic and circulation concerns, look at ways to potentially improve the movement of through-traffic (particularly truck traffic), and improve the safety and accessibility for all modes of transportation.

## Alternatives

There are six proposed alternative routes; two alternatives around the west side of Bishop and four on the east side of Bishop. Improvement to the downtown district is independent of the alternative routes:

- Alternative 1: A new full speed 2-lane facility, an alternate Route 395 that is west of Bishop, west of Red Hill Road and east of Rocking K. Beginning at the south end at existing 395 near Gerkin Road and connecting back to existing 395 easterly of Ed Powers Road and westerly of the Bishop Gun Club facility. Signage would be placed on 395 directing 395 through trucks along this new route.
- Alternative 2: A new full speed 2-lane facility, an alternate Route 395 that is west of Bishop and east of Red Hill. Beginning at existing 395 near Gerkin Road and connecting back to existing 395 easterly of Ed Powers Road and westerly of the Bishop Gun Club facility. Signage would be placed on 395 directing 395 through trucks along this new route.
- Alternative 3: A new full speed 2-lane facility, an alternate route 6 that is east of Bishop, east of the wastewater facility and west of the Airport. Beginning at the south end at existing 395 near Gerkin Road and connecting to the north at existing route 6 either easterly of 5 Bridges road or southerly of 5 bridges road. Signage would be placed on 395 at the south end directing through trucks along this new route. Trucks bound for 395 could use this facility up to Wye Rd. where they would again be connected to 395 .
- Alternative 4: A new full speed 2-lane facility, an alternate route 6 that is east of Bishop, west of the wastewater facility, east of Johnston Dr and west of the Airport. Beginning at the south end of the alignment at existing 395 near Gerkin Road and connecting to the north at existing route 6 either easterly of 5 bridges road or southerly of 5 bridges road. Signage would be placed on 6 at the north end directing through trucks along this new route. Trucks bound for 395 could use this facility up to Wye Rd where they would again be connected to 395.
- Alternative 5: Schober Lane/395 intersection would be improved and Schober Lane to the east would be improved to a new reduced speed 2-lane truck route. Easterly of the canal the road would turn to the north and travel east of Johnston Drive and west of the Airport. This road would connect back to 395/6 at Wye road or continue north to connect 6 either north of the Ford Dealership or south or east of 5 bridges road. Trucks bound for 395 could use this facility up to Wye Rd where they would again be connected to 395 .
- Alternative 6: A new intersection and road would be added just south of the existing County Yard facility. This new road would be a reduced speed 2-lane truck route heading in an easterly direction. Easterly of the canal the road would turn to the north and travel east of Johnston Drive and West of the Airport. This road would connect back to $395 / 6$ at Wye road or continue north to connect to 6 either north of the Ford Dealership or south of 5 bridges road. Trucks bound for 395 could use this facility up to Wye Rd where they would again be connected to 395.
- Link from 395 to 6 , north of Bishop: This link would be a full speed 2-lane facility. The easterly connection to 6 could be north of the Ford dealership or between Dixon Lane and 5 Bridges Road or east of 5 Bridges Road. The new facility could connect to, or parallel Riverside Road north of the Dixon area and south of the Owens River continuing westerly and connecting to 395 easterly of Ed Powers Road and westerly of the Bishop Gun Club facility.
- Plan for Downtown improvements: The project goals as listed in the project description above were developed by the project development team at the beginning of this study prior to any data collection. It became apparent after the first traffic count collection that the goal for downtown streetscape improvements would be a challenge. Changes that may affect traffic operation downtown are not feasible without a major reduction in traffic volumes.

The project sponsors (City of Bishop, Inyo County, and the Local Transportation Commission) initially believed that if we could remove the majority of commercial trucks from downtown onto an alternate route, the downtown corridor could then be enhanced with landscaped center medians, onstreet parking, and other pedestrian friendly improvements that would significantly affect the operation of the highway. Initial traffic analysis clearly indicates that the traffic volumes downtown include a major local traffic component and that a truck route alone would not reduce traffic volumes enough to provide for the significant operational changes the team desired.

To obtain the team's goal of downtown improvements, significant changes to local circulation patterns (City and County roads) would be required in order to reduce local traffic volumes on Main Street to the point that operational changes could be made. Since local circulation on City and County roads is not under Caltrans' jurisdiction and the alternate truck routes alone do not provide enough of a decrease in traffic volumes downtown, the third bulleted goal on page 1 is not explicitly addressed by the alternatives in this study. This goal is still something to strive towards, but will require efforts on multiple organizational fronts. For the purpose of the study this goal will remain as originally crafted by the project development team with the understanding that an alternate truck route alone cannot attain it.

## Anticipated Environmental Approval

## CEOA

## - Categorical/Statutory Exemption Negative Declaration / focused ND Environmental Impact Report

## NEPA

- Categorical Exclusion
- Finding of No Significant Impact
$\checkmark$ Environmental Impact Statement


## PSR Summary Statement

The anticipated environmental document for the proposed project is an Environmental Impact Report/Environmental Impact Statement, due to the potential for adverse impacts to cultural and biological resources for the range of alternatives currently being considered if this feasibility study were to be programmed as a project. Early elimination of alternatives has the potential to significantly reduce cost and timeframes for environmental studies. The timeline for an environmental determination could vary anywhere from 72 months and up to 120 months for the full range of alternatives presented. The Federal Highways Administration and the California Department of Transportation would act as lead agencies in the preparation of a joint CEQA/NEPA (California Environmental Quality Act/National Environmental Policy Act) environmental document. Changes to the scope of this project will necessitate additional investigations and result in delays to completion of the environmental document and changes in production costs.

## Risks

Before this project is programmed, the project's cost, scope, and schedule will need to be re-evaluated to ensure that the project is properly resourced and sufficient manpower in Caltrans and consultant staff is available to perform the work.

## Special Considerations

The project has the potential to require extensive coordination with external resource agencies. The level of coordination is highly dictated by the project's level of impact and the significance of the particular resource. Below is a summary of the coordination that will most likely be required on this project with information about the responsible agency:

Section 404. Wetlands have legal protection in accordance with Section 404 of the Clean Water Act (33 U.S.C. Section 1344). A permit from the Army Corps of Engineers (ACOE) is required for most activities that will impact wetlands. The term "waters of the U.S." is also discussed in Section 404. Waters are currently described as any areas that might be considered waterways, either for commerce or recreation, even on a limited scale. Wetlands are a subcategory of waters. Frequently, the term "wetlands and other waters of the U.S." is used when describing areas under ACOE jurisdiction. Delineation of waters and wetlands results in "potential jurisdictional areas" which must be verified by the ACOE. Upon verification, these areas are referred to as "jurisdictional areas." A Section 404 permit is required from the ACOE when a project requires fill or other modification of waters, including wetlands. There are two types of permits issued by the ACOE, individual and general. This project would fall under the requirements of an individual permit.

Individual permits are the most complex. They cover projects affecting more than three acres, resulting in potentially significant impacts. The process of obtaining an individual permit usually takes many months. Special Conditions of the permit may include mitigation activities that need to be monitored for a five to ten year period for the most complex and/or controversial projects.

Initiation of a request for an ACOE permit to affect wetlands involves other resource and regulatory agencies as a part of the interagency review process. The ACOE submits permit applications to the Environmental Protection Agency (EPA), Department of Fish and Game (DFG), National Marine Fisheries Service (NMFS), and U.S. Fish and Wildlife Service (FWS) for review and comment. Time periods and extent of commenting required by these agencies varies depending upon the permit type. Individual permits are the most lengthy and involved. Applications for ACOE permits may be prepared and submitted by the Project Engineer, the District Biologist, or others, using information on delineated wetlands and other waters of the U.S. as prepared by the biologist. The Project Engineer provides information on the extent of the construction impacts responsible for proposed fill. The District Biologist is the key liaison with resource and regulatory agency staff regarding the wetland habitat impacts and potential mitigation.

Section 401. Section 401 of the Clean Water Act (33 U.S.C. 1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain certification from the State in which the discharge originates. As a result, proposed fill in waters and wetlands requires coordination with the appropriate Regional Water Quality Control Board (RWQCB) that administers Section 401 and provides certification. The RWQCB also plays a role in review of water quality and wetland issues, including avoidance and minimization of impacts. Section 401 certification is required prior to issuance of a Section 404 permit. The Project Engineer may be responsible for this coordination, with assistance form the District Biologist, regarding specific impacts and mitigation.

Sections 1602 of the Fish and Game Code. Under this section of the Fish and Game Code, Caltrans and other agencies are required to notify DFG prior to any project that would divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an
existing fish or wildlife resource may be substantially adversely affected, DFG is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications and bid documents for the project.

Federal Endangered Species Act of 1973. This act and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 requires Federal agencies, in consultation with, and with the assistance of the Secretary of the Interior or the Secretary of Commerce, as appropriate, to insure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) share responsibilities for administering the Act. Regulations governing interagency cooperation under Section 7 are found at 50 CFR Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing take that may occur incidental to an otherwise legal activity.

Section 106 of the National Historic Preservation Act. Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of their undertakings on historic properties and afford a reasonable opportunity to comment on such undertakings. The section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.

The State Historic Preservation Officer (SHPO) reflects the interests of the State and its citizens in the preservation of their cultural heritage. In accordance with section $101(b)(3)$ of the act, the SHPO advises and assists Federal agencies in carrying out their section 106 responsibilities and cooperates with such agencies, local governments and organizations and individuals to ensure that historic properties are taking into consideration at all levels of planning and development.

## Anticipated Project Mitigation

Preliminary environmental assessment of the project area identified visual, cultural, biological, and paleontological resources that would be adversely affected by the proposed alternatives. The following summarizes the level of mitigation anticipated for each resource. The estimated costs and duration of work is premised on costs and time experienced on past projects within District 9 and other parts of the State.

Visual: A visual impact assessment will be required ( $\mathbf{3}$ months). The time necessary to perform this evaluation will be concurrent with the environmental clearance process.
Aesthetic enhancements proposed as part of the downtown improvement plan are estimated at approximately $\$ 1,000,000$. These enhancements could potentially include wider sidewalks, center medians with landscaping, etc., depending upon operational constraints and acceptance of maintenance responsibility by a local agency. These costs are not associated with the costs identified later in this document as part of the roadway construction project.

Cultural: Phase III Data Recovery Plan and excavation are required for all eligible sites adversely impacted by the project. Several archaeological sites that will be NRHP eligible are anticipated and will require mitigation. Estimated duration of study would be 2 years and 6 months. Draft and Final Phase III reports will be produced. Estimated Cost of Phase III is expected to be $\$ \mathbf{1 , 0 0 0 , 0 0 0}$. An additional estimate of $\$ 100,000$ is anticipated for construction and Native American monitoring.

Paleontology: Major excavation in the older dissected alluvial fan and lakebed deposits that lie along the southern boundary of the project area might encounter sensitive vertebrate fossils. If there will be construction excavation activity in the south and southwest portion of the project area additional study would be recommended. Alternatives 1 and 2, which pass south and west of Bishop, would have the greatest impact on this area. Alternatives 3 and 4 would impact this area in the south where they intersect the existing highway. Alternatives 5 and 6 near the airport would likely not have an impact. If necessary, mitigation costs are estimated to be approximately $\$ 150,000$ for paleontological monitoring and additional studies for Alternatives 1,2,3, and 4 if excavation is to include significant excavation more than a few feet deep.
Biology: Mitigation for temporary and permanent impacts to sensitive biological resources (wetlands, riparian vegetation, regulated plants and animals) will be required. Mitigation for impacts to waters of the United States may be required. For this project, mitigation could include restricted construction scheduling, habitat enhancement, habitat restoration, or habitat replacement. Current survey information has determined that wetland habitat does exist within the study area. The options available to mitigate for permanent large-scale impacts to wetland habitat in Inyo County are virtually non-existent. Current estimates for wetland mitigation elsewhere in the state are approximately $\$ 250,000$ per hectare ( $\$ 100,000$ per acre) impacted. At this stage of the project it is very difficult to assess the complete impacts to wetlands within the project area. The table below roughly estimates the acreage potentially included within the proposed right of way for each alternative and provides a rough estimate of what the costs may be based on preliminary field surveys and project mapping available at this time.

| Alternative | Potential R/W Impact <br> Hectare (Acre) | Mitigation Cost (\$) |
| :---: | :---: | :---: |
| 1 | $8(20)$ | $2,000,000$ |
| 2 | $16(40)$ | $4,000,000$ |
| 3 | $81(200)$ | $20,000,000$ |
| 4 | $81(200)$ | $20,000,000$ |
| 5 | $20(50)$ | $5,000,000$ |
| 6 | $20(50)$ | $5,000,000$ |

Taking the worst case into consideration, the project would require approximately $\$ 250,000$ per hectare ( $\$ \mathbf{1 0 0 , 0 0 0}$ per acre) impacted to cover the biological mitigation anticipated for this project. An additional $\$ 1,250,000$ would need to be reserved for proposed mitigation on cultural and paleontological resources if necessary.

## Disclaimer

This report is not an environmental document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in this report. The estimates and conclusions provided are approximate and are based on cursory analysis of probable effects. This report is to provide a preliminary level of environmental analysis to supplement the Project Study Report. Changes in project scope, alternatives, or environmental laws will require a re-evaluation of this report.

## Reviewed by:



Date: 7-21-06

## Environmental Technical Reports or Studies Required

| Study | Document | N／A |
| :---: | :---: | :---: |
| $\checkmark$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\square$ |
| $\checkmark$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\square$ |
| $\checkmark$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\square$ |
| $\checkmark$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\square$ |
| $\square$ | $\checkmark$ | $\square$ |

Cultural
ASR
HSR
HASR


HRER
$\checkmark$

HPSR
Section 106 ／SHPO
Native American Coordination $\checkmark$

Other
Finding of Effect
Data Recovery Plan

Hazardous Waste
ISA（Additional）
$\square$
PSI
Other

Biological
Endangered Species（Federal）
Endangered Species（State）


## Permits

401 Permit Coordination
404 Permit Coordination

| $\checkmark$ | $\square$ | $\square$ |
| :--- | :--- | :--- |
| $\checkmark$ | $\square$ | $\square$ |
| $\checkmark$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\checkmark$ |
| $\square$ | $\square$ | $\checkmark$ |
| $\checkmark$ | $\square$ | $\square$ |
| $\square$ | $\square$ | $\square$ |
| $\checkmark$ | $\square$ | $\square$ |

## Discussion of Technical Review

Socio-economic and Community Effects. The project has the potential to divert more than just commercial traffic flow away from Bishop's Central Business District. A Community Impact Assessment (CIA) study should be completed to document the potential negative or positive results expected from proposed project. The Community Impact Assessment would assure that consequences to the social fabric of the area are given consideration with other environmental impacts. Estimated duration of the study would be approximately $\mathbf{1 2}$ months to be conducted concurrently with the environmental clearance process. Results of the study would be incorporated into the Environmental Document.

Farmlands. Alternatives proposed to swing east and around the community of Bishop may impact some land currently in agricultural use. A farmland assessment will be required during the preparation of the environmental document. Further design engineering is required to determine the extent of lands impacted. Once total impact areas are known, Form AD 1006 will be completed and submitted to the appropriate Natural Resources Conservation Service Field office for verification of prime and unique farmlands impacted by the proposed project. Completion of the farmland assessment should be approximately six months and would be conducted concurrently with the environmental clearance for the project. Conversion of farmlands subject to the Farmland Protection Policy Act will require coordination with the U.S. Army Corps of Engineers.

4(f) Impacts. The project is not expected to have any effects on resources subject to Section 4(f).
Paleontology. Most of the project area is covered by Quaternary nonmarine terrace deposits and alluvium; Quaternary alluvium is generally ranked as low sensitivity in the CSUF (2000) database because of the low probability of encountering fossils of scientific interest in the upper few feet. However, scientifically significant fossils have been found in Quaternary alluvium in Inyo County. There are two University of California Museum of Paleontology vertebrate fossil localities about 10 miles southeast of the project area that have yielded fossils of Rancholabrean age.

The southwestern portion of the project area is underlain by older dissected alluvial fan and lakebed deposits, some of which may be of late tertiary age. The depositional environment of the lakebed deposits, from ancient Lake Waucobi, appears the same as other pluvial lakes of the Basin-ranges and Mojave Desert provinces. Some of these lakebeds such as Lake Manix and Owens Lake, have yielded abundant vertebrate fossils. Some of the older sedimentary deposits may be part of the Coso Formation that has yielded important tertiary age vertebrate fossils from localities near Owens Lake.

Major excavation in the older dissected alluvial fan and lakebed deposits might encounter sensitive vertebrate fossils. If there will be construction excavation activity in the south and southwest portion of the project area additional study would be recommended. Alternatives 1 and 2, which pass west of Bishop, would have the greatest impact on this area. Alternatives 3 and 4 would impact this area in the south where they intersect the existing highway. Alternatives 5 and 6 near the airport would likely not have an impact Estimated duration of additional study would be 6 months at an estimated cost of $\$ 150,000.00$.

Visual Effects. A review was performed on the above referenced project. The project is located near Bishop from Warm Springs Road to Ed Powers Road in the high desert terrain of the Eastern Sierra. The surrounding landscape includes steep slopes, areas with gently rolling terrain, and
areas that are relatively flat. Vistas and views of the adjacent Inyo National Forest are seen from all parts of the proposed project study area. Perennial rivers and wetland areas dot the landscape where natural riparian vegetation occurs. These pockets of riparian vegetation are surrounded by vegetation typical of a high desert. Both of these landscapes, riparian as well as high desert, offer a unique visual experience to the user of the highway facility,

A preliminary visual resource assessment was conducted for this project. The follow items were identified and pertain to the construction of this project:

- According to the typical cross sections included in the preliminary studies, all slopes will be constructed at 1:4. This is shown for each of the alternatives. In this case, structural reinforcements to the slopes will not be necessary. However, if the design cross sections change to include slopes steeper than 1:4 or rock cutting, structural alterations may be required. To alleviate the effects of any rock slope stabilization, construction efforts such as rock staining and 'Soil Nail Walls' may be required. Staining of the newly exposed rock may be required to blend the color of the newly cut rock into the adjacent areas. Where steep slopes are being cut into, retaining walls or 'Soil Nail Walls' may be used. This will help minimize disturbance to the native vegetation and also minimize the visual impact of the construction. Terracing or benching these slopes may also be required. The cost of rack staining and 'Soil Nail Walls' will be incorporated with the cost for roadway construction.
- The Highway Design Manual, Topic 304 and the NPDES Storm Water Permit require written concurrence of the District Landscape Architect for slopes steeper than 1:4. The District Landscape Architect should be involved early in the PDT meetings to help make the determination on slope design. For this project, the emphasis will be to minimize disturbance and protect the existing vegetation.
- A preliminary review reveals that there will be vegetation removed by the construction of this project. Care must be taken to repair any areas where vegetation removal is required. These costs will be identified as part of the roadway construction project. Vegetation removal must be kept to a minimum.
- Additional revegetation requirements beyond biological revegetation will be necessary. This Visual Mitigation Planting will be in addition to the biological revegetation planting. Visual Mitigation Planting will be concurrent with the biological revegetation and will be accomplished as a separate project from the roadway construction project and must follow directly after the completion of the roadway construction project. Funding for this mitigation project is to be identified and set aside from the funds for the construction project. The amount required for Visual Mitigation Planting will vary depending upon which alternative is selected and whether or not the downtown improvement is included in the project. An estimated preliminary cost for the downtown improvement is $\$ 1,000,000$. A threeyear plant establishment period will be provided to ensure the survival of the newly planted vegetation.
- Appropriate Environmental agency requirements, including but not limited to the California Department of Fish and Game (DFG) 1602 agreement, may be applicable to the biological revegetation portion of the project. The visual
mitigation planting will be accomplished under the requirements of the Caltrans Highway Design Manual. The final Environmental Document should be clear that DFG agreement requirements are applicable exclusively to areas of river banks or those areas defined by the 1602 agreement, not the entire project limits.
- All areas disturbed during the construction of this project will require an Erosion Control application. As part of this process, the top $300-\mathrm{mm}$ of topsoil (duff) (12 inches) shall be stockpiled and replaced on the finished slopes prior to the application of Erosion Control. The funding for the erosion control will be separate from the funding for Visual Mitigation Planting. The cost will be identified as part of the roadway construction project.
- Some of the identified alternatives will require the service of structures design. Bridges, walls and all other structures that are required for the construction of the selected build alternative must receive special aesthetic treatments. Visual enhancement of structures should be coordinated through a designated Landscape Architecture representative.

At the time the Project Report is being developed, a "Visual Impact Assessment" will be required. The time necessary to perform this evaluation will be approximately three months and will be concurrent with the environmental clearance process.

Water Quality and Erosion. A temporary reduction in water quality is expected during the construction of the proposed alternatives from various stream channel crossings. The impacts would be temporary and not constitute a significant impact. Caltrans and the future contractor for the project should comply with all requirements specified within permits obtained from regional resource agencies. All appropriate best management practices should be utilized to minimize water quality impacts.

The project alternatives encroach upon Bishop Creek and various pasture irrigation ditches. These areas cannot be avoided due to the nature of the perpendicular crossing of these streams by the various alternatives. The impacts to these stream channels should be kept to the minimum amount required to provide a safe facility for the traveling pubic. Environmentally Sensitive Areas (ESAs) would be required to minimize potential impacts. The ESAs shall be established at the existing or new right of way boundary where possible or approximately 15 feet beyond the construction area where stream channel realignment is required. These ESAs shall be delineated on contract plans and protected during construction by not allowing any construction activities within the designated areas.

Typical of the high desert, the area is somewhat sparsely vegetated and, therefore, easily eroded by wind and water. Newly created slopes and other areas where the vegetation is disturbed by construction will be more susceptible to soil erosion by these forces. To mitigate this situation, construction of high slopes should be $3: 1$ or flatter through most of the project area and slopes should be kept to the minimum height required to attempt to balance earthwork quantities. The vegetation and top 300 mm ( 12 inches) of soil (duff) from the excavation areas should be set aside during construction and then later used to cover the finished highway slopes. This will aid in hastening the revegetation of disturbed areas by incorporating organic matter and what natural seed are present in the soil. A mixture of native seed (grasses and shrubs) and straw should then be punched into these slopes and disturbed areas. This approach has been used with considerable success on other highway projects in the region.

Floodplain. A floodplain evaluation report will need to be prepared to analyze the effects of the proposed alternatives on the 100-year floodplain. FEMA has Flood Insurance Rate Maps (FIRM) for both the City of Bishop and the unincorporated areas of Inyo County surrounding the city. The proposed east side alignments cross over floodplain zones A and B . Zone A is an area designated as 100 year floodplain and Zone $B$ is an area between the limits of a 100 year flood and 500 year flood.

- Alignment 3E crosses Zone A floodplain a total of approx. 2,900 feet and Zone B for approx. 13,300 ft.
- Alignment 4E crosses Zone B for approx. 12,180 lineal feet.
- Alignment 5E crosses Zone B for approx. 12,180 lineal feet.
- Alignment 6E crosses Zone B for approx, 9,690 lineal feet.
- None of the alternatives encroach longitudinally on the floodplain.

The design of the roadway shall be done in such a way to prevent significant increase of the base (100 year) floodplain elevation, especially in those areas that traverse FEMA designated floodplains. Adequate drainage facilities are necessary to convey the 100 year flow to prevent the new roadway embankment from causing objectionable backwater flooding.

Bridges or reinforced concrete box culverts are recommended at the Bishop Creek crossings, major canal crossings, and the Bishop flood bypass channel crossing. Pipe culverts are recommended at other drainage crossings. Estimated duration of study would be 2 months.

Air and Noise. The project limits lie within the Great Basin Air Pollution Control District. The region encompassing Inyo County is a PM 10 non-attainment area. The project limits are within an area of non-concern for PM 2.5 for USEPA due to specific Air District requirements and the lack of receptors within the project limits. A short-term degradation of air quality can be expected due to construction activity: equipment exhaust, the nature of the work, the grading operations and newly created bare slopes. These short-term conditions can be minimized by enforcement of Caltrans dust control specifications during construction. The proposed project will not have any significant long-term impacts to any of the parameters for Air Quality.

The projected Peak Hour noise levels are below FHWA requirements for all receptors within the vicinity of the proposed alternatives. The no-build alternative is projected to have noise levels so similar to the proposed project that the difference would not be discernible to most human ears and therefore not create a significant noise impact.

## Wild and Scenic River. N/A

Cultural Resources. The study area has not been completely surveyed for cultural resources, however recorded surveys and inventories of previous projects identify known cultural resources within and in the vicinity of the Archaeological APE and Architectural APE of the proposed project. Cultural sensitivity within the project area is high. Completion of cultural resource compliance would be a critical path item for completion of the environmental document. Anticipated duration of Cultural Studies is $\mathbf{8 7}$ months and does not include Phase III studies. Phase III studies will be conducted after PAED and before construction, and will require an additional 30 months. Estimated cost of mitigation is $\$ 1,000,000.00$. Estimated cost of monitoring is $\$ 100,000.00$.

The following are anticipated studies and time frames necessary for cultural resource compliance during the environmental process:

- A complete Phase I (Archaeological Survey Report) would be required within the project Area of Potential Effect including areas of new right of way acquisition. Estimated duration of study would be 1 year and 6 months due to a large area (approximately 10873 acres) requiring survey, research and archaeological site recordation, Draft ASR and Final ASR requirements.
- A Phase II excavation to determine sites' eligibility to the National Register of Historic Places would be required. Anticipating many archaeological sites that will require NRHP Section 106 evaluation. Estimated duration of study would be 2 years and 6 months. Draft and Final Phase II reports produced.
- Additional studies and reports required for preparation of HPSR:
- Historic Architectural Survey Report (HASR) 6 months.
- Historic Study Report (HSR) 6 months.
- Historic Resource Evaluation Report (HRER) 6 months.
- Historic Property Survey Report (HPSR) 1 year 6 months.
- Phase III Data Recovery Plan and excavation required for all eligible sites adversely impacted by the project. Anticipate several archaeological sites that will be NRHP eligible and will require mitigation. Estimated duration of study would be $\mathbf{2}$ years and $\mathbf{6}$ months. Draft and Final Phase III reports produced.
- Consultation:
- Native American Community 240 hours
- DWP/SCE/Private Property Owners 180 hours

The following is a breakdown of time and costs for Phase I, II, and III Cultural Resource Studies:

| Phase | Cost | Time Requirements |
| :--- | :--- | :--- |
| I | $\$ 150,000.00^{*}$ (consultant) | 2780 hours (consultant) |
|  | $\$ 5,000.00^{*}$ (CT support cost) | 1020 hours (Caltrans PQS) |
| II | $\$ 2,000,000.00^{*}$ (consultant) | 4660 hours (consultant) |
| III | $\$ 5,000.00^{*}$ (CT support costs) | 1020 hours (Caltrans PQS) |
|  | $\$ 1,000,000.00^{*}$ (consultant) | 3000 hours (consultant) |
| Construction | $\$ 5,000.00^{*}$ (CT support costs) | 1020 hours (Caltrans PQS) |
|  | $\$ 100,000.00^{*}$ (monitoring) | 3000 hours (consultant- <br>  <br>  |
|  |  | includes Native American <br>  |
|  |  | 1020 hours (Caltrans PQS) |

* These figures represent 2004 costs and will increase incrementally from year to year.

Native American Coordination. Extensive Native American consultation would be required. Construction monitoring would also be needed by a Caltrans archaeologist or qualified replacement. Hours and estimated cost included in breakdown above.

Hazardous Waste/Materials. Initial review has identified one site on the southwest corner of U.S. 6 and Wye Road that is known to contain polluted soils. This site, a gas station, is currently being improved under the direction of the Lahontan Regional Water Board. It is anticipated that the site's pollution will be reduced below action levels by the time this project is constructed. There are no additional known sources of significant hazardous wastes within the project limits. An updated ISA will be required during the environmental phase of the project to confirm this condition still exists. Estimated duration of study would be $\mathbf{1 2}$ months.

Biological Resources. A search for special-status species was conducted using the Natural Diversity Database, the California Native Plant Society Electronic Inventory of Rare and Endangered plants, and the California Department of fish and Game maps of Areas of Special Biological Importance for Mono and Inyo Counties. Based on the search described, the following list of potential project impacts was developed:

- Special-status species identified:
- Northern harrier
- Golden eagle
- Willow flycatcher
- Owens tui chub
- Owens sucker
- Pale big-eared bat
- Panamint alligator lizard
- Fish Slough springsnail
- Hall's meadow hawksbeard
- Fish Slough milk-vetch
- Owens Valley checkerbloom
- Frog's-bit buttercup
- Nevada oryctes
- Hot springs fimbristylis
- Prairie wedge grass
- Swainson's hawk
- Prairie falcon
- Bank swallow
- Owens speckled dace
- Owens pupfish
- Owens Valley vole
- Owens Valley springsnail
- Silver-leaved mild-vetch
- Torrey's blazing star
- July gold
- Alkali ivesia
- Single-spiked sedge
- Inyo County star-tulip
- Hillside wheat grass
- Other Species to Consider:

1. Tule Elk - The study area includes habitat for tule elk and delineated tule elk calving areas.
2. Deer - Deer winter range does exist within the study area.
3. Fisheries - Owens River

- Wildlife Crossings and other Considerations:

1. Any structure (bridge, box culvert, etc.) should take into consideration wildlife usage.

- The following Contract Special Provisions should be included in the final project:

1. Swallow Contract Special Provisions
2. Duff Contract Special Provisions

- The following special habitats were identified within the project study area:

1. Alkali meadow
2. Transmontane alkali marsh
3. Wetland habitat
4. Riparian

- Wetlands. A delineation of jurisdictional wetlands and waters of the United States needs to be done. Executive Order 11990 requires an avoidance alternative analysis for wetland impacts unless there is no practicable alternative available. Impacts to waters of the U.S. and wetlands from the project and any temporary access roads will need to be quantified. Within Inyo County the viable options to mitigate for permanent large scale impacts to wetland habitat are virtually non-existent. District 9 has pursued many avenues to mitigate for permanent impacts to wetland habitat to no avail. The Army Corps of Engineers is currently estimating costs for wetland mitigation to be approaching $\$ 250,00$ per hectare ( $\$ 100,000$ per acre). Currently survey information has determined that wetland habitat does exist within the study area:
- Alternative $1 \mathrm{~W}=20$ acres
- Alternative $2 \mathrm{~W}=40$ acres
- Alternative $3 \mathrm{E}=200$ acres
- Alternative $4 \mathrm{E}=200$ acres
- Alternative $5 \mathrm{E}=50$ acres
- Alternative $6 \mathrm{E}=50$ acres
- Mitigation. Mitigation for temporary and permanent impacts to sensitive biological resources (wetlands, riparian vegetation, regulated plants and animals) will be required. Mitigation for impacts to waters of the United States may be required. For this project, mitigation could include restricted construction scheduling, habitat enhancement, habitat restoration, or habitat replacement

In regard to the worst case scenario, a total of $\mathbf{3 3 , 0 0 0}$ Caltrans hours and 90,000 Consultant hours are estimated to complete the various biological tasks (see WBS breakdown). Total duration of biological studies is estimated to be $\mathbf{4 8}$ months, consisting of:

Botanical surveys
Fauna surveys
Writing Biological Contracts
Document writing and associated tasks

36 months
36 months
12 months
24 months


| Prairie falcon | Falco mexicanus | SC |  | March - Aug |
| :--- | :--- | :---: | :---: | :---: |
| Willow flycatcher | Empidonx traillii | SE |  | March - Aug |
| Bank swallow | Riparia riparia | ST | FSC | March - Aug |
| Owens tui chub | Gila bicolor snyderi | SE | FE | March - Aug |
| Owens speckled <br> dace | Rhinichthys osculus ssp. | SC |  | March - Aug |
| Owens sucker | Catostomus fumeiventris | SC |  | March - Aug |
| Owens pupfish | Cyprinodon radiosus | SE | FE | March - Aug |
| Pale big-eared bat | Corynorhinus townsendii <br> pallescns | SC | FSC | March - Sept |
| Owens valley vole | Microtus californicus <br> vallicola | SC |  | March - Aug |
| Panamint alligator <br> lizard | Elgaria panamintinus | SC |  | March - Aug |
| Owens Valley <br> springsnail | Pyrgulopsis owensensis |  |  | March - Aug |
| Won's springsnail | Pyrgulopsis wongi |  | March - Aug |  |
| Fish Slough <br> springsnail | Pyrgulopsis perturbata |  | SC |  |
| Leopard frog | Rana pipiens |  |  |  |
| American badger | Taxidea taus |  |  |  |
| Burrowing owl | Athene cunicularia |  |  |  |

## Key to Status

$\mathrm{FE}=$ Federal Endangered $\quad \mathrm{SE}=$ State Endangered $1 \mathrm{~B}=\mathrm{CNPS}$ Rare or Endangered in
$\mathrm{FT}=$ Federal Threatened $\quad \mathrm{ST}=$ State Threatened $\quad$ California and elsewhere
FSC $=$ Federal Species of Concern $S C=$ Species of Concern
Right-of-Way Relocation or Staging Area. A new Right-of-Way is indicated for this project. Material sites and disposal sites are indicated, but not identified. These areas, which must be identified prior to initiating environmental studies, will require complete environmental evaluation as part of this project.

Permits. Permits from the State Department of Fish and Game (1602 agreement), U. S. Army Corps of Engineers (an individual 404 Permit will be required because wetland/waters impacts may exceed the threshold acreage), and the Regional Water Quality Control Board (401) will be required. Additional permits for the material site and disposal site may be required.

## List of Preparers

| Hazardous Waste Review by Dan Holland | December 23, 2004 |
| :--- | :--- |
| Biological Review by Wendy Philpott | July 7, 2003 |
| Cultural Review by Tom Mills | December 15, 2004 |
| Paleontology by Pete Hansen | February 24, 2005 |
| Visual Review by Lori Butler | March 28, 2005 |
| Floodplain Review by Truman Denio | February 15, 2005 |
| Air, Noise, and Water review by Dan Holland | December 23, 2004 |

## Attachment 7_Right of Way Summary Report

## Memorandum

To: Brad Mettam<br>Project Manager - Bishop

Attention: Bart Dela Cruz, Design Manager - Bishop<br>Donna Holland, Project Engineer - Bishop

Date: January 9, 2006
File Ref.: Inyo 395 PM 111.12/122.3
Inyo 06 PM 0.0/5.6
EA: 09-31460k
Alt No.: 1 thru 6

## From: DEPARTMENT OF TRANSPORTATION Division of Right of Way, Central Region - Bishop

Subject: Approximate Right of Way Data Costs for the Bishop Area Access \& Circulation Study
We have completed an estimate of the right of way costs for the above-referenced circulation study based on the Right of Way Data Sheet Request Form dated: 11/04/02 "Bishop Area Access and Circulation" - developing circulation and alternate access for the City of Bishop; near Bishop from Schober Lane to Barlow Lane (KP183.9/198.6) - six alternates proposed. The following costs have been identified:
A. Alternate 1 W :

- Acquisition:
- Mitigation:
- Utility Relocation (State's Share)
- Relocation Assistance
- Clearance/Demolition
- Title/Escrow Fees

Total RW Costs

- Environmental permit/filing fees:
\$ 8,000.00
- Construction Contract Work:
\$ 30,000.00
B. Alternate 2 W :
- Acquisition:
- Mitigation:
- Utility Relocation (State's Share)
- Relocation Assistance
- Clearance/Demolition
\$ 800,229.00
\$ 115,000.00
\$ 391,000.00
\$ 0.00
- Title/Escrow Fees Total RW Costs
\$ 0.00
$\$ \quad 1,000.00$
$\$ 1,307,229.00=$

| $\$ 835,091.00$ |  | (14 A type, 1 B type) |
| :--- | ---: | :--- |
| $\$$ | $57,500.00$ | (4 A type -5 acres in size; 20 acres total) |
| $\$ 1,872,200.00$ | (electric and phone - towers/poles) |  |
| $\$$ | 0.00 |  |
| $\$$ | 0.00 |  |
| $\$$ | $1,000.00$ |  |
| $\$ 2,765,791.00$ |  | $\$ \mathbf{2 , 7 6 6 , 0 0 0 . 0 0}$ rounded |

(22 A type, 2 B type)
(8 A type - 5 acres in size; 40 acres total) (electric - poles)

- Environmental permit/filing fees:
\$ 8,000.00
- Construction Contract Work: \$ 30,000.00

| C. | Alternate 3 E-Wye: | South of Wye | Wye Connect | (Most costly alternate) |
| :---: | :---: | :---: | :---: | :---: |
|  | Acquisition: | \$ 577,441.00 | \$3,923,613.00 | (11 A, 3 B type) |
|  | Mitigation: | \$ 215,625.00 | \$ 57,500.00 | (10 A-5 ac each; 50ac total) |
|  | Utility Relocation (State's Share) | \$ 161,000.00 | \$ 294,400.00 | (electric/phone - poles) |
|  | Relocation Assistance | \$ 0.00 | \$ 57,500.00 | (RAP for 3 businesses) |
|  | Clearance/Demolition | \$ 0.00 | \$ 47,150.00 | (3 structures) |
|  | Title/Escrow Fees | \$ 1,000.00 | \$ 1,000.00 |  |
|  | Total RW Costs | \$ 955,066.00 | \$4,381,163.00 | combined $=\underline{\$ 5,337,000.00}$ |
|  | Environmental permit/filing fees: | $\$ \quad 8,000.00$ |  |  |
|  | Construction Contract Work: | \$ 30,000.00 |  |  |
| D. | Alternate 3 E- North: | South of Wye | North Connect |  |
|  | Acquisition: | \$ 577,441.00 | \$ 682,813.00 | (20 A, 1 B type) |
|  | Mitigation: | \$ 215,625.00 | \$ 359,375.00 | (40 A-5 ac each; 200ac total) |
|  | Utility Relocation (State's Share) | \$ 161,000.00 | \$ 207,000.00 | (electric/phone - poles) |
|  | Relocation Assistance | \$ 0.00 | \$ 0.00 |  |
|  | Clearance/Demolition | \$ 0.00 | \$ 0.00 |  |
|  | Title/Escrow Fees | \$ 1,000.00 | \$ 1,000.00 |  |
|  | Total RW Costs | \$955,066.00 | \$1,250,188.00 | combined $=\$ 2,206,000.00$ |
|  | Environmental permit/filing fees: | \$ 8,000.00 |  |  |
|  | Construction Contract Work: | \$ 30,000.00 |  |  |
| E. | Alternate 4 E - Wye: | South of Wye | Wye Connect |  |
|  | Acquisition: | \$ 428,806.00 | \$3,923,613.00 | (12 A, 3 B type) |
|  | Mitigation: | \$ 215,625.00 | \$ 57,500.00 | (10 A-5 ac each; 50ac total) |
|  | Utility Relocation (State's Share) | \$ 115,575.00 | \$ 294,400.00 | (various - elec/phone etc.) |
|  | Relocation Assistance | \$ 0.00 | \$ 57,500.00 | (RAP for 3 businesses) |
|  | Clearance/Demolition | \$ 0.00 | \$ 47,150.00 | (3 structures) |
|  | Title/Escrow Fees | \$ 1,000.00 | \$ 1,000.00 |  |
|  | Total RW Costs | \$ 761,006.00 | \$4,381,163.00 | combined $=\$ 5,143,000.00$ |
|  | Environmental permit/filing fees: | \$ 8,000.00 |  |  |
|  | Construction Contract Work: | \$ 30,000.00 |  |  |


| F. | Alternate 4 E - North: | South of Wye | North Connect |
| :--- | :--- | :--- | :--- |
| • Acquisition: | $\$ 428,806.00$ | $\$ 682,813.00$ (20 A, 1 B type) |  |
| Mitigation: | $\$ 215,625.00$ | $\$ 359,375.00$ (40 A-5 ac each; 200ac total) |  |
| Utility Relocation (State's Share) | $\$ 115,575.00$ | $\$ 207,000.00$ (electric/phone - poles) |  |
| Relocation Assistance | $\$ 10.00$ | $\$$ | 0.00 |
| Clearance/Demolition | $\$ 10.00$ | $\$$ | 0.00 |
| Title/Escrow Fees | $\$ 1,000.00$ | $\$ 1,000.00$ |  |
|  | Total RW Costs | $\$ 761,006.00$ | $\$ 1,250,188.00$ |
| combined $=\mathbf{\$ 2 , 0 1 2 , 0 0 0 . 0 0}$ |  |  |  |

- Environmental permit/filing fees: \$ 8,000.00
- Construction Contract Work: \$30,000.00

| G. | Alternate $5 \mathrm{E}-\mathrm{Wye}$ : | South of Wye | Wye Connect |
| :---: | :---: | :---: | :---: |
|  | Acquisition: | \$ 224,071.00 | \$3,923,613.00 (11 A, 3 B type) |
|  | Mitigation: | \$ 86,250.00 | \$ 57,500.00 (10 A-5 ac each; 50ac total) |
|  | Utility Relocation (State's Share) | \$ 109,825.00 | \$ 294,400.00 (various -elec/phone, etc.) |
|  | Relocation Assistance | \$ 0.00 | \$ 57,500.00 (RAP for 3 businesses) |
|  | Clearance/Demolition | \$ 0.00 | \$ 47,150.00 (3 structures) |
|  | Title/Escrow Fees | \$ 1,000.00 | \$ 1,000.00 |
|  | Total RW Costs | \$ 421,146.00 | \$4,381,163.00 combined $=$ \$4,803,000.00 |

- Environmental permit/filing fees: \$ 8,000.00
- Construction Contract Work: \$ 30,000.00
H. Alternate 5 E - North: South of Wye North Connect
- Acquisition: \$224,071.00
$\$ 682,813.00$ ( $20 \mathrm{~A}, 1 \mathrm{~B}$ type)
- Mitigation:
\$ 86,250.00
- Utility Relocation (State's Share)
\$ 109,825.00
- Relocation Assistance \$ 0.00
- Clearance/Demolition \$ 0.00
- Title/Escrow Fees

Total RW Costs
$\$ \quad 1,000.00$
\$ 421,146.00
\$ 359,375.00 (40 A-5 ac each; 200ac total)
\$ 207,000.00 (various -elec/phone, etc.)
\$ 0.00
\$ 8,000.00

- Environmental permit/filing fees:
- Construction Contract Work: \$30,000.00

- Environmental permit/filing fees: \$ 8,000.00
- Construction Contract Work: \$ 30,000.00

| J. Alternate 6E-North: | South of Wye | North Connect |
| :---: | :---: | :---: |
| - Acquisition: | \$ 197,551.00 | \$ 682,813.00 (9 A, 3 B types) |
| - Mitigation: | \$ 86,250.00 | \$ 359,375.00 (40 A-5 ac each; 200ac total) |
| - Utility Relocation (State's Share) | \$ 75,325.00 | \$ 207,000.00 (various- elec/phone, etc.) |
| - Relocation Assistance | \$ 0.00 | \$ 0.00 |
| - Clearance/Demolition | \$ 0.00 | \$ 0.00 |
| - Title/Escrow Fees | \$ 1,000.00 | \$ 1,000.00 |
| Total RW Costs | \$ 360,126.00 | \$1,250,188.00 combined $=\mathbf{\$ 1 , 6 1 1 , 0 0 0 . 0 0}$ |

- Environmental permit/filing fees: \$ 8,000.00
- Construction Contract Work: \$30,000.00

The following assumptions and limiting conditions were identified:

1. Contractor needs to be aware that USA Alert has to be contacted prior to any digging. This information should go in the specials.
2. Project is listed in the Wednesday September 14, 2005 Bishop "Status of Projects" on page 1. It shows a r/w certification date set for: not given, project is Feasibility Study only.
3. These costs are for the 2005 year and are not escalated. The addendum pages in RW Estimate Report break out the two components for Alternates 3 and 4 and escalate RW costs out 3 years for all of the Alternates. There are no addendum pages for Alternates 5 and 6 in the RW Estimate Report, which the Project Engineer has broken out into components on their tally sheet. Alt's 5 and 6 have been broken down into components on this sheet, following Project Engineers style.
4. Environmental filing/permit processing fees have been determined at a standard rate of $\$ 8,000.00$ for 2006.
5. Right of Way activities (regular or "reg." right of way work) can commence upon receipt of completed Certificate of Sufficiency. Anticipated Lead Times for this project will be -

- Preparation of Right of Way Maps to Reg. R/W (beginning of regular right of way work). 12 Months
- Reg. Right of Way (beginning of $\mathrm{r} / \mathrm{w}$ work) to Right of Way Certification.

24 Months

NOTE: The last chance to submit map/project changes to Right of Way, without jeopardizing r/w certification date, is $\mathbf{3}$ months after start of regular right of way work.

ANTICIPATED Right of Way LEAD - TIME will require a minimum of 24 months after we receive certified Appraisal Maps, the necessary environmental clearances have been obtained, and freeway agreements have been approved.
NANCYESCALLIER
Field Office Chief
Right of Way, Central Region - Bishop
(760) 872-0641 or $8-627-0641$

## Attachment 8_Possible Wye Road Connections



BAACS 09-31460K


BAACS 09-31460K


BAACS 09-31460K


BAACS 09-31460K Attachment 8

Page 5 of 5


## Attachment 9_Cost Estimates

## Project Description-Alternative 1

BAACS Alternative 1 proposes a new full speed 2-lane facility, west of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading westerly, then heading northerly, west of Red Hill and east of Ed Powers Road, re-connecting to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 39,204,900$ |  |
| ---: | ---: | ---: |
| Right of Way Costs | $\$ 2,966,300$ to | $\$ 4,746,300$ |
| TOTAL | $\$ 42,171,200$ | to | $\mathbf{\$ 4 3 , 9 5 1 , 2 0 0}$




## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 134000 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $2,010,000$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
$\$$
2,178,000

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 101400 |  |  |  |
| Sidewalks, Curb and Gutter |  |  |  | 85 |
| Cold Plane AC-45 mm | 31500 | M2 | $\$$ | $5,619,000$ |
| Aggregate Base | 29400 | M3 | $\$$ | 45 |
|  |  |  |  | $1,37,500$ |
| Incentive for QC/QA |  | LS | $4 \% A C$ |  |

Subtotal Section 2
\$ 10,444,260

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ | 37,000 |
| Progress Schedule (Critical Path) |  | LS |  | \$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  |  |  |
| Erosion Control |  | LS |  | \$ | 174,600 |
| Duff | 36 | HA | 3600 | \$ | 129,600 |
| Water Pollution Control |  | LS |  | \$ | 166,700 |
| RE Office Space |  | LS |  | \$ | 92,600 |
| Fencing | 25800 | M | 17 | \$ | 438,600 |
| Remove Base and Surfacing | 15470 | M3 | 30 | \$ | 464,100 |
| Shoulder Backing | 90 | M3 | 50 | \$ | 4,500 |
| Bladed Dirt Road | 1110 | M | 20 | \$ | 22,200 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | \$ | 1,100,000 |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  | \$ | 150,000 |

Section 5. Traffic Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 61900 |  | M | 0.6 |
| Traffic Signals |  |  |  | $\$$ |
| Roadside Signs |  | LS |  | $\$ 7,140$ |
| Traffic Control Systems |  | LS |  | $\$$ |
| Transportation Management Plan |  | LS |  | $\$ 85,200$ |
| Rumble Strip | 350 | Sta | 250 | $\$$ |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$$ |

Subtotal Section 5
$\$$
831,740

Section 6. Minor Items

| $\$ \quad 25,457,730 x$ | $10 \%=$ | $\$ 2,545,773$ |
| :--- | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%)$ |  |

Subtotal Section 6
\$ 2,545,773

Section 7. Roadway Mobilization

$$
\begin{array}{llll}
\$ \quad 28,003,503 x & 10 \%= & \$ 2,800,350 \\
\hline \text { (Subtotal of Sections 1-6) } & (10 \%) & &
\end{array}
$$

Subtotal Section $7 \quad \$ \quad 2,800,350$

Section 8. Roadway Additions

| Supplemental Work | \$ | 28,003,503 x | 10\% = | \$ | 2,800,350 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | tal of Sections 1-6) | (5 to 10\%) |  |  |
| Contingencies | \$ | 28,003,503 x | 20\% = | \$ | 5,600,701 |

Subtotal Section $8 \quad \$ \quad 8,401,051$

TOTAL ROADWAY ITEMS $\frac{\$ \quad 39,204,900}{\text { (Total Sections 1-8) }}$

## II Structures Items

TOTAL STRUCTURES ITEMS
\$
III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | 835,091 |  |  |
| :--- | :--- | :---: | :---: | :---: |
| Mitigation-Wetland Purchase | $\$$ | 220,000 to 2,000,000 |  |  |
| Utility Relocation (State's Share) | $\$$ | $1,872,200$ |  |  |
| Relocation Assistance |  |  |  |  |
| Clearance/Demolition | $\$$ |  |  |  |
| Title and Escrow Fees |  |  |  |  |
|  |  |  |  |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{2 , 9 2 8 , 2 9 1}$ to 4,708,291 |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |
| :--- | ---: | ---: | ---: |
| Construction Contract Work | $\$$ | 30,000 |

# Bishop Area Access and Circulation Feasibility Study 

## Project Description-Alternative 2

BAACS Alternative 2 proposes a new full speed 2-lane facility, west of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading westerly, then heading northerly east of Red Hill and Ed Powers Road and west of Otey Road, re-connecting to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 35,439,300$ |  |
| ---: | ---: | ---: |
| Right of Way Costs | $\$ 2,276,200$ to | $\$ 5,230,200$ |
| TOTAL | $\$ 37,715,500$ to | $\$ 40,669,500$ |




## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 163000 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $2,445,000$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
$\$$
2,612,000

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 120200 |  |  |  |
| Sidewalks, Curb and Gutter |  |  |  | 85 |
| Cold Plane AC-45 mm | 0 | M2 | $\$$ | $10,217,000$ |
| Aggregate Base | 35500 | M3 | $\$$ | 45 |
|  |  |  |  |  |
| Incentive for QC/QA |  | LS | $4 \% A C$ |  |

Subtotal Section 2
\$ 12,223,180

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$ 4,502,600$ |

Subtotal Section 3 $\qquad$

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Finish Roadway |  | LS |  | $\$$ |
| Progress Schedule (Critical Path) |  | LS |  | $\$ 8,500$ |
| Prepare Storm Water Prevention Plan |  | LS |  | $\$$ |
| Relocate Private Irrigation Facilities |  | LS |  | 25,000 |
| Erosion Control |  | LS |  | $\$$ |
| Duff | 35 | HA | 3600 | $\$$ |
| Water Pollution Control |  | LS |  | 126,000 |
| RE Office Space |  | LS |  | 173,200 |
| Fencing | 25710 | M | 17 | 96,200 |
| Remove Base and Surfacing | 14600 | M3 | 30 | $\$$ |
| Shoulder Backing | 0 | M3 | 50 | $\$$ |
| Bladed Dirt Road | 430 | M | 20 | $\$$ |
|  |  |  |  | 8,000 |
| Environmental Mitigation |  |  |  | - |
| Archeology |  | LS |  | $\$$ |
| Biology |  |  |  | $1,100,000$ |
| Paleontology |  | LS |  | $\$$ |


| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 59600 | M | 0.6 | $\$$ |
| Traffic Signals |  |  |  | 35,760 |
| Roadside Signs |  | LS |  | $\$$ |
| Traffic Control Systems |  | LS |  | $\$$ |
| Transportation Management Plan |  | LS |  | $\$ 9,400$ |
| Rumble Strip | 325 | Sta | 250 | $\$$ |
| Traffic Monitoring Station | 1 | EA | 15000 | 81,200 |

Subtotal Section 5
\$
861,510

Section 6. Minor Items

| $\$$ | $23,012,560 \times$ | $10 \%=$ | $\$ 2,301,256$ |
| :--- | ---: | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%)$ |  |  |

Subtotal Section 6
\$ 2,301,256

Section 7. Roadway Mobilization

$$
\begin{array}{cccc}
\$ \quad 25,313,816 \times & 10 \%= & \$ 2,531,382 \\
\hline \text { (Subtotal of Sections 1-6) } & (10 \%) & &
\end{array}
$$

Subtotal Section 7
\$ 2,531,382

Section 8. Roadway Additions

| Supplemental Work | \$ | 25,313,816 x | 10\% = | \$ | 2,531,382 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | tal of Sections 1-6) | (5 to 10\%) |  |  |
| Contingencies | \$ | 25,313,816 x | 20\% = | \$ | 5,062,763 |


| Subtotal Section 8 | $\$$ | $7,594,145$ |
| ---: | :---: | ---: |
|  | $\$ 35,439,300$ |  |
| TOTAL ROADWAY ITEMS | $\$ \quad 35,40$ (Total Sections 1-8) |  |

## II Structures Items

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ |
| :--- | :--- |
| Mitigation-Wetland Purchase | $\$ 00,229$ |
| Utility Relocation (State's Share) | $\$ 046,000$ to 4,000,000 |
| Relocation Assistance |  |
| Clearance/Demolition |  |
| Title and Escrow Fees | $\$$ |
|  |  |
| Total $\$ \mathbf{2 , 2 3 8 , 2 2 9}$ to 5,192,229 |  |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |
| :--- | :--- | ---: | :---: |
| Construction Contract Work | $\$$ | 30,000 |  |
| Total $\$ \mathbf{3 8 , 0 0 0}$ |  |  |  |

# Bishop Area Access and Circulation Feasibility Study 

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6

BAACS 09-31460K

## Project Description-Alternative 3 With Wye Connect

BAACS Alternative 3 with a Wye Road connection proposes a new full speed 2-lane facility, east of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading easterly, then heading northerly east of the City and County Waste Water Facility to East Line Street, turning westerly along East Line Street, then heading northerly, west of the Bishop Airport toward Wye Road. Connecting back to US 395 and US 6 along existing Wye Road with a new intersection at both the Wye Road/US 6 intersection and the US 6/US 395 intersection. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 30,176,300$ |
| ---: | :--- |
| Right of Way Costs | $\$ 12,049,100$ to |
| TOTAL | $\$ 42,225,400$ to | $\mathbf{\$ 4 8 , 9 1 9 , 4 0 0}$

Estimate Prepared By:



## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 123100 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $1,846,500$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
\$ 1,980,500

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 88800 | TONN | $\$$ | 85 |
| Sidewalks, Curb and Gutter | 982 | M3 | $\$$ | 300 |
| Cold Plane AC-45 mm | 0 | M2 | $\$, 548,000$ |  |
| Aggregate Base-Roadwork | 26000 | M3 | 5 | $\$ 4,600$ |
| -sidewalks | 803 | M3 | $\$$ | 45 |
| Incentive for QC/QA |  | LS | $4 \% A C$ | $1,170,000$ |

Subtotal Section 2
\$
9,350,655

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3
$\$$ 4,983,900

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ | 31,000 |
| Progress Schedule (Critical Path) |  | LS |  | \$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  | \$ | 115,500 |
| Erosion Control |  | LS |  | \$ | 121,300 |
| Duff | 26 | HA | 3600 | \$ | 93,600 |
| Water Pollution Control |  | LS |  | \$ | 135,000 |
| RE Office Space |  | LS |  | \$ | 75,000 |
| Fencing | 22620 | M | 17 | \$ | 384,540 |
| Remove Base and Surfacing | 10050 | M3 | 30 | \$ | 301,500 |
| Shoulder Backing | 0 | M3 | 50 | \$ | - |
| Bladed Dirt Road | 290 | M | 20 | \$ | 5,800 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | \$ | 1,100,000 |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  | \$ | 150,000 |

Section 5. Traffic Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 48300 |  | M | 0.6 |
| Traffic Signals |  |  |  | $\$$ |
| Roadside Signs |  | LS |  | $\$ 8,980$ |
| Traffic Control Systems |  | LS |  | $\$$ |
| Transportation Management Plan |  | LS |  | $\$ 250,000$ |
| Rumble Strip | 246 | Sta | 250 | $\$$ |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$$ |

Subtotal Section 5
$\$$
691,680

Section 6. Minor Items

| $\$ \quad 19,594,975 x$ | $10 \%=$ | 1,959,498 |  |
| :--- | ---: | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%$ ) |  |  |

Subtotal Section 6 \$
\$ 1,959,498

Section 7. Roadway Mobilization

$$
\begin{array}{llll}
\$ \quad 21,554,473 \times & 10 \%= & \$ 2,155,447 \\
\hline \text { (Subtotal of Sections 1-6) } & (10 \%) & &
\end{array}
$$

Subtotal Section 7
\$ 2,155,447

Section 8. Roadway Additions

| Supplemental Work | \$ | 21,554,473 x | 10\% = | \$ | 2,155,447 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | (Subtotal of Sections 1-6) |  | (5 to 10\%) |  |  |
| Contingencies | \$ | 21,554,473 x | 20\% = | \$ | 4,310,895 |


| Subtotal Section 8 | $\$$ | $6,466,342$ |
| ---: | :---: | ---: |
|  | $\$ 0,176,300$ |  |
| TOTAL ROADWAY ITEMS | $\$ \quad 30,170$ |  |

## II Structures Items

TOTAL STRUCTURES ITEMS
\$

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | $4,501,054$ |
| :--- | :--- | :---: |
| Mitigation-Wetland Purchase | $\$$ | $6,949,000$ to 13,643,000 |
| Utility Relocation (State's Share) | $\$$ | 455,400 |
| Relocation Assistance | $\$$ | 57,500 |
| Clearance/Demolition | $\$$ | 47,150 |
| Title and Escrow Fees | $\$$ |  |
|  | 1,000 |  |
|  |  |  |
| Total $\mathbf{\$}$ |  | $\mathbf{1 2 , 0 1 1 , 1 0 4 ~ t o ~ 1 8 , 7 0 5 , 1 0 4}$ |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |
| :--- | ---: | :--- | ---: |
| Construction Contract Work | $\$$ | 30,000 |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{3 8 , 0 0 0}$

# Bishop Area Access and Circulation Feasibility Study 

Alternative 3-North

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6

BAACS 09-31460K

## Project Description-Alternative 3 With North Connect

BAACS Alternative 3 with a North connection proposes a new full speed 2-lane facility, east of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading easterly, then heading northerly, east of the City and County Waste Water Facility to East Line Street, turning westerly along East Line Street, then heading northerly, west of the Bishop Airport. Connecting to US 6 north of Dixon Lane and south of Five Bridges Road with a new North Connection/US 6 junction. Then continuing westerly parallel to Riverside Road, north of Dixon Lane and south of the Owens River, re-connection to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 45,802,100$ |
| ---: | :--- |
| Right of Way Costs | $\$ 13,048,300$ to |
| TOTAL | $\$ 58,850,400$ to | $\mathbf{\$ 7 0 , 8 1 8 , 4 0 0}$

Estimate Prepared By:


May 12, 2006
Date


## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 218400 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $3,276,000$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
$\$$
3,534,000

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 160500 |  |  |  |
| Sidewalks, Curb and Gutter |  |  |  | 85 |
| Cold Plane AC-45 mm | 0 | M2 | $\$$ | 5 |
| Aggregate Base | 47800 | M3 | $\$$ | 45 |
|  |  |  |  |  |
| Incentive for QC/QA |  | LS | $4 \% A C$ | - |

Subtotal Section 2
$\$$
16,339,200

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3
\$ 5,206,500

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :--- | :---: | :---: | :---: | ---: | ---: |
|  |  |  |  |  |  |
| Finish Roadway |  | LS |  | $\$$ | 57,000 |
| Progress Schedule (Critical Path) |  | LS |  | $\$$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | $\$$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  | $\$$ | 115,500 |
| Erosion Control |  | LS |  | $\$$ | 234,500 |
| Duff | 48 | HA | 3600 | $\$$ | 172,800 |
| Water Pollution Control |  | LS |  | $\$$ | 256,300 |
| RE Office Space |  | LS |  | $\$$ | 142,400 |
| Fencing | 46140 | M | 17 | $\$$ | 784,380 |
| Remove Base and Surfacing | 13140 | M3 | 30 | $\$$ | 394,200 |
| Shoulder Backing | 0 | M3 | 50 | $\$$ | - |
| Bladed Dirt Road | 290 | M | 20 | $\$$ | 5,800 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | $\$$ | $1,100,000$ |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  | $\$$ | 150,000 |


| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :--- | :---: | :---: | :---: | ---: | ---: |
|  |  |  |  |  |  |
| Lighting |  | LS |  | $\$$ | 104,000 |
| Traffic Delineation Items | 89200 | M | 0.6 | $\$$ | 53,520 |
| Traffic Signals |  |  |  |  |  |
| Roadside Signs |  | LS |  | $\$$ | 384,700 |
| Traffic Control Systems |  | LS |  | $\$$ | 227,800 |
| Transportation Management Plan |  | LS |  | $\$$ | 256,300 |
| Rumble Strip | 531 | Sta | 250 | $\$$ | 132,750 |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$$ | 15,000 |

Subtotal Section 5
$\$$
1,174,070

Section 6. Minor Items

| $\$ \quad 29,741,650 \times$ | $10 \%=$ | $\$ 2,974,165$ |  |
| :--- | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%)$ |  |  |

Subtotal Section 6
\$ 2,974,165

Section 7. Roadway Mobilization

$$
\begin{array}{cccc}
\$ \quad 32,715,815 \times & 10 \%= & \$ 3,271,582 \\
\hline \text { (Subtotal of Sections 1-6) } & (10 \%) &
\end{array}
$$

Subtotal Section 7
\$ 3,271,582

Section 8. Roadway Additions

| Supplemental Work | $\$ \quad 32,715,815 \times$ | $10 \%=$ | $\$ 3,271,582$ |
| ---: | :--- | ---: | :--- | :--- |
|  | (Subtotal of Sections 1-6) | $(5$ to $10 \%)$ |  |
| Contingencies | $\$ \quad 32,715,815 \times$ | $20 \%=$ | $\$ 6,543,163$ |
|  | (Subtotal of Sections $1-6)$ | $(20 \%)$ |  |

Subtotal Section $8 \quad \$ \quad 9,814,745$
TOTAL ROADWAY ITEMS $\quad \begin{gathered}\text { (Total Sections 1-8) }\end{gathered}$

## II Structures Items

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | $1,260,254$ |
| :--- | :--- | :---: |
| Mitigation-Wetland Purchase | $\$$ | $11,381,000$ to 23,349,000 |
| Utility Relocation (State's Share) | $\$$ | 368,000 |
| Relocation Assistance |  |  |
| Clearance/Demolition | $\$$ |  |
| Title and Escrow Fees |  |  |
|  |  |  |
| Total $\mathbf{\$}$ |  | $\mathbf{1 3 , 0 1 0 , 2 5 4}$ to 24,978,254 |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |
| :--- | :--- | ---: | :---: |
| Construction Contract Work | $\$$ | 30,000 |  |
| Total $\$ \mathbf{3 8 , 0 0 0}$ |  |  |  |

# Bishop Area Access and Circulation Feasibility Study 

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6

BAACS 09-31460K

## Project Description-Alternative 4 With Wye Connect

BAACS Alternative 4 with a Wye Road connection proposes a new full speed 2-lane facility, east of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading easterly, then northerly, east of Johnston Drive, west of the Waste Water Facility and west of the Bishop Airport, to Wye Road. Connecting back to US 395 and US 6 along existing Wye Road with a new intersection at both the Wye Road/US 6 intersection and the US 6/US 395 intersection. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 25,418,600$ |  |
| ---: | ---: | ---: |
| Right of Way Costs | $\$ 9,592,000$ to | $\$ 13,465,000$ |
| TOTAL | $\$ 35,010,600$ | to |
| $\$ 38,883,600$ |  |  |

Estimate Prepared By:



## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 107000 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $1,605,000$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
\$ 1,707,000

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 76700 | TONN | $\$$ | 85 |
| Sidewalks, Curb and Gutter | 982 | M3 | $\$$ | 300 |
| Cold Plane AC-45 mm | 0 | M2 | $\$, 519,500$ |  |
| Aggregate Base-Roadwork | 22400 | M3 | 5 | $\$ 4,600$ |
| -sidewalks | 803 | M3 | $\$$ | 45 |
| Incentive for QC/QA |  | LS | $4 \% A C$ | $1,008,000$ |

Subtotal Section 2
\$
8,119,015

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3
$\$ 3,658,430$

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ | 25,800 |
| Progress Schedule (Critical Path) |  | LS |  | \$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  | \$ | 108,000 |
| Erosion Control |  | LS |  | \$ | 101,800 |
| Duff | 21 | HA | 3600 | \$ | 75,600 |
| Water Pollution Control |  | LS |  | \$ | 111,200 |
| RE Office Space |  | LS |  | \$ | 61,800 |
| Fencing | 17180 | M | 17 | \$ | 292,060 |
| Remove Base and Surfacing | 9750 | M3 | 30 | \$ | 292,500 |
| Shoulder Backing | 0 | M3 | 50 | \$ | - |
| Bladed Dirt Road | 750 | M | 20 | \$ | 15,000 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | \$ | 1,100,000 |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  | \$ | 150,000 |

Section 5. Traffic Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 41000 |  | M | 0.6 |
| Traffic Signals |  |  |  | $\$$ |
| Roadside Signs |  | LS |  | $\$ 4,600$ |
| Traffic Control Systems |  | LS |  | $\$$ |
| Transportation Management Plan |  | LS |  | $\$$ |
| Rumble Strip | 205 | Sta | 223,500 |  |
| Traffic Monitoring Station | 1 | EA | 111,200 |  |

Subtotal Section 5
$\$$
612,350

Section 6. Minor Items

| $\$ \quad 16,505,555 x$ | $10 \%=$ | 1,650,556 |  |
| :--- | ---: | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%$ ) |  |  |

Subtotal Section 6 \$
\$ 1,650,556

Section 7. Roadway Mobilization

| $\$ \quad 18,156,111 x$ | $10 \%=$ | $\$ 1,815,611$ |  |
| :--- | ---: | :---: | :---: |
| (Subtotal of Sections 1-6) | $(10 \%)$ |  |  |

Subtotal Section 7
\$ 1,815,611

Section 8. Roadway Additions

| Supplemental Work | \$ | 18,156,111 x | 10\% = | \$ | 1,815,611 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | (Subtotal of Sections 1-6) |  | (5 to 10\%) |  |  |
| Contingencies | \$ | 18,156,111 x | 20\% = | \$ | 3,631,222 |

Subtotal Section $8 \quad \$ \quad 5,446,833$

TOTAL ROADWAY ITEMS $\frac{\$ \quad 25,418,600}{\text { (Total Sections 1-8) }}$

## II Structures Items

TOTAL STRUCTURES ITEMS
\$

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | $4,352,419$ |
| :--- | :--- | :---: |
| Mitigation-Wetland Purchase | $\$$ | $4,686,000$ to 8,559,000 |
| Utility Relocation (State's Share) | $\$$ | 409,975 |
| Relocation Assistance | $\$$ | 57,500 |
| Clearance/Demolition | $\$$ | 47,150 |
| Title and Escrow Fees | $\$$ |  |
|  |  |  |
| Total $\mathbf{\$}$ |  | $\mathbf{9 , 5 5 4 , 0 4 4}$ to 13,427,044 |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |
| :--- | ---: | :--- | ---: |
| Construction Contract Work | $\$$ | 30,000 |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{3 8 , 0 0 0}$

# Bishop Area Access and Circulation Feasibility Study 

Alternative 4-North

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6

BAACS 09-31460K

## Project Description-Alternative 4 With North Connect

BAACS Alternative 4 with a North connection proposes a new full speed 2-lane facility, east of Bishop. Beginning south of Bishop near the intersection of Gerkin Road and US 395, heading easterly, then northerly, east of Johnston Drive, west of the Waste Water Facility and west of the Bishop Airport, connecting to US 6 north of Dixon Lane and south of Five Bridges Road with a new North Connection/US 6 junction. Then continuing westerly parallel to Riverside Road, north of Dixon Lane and south of the Owens River, reconnection to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 41,035,300$ |
| ---: | :--- |
| Right of Way Costs | $\$ 10,591,200$ to $\$ 21,473,200$ |
| TOTAL | $\$ 51,626,500$ to |



May 12, 2006
Date


## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 202000 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $3,030,000$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
$\$$
$3,256,000$

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 148400 | TONN | $\$$ | 85 |
| Sidewalks, Curb and Gutter |  |  |  | $12,614,000$ |
| Cold Plane AC-45 mm | 0 | M 2 | $\$$ | 5 |
| Aggregate Base | 44100 | M 3 | $\$$ | 45 |
|  | $\$$ |  |  |  |
| Incentive for QC/QA |  |  |  | $1,984,500$ |

Subtotal Section 2
$\$$
15,103,060

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ | 51,700 |
| Progress Schedule (Critical Path) |  | LS |  | \$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  | \$ | 108,000 |
| Erosion Control |  | LS |  | \$ | 215,000 |
| Duff | 44 | HA | 3600 | \$ | 158,400 |
| Water Pollution Control |  | LS |  | \$ | 232,500 |
| RE Office Space |  | LS |  | \$ | 129,200 |
| Fencing | 40700 | M | 17 | \$ | 691,900 |
| Remove Base and Surfacing | 12850 | M3 | 30 | \$ | 385,500 |
| Shoulder Backing | 0 | M3 | 50 | \$ | - |
| Bladed Dirt Road | 750 | M | 20 | \$ | 15,000 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | \$ | 1,100,000 |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  | \$ | 150,000 |


| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 81900 | M | 0.6 | $\$$ |
| Traffic Signals |  |  |  | 49,140 |
| Roadside Signs |  | LS |  | $\$$ |
| Traffic Control Systems |  | LS |  | $\$ 58,300$ |
| Transportation Management Plan |  | LS |  | $\$$ |
| Rumble Strip | 490 | Sta | 206,600 |  |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$ 0$ |

Subtotal Section 5
\$
1,094,040

Section 6. Minor Items
$\$ \quad 26,646,330 \times \quad 10 \%=\quad \$ 2,664,633$
(Subtotal of Sections 1-5) (5 to 10\%)
Subtotal Section 6 \$
\$ 2,664,633

Section 7. Roadway Mobilization

| $\$ \quad 29,310,963 x$ | $10 \%=$ | $\$ 2,931,096$ |  |
| :---: | :---: | :---: | :---: |
| (Subtotal of Sections 1-6) | $(10 \%)$ |  |  |

Subtotal Section 7
\$ 2,931,096

Section 8. Roadway Additions

| Supplemental Work | $\$ \quad 29,310,963 \times$ | $10 \%=$ | $\$ 2,931,096$ |
| ---: | :--- | ---: | :---: | :---: |
|  | (Subtotal of Sections 1-6) | $(5$ to $10 \%)$ |  |
| Contingencies | $\$ \quad 29,310,963 \times$ | $20 \%=$ | $\$ 5,862,193$ |
|  | (Subtotal of Sections 1-6) | $(20 \%)$ |  |

Subtotal Section $8 \quad \$ \quad 8,793,289$
TOTAL ROADWAY ITEMS $\underset{\text { (Total Sections 1-8) }}{\$ \quad 41,035,300}$

## II Structures Items

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | $1,111,619$ |
| :--- | :--- | :---: |
| Mitigation-Wetland Purchase | $\$$ | $9,118,000$ to 20,000,000 |
| Utility Relocation (State's Share) | $\$$ | 322,575 |
| Relocation Assistance |  |  |
| Clearance/Demolition | $\$$ |  |
| Title and Escrow Fees |  |  |
|  |  |  |
| Total $\mathbf{\$}$ |  |  |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |  |
| :--- | :--- | ---: | :---: | :---: |
| Construction Contract Work | $\$$ | 30,000 |  |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{3 8 , 0 0 0}$ |

# Bishop Area Access and Circulation Feasibility Study 

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6

BAACS 09-31460K

## Project Description-Alternative 5 With Wye Connect

BAACS Alternative 5 with a Wye Road connection proposes a new reduced speed 2-lane facility, east of Bishop. Beginning south of Bishop at a new signalized Schober Lane/US 395 intersection heading, easterly, then northerly east of Johnston Drive, west of the Waste Water Facility and west of the Bishop Airport, to Wye Road. Connecting back to US 395 and US 6 along existing Wye Road with a new intersection at both the Wye Road/US 6 intersection and the US 6/US 395 intersection. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 19,723,000$ |  |
| ---: | ---: | ---: |
| Right of Way Costs | $\$ 9,342,600$ to | $\$ 11,871,600$ |
| TOTAL | $\$ 29,065,600$ | to |
| $31,594,600$ |  |  |




## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 72700 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $1,090,500$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
\$
$1,124,500$

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 51900 | TONN | $\$$ | 85 |
| Sidewalks, Curb and Gutter | 982 | M3 | $\$$ | 300 |
| Cold Plane AC-45 mm | 0 | M2 | $\$ 411,500$ |  |
| Aggregate Base-Roadwork | 15000 | M3 | 5 | $\$ 4,600$ |
| -sidewalks | 803 | M3 | $\$$ | 45 |
| Incentive for QC/QA |  | LS | $4 \% A C$ | 675,000 |

Subtotal Section 2
\$
5,593,695

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3
$\$$
,557,700

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ | 16,800 |
| Progress Schedule (Critical Path) |  | LS |  | \$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  |  |  |
| Erosion Control |  | LS |  | \$ | 54,700 |
| Duff | 12 | HA | 3600 | \$ | 43,200 |
| Water Pollution Control |  | LS |  | \$ | 65,600 |
| RE Office Space |  | LS |  | \$ | 36,500 |
| Fencing | 10921 | M | 17 | \$ | 185,657 |
| Remove Base and Surfacing | 4950 | M3 | 30 | \$ | 148,500 |
| Shoulder Backing | 0 | M3 | 50 | \$ | - |
| Bladed Dirt Road | 360 | M | 20 | \$ | 7,200 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | \$ | 1,100,000 |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  |  |  |

Section 5. Traffic Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 29600 | M | 0.6 | $\$$ |
| Traffic Signals |  | LS |  | $\$ 7,760$ |
| Roadside Signs |  | LS |  | $\$ 80,000$ |
| Traffic Control Systems |  | LS |  | $\$ 72,900$ |
| Transportation Management Plan |  | LS |  | $\$$ |
| Rumble Strip | 114 | Sta | 250 | $\$$ |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$$ |

Subtotal Section 5
$\$$
798,060

Section 6. Minor Items

| $\$ \quad 12,807,112 x$ | $10 \%=$ | 1,280,711 |  |
| :--- | ---: | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%)$ |  |  |

Subtotal Section 6
\$ 1,280,711

Section 7. Roadway Mobilization

| $\$ \quad 14,087,823 x$ | $10 \%=$ | $\$ 1,408,782$ |  |
| :--- | ---: | :---: | :---: |
| (Subtotal of Sections 1-6) | $(10 \%)$ |  |  |

Subtotal Section $7 \quad \$ \quad 1,408,782$
Section 8. Roadway Additions

| Supplemental Work | $\$ 14,087,823 \times$ | $10 \%=$ | $\$ 1,408,782$ |
| ---: | :---: | :---: | :---: | :---: |
|  | (Subtotal of Sections 1-6) | $(5$ to $10 \%)$ |  |
| Contingencies | $\$ \quad 14,087,823 \times$ | $20 \%=$ | $\$ 2,817,565$ |
|  | (Subtotal of Sections 1-6) | $(20 \%)$ |  |


| Subtotal Section 8 | $\$$ | $4,226,347$ |
| ---: | :---: | ---: |
|  | $\$ 19,723,000$ |  |
| TOTAL ROADWAY ITEMS | $\$ \quad 19,7$ Total Sections 1-8) |  |

## II Structures Items

TOTAL STRUCTURES ITEMS
\$

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | $4,147,684$ |  |
| :--- | :--- | :---: | :---: |
| Mitigation-Wetland Purchase | $\$$ | $4,647,000$ to 7,176,000 |  |
| Utility Relocation (State's Share) | $\$$ | 404,225 |  |
| Relocation Assistance | $\$$ | 57,500 |  |
| Clearance/Demolition | $\$$ | 47,150 |  |
| Title and Escrow Fees | $\$$ |  |  |
|  |  |  |  |
| Total $\mathbf{\$ ~}$ |  | $\mathbf{9 , 3 0 4 , 5 5 9}$ to 11,833,559 |  |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |
| :--- | ---: | :--- | ---: |
| Construction Contract Work | $\$$ | 30,000 |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{3 8 , 0 0 0}$

# Bishop Area Access and Circulation Feasibility Study 

Alternative 5-North

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6
BAACS 09-31460K

## Project Description-Alternative 5 With North Connect

BAACS Alternative 5 with a North connection proposes a new reduced speed 2-lane facility, east of Bishop. Beginning south of Bishop at a new signalized Schober Lane/US 395 intersection, heading easterly, then northerly east of Johnston Drive, west of the Waste Water Facility and west of the Bishop Airport, connecting to US 6 north of Dixon Lane and south of Five Bridges Road with a new North Connection/US 6 junction. Then continuing westerly, parallel to Riverside Road, north of Dixon Lane and south of the Owens River, reconnection to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 35,959,900$ |
| ---: | :--- |
| Right of Way Costs | $\$ 10,341,700$ to |
| TOTAL | $\$ 46,301,600$ to | $\mathbf{\$ 5 7 , 2 2 2 , 6 0 0}$



May 12, 2006
Date


## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Roadway Excavation | 168000 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $2,520,000$ |
| Clearing and Grubbing |  | LS |  | $\$$ |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
$\$$
2,704,000

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 123600 | TONN | $\$$ | 85 |
| Sidewalks, Curb and Gutter |  |  |  | $10,506,000$ |
| Cold Plane AC-45 mm | 0 | M2 | $\$$ | 5 |
| Aggregate Base | 36700 | M3 | $\$$ | 45 |
|  |  |  |  | $1,651,500$ |
| Incentive for QC/QA |  | LS | $4 \% A C$ | $\$$ |

Subtotal Section 2
\$ 12,577,740

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$ 3,780,300$ |

Subtotal Section 3
\$
3,780,300

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ 42,700 |
| Progress Schedule (Critical Path) |  | LS |  | \$ 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  |  |
| Erosion Control |  | LS |  | \$ 167,800 |
| Duff | 35 | HA | 3600 | \$ 126,000 |
| Water Pollution Control |  | LS |  | \$ 186,900 |
| RE Office Space |  | LS |  | \$ 103,900 |
| Fencing | 34440 | M | 17 | \$ 585,480 |
| Remove Base and Surfacing | 26798 | M3 | 30 | \$ 803,940 |
| Shoulder Backing | 0 | M3 | 50 | \$ |
| Bladed Dirt Road | 360 | M | 20 | \$ 7,200 |
|  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |
| Archeology |  | LS |  | \$ 1,100,000 |
| Biology |  |  |  |  |
| Paleontology |  | LS |  |  |

Section 5. Traffic Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 70500 | M | 0.6 | $\$$ |
| Traffic Signals |  | LS |  | $\$ 2,300$ |
| Roadside Signs |  | LS |  | $\$$ |
| Traffic Control Systems |  | LS |  | $\$ 00,000$ |
| Transportation Management Plan |  | LS |  | $\$ 00$ |
| Rumble Strip | 398 | Sta | 250 | $\$$ |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$$ |

Section 6. Minor Items

| $\$ \quad 23,350,560 \times$ | $10 \%=$ | $\$ 2,335,056$ |
| :--- | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to 10\%) |  |

Subtotal Section 6
\$ 2,335,056

Section 7. Roadway Mobilization

| $\$$ | $25,685,616 x$ | $10 \%=$ | $\$ 2,568,562$ |
| :--- | ---: | :---: | :---: | :---: |
| (Subtotal of Sections 1-6) | $(10 \%)$ |  |  |

Subtotal Section $7 \quad \$ \quad 2,568,562$
Section 8. Roadway Additions

| Supplemental Work | \$ | 25,685,616 x | 10\% = | \$ | 2,568,562 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | (Subtotal of Sections 1-6) |  | (5 to 10\%) |  |  |
| Contingencies | \$ | 25,685,616 x | 20\% = | \$ | 5,137,123 |
|  | (Sub | tal of Sections 1-6) | (20\%) |  |  |


| Subtotal Section 8 | $\$$ | $7,705,685$ |
| ---: | :---: | ---: |
| TOTAL ROADWAY ITEMS | $\$ \quad 35,959,900$ |  |

## II Structures Items

## III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ |
| :--- | :--- |
| Mitigation-Wetland Purchase | $\$$ |
| Utility Relocation (State's Share) | $\$ 906,884$ |
| Relocation Assistance |  |
| Clearance/Demolition |  |
| Title and Escrow Fees | $\$$ |
| Total $\mathbf{\$}$ |  |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |
| :--- | ---: | :--- | ---: |
| Construction Contract Work | $\$$ | 30,000 |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{3 8 , 0 0 0}$

# Bishop Area Access and Circulation Feasibility Study 

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6

BAACS 09-31460K

## Project Description-Alternative 6 With Wye Connect

BAACS Alternative 6 with a Wye Road connection proposes a new reduced speed 2-lane facility, east of Bishop. Beginning south of Bishop at a new signalized intersection south of the existing Inyo County Yard facility then heading easterly, then northerly, east of Johnston Drive, west of the Waste Water Facility and west of the Bishop Airport, to Wye Road. Connecting back to US 395 and US 6 along existing Wye Road with a new intersection at both the Wye Road/US 6 intersection and the US 6/US 395 intersection. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 18,553,000$ |  |
| ---: | ---: | ---: |
| Right of Way Costs | $\$ 8,431,600$ to | $\$ 10,959,600$ |
| TOTAL | $\$ 26,984,600$ | to |
| $\$ 29,512,600$ |  |  |

Estimate Prepared By:



## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 64200 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | 963,000 |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
\$ 1,016,000

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 45700 | TONN | $\$$ | 85 |
| Sidewalks, Curb and Gutter-Concrete | 982 | M3 | $\$$ | 300 |
| Cold Plane AC-45 mm | 0 | M2 | $\$, 884,500$ |  |
| Aggregate Base-Roadwork | 13100 | M3 | 5 | $\$ 4,600$ |
| -sidewalks | 803 | M3 | $\$$ | 45 |
| Incentive for QC/QA |  | LS | $4 \% A C$ | 589,500 |

Subtotal Section 2
$\$$
4,960,115

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3 $\qquad$

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ | 14,600 |
| Progress Schedule (Critical Path) |  | LS |  | \$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  |  |  |
| Erosion Control |  | LS |  | \$ | 50,600 |
| Duff | 11 | HA | 3600 | \$ | 39,600 |
| Water Pollution Control |  | LS |  | \$ | 57,500 |
| RE Office Space |  | LS |  | \$ | 31,900 |
| Fencing | 9160 | M | 17 | \$ | 155,720 |
| Remove Base and Surfacing | 4950 | M3 | 30 | \$ | 148,500 |
| Shoulder Backing | 0 | M3 | 50 | \$ | - |
| Bladed Dirt Road | 240 | M | 20 | \$ | 4,800 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | \$ | 1,100,000 |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  | \$ | 150,000 |

Section 5. Traffic Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 25800 | M | 0.6 | $\$$ |
| Traffic Signals |  | LS |  | $\$ 5,480$ |
| Roadside Signs |  | LS |  | $\$ 80,000$ |
| Traffic Control Systems |  | LS |  | $\$ 63,800$ |
| Transportation Management Plan |  | LS |  | $\$$ |
| Rumble Strip | 96 | Sta | 250 | $\$$ |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$$ |

Subtotal Section 5
$\$$
766,880

Section 6. Minor Items

| $\$ \quad 12,047,415 x$ | $10 \%=$ | 1,204,742 |  |
| :--- | ---: | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%$ ) |  |  |

Subtotal Section 6
\$ 1,204,742

Section 7. Roadway Mobilization

$$
\begin{array}{llll}
\$ \quad 13,252,157 \times & 10 \%= & \$ 1,325,216 \\
\hline \text { (Subtotal of Sections 1-6) } & (10 \%) & &
\end{array}
$$

Subtotal Section 7
$\$ \quad 1,325,216$

Section 8. Roadway Additions

| Supplemental Work | \$ | 13,252,157 x | 10\% = | \$ | 1,325,216 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | (Subtotal of Sections 1-6) |  | (5 to 10\%) |  |  |
| Contingencies | \$ | 13,252,157 x | 20\% = | \$ | 2,650,431 |


| Subtotal Section 8 | $\$$ | $3,975,647$ |
| ---: | :---: | ---: |
|  | $\$ 18,553,000$ |  |
| TOTAL ROADWAY ITEMS | $\$ \quad 18,510$ |  |

## II Structures Items

TOTAL STRUCTURES ITEMS
\$

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | $4,121,164$ |
| :--- | :--- | :---: |
| Mitigation-Wetland Purchase | $\$$ | $4,023,000$ to 6,551,000 |
| Utility Relocation (State's Share) | $\$$ | 143,750 |
| Relocation Assistance | $\$$ | 57,500 |
| Clearance/Demolition | $\$$ | 47,150 |
| Title and Escrow Fees | $\$$ |  |
|  |  |  |
|  |  |  |
| Total $\mathbf{\$}$ |  | $\mathbf{8 , 3 9 3 , 5 6 4}$ to 10,921,564 |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |  |
| :--- | ---: | :--- | ---: |
| Construction Contract Work | $\$$ | 30,000 |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{3 8 , 0 0 0}$

# Bishop Area Access and Circulation Feasibility Study 

Alternative 6-North

09-INY-395-PM 111.1/122.3
09-INY-6-PM 0.0/5.6
BAACS 09-31460K

## Project Description-Alternative 6 With North Connect

BAACS Alternative 6 with a North connection proposes a new reduced speed 2-lane facility, east of Bishop. Beginning south of Bishop at a new signalized intersection south of the existing Inyo County Yard facility then heading easterly, then northerly, east of Johnston Drive, west of the Waste Water Facility and west of the Bishop Airport, connecting to US 6 north of Dixon Lane and south of Five Bridges Road with a new North Connection/US 6 junction. Then continuing westerly, parallel to Riverside Road, north of Dixon Lane and south of the Owens River, re-connection to existing US 395 westerly of the Bishop Gun Club and near, or easterly of, the intersection of Ed Powers Road and US 395. Signage on US 395 and US 6 would direct through trucks along this new route.

| Total Roadway Costs | $\$ 33,893,100$ |  |
| ---: | ---: | ---: |
| Right of Way Costs | $\$ 9,656,700$ to | $\$ 21,201,700$ |
| TOTAL | $\$ 43,549,800$ to | $\$ 55,094,800$ |



May 12, 2006
Date


## I Roadway Items

Section 1. Earthwork

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Roadway Excavation | 159600 | M3 | $\$$ | 15.00 |
| Imported Borrow |  |  |  | $2,394,000$ |
| Clearing and Grubbing |  | LS |  |  |
| Develop Water Supply |  | LS |  | $\$$ |

Subtotal Section 1
$\$$
2,571,000

Section 2. Pavement Structural Section

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| PCC Pavement ( 0.3 Depth) |  |  |  |  |
| Asphalt Concrete | 117400 | TONN | $\$$ | 85 |
| Sidewalks, Curb and Gutter |  |  |  | $9,979,000$ |
| Cold Plane AC-45 mm | 0 | M 2 | $\$$ | 5 |
| Aggregate Base | 34900 | M 3 | $\$$ | 45 |
|  | $\$$ | $\$$ | $1,570,500$ |  |
| Incentive for QC/QA |  |  |  |  |

Subtotal Section 2
$\$$
11,948,660

Section 3. Drainage

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Project Drainage |  | LS |  | $\$$ |

Subtotal Section 3

Section 4. Specialty Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Finish Roadway |  | LS |  | \$ | 40,500 |
| Progress Schedule (Critical Path) |  | LS |  | \$ | 50,000 |
| Prepare Storm Water Prevention Plan |  | LS |  | \$ | 25,000 |
| Relocate Private Irrigation Facilities |  | LS |  |  |  |
| Erosion Control |  | LS |  | \$ | 163,800 |
| Duff | 34 | HA | 3600 | \$ | 122,400 |
| Water Pollution Control |  | LS |  | \$ | 178,800 |
| RE Office Space |  | LS |  | \$ | 99,300 |
| Fencing | 32700 | M | 17 | \$ | 555,900 |
| Remove Base and Surfacing | 8040 | M3 | 30 | \$ | 241,200 |
| Shoulder Backing | 0 | M3 | 50 | \$ | - |
| Bladed Dirt Road | 240 | M | 20 | \$ | 4,800 |
|  |  |  |  |  |  |
| Environmental Mitigation |  |  |  |  |  |
| Archeology |  | LS |  | \$ | 1,100,000 |
| Biology |  |  |  |  |  |
| Paleontology |  | LS |  | \$ | 150,000 |

Section 5. Traffic Items

| Work Item | Quantity | Unit | Unit Price | Item Cost |
| :--- | :---: | :---: | :---: | ---: |
|  |  |  |  |  |
| Lighting |  | LS |  | $\$$ |
| Traffic Delineation Items | 66700 | M | 0.6 | $\$$ |
| Traffic Signals |  | LS |  | $\$ 0,020$ |
| Roadside Signs |  | LS |  | $\$$ |
| Traffic Control Systems |  | LS |  | $\$ 90,000$ |
| Transportation Management Plan |  | LS |  | $\$$ |
| Rumble Strip | 380 | Sta | 250 | 158,900 |
| Traffic Monitoring Station | 1 | EA | 15000 | $\$$ |

Subtotal Section 5
$\$$

Section 6. Minor Items

| $\$ \quad 22,008,480 \times$ | $10 \%=$ | $\$ 2,200,848$ |  |
| :--- | ---: | ---: | ---: |
| (Subtotal of Sections 1-5) | (5 to $10 \%)$ |  |  |

Subtotal Section 6 $\qquad$

Section 7. Roadway Mobilization

$$
\begin{array}{llll}
\$ \quad 24,209,328 x & 10 \%= & \$ 2,420,933 \\
\hline \text { (Subtotal of Sections 1-6) } & (10 \%) & &
\end{array}
$$

Subtotal Section $7 \quad \$ \quad 2,420,933$

Section 8. Roadway Additions

| Supplemental Work | \$ | 24,209,328 x | 10\% = | \$ | 2,420,933 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | (Subtotal of Sections 1-6) |  | (5 to 10\%) |  |  |
| Contingencies | \$ | 24,209,328 x | 20\% = | \$ | 4,841,866 |

Subtotal Section $8 \quad \$ \quad 7,262,798$
TOTAL ROADWAY ITEMS $\quad \begin{gathered}\$ \quad 33,893,100 \\ \text { (Total Sections 1-8) }\end{gathered}$

## II Structures Items

III Right of Way Items

RIGHT OF WAY COSTS

| Acquisition | $\$$ | 880,364 |  |  |
| :--- | :--- | :---: | :---: | :---: |
| Mitigation-Wetland Purchase | $\$$ | $8,455,000$ to 20,000,000 |  |  |
| Utility Relocation (State's Share) | $\$$ | 282,325 |  |  |
| Relocation Assistance |  |  |  |  |
| Clearance/Demolition | $\$$ |  |  |  |
| Title and Escrow Fees |  |  |  |  |
|  |  |  |  |  |
| Total $\mathbf{\$}$ |  |  |  | $\mathbf{9 , 6 1 8 , 6 8 9}$ to 21,163,689 |

RIGHT OF WAY SUPPORT COSTS

| Environmental permit/filing fees | $\$$ | 8,000 |
| :--- | :--- | ---: |
| Construction Contract Work | $\$$ | 30,000 |
| Total $\$ 4$ |  |  |
| $\mathbf{y y y}$ | $\mathbf{3 8 , 0 0 0}$ |  |

## Attachment 10_City/County Recommendations

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