09 - INY - 395 – PM 116.0/116.7
09 - INY - 6 – PM 0.0/0.4
09 – INY - Wye Rd. – PM 0.0/0.3
EA 33270K
June 2, 2009

FEASIBILITY STUDY REPORT
FOR
"Bishop Wye Traffic Circulation Improvement"

THIS DOCUMENT CANNOT BE USED FOR PROGRAMMING PURPOSES. A PROJECT STUDY REPORT WILL NEED TO BE WRITTEN TO SERVE AS THE PROGRAMMING DOCUMENT.

09 - INY - 395 – PM 116.0/116.7
09 - INY - 6 – PM 0.0/0.4
09 – INY - Wye Rd. – PM 0.0/0.3
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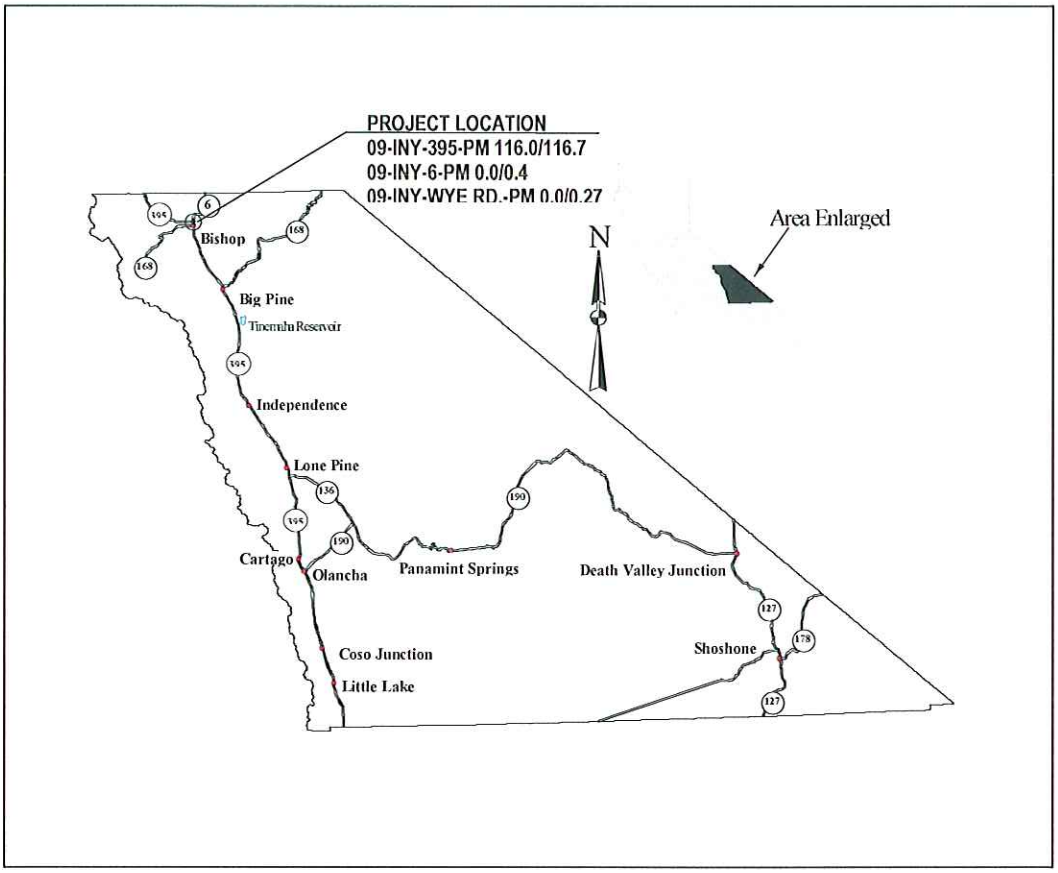

In Inyo County, in and near Bishop, on Route 6 from Route 395 to 0.3 mile north of Wye Road, on Route 395 from Sierra Street to 0.3 mile north of Wye Road, and on Wye Road from Route 395 to Spruce Street.

APPROVAL RECOMMENDED: Cedrik Zemitis

CEDRIK ZEMITIS, PROJECT MANAGER

APPROVED: T. P. Hallenbeck 7/24/09

THOMAS P. HALLENBECK, DISTRICT 9 DIRECTOR *DATE*

09 - INY - 395 – PM 116.0/116.7
09 - INY - 6 – PM 0.0/0.4
09 – INY - Wye Rd. – PM 0.0/0.3
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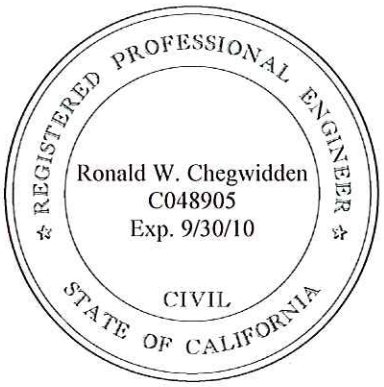
This Feasibility Study Report has been prepared under the direction of the following Registered Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

Ronald W. Chegwidden — 6/2/09

RONALD W. CHEGWIDDEN, REGISTERED CIVIL ENGINEER — *DATE*



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1. INTRODUCTION

The Bishop Wye Traffic Circulation Improvement Project proposes to increase intersection capacity and improve safety at the junctions of US 395, US 6, and Wye Road. These capacity and safety improvements are needed due to projected increases in traffic as a result of increased commercial truck traffic, development in the Chalfant, Hammil, and Benton Valley areas of Mono County, development of adjacent commercial parcels, and to accommodate a potential alternative truck route around the City of Bishop. The congestion and reduced safety that could result will adversely impact US 395 and US 6 and reduce their effectiveness as both interregional corridors and North Main Street for the City of Bishop. In addition, the current configuration of these routes is already contributing to an accident rate that is above the statewide average and may accelerate as the volume of traffic increases.

The purpose of this Feasibility Study Report (FSR) is to evaluate several alternatives for intersection improvements that should increase safety and accommodate future increases in traffic volume. Four build alternatives and a no build alternative were studied for this FSR. All of the alternatives are considered viable and have been discussed in this report. Additional alternatives have been identified, but were not evaluated in detail in this FSR. The total current estimated costs for the build alternatives range from $ 3,173,000 to $ 4,939,000.

Since there are no funds programmed for this project at this time, this FSR attempts to evaluate the alternatives in general terms. More focused review will most likely be necessary to develop alternatives that are suitable for programming purposes.

2. BACKGROUND

The City of Bishop is the only incorporated city in Inyo County. It is located in the northern part of the county, roughly 275 miles north of Los Angeles and 210 miles south of Reno, on the eastern side of the Sierra Nevada Mountains at an elevation of 4000 feet. The City of Bishop has approximately 3,500 residents with an additional 6000 in the immediate surrounding area.

US 395 and US 6 are the primary elements of the transportation corridor connecting the Eastern Sierra Region (Inyo and Mono Counties) and Western Central Nevada to the Southern California region. This network provides the only major truck route up and down the eastern portion of California, and is the source of nearly all goods and services to the Eastern Sierra region.

Both US 395 and US 6 are functionally classified as Rural Principal Arterials and are included in the Federal Aid Primary (FAP) Highway System as well as the National Highway System. They are included in the State Freeway and Expressway System and the Subsystem of Highways for the Movement of Extra Legal Permits Loads (SHELL) system. Both are also Federal Surface Transportation Assistance Act (STAA) routes, which authorizes their use by larger trucks and gives trucks access to facilities off the route. In Inyo County, US 395 and US 6 are part of the system of routes of statewide significance.

US 395 is a mixture of four-lane divided expressway and two lane conventional highway. It has been identified as one of eleven major regional transportation corridors in the State of California. It has also been identified as one of five major recreational corridors for the Southern California region. In the Bishop area, US 395 also serves as North Main Street for the City of Bishop. As a result, the traffic is composed of a mixture of local and through vehicles. Large trucks comprise about 22% of the total volume of interregional traffic, and recreational travel constitutes nearly 55% of the total interregional traffic (2000 Origin and Destination Study).

US 6 is a two lane conventional highway that originates in Bishop at its junction with US 395, and continues eastward to Provincetown, Massachusetts. As such, it provides access to Central Nevada and Interstate routes to the east and is used regularly by commercial trucks. During the winter months, it also serves as an all-weather alternative to US 395. US 6 also serves as North Main Street for the City of Bishop and has been developing greater regional importance as the primary route to projected residential development in the Tri-Valley area of Mono County.

Wye Road is a two lane local route that is owned by both the State and the City of Bishop. Wye Road west of US 6 is located on the former alignment for US 395 and is still owned by the State. Since left turns are not permitted at the intersection of US 395 and US 6, this portion of Wye Road provides the only connection between southbound US 395 and northbound US 6. It is also the predominant route used by southbound US 6 traffic turning onto northbound US 395, as the angle at the intersection of US 395 and US 6 is very sharp and there is restricted space for right turn movements. Wye Road east of US 6 is owned by the City of Bishop and primarily serves as an access road to local businesses and development, but also provides a western alternate access route to the Eastern Sierra Regional Airport.

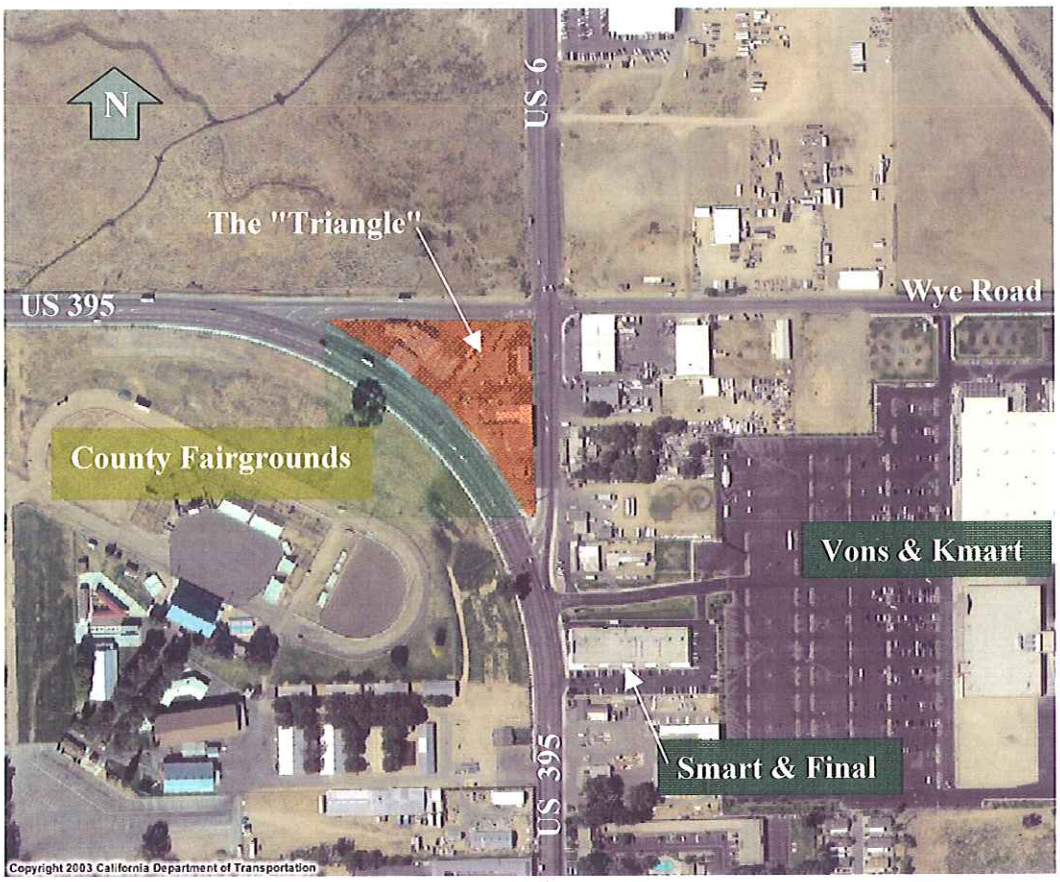
Within the project area, US 395 is a four lane conventional highway with a two way center turn lane and paved shoulders. US 6 is a two lane highway, but also has a two way center turn lane and paved shoulders. For both facilities, the current cross-section consists of 12 foot lanes, a 14 foot center turn lane, and 8 foot shoulders. West Wye Road has 12 foot lanes, a 14 foot left turn lane, and paved shoulders that vary from 3 to 8 feet. East Wye Road has two lanes with parking, but no designated left turn lane. Curb and sidewalk have been added along the fairgrounds, the Kmart/Vons driveway, and the southeast corner of US 6 and Wye Road, but other areas lack these improvements. US 395 is in a 25 mph speed zone up to PM 116.25 (signalized intersection with US 6) and 35 mph zone after PM 116.25. US 6 and West Wye Road are both 35 mph zones in the project area, while East Wye Road is in a 25 mph speed zone.

All three of these routes converge in a triangular area opposite the Tri-County Fairgrounds, referred to as the "Triangle" in Figure 1, forming a major regional hub within the Bishop central business district. The junctions of these routes consist of an at-grade signalized intersection between US 395 and US 6 and at-grade controlled intersections between US 395 and Wye Road and US 6 and Wye Road.

Commercial development is scattered in the vicinity of the junctions and business types include gas stations, retail stores, restaurants, and service garages. The southeast corner of Wye Road and US 6 has a large shopping center containing a K-Mart, Vons, and a Vons gas station that are all set back from the corner, but have a primary driveway that connects to US 395, as well as a

north exit to Wye Road and an east driveway to Spruce Street. There is a small strip mall development and several individual businesses in front of the Kmart/Vons development that abut both US 395 and US 6. The Tri-County Fairgrounds are located on the southwest side of the intersection and experience heavy visitation and traffic congestion during special events.

Figure 1. Area Map



In July 2007, the California Department of Transportation released the Bishop Area Access & Circulation Feasibility Study (BAACS). The purpose of the BAACS was to study US 395 as it passed through Bishop and recommend alternatives that would improve circulation and safety, accommodate commercial truck traffic, plan for downtown improvements, facilitate ground access to the Eastern Sierra Regional Airport, and maintain the viability of services in Bishop. Because of its importance to regional traffic and as a primary node in any potential alternative truck route, the BAACS recognized the US 395/US 6/Wye Road junction as a critical element in the regional transportation network and identified several possible alternatives that would reconfigure the intersection to support the long-term projected increase in truck and residential traffic at this junction. Those alternatives were, in large part, the origin of the alternatives studied in this FSR.

While the intersection is not currently exceeding capacity, traffic volumes are expected to reach or exceed the capacity within the next twenty years. Based on a recommended 1% growth rate, the BAACS projects the Annual Average Daily Traffic (AADT) on US 395 within the Bishop corridor will increase to more than 21,000 by the year 2025. Additional traffic is also anticipated from the potential development of as many as 4,850 residential units in the Benton, Hammil Valley, and Chalfant Valley (Tri-Valley) areas of Mono County. Continued development of commercial parcels to the east of the intersection area and the potential development of an eastern alternative truck route utilizing Wye Road, as proposed in the BAACS, would further exacerbate traffic volumes in this intersection. The increased traffic volumes have the potential to impact the local roadway system as well as drivers avoid the traffic in the intersection.

Accident rates for US 6 are over four times the statewide average for similar facilities. This is likely due to several factors such as the offset alignment of Wye Road, limited sight distance, multiple access points, and the mixture of local and commercial traffic. The recent development of the K-Mart/Vons shopping center in the southeast corner of this intersection has compounded the traffic and safety concerns in this area, as evidenced by the higher rate of traffic growth on US 6 as compared to US 395. The projected increase in traffic volumes is anticipated to lead to an increase in the number of conflicts and accidents in this area.

A jointly funded project with the City of Bishop is planned to straighten Wye Road through its intersection with US 6 by aligning the through lanes, and also adding left turn lanes, curb, gutter, and sidewalk. Construction of these improvements, scheduled to begin in 2010, will reduce the conflicts at the Wye Road / US 6 intersection. At this time, there are no plans to add a signal to this intersection.

3. PURPOSE AND NEED STATEMENT

Need:

Due to development in Northern Nevada and Mono County, truck and residential traffic is projected to increase beyond the capacity of the existing roadway system. These factors, along with increased development in the vicinity of the intersection and a potential alternative truck route using Wye Road, could result in traffic exceeding the capacity of the US 395 / US 6 / Wye Road junction, excessive congestion, and failure of the intersections.

Between PM 0.0 and PM 0.4, US 6 has an accident rate that is 4.06 times the statewide average for similar facilities. This is likely due to several factors such as the offset alignment of Wye Road, limited sight distance, and a mixture of commercial and regional traffic. There are also multiple access points within this short corridor, which makes it difficult for drivers to predict when vehicles are entering or exiting the highway. In particular, the commercial driveway for Kmart/Vons has created multiple conflict points that could lead to a significant increase in the accident rate on US 395.

Purpose:

The purpose of this FSR is to evaluate and identify several alternatives that reconfigure the existing routes and intersections to provide increased capacity to accommodate the projected traffic volumes. In addition to improving the flow of traffic, the proposed alternatives will reduce conflict points, clarify traffic movements, and improve access into and through the intersections. Signals, sidewalk, curb and gutter, and other means will be incorporated to define access points and alert drivers to the potential of entering or exiting traffic. The improved access in and through the project area will reduce the potential accident rate and increase intersection safety, while supporting increased capacity as a whole.

4. DEFICIENCIES

Traffic Data

US 395 carries the greatest volume of traffic in the project area. The annual average daily traffic (AADT) for US 395 within the project limits is 15,900 vehicles (2007 Count). Based on an estimated growth rate of 0.5 % per year, the AADT is projected to increase to 17,570 by the year 2027. This estimate is conservative, however, as it does not consider the projected increases in traffic due to new development in Mono County and Northern Nevada. In order to account for these increases, the BAACS suggested a growth rate of 1% per year. Using a 1% growth rate, the AADT could increase to 19,400 by the year 2027.

Currently, local traffic is largely responsible for generating the high volumes in the project area. Based on traffic counts collected for the BAACS, almost 63% of the traffic in the downtown US 395 corridor is local traffic. The remaining 37% is primarily interregional traffic, with truck traffic amounting to approximately 22% of the interregional traffic. As the US 395 corridor becomes an increasingly important truck route connecting industrial development in northern Nevada with that in Southern California, truck traffic in the project area is projected to increase at a rate of at least 1.2% per year.

On US 6, the AADT is 3,800 (2007 Count), with medium and heavy duty trucks accounting for about 21% of all vehicles. Based on an estimated growth rate of 1.6 % per year, the AADT is projected to increase to 5,220 by the year 2027. As the Tri-Valley areas of Mono County are developed, this growth rate is likely to increase. While US 6 carries only about one-third of the overall interregional truck traffic, the truck growth rate is still expected to increase at a rate similar to the truck growth rate on US 395.

Traffic counts were collected for East Wye Road in 2007 with a resultant AADT of 2,212. Using the same growth rate as US 395 and US 6, the AADT is projected to increase to 2,444 by the year 2027. The percentage of trucks was very low, only two percent, and is not expected to increase appreciably based on current constraints. However, as further development occurs in the K-Mart/Vons shopping center, or in the event that an alternative truck route utilizing East Wye Road is developed, the percentage of trucks could increase significantly.

According to the US 395 Transportation Concept Report (2000), the concept Level of Service (LOS) established for US 395 is LOS B. Within the project limits, US 395 is currently operating at LOS E. The primary cause of the reduced LOS is localized congestion due to the volume of traffic, numerous access points, signalization, and speed restrictions. Similarly, the concept LOS established by the US 6 Transportation Concept Report (1991) for US 6 is LOS B. US 6 is also currently operating at LOS E, although a pending update of the US 6 Transportation Concept Report reflects an upgrade in the level of service to LOS B. As the AADT's for both routes grow at moderate rates, both routes are anticipated to remain at their current level of service. However, the increased traffic volume that will result from development in Mono County and Northern Nevada could cause further reductions in the level of service on both routes.

The 3-year collision rates for both highways have been shown in Table 1A. When compared to similar state facilities, US 6 has the highest accident rate within the project limits with a total collision rate that is 4.06 times the state average. The high accident rate may be caused by a number of factors, such as the problematic access points, offset alignment in Wye Road, mixture of commercial and local traffic, and poor sight distance. Recent collision rates on US 395 are well below the statewide average for similar facilities. However, Table 2 shows that the number of accidents on US 395 is actually greater than those on US 6 in the last three years. Evidence suggests that the driveways of Kmart/Vons and Smart & Final are areas of significant conflict and contribute to this higher frequency. Caltrans used recorded video to analyze driver behavior along this area of US 395, and the video revealed a high level of driver confusion, hesitation, near-collisions, and illegal turns at these driveways.

Table 1A. Collision Rates (per MVM)*

	Fatal	F+I	Total
US 6 (PM 0.0/0.45)			
Actual	0	2.46	3.94
Statewide Average	0.024	0.41	0.97
US 395 (PM 116.0/116.7)			
Actual	0	0.26	0.78
Statewide Average	0.026	0.54	1.35

Based on the 3 year study period from 4/01/2005 to 3/31/2008
* Accidents per Million Vehicle Miles

The 3-year collision rates for the intersections within the project limits were also determined and have been shown in Table 1B. The intersection of US 6 and Wye Road has the highest accident rate with an accident rate that is three times the state average. All four accidents at this location involve turning or crossing movements at the intersection and failure to yield to through traffic on US 6. The pending Wye Road realignment project may reduce the accident rate considerably by improving the alignment and sight distance at the intersection.

Table 1B. Collision Rates (per MV)**	Fatal	F+I	Total
US 6 and Wye Road Intersection			
Actual	0	0.67	0.9
Statewide Average	0.006	0.13	0.30
US 395 and US 6 Intersection			
Actual	0	0.05	0.19
Statewide Average	0.002	0.11	0.30
US 395 and Wye Road Intersection			
Actual	0	0.06	0.18
Statewide Average	0.001	0.06	0.15

Based on the 3 year study period from 4/01/2005 to 3/31/2008
** Accidents per Million Vehicles

Between April 2005 and March 2008, a total of 17 collisions were reported within the project limits. Of these 17, eight resulted in injuries and the remaining nine resulted in property damage only. The types of accidents were predominantly Broadside (29%) and Rear End (23%). The numbers and types of collisions have been summarized in Table 2 and Table 3.

Table 2. Collision Location Frequency		
Location		**Number**
US 6 (PM 0.0/0.45)		8
US 395 (PM 116.0/116.70)		9
	Total:	17
US 6 and Wye Road Intersection		4
US 395 and US 6 Intersection		4
US 395 and Wye Road Intersection		3

Based on the 3 year study period from 4/01/2005 to 3/31/2008

Table 3. Type of Collision		
Collision Type	**Number**	**Percentage**
Broadside	5	29%
Rear End	4	23%
Sideswipe	3	18%
Hit Object	3	18%
Auto/Pedestrian	2	12%
Total	17	100%

Based on the 3 year study period from 4/01/2005 to 3/31/2008

Demographics

The US 395 / US 6 intersection connects residents in Mono County with the City of Bishop and the US 395 corridor. The scarcity and cost of private land in the Bishop area has encouraged new development northward into the Tri-Valley area of Mono County. Development projections include 3,874 additional dwelling units near Benton, 304 new units in Hammil Valley, and 661 units in Chalfant Valley. The majority of residents at these new developments will commute to Bishop and US 395 by way of US 6. While these developments are not anticipated to reach buildout during the twenty-year horizon, they are estimated to contribute nearly 3,000 additional daily vehicle trips at full buildout.

In addition to the possible increase in passenger vehicles, commercial truck traffic in the project area is projected to increase at a rate of at least 1.2 % per year (Goods Movement Study – US 395 Corridor, June 2006). The major factors contributing to the increase in truck traffic include warehousing developments in the Reno/Carson area of Nevada, commercial and residential development along the US 395 corridor in California and Nevada, residential development in Mono County, and national trends in the growth of trucking and goods movement. When compared to the estimated growth rate of 0.5% for all traffic, the elevated growth rate for commercial trucks accentuates the potential impact that trucks could have on the intersection.

The County of Inyo has also targeted the Eastern Sierra Regional Airport as a site for potential industrial development. If this occurs, the alternative truck route studied by the BAACS could become much more viable. In the event that an alternative route was constructed, there would be a significant increase in the amount of truck traffic within the project limits.

Geometric Concerns

The capacity and function of the US 395/US 6/Wye Road intersection is limited by elements of its current geometry. The signalized, at grade intersection of US 395 with US 6 occurs on a 90-degree curve of US 395. Due to the oblique angle at the intersection, the right turn movement from US 6 to US 395 at the intersection is very sharp and cannot be negotiated by large vehicles and trailers. As a result, West Wye Road is used for most of the southbound (SB) US 6 right turns onto northbound (NB) US 395. Left turns from SB US 395 onto NB US 6 are also not permitted at the intersection, so NB US 6 traffic must use West Wye Road as well. Since West Wye Road has only 500 feet of queuing length and requires a non-signalized left turn at the US 6 intersection, there is significant potential for backup at the stop sign that will eventually cause the Wye Road / US 6 intersection to fail due to backup onto US 395.

The intersection of US 395 and West Wye Road has similar geometric concerns, as it also occurs on the 90-degree curve of US 395 at an oblique angle. This creates prolonged exposure and sight distance problems for southbound vehicles as they cross NB US 395. It creates sight distance concerns for northbound vehicles as well as they are entering US 395 from West Wye Road, due to vehicles approaching from the driver's side blind area. There is no acceleration lane to allow entering vehicles to merge into the flow of traffic. As a result, the accidents at this intersection are all related to the merge movement from Wye Road into NB US 395.

The angle of intersection between Wye Road and US 6 meets standards, but the intersection has other geometric concerns. The eastbound lane of West Wye Road is currently aligned with the parking lane on East Wye Road. As a result, vehicles must make a diagonal movement to cross US 6, which creates driver confusion as vehicle movements are not always apparent to other drivers. In addition, parked or queued vehicles block the view of approaching vehicles on US 6, creating sight distance problems for vehicles attempting to enter or cross US 6. The corner radii of the existing US 6/Wye Road intersection are also too tight to effectively accommodate large truck turning movements. In addition, trucks and slow moving vehicles turning onto NB US 6 from Wye road do not have an acceleration lane, which contributes to backups on Wye Road and potential conflicts with through traffic on US 6. The previously mentioned project to realign Wye Road Project will resolve some of these problems.

Access Issues

The lack of access control in the project area contributes to the high accident rates. There are several businesses fronting US 6 between US 395 and Wye Road and the curb, gutter, and sidewalk are discontinuous through this area. As a result, the businesses do not have defined driveways or controlled access points. The lack of defined access points and the proximity of these businesses to the existing intersections leads to conflicts between through traffic and vehicles entering or leaving these businesses.

The Vons/Kmart driveway onto US 395 is another area of potential concern. Although there have been relatively few accidents at this location, the proximity of the driveway to the signal at US 395/US 6 and the US 6 offramp has created a number of issues. In order to reduce conflicts with through traffic on US 395 and US 6 and to minimize impacts to the intersection, traffic is restricted from making left turns out of the driveway onto SB US 395 or into the driveway from SB US 395. Since this driveway was designed to be the primary access point from US 395, the left turn restrictions have resulted in frequent illegal turn movements. Vehicles making legal right turns to enter NB US 395 must also cross the US 6 onramp. Drivers unfamiliar with this onramp can misinterpret the right turn signal of a US 6 through vehicle as an intended right turn into the Kmart/Vons driveway. Additionally, any queue at the signal for NB US 395 prevents Kmart/Vons traffic from exiting onto US 395 or creates blockages of the offramp as vehicles wait to enter US 395. While there have been few incidents to date, the number of conflicts and projected increase in traffic volumes are anticipated to result in an increased number of accidents at this location. It has been suggested that the concerns at this location could potentially be alleviated by moving the driveway to the southern boundary of the shopping center.

Just south of the Vons/Kmart driveway, the driveway for the Smart & Final development has unrestricted access to and from US 395. This unrestricted access has encouraged unintended traffic through the Smart & Final parking lot from the K-Mart/Vons parking lot for legal left turns onto SB US 395. The additional traffic coupled with a relatively narrow driveway has contributed to congestion within the parking lot, as well as queuing in the right turn lane on US 395, due to traffic attempting to enter the parking lot.

5. CORRIDOR AND SYSTEM COORDINATION

US 395 and US 6 form the major access corridors to and through Inyo County. These corridors connect the Eastern Sierra region with Southern California and the Reno/Lake Tahoe region in northern Nevada. US 395 is identified as a regionally significant part of the Interregional Road System (IRRS).

This project is consistent with other regional planning documents such as the General Plan for the City of Bishop, the Inyo County General Plan, and the Inyo County Regional Transportation Plan. It is also consistent with internal planning documents such as the Transportation Concept Reports for US 395 and US 6, and the District System Management Plan for District 9. It draws upon and supports the recommendations of the Bishop Area Access & Circulation Feasibility Study (July, 2007) and the Goods Movement Study for US-395 Corridor (June, 2006).

The proposed alternatives were developed with consideration of a pending project to improve the alignment of Wye Road. They also considered the needs of local businesses and potential future development within the project area, as well as a potential future alternative truck route to the Eastern Sierra Regional Airport.

6. ALTERNATIVES

As noted earlier, the need for an intersection improvement at the US 395/US 6/Wye Road intersection and a range of potential alternatives originated in the BAACS study. With further assessment and consideration by the Project Development Team, the proposed improvements have been narrowed down to four feasible alternatives. Each alternative proposes changes in the geometry of the US 395/US 6/Wye Road intersection as well as improvements to the existing roads that should increase the safety and capacity of the corridor as a whole, while striving to be consistent with and support local development in the area.

Micro-Simulation Method

As a means of assessment and comparison, each alternative was modeled in micro-simulation software. A "hotspot" queuing analysis was run on each model for the projected years of 2025 and 2035, and a visual analysis of virtual vehicle behavior was conducted. The Bishop-Wye micro-simulation models were designed by District 9 Systems Planning, Design, and Traffic Operations. Input considerations included timing of signals (all non-actuated), lane alignments, traffic volumes, and virtual traffic behavior. Count stations, field counts, traffic camera videos, and Caltrans AADT reports were used to calibrate traffic volumes. Caltrans Digital Highway Inventory Photography Program (DHIPP), GIS information, and Caltrans Design drawings were used to construct scaled models in Paramics micro-simulation software (v6.4.1). All models used the same demand matrices as the As Built Model. Hotspot analysis was conducted over one model hour with growth rates set at 1% (based on BAACS recommendations). A summary of the results of the micro-simulation modeling is shown in Table 4.

Table 4. Bishop Wye Micro-Simulation Modeling

Year 2025 Results

	No Build	Alt 1	Alt 2	Alt 3	Alt 4
395 NB - S&F dwy					
395 SB - S&F dwy					
395 NB - Kmart dwy					
395 SB - Kmart dwy					
395 NB - 6					
395 SB -6					
395 NB - Wye Rd					
395 SB - Wye Rd					
S&F Drive - IN					
S&F Drive - OUT					
Kmart Drive - IN					
Kmart Drive - OUT					
6 NB - 395					
6 SB - 395					
6 NB - Wye Rd					
6 SB - Wye Rd					
Wye Rd EB - 395					
Wye Rd WB - 395					
Wye Rd EB - 6					
Wye Rd WB - 6					

Legend

Hot Spot Analysis:
Seven or more vehicles queuing within 90 seconds

	Minor	1-3 Occurrences
	Moderate	4-9 Occurrences
	Major	≥10 Occurrences
	Failure	Nonstop Queuing

Alternatives:

Alt 1 Standard Signalized Intersection

Alt 2 Relocate US 395/US 6 Intersection

Alt 3 Roundabout

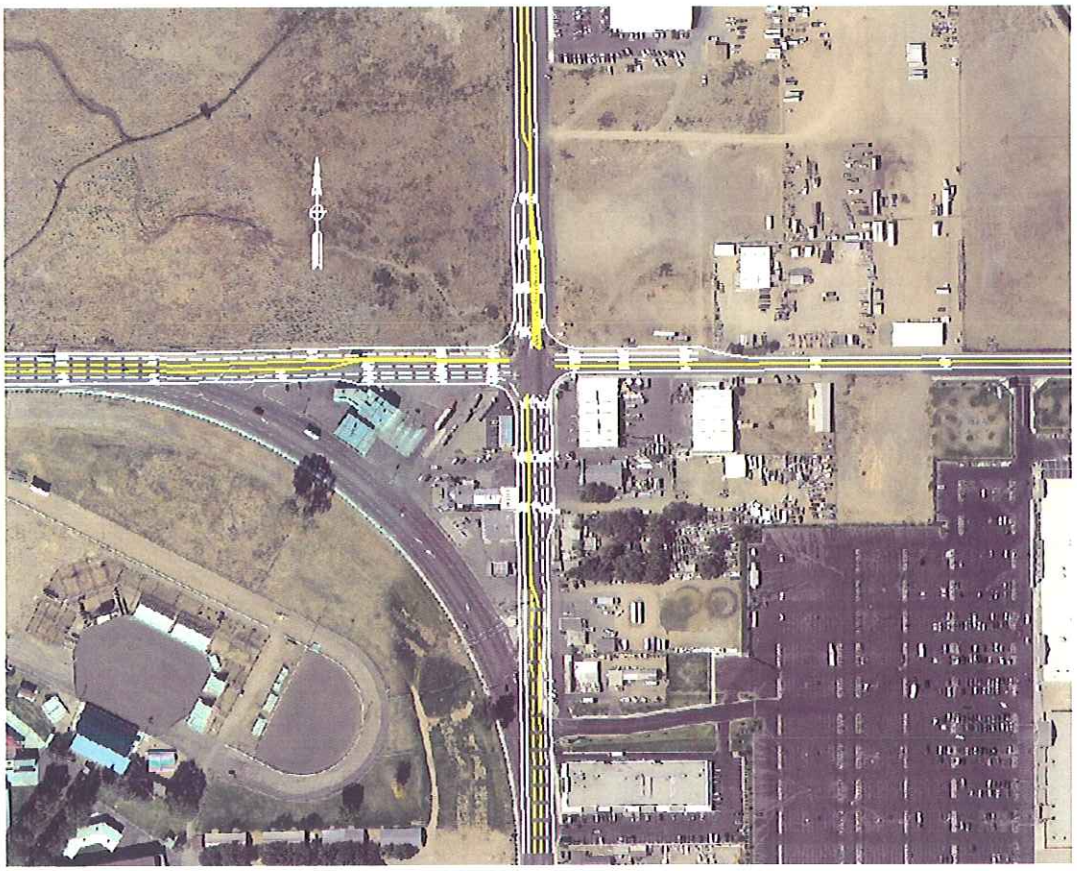
Alt 4 Improve US 395/US 6 Intersection

Alternative 1

This alternative proposes to direct all traffic in the US 395/US 6/Wye Road area through a standard signalized intersection. Dedicated turn lanes would be provided for left and right turns from each leg of the intersection. Since US 395 has the highest traffic volumes, dual left turn lanes would be provided for NB US 395 traffic and an additional right turn lane would be provided for a "free right" for SB US 395 traffic. The through lanes for US 395/US 6 and US 395/Wye Road would be aligned to minimize driver confusion. New curb and gutter, sidewalk, and driveways would be included to provide pedestrian safety and define business access points.

This alternative would be consistent with the existing roads and planned improvements to Wye Road, including a potential alternate truck route. The single intersection geometry simplifies and improves the access between US 395 and US 6, and is familiar to drivers and easy to understand. The geometry also eliminates the conflicts at the Vons/Kmart driveway and US 6 and permits left turns into the driveway via a Two Way Left Turn Lane (TWLTL).

Figure 2. Alternative 1



Due to the dedicated left turn lanes, no left turns would be allowed in the approaches to the intersection, creating some loss of access to businesses in the triangle area. Redirecting the high volume of US 395 traffic through this corridor will also increase the potential access conflicts south of Wye Road. Since the free right lane for US 395 would be uncontrolled, pedestrian safety in the intersection could be adversely impacted.

There will be minimal new right of way required. Additional right of way will be required in the southwestern and northwestern quadrants for shoulder improvements. Right of way would also be required for the improvements on East Wye Road, but the right of way will be acquired in conjunction with the currently planned project for Wye Road. Since it would no longer be utilized, the existing US 395 right of way fronting the fairgrounds would be abandoned.

With the disproportionately high volume of traffic on US 395, the modeling showed significant queuing for the protected left turn for NB US 395 traffic at the signalized intersection with US 6, but the model indicated that at least 95% of traffic would clear the queue. Queuing could be reduced with signal actuation and improved signal timing.

Since this alternative is relatively simple to construct and requires minimal new right of way, it is the least expensive of the four alternatives. The estimated cost for Alternative 1 is $3,176,000.

Alternative 2

This alternative would relocate the junction of US 6 and US 395 to a new signalized intersection at the west edge of the Triangle area and Wye Road would be extended to the new alignment for US 6. A new signalized intersection would be constructed at the existing Kmart/Vons driveway and the off-ramp for US 6 would be closed. The vacated portions of the existing right of way for US 6 would be relinquished to the City of Bishop.

A dedicated intersection for US 6 will provide safer and more direct access to US 6, with greater capacity and potential for future expansion, while maintaining the existing capacity of US 395. The additional signal at the K-Mart driveway will provide direct access to the shopping center, eliminating current access problems and reducing potential conflicts between through traffic and local traffic. The improved access, coupled with new acceleration and deceleration lanes, will also improve current and future capacity on US 395. The relinquishment of the existing US 6 right of way will provide a local road that can maintain access to existing businesses.

Figure 3. Alternative 2

There are several drawbacks to this alternative. The realignment of Wye Road to US 6 creates a circuitous or zigzag movement that could confuse drivers and would not be consistent with the potential use of Wye Road as an alternate truck route. It also abandons the new improvements to West Wye Road that are scheduled to be constructed in 2010. The proximity of the US 6/Wye Road and US 395/US 6 intersections could also lead to queuing on US 6.

This alternative would require considerable new right of way, however, nearly all of the new right of way would be limited to currently undeveloped public lands. Since the existing roads will not be impacted, this alignment will also result in a significant reduction in utility relocation costs. The existing right of way for West Wye Road would most likely be abandoned.

Modeling for this alternative indicated significant queuing for NB US 395 traffic near the Vons/Kmart driveway and a failure occurred for vehicles exiting the Smart & Final driveway because of this queuing. The proximity of the signal at the Vons/Kmart driveway to the Smart & Final driveway suggests that a right only exit for the Smart & Final driveway is recommended, and when implemented, the model no longer fails. Extending the right turn pocket to the south of the Smart & Final driveway could also alleviate some of this queuing.

Due to higher environmental, right of way, and construction costs, Alternative 2 has the highest cost of all the alternatives. The estimated cost for Alternative 2 is $4,939,000.

Alternative 3

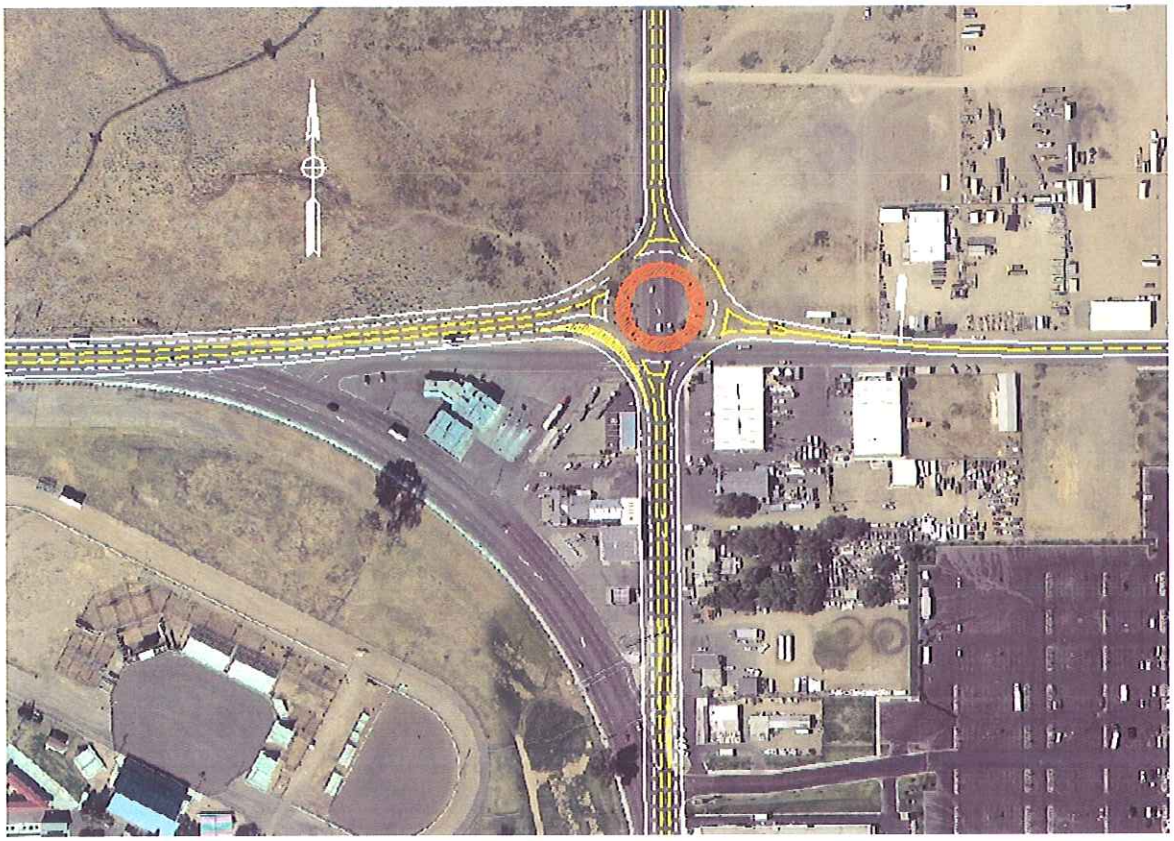
Alternative 3 would replace the existing US 395/US 6, US 395/Wye Road, and US 6/Wye Road intersections with a roundabout located north of the current US 6/Wye Road intersection. In order to align the roundabout, minor realignments would be required on Wye Road and US 395. The roundabout would be constructed in its ultimate two-lane configuration, but only one lane would be used initially. The single lane is capable of handling current projected traffic volumes and the second lane would be available for a simple conversion to accommodate future long-term improvements or changes in demand, such as an alternate truck route using Wye Road.

Studies have demonstrated that roundabouts generally provide higher capacity and lower delays than conventional signalized intersections. By eliminating the intersection cross traffic and focusing the driver's attention on approaching traffic only, roundabouts typically operate more safely than standard intersections. While the frequency of crashes may not be lower, the injury rates are reduced significantly due to the lower operating speeds. Roundabouts are also much safer for pedestrians, as the pedestrians are confined to the outside of the roundabout. Splitter islands also provide pedestrian refuge between opposing lanes and allow a pedestrian to cross one direction of traffic at a time. Because a driver's entrance into the roundabout is predicated upon gaps in traffic, signals are not required. As a result, roundabouts are easier to maintain and self-regulating in terms of the flow of traffic.

The higher traffic volumes on US 395 will require special attention and may require either a two lane entrance into the roundabout or channelization of two lanes into one. The mixture of large trucks and personal vehicles will also warrant special design consideration. TWLTL's will be provided in each approach to provide median access to local businesses, but access to businesses adjacent to the roundabout will be impacted. As with Alternative 1, the high volume of traffic

from US 395 will also increase access conflicts in the existing US 6 corridor south of Wye Road. While the roundabout geometry will support a possible long-term alternative truck route on Wye Road, the currently planned US 6/Wye Road intersection improvements would be abandoned.

Figure 4. Alternative 3



The footprint of the roundabout would require minimal additional right of way in the "triangle" area, but would involve acquisition of new right of way in the northwest and northeast quadrants, both of which are currently vacant. The right of way would be acquired for the ultimate two-lane configuration, but would only be marginally more than that required the one-lane configuration. Since the roundabout would be constructed in the general vicinity of the current US 6/Wye Road intersection, there would be a moderate amount of utility relocation required.

Modeling of this alternative showed failures in the southbound lane of US 6 at the entrance to the roundabout. This was primarily due to the much higher volumes of traffic on NB US 395 and the reduction of this traffic to one lane within the roundabout, which limits the gaps available for the high volume of trucks on SB US 6. Merging NB US 395 traffic into one entrance lane may improve the queuing on SB US 6, but also causes significant queuing at the southern entrance to the roundabout. Given the disparities in traffic volumes, the ultimate design of the roundabout will be a critical factor in reducing the queuing and associated traveler delay.

Due to the moderate right of way, environmental, and construction costs, this alternative has the second highest cost of all alternatives. Total estimated cost for Alternative 3 is $4,228,000.

Alternative 4

This alternative would construct a new intersection for US 395/US 6 slightly northwest of the existing intersection. All NB US 6 traffic would be required to use the intersection and the existing "off-ramp" for NB US 6 would be closed. Existing access to NB US 6 via West Wye would be removed, and West Wye would become one-way, supporting NB 395 traffic from US 6 or East Wye Road. A TWLTL would be included on both US 395 and US 6 to provide median access to local businesses as well as storage for any queuing that may occur on US 6.

Figure 5. Alternative 4

This alternative improves safety by eliminating the existing SB US 395 to NB US 6 connection on West Wye Road, and directing traffic movements through a signalized intersection instead of a turning movement at an uncontrolled intersection. The separation of the new intersection from the K-Mart driveway should also reduce the number of conflicts between NB US 6 traffic and local traffic entering or exiting the K-Mart driveway.

This alternative preserves the existing uses and access for businesses along US 6, while complementing the planned improvements to Wye Road. On the other hand, it is not consistent with a possible alternative truck route using Wye Road, as it would require a zig-zag movement from SB US 395 to East Wye Road. Due to the relatively limited space, the intersection will still be at an oblique angle, and the location may need to be adjusted to provide optimal truck access to NB US 6 from SB US 395.

This alternative will require minimal additional right of way. The proposed intersection was located in a leased commercial parcel that has been vacated. Since a former gas station operated on the parcel, there may be contaminated soils concerns. Right of way will also be required in the northwest quadrant for widening and construction of an acceleration lane for NB US 395.

Modeling for Alternative 4 showed significant queuing at the signalized intersection of US 395 and US 6. The queue results from the elimination of the eastbound access on Wye Road from US 395, which directs all SB US 395 traffic destined for NB US 6 to the protected left turn at the intersection. Moderate queuing for SB US 395 traffic was also indicated at the TWLTL into the Vons/Kmart driveway due to blockages caused by north bound traffic that was backed up at the signalized intersection. Moving the intersection further north could mitigate the Vons/Kmart access concerns, but would require additional right of way, causing further impact to businesses in the triangle area.

Due to moderate right of way and environmental costs, but reduced construction costs, this alternative has the second lowest cost of all alternatives. Total estimated cost for Alternative 4 is $3,488,000.

Alternative 5 - No Build Alternative

This alternative would not construct any improvements and would leave the intersections in their current configuration. This alternative would not alleviate existing concerns, provide additional capacity, or improve intersection safety. As a result, congestion, level of service, and the number of collisions will worsen as traffic volumes increase. Further development in the Kmart/Vons shopping center and surrounding area will amplify these deficiencies.

When modeled, this alternative operates similar to the current 2008 peak hour conditions for the Bishop Wye intersection. The modeling shows minor queuing at the signalized intersection of US 395 and US 6. The model was unable to simulate erratic behavior at the US 395/Vons/Kmart driveway and US 6 off-ramp that was witnessed in traffic camera videos and is known to exist at this location.

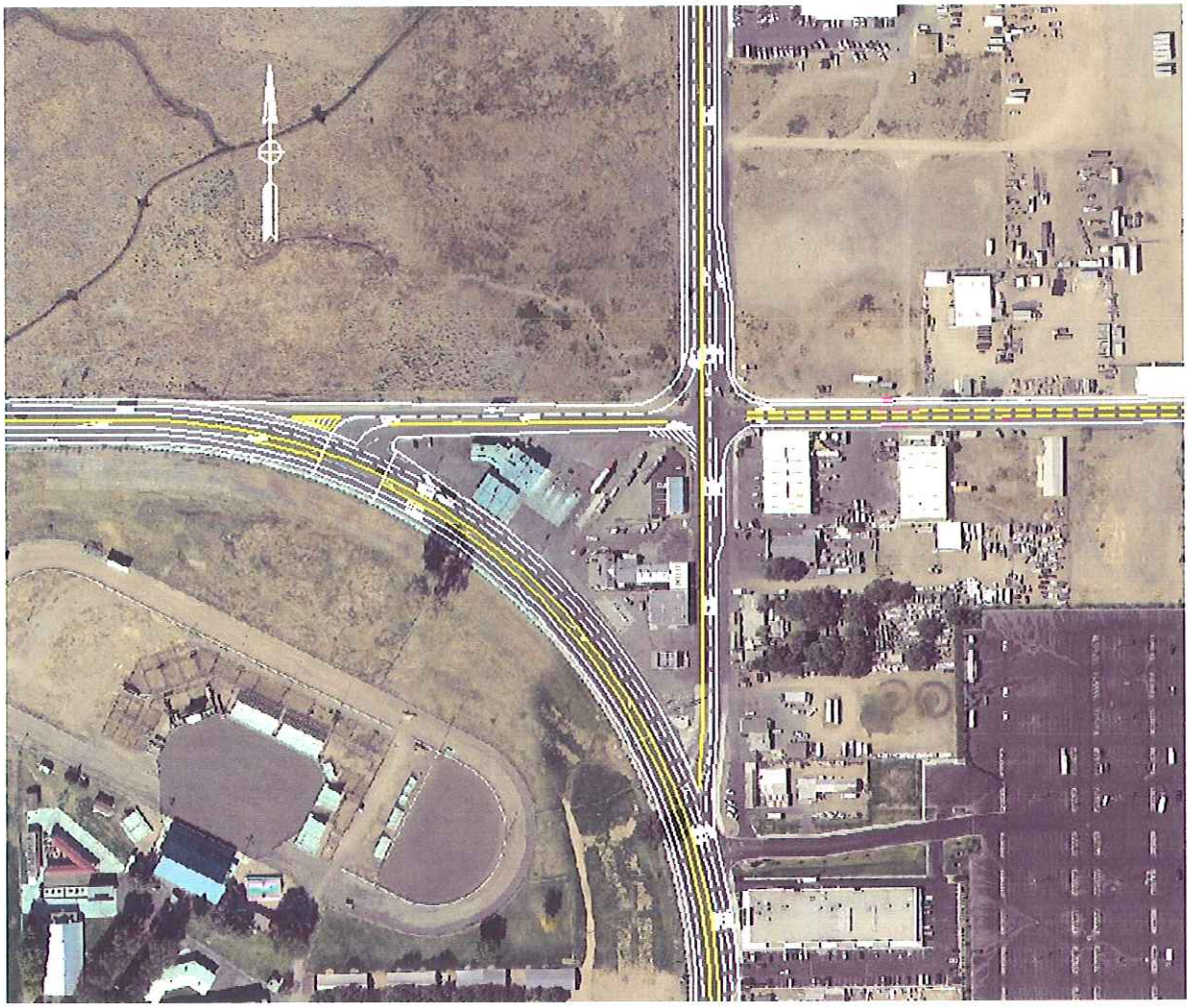
Additional Alternatives

The following additional alternatives were identified during alternative development, but were either removed from consideration or were not evaluated for this Feasibility Study Report due to other factors.

US 6/Wye Road Couplet (Old Alt 3):

This alternative would move the intersection of US 395 and US 6 to the northwest corner of the triangle area. The existing off ramp to NB US 6 would be retained, but US 6 would be changed to one-way between the off ramp and Wye Road and southbound US 6 traffic would be required to use West Wye Road to access US 395. In many respects, this alternative is very similar to the current traffic pattern, except that southbound traffic would not be permitted below Wye Road. All of the improvements are proposed to be constructed within existing right of way.

Figure 6. US 6/Wye Road Couplet

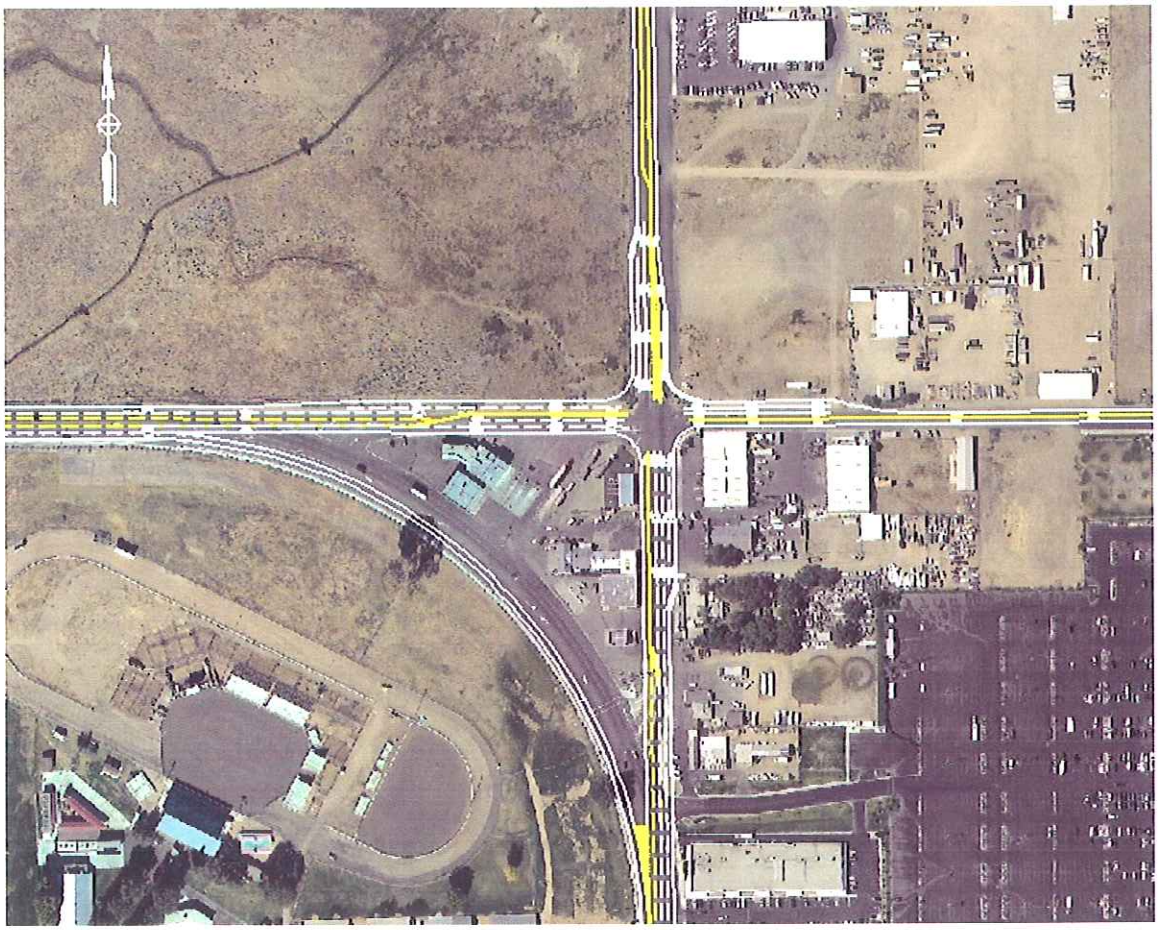


This alternative improves access to the Kmart/Vons driveway by providing a TWLTL, but fails to address the conflict issues with through traffic on US 6. It also restricts business access along US 6 between US 395 and Wye Road to northbound traffic only. Of greater concern, the right of way at the northwest corner of the "triangle" is insufficient to build a standard intersection, and as such, commercial trucks would be prevented from using the intersection. Additionally, West Wye Road must carry all vehicles traveling SB US 395 to NB US 6 and all SB US 6 traffic. With the anticipated increase in traffic volumes and a relatively short queue area, this short road segment would experience increased congestion and a reduction in Level of Service.

This alternative actually reduces capacity because of the restrictive geometry at the US 395/US 6 intersection and the increased volume of NB US 6 traffic. While it would be consistent with the planned project to align Wye Road, it does little else to improve safety within the overall project area. As a result, it was removed from consideration.

Alternative 1B:
This alternative is similar to Alternative 1, except that the existing US 395 right of way fronting the fairgrounds would be used to provide a free right for southbound traffic on US 395. This would eliminate the need for a free right turn lane at the proposed US 395/US 6/Wye Road intersection and reduce the amount of new right of way required in the triangle area. It also would improve the safety of the proposed intersection by reducing the volume of traffic using the intersection, as well as preserve access to the businesses on the west side of the "triangle" area for southbound traffic on US 395.

Figure 7. Alternative 1B



In order to reduce conflicts between the free right through traffic and vehicles exiting the K-Mart and Smart & Final driveway area, traffic in the free right lane would be prevented from merging with the second southbound lane of US 395 until after it had passed these driveways. However, modeling indicated that this channelization would lead to excessive queuing and access issues as the SB US 395 traffic approaches Sierra and Yaney Streets to the south.

Since this alternative fails the project purpose of increasing capacity and would add potential conflicts, it was removed from consideration as a viable alternative.

Access Management:
Under this alternative, Caltrans would acquire access rights along US 395 and US 6 and deny access to the highway. In order to restore access to private parcels, public access easements would be acquired on adjacent private parcels. Conflict points would be eliminated, therefore reducing the congestion, collision, and confusion problems caused by multiple access points.

Figure 8. Access Management

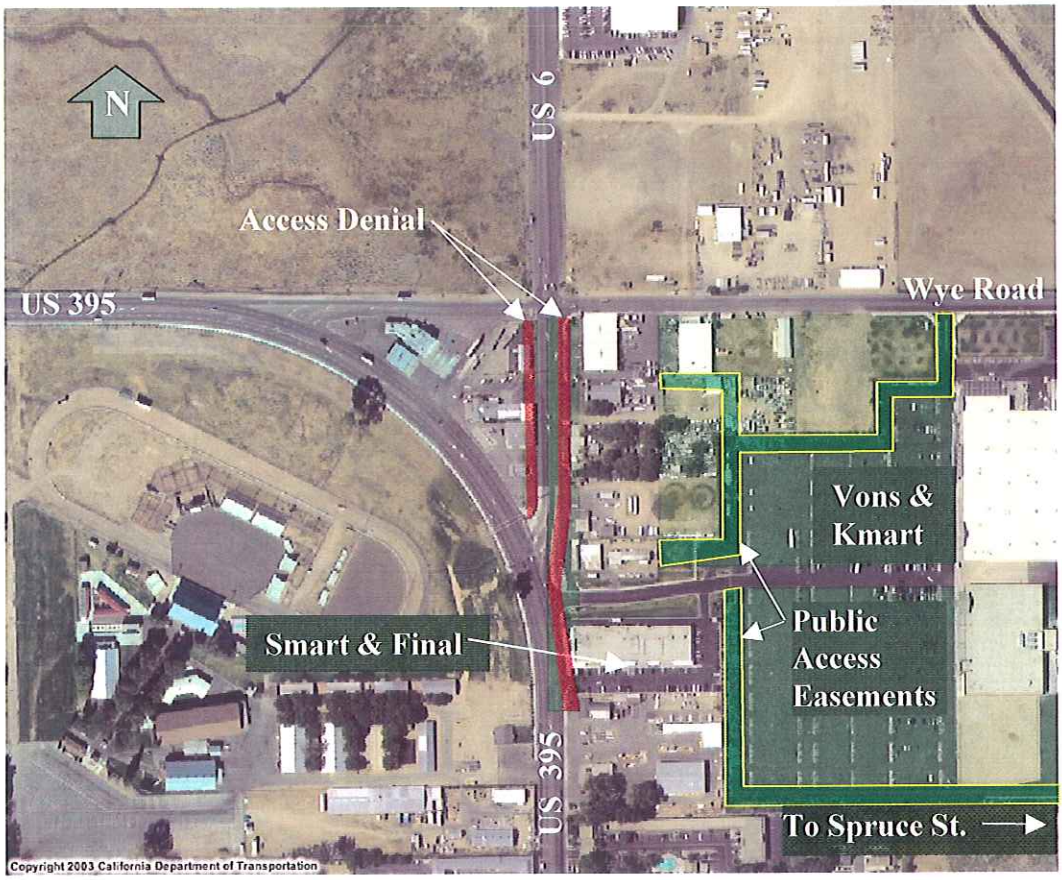


Figure 8 shows the proposed areas of access control. Access would be denied on the east side of US 395 and US 6 from the Smart and Final parcel north to the Wye Road intersection. Public access easements would then be obtained, mostly on the perimeter of the existing K-Mart/Vons parking lot, to restore access to existing businesses. Existing driveways that provide access to East Wye Road and Spruce Street would remain. Access rights would also be acquired on the west side of US 6 in the triangle area. In order to minimize impacts to businesses within the triangle area, access would still be available from US 395 and Wye Road. This segment of US 6 could then be four-lane highway (two lanes each north and south bound). Improvements to the Wye/US 6/US 395 intersections could also be included.

This alternative does not require additional State highway right-of way and environmental studies would be minimal. The easements that have been indicated are generally representative of where an easement might be located and the final locations could vary significantly based upon access needs and the availability of private land. The viability of this alternative is heavily dependent upon the impact to businesses as well as the acceptance of these easements by both the public and the City of Bishop. Since these impacts have not been determined, this alternative was not evaluated.

7. COMMUNITY INVOLVEMENT

As noted previously, the need for improvements to the US 395/US 6/Wye Road intersection was recognized in the BAACS. As a result, the public is generally aware of proposed improvements to this intersection through the public process held in conjunction with the BAACS.

Since this Feasibility Study Report only evaluates alternatives and does not program funds for their development, the alternatives and this FSR have not been presented to the public or circulated for further review. They have, however, been reviewed by the City of Bishop. If funded, this project will require additional meetings with the public, business owners, local agencies, and other stakeholders to fully assess the impacts and viability of each alternative.

8. ENVIRONMENTAL DETERMINATION / DOCUMENT

The anticipated environmental document for the proposed project is a Negative Declaration /Finding of No Significant Impact. The Federal Highway Administration and the California Department of Transportation would act as lead agencies in the preparation of a joint NEPA/CEQA (National Environmental Policy Act/California Environmental Quality Act) environmental document.

A preliminary evaluation of the environmental impacts was performed for each alternative. Some of the significant concerns include:

- All alternatives will require an archeological and historical property survey. A Section 4(f) Evaluation of impacts to the Tri-County Fairground may be required.

- An Initial Site Assessment (ISA) would be required for Alternatives 1 and 4 to address the potential for hazardous waste in the properties along US 6 and West Wye Road. Alternatives 2 and 3 may also require additional preliminary site investigations such as soil testing for hydrocarbons deposited as a result of underground storage tanks that may have existed or currently exist on adjacent properties.

- Alternatives 1 and 4 have the same scale of biological resource impacts, especially north along US 6 toward Bishop Creek and west along Wye Road from the Bishop Canal. Alternative 3 has greater biological impacts due to the area required for the roundabout north of US 6 and Wye Road. The risk of encountering sensitive biological resources is unknown, but could potentially trigger mitigation costs and permits. Alternative 2 has

the greatest potential impact, as it directly impacts the vacant pasture land toward the Dixon Lane / Meadow Creek area; biological studies and permits will be required. If special-status plant/animal species are discovered during the reconnaissance-level surveys, additional time and resources would be required to coordinate with U.S. Fish and Wildlife Services and California Department of Fish and Game.

- Depending upon which alternative is selected, the project would most likely require a 404 permit from the U.S. Army Corps of Engineers, a 401 Water Quality Certification from the Regional Water Quality Control Board and a Section 1602 Streambed Alteration Notification from the California Department of Fish and Game.

9. FUNDING

A funding source has not been identified for this project at this time. In the event that this project is funded, the next step would be development of a Project Initiation Document (PID).

Preliminary cost estimates have been prepared for each of the alternatives. Roadway costs consider all improvements associated with each alternative, including roadwork, signals, drainage, and sidewalks in the project area. Dollar amounts represent current (2009) costs without escalation. Due to the level of detail available, these cost estimates are useful for long range planning purposes only.

CONSTRUCTION AND R/W CAPITAL COST ESTIMATES (CURRENT)			
ALTERNATIVE	**ROADWAY COST**	**R/W COST**	**TOTAL COST**
ALTERNATIVE 1	$2,285,200	$888,000	$3,173,000
ALTERNATIVE 2	$3,019,000	$1,919,800	$4,939,000
ALTERNATIVE 3	$2,377,500	$1,850,000	$4,228,000
ALTERNATIVE 4	$2,220,500	$1,267,800	$3,488,000

10. DISTRICT CONTACTS

Project Manager	Cedrik Zemitis	760-872-5250
Design Manager	Brian Wesling	760-872-0630
Environmental Manager	Tom Mills	760-872-2424
Landscape Architect	R. Steve Miller	760-872-0784
System Planning	Brad Mettam	760-872-0691
Traffic Operations	Terry Erlwein	760-872-0650
Right of Way	Nancy Escallier	760-872-0641
Hydraulics	Andrew Brandt	760-872-8036
Project Engineer	Ron Chegwidden	760-872-0764

11. LIST OF ATTACHMENTS

A. Preliminary Environmental Notes
B. Preliminary Right of Way Summary
C. Traffic Report
D. Cost Estimates

12. REFERENCES

"The Bishop Area Access & Circulation Feasibility Study", California Department of Transportation, District 9, July 2007.

"US 395 Transportation Concept Report", California Department of Transportation, Office of System Planning, District 9, May 2000.

"Route 6 Route Concept Report", California Department of Transportation, System Planning Branch, District 9, March 1991.

"Goods Movement Study for US-395 Corridor", California Department of Transportation, District 9, June 2006.

ATTACHMENT A

Memorandum

Flex your power!
Be energy efficient!

To: Tony Symanovich
Caltrans District 9, Design

Date: February 10, 2009
File: EA 09-33270k

From: Sarah Gassner
Senior Environmental Planner
Southern Sierra Environmental Analysis Branch

Subject: Preliminary evaluations of the environmental impacts for Bishop Wye Traffic Circulation, there are four build alternatives and a No Build.

On January 12, 2009, the Project Development Team agreed to have a memorandum composed to outline potential environmental impacts for this project instead of the full Preliminary Environmental Assessment Report (PEAR) for the purpose of a Feasibility Study Report. Based on our understanding, this project would not likely to programmable at this time. Therefore, environmental impacts and technical studies have not been fully analyzed.

The anticipated environmental approval document for this proposed project is an Negative Declaration (ND)/Finding of No Significant Impact (FONSI).

Build Alternatives

	Alt 1	Alt 2	Alt 3	Alt 4	No Build
Community Impact Study	X	X	X	X	NA
Farmland	X	X	X	X	NA
Section 4(f) Evaluation	X	X	X	X	NA
Visual Resources	X	X	X	X	NA
Water Quality	X	X	X	X	NA
Floodplain Evaluation	X	X	X	X	NA
Noise Study	X	X	X	X	NA
Air Quality Study	X	X	X	X	NA
Paleontology	X	X	X	X	NA
Wild and Scenic River Consistency	NA	NA	NA	NA	NA
Cumulative Impacts	NA	NA	NA	NA	NA

X: Requires study including field surveys and reports.
NA: Issue is not applicable to the proposed project.

Cultural

- Alternatives 1, 2, 3 and 4: An archeological and historical property survey would be required for the project. The proposed Area of Potential Effect (APE) must include all access roads, work areas and staging areas beyond the existing paved highway. A Section 4(f) Evaluation for the Tri-County fairground may be required.

Hazardous Waste

- Initial Site Assessment (ISA) would be required for Alternative 1 to address the potential for hazardous waste properties along North U.S. 395 and Wye Road. Alternatives 2, 3 and 4 may require additional preliminary site investigation such as soil testing for hydrocarbons deposited as the result of underground storage tanks that may have existed or currently exist on adjacent properties.

Biological

- Alternatives 1 and 4 have the same scale of biological resources impacts, especially along north of U.S. 6 toward Bishop Creek and to the west of Wye Road/Bishop Canal.
- Alternative 3 has greater biological impacts due to the roundabout north of U.S. 395/Wye Road. The risk of encountering sensitive biological resources is unknown and could potentially trigger mitigation cost and permits.
- By constructing a new intersection for U.S. 395 and U.S. 6 to the northwest, alternative 2 would directly impact to the vacant pasture land toward the Dixon Lane Meadow Creek; additional biological studies and permits may be required. If special-status plant/animal species are discovered during the reconnaissance-level surveys, additional time and resources would be required to coordinate with U.S. Fish and Wildlife Services and California Department of Fish and Game.
- Environmental Sensitive Area (ESA) for the biological site would be included in the PS&E package.

Permits: A 404 permit from the U.S. Army Corps of Engineers, a 401 Water Quality Certification from the Regional Water Quality Control Board and a Section 1602 Streambed Alternation Notification from the California Department of Fish and Game would be required for this project.

ATTACHMENT B

State of California Business, Transportation and Housing Agency

Right of Way Data Sheet Report

To: Cedrik Zemitis
Project Manager – Bishop

Date: March 26, 2009
File Ref.: Inyo 6 PM 0.0-0.40
EA: 09-33270k
Alt No.: all 4

Attention: Brian Wesling, Design Manager
Ron Chegwidden, Project Engineer 872-0764

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

We have completed an estimate of the right of way costs for the above-referenced project based on the Right of Way Data Sheet Request Form dated: *January 22, 2009 – for a preliminary assessment of Right of Way Costs for the 4 Alternatives for the Bishop Wye Traffic Circulation Project* . 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. The January 2009 Bishop "Status of Projects", page 1, **has not** outlined a target right of way certification date: Project is in PID Stages.

3. The Project Engineer indicates that **new** right of way is required for this project.

4. The Environmental Branch has not provided a MCCE form so it is undetermined at this time if there are any permit filing fees on this project or mitigation requirements/costs. **Note:** the standard amount of $15,000.00 will be used to cover any unknowns.

5. Utility Relocations will occur. Companies involved are Verizon, SCE and City of Bishop water and sewer.

6. Right of Way activities (ordering title reports, preparing base maps, preparing appraisal maps, etc) can commence upon receipt of completed Certificate of Sufficiency. Anticipated Lead Times for this project will be –

   - Preparation of R/W Maps to Regular R/W activities (base map prep, order title reports, appraisal map prep, comparable sales search) — 6 Months
   - Regular R/W activities (acquiring parcels or permits, performing RAP, utility relocation activities) to Right of Way Certification. — 18 Months

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

ANTICIPATED Right of Way LEAD - TIME will require a minimum of 18 months after we receive certified Appraisal Maps, the necessary environmental clearances have been obtained, and freeway agreements have been approved.

for Nancy Escallier

NANCY ESCALLIER
Field Office Chief
Right of Way, Central Region - Bishop
(760) 872-0641; Fax (760) 872-0755

RIGHT OF WAY DATA SHEET

REQUEST DATE: 1-22-09

From: FRE ☐ STK ☐ SLO ☐ BIS ☒

District: 09 County:Inyo Route: 6
PM 0.0/0.40
EA 09-33270k Alt No.: 1

1. **RIGHT OF WAY COST ESTIMATE:**
(entered into PMCS COST RW1-5 Screens)

	Current Value Year 2009	Escalated 3 yrs - 2012	Escalated 5 yrs -2014
Acquisition (Excess, Damages, Goodwill and Grantor Appraisal fees)	$570,745.00	$660,709.00	$728,431.00
Project permit fees			
Mitigation			
Utility Relocation (States share)	$301,300.00	$348,792.00	$384,544.00
Relocation Assistance			
Clearance/Demolition			
Title and Escrow Fees	$ 1,000.00	$ 1,000.00	$ 1,000.00
TOTAL CURRENT VALUE	**$873,045.00**	**$1,010,501.00**	**$1,113,975.00**
R/W SUPPORT COSTS			
Environmental permit/filing fees	$15,000.00	$15,000.00	$15,000.00
Construction Contract Work (construction costs to be included in projects PS&E)			

2. Current anticipated date of RIGHT OF WAY CERTIFICATION: __n/a_____

3. **PARCEL DATA:**
(entered on PMCS EVNT RW screen)

TYPE	NUMBER	DUAL/APPR	UTILITIES		RR INVOLVEMENT	
X			U4-1	2	None	X
A	3		-2		C & M Agmt	
B			-3	1	Service Contract	
C			-4		Lic/RE/Clauses	
D					**MISC R/W WORK**	
TOTAL:	3		U5-7	3	RAP Displacement	None
			5-8		Clear/Demo	None
			5-9	3	Const Permits	
EXCESS:					Cond	

Parcel Area: **Right of Way** - 32,670 sf **Excess** - 0.0 sf

4. Items of construction contract work: YES ☐ NO ☒

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.): Land Owned by LA-DWP

YES - RIGHT OF WAY REQUIRED ☒ NO – NONE REQUIRED ☐

RIGHT OF WAY DATA SHEET

REQUEST DATE: 1-22-09
From: FRE ☐ STK ☐ SLO ☐ BIS ☒

District: 09 County: Inyo Route: 6
PM 0.0/0.40
EA 09-33270k Alt No.: 2

1. **RIGHT OF WAY COST ESTIMATE:**
(entered into PMCS COST RW1-5 Screens)

	Current Value Year 2009	Escalated 3 yrs - 2012	Escalated 5 yrs -2014
Acquisition (Excess, Damages, Goodwill and Grantor Appraisal fees)	$1,720,630.00	$1,991,844.00	$2,196,008.00
Project permit fees			
Mitigation			
Utility Relocation (States share)	$183,138.00	$243,757.00	$294,946.00
Relocation Assistance			
Clearance/Demolition			
Title and Escrow Fees	$ 1,000.00	$ 1,000.00	$ 1,000.00
TOTAL CURRENT VALUE	**$1,904,786.00**	**$2,237,000.00**	**$2,492,000.00**
R/W SUPPORT COSTS			
Environmental permit/filing fees	$15,000.00	$15,000.00	$15,000.00
Construction Contract Work (construction costs to be included in projects PS&E)			

2. Current anticipated date of RIGHT OF WAY CERTIFICATION: __n/a_____

3. **PARCEL DATA:**
(entered on PMCS EVNT RW screen)

TYPE	NUMBER	DUAL/APPR	UTILITIES		RR INVOLVEMENT	
X			U4-1	2	None	X
A	3		-2		C & M Agmt	
B			-3	1	Service Contract	
C			-4		Lic/RE/Clauses	
D					**MISC R/W WORK**	
TOTAL:	3		U5-7	3	RAP Displacement	None
			5-8		Clear/Demo	None
			5-9	3	Const Permits	
EXCESS:					Cond	

Parcel Area: **Right of Way** - 98,445 sf **Excess** - 0.0 sf

4. Items of construction contract work: YES ☐ NO ☒

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.): Land Owned by LA-DWP

YES - RIGHT OF WAY REQUIRED ☒ NO – NONE REQUIRED ☐

RIGHT OF WAY DATA SHEET

REQUEST DATE: 1-22-09
From: FRE ☐ STK ☐ SLO ☐ BIS ☒

District: 09 County: Inyo Route: 6
PM 0.0/0.40
EA 09-33270k Alt No.: 3

1. **RIGHT OF WAY COST ESTIMATE:**
(entered into PMCS COST RW1-5 Screens)

	Current Value Year 2009	Escalated 3 yrs - 2012	Escalated 5 yrs -2014
Acquisition (Excess, Damages, Goodwill and Grantor Appraisal fees)	$1,519,725.00	$1,759,272.00	$1,939,597.00
Project permit fees			
Mitigation			
Utility Relocation (States share)	$312,283.00	$415,649.00	$502,935.00
Relocation Assistance			
Clearance/Demolition			
Title and Escrow Fees	$ 3,000.00	$ 3,000.00	$ 3,000.00
TOTAL CURRENT VALUE	**$1,835,008.00**	**$2,178,000.00**	**$2,446,000.00**
R/W SUPPORT COSTS			
Environmental permit/filing fees	$15,000.00	$15,000.00	$15,000.00
Construction Contract Work (construction costs to be included in projects PS&E)			

2. Current anticipated date of RIGHT OF WAY CERTIFICATION: __n/a_____

3. **PARCEL DATA:**
(entered on PMCS EVNT RW screen)

TYPE	NUMBER	DUAL/APPR	UTILITIES		RR INVOLVEMENT	
X			U4-1	2	None	X
A	5		-2		C & M Agmt	
B			-3	1	Service Contract	
C			-4		Lic/RE/Clauses	
D					**MISC R/W WORK**	
TOTAL:	5		U5-7	3	RAP Displacement	None
			5-8		Clear/Demo	None
			5-9	3	Const Permits	
EXCESS:					Cond	

Parcel Area: **Right of Way -** 20,473 sf FEE, 62,228sf Easement **Excess** - 0.0 sf

4. Items of construction contract work: YES ☐ NO ☒

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.): 3 parcels owned by LA-DWP; 2 privately owned.

YES - RIGHT OF WAY REQUIRED ☒ NO – NONE REQUIRED ☐

RIGHT OF WAY DATA SHEET

REQUEST DATE: 1-22-09
From: FRE ☐ STK ☐ SLO ☐ BIS ☒

District: 09 County: Inyo Route: 6
PM 0.0/0.40
EA 09-33270k Alt No.: 4

1. **RIGHT OF WAY COST ESTIMATE:**
(entered into PMCS COST RW1-5 Screens)

	Current Value Year 2009	Escalated 3 yrs - 2012	Escalated 5 yrs -2014
Acquisition (Excess, Damages, Goodwill and Grantor Appraisal fees)	$1,044,200.00	$1,208,792.00	$1,332,693.00
Project permit fees			
Mitigation			
Utility Relocation (States share)	$207,633.00	$276,360.00	$334,395.00
Relocation Assistance			
Clearance/Demolition			
Title and Escrow Fees	$ 1,000.00	$ 1,000.00	$ 1,000.00
TOTAL CURRENT VALUE	**$1,252,833.00**	**$1,486,000.00**	**$1,668,000.00**
R/W SUPPORT COSTS			
Environmental permit/filing fees	$15,000.00	$15,000.00	$15,000.00
Construction Contract Work (construction costs to be included in projects PS&E)			

2. Current anticipated date of RIGHT OF WAY CERTIFICATION: __n/a_____

3. **PARCEL DATA:**
(entered on PMCS EVNT RW screen)

TYPE	NUMBER	DUAL/APPR	UTILITIES		RR INVOLVEMENT	
X			U4-1	2	None	X
A	2		-2		C & M Agmt	
B			-3	1	Service Contract	
C			-4		Lic/RE/Clauses	
D					**MISC R/W WORK**	
TOTAL:	2		U5-7	3	RAP Displacement	None
			5-8		Clear/Demo	None
			5-9	3	Const Permits	
EXCESS:					Cond	

Parcel Area: **Right of Way -** 59,678 sf **Excess -** 0.0 sf

4. Items of construction contract work: YES ☐ NO ☒

5. Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.): Land Owned by LA-DWP

YES - RIGHT OF WAY REQUIRED ☒ NO – NONE REQUIRED ☐

6. Effect on assessed valuation: YES ☐ NOT SIGNIFICANT ☒ NO ☐

7. Utility facilities or rights of way affected: YES ☐ Utility Worksheet (exhibit 13-ex-6) attached. NO ☐

Note: The following items may seriously impact lead time for utility relocation: a) Longitudinal policy conflict(s) b) Environmental concerns impacting acquisition of potential easements c) Power lines operating in excess of 50KV and substations.

8. Railroad facilities or rights of way affected: YES ☐ Railroad Worksheet attached. NO ☒

9. Previously unidentified sites with hazardous waste and/or material found: NONE EVIDENT ☒

10. RAP displacements required: YES ☐ NO ☒

11. Material borrow and/or disposal sites required: YES ☐ NO ☒

12. Potential relinquishments and/or vacations: YES ☐ NO ☒

13. Existing and/or potential Airspace sites: YES ☐ NO ☒

14. Environmental mitigation parcels required: YES ☐ Unknown at this time ☒

15. All Right of Way work will be performed by Caltrans staff: YES ☒ NO ☐

16. Data for evaluation provided by:

Estimator: Lora Ruchen for Andy Gillem Date: 3/24/09

Utility Relocation Coordinator: Lora Ruchen for Bob Pingel Date: 3/24/09

I have personally reviewed this Right of Way Data Sheet and all supporting information. I find this Data Sheet complete and current, subject to the limiting conditions set forth.

3/24/09
Date

Lora Ruchen for NANCY ESCALLIER
Field Office Chief
Right of Way, Central Region - Bishop

Entered onto PMCS Screens (Event, Cost, Agre.) By: _____ Date: _____

Date:2-2-09
P.M.: **EA:33270K**

UTILITIES	
U4-1	2
-2	
-3	1
-4	
U5-7	3
-8	
-9	3

Description of Project: Bishop Wye Rd.

Estimate for: [] Preliminary Route Estimate

[ ] R/W Data Sheet (Alternate #1)

Evidence of Utilities:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Anticipated Utility Relocations:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Estimated Cost of Utility Relocations:

						INITIAL RELOCATE		MOVE BACK
	Fiber Optic Line	@ $		/ft	= $		= $	
600	ft of UG Telephone Line	@ $	60	/m	= $	36,000	= $	
600	Ft Telephone Line	@ $	50	/ft	= $	30,000	= $	
	Wood Poles (Telephone)	@ $		/Pole	= $		= $	
12	Wood Poles (Electric)	@ $	15,000	/Pole	= $	180,000	= $	
	Steel Poles H-Poles	@ $		/Pole	= $		= $	
	Steel Towers	@ $		/Twr.	= $		= $	
10	Water Line lids	@ $	50	/m	= $	500	= $	
	Fire Hydrants	@ $		/F.H.	= $		= $	
2	Sewer Line lids	@ $	250	/m	= $	500	= $	
	m of Fiber Optics Line	@ $		/ft.	= $		= $	
25	Other Pot Holing	@ $	600	/	= $	15,000	= $	

TOTAL ESTIMATE (State's Share) =$ 262,000

Remarks: Edison, Verizon, City of Bishop

R/W UTILITY ESTIMATE WO[illegible]SHEET AND EXHIBIT

R/W DATA SHEET INSTRUCTIONS 13-EX-6 (Rev. 8/95)

Date:2-2-09
P.M.: **EA:33270K**

UTILITIES	
U4-1	2
-2	
-3	1
-4	
U5-7	3
-8	
-9	3

Description of Project: Bishop Wye Rd.

Estimate for: [] Preliminary Route Estimate

[ ] R/W Data Sheet (Alternate #2)

Evidence of Utilities:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Anticipated Utility Relocations:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Estimated Cost of Utility Relocations:

						INITIAL RELOCATE		MOVE BACK
	Fiber Optic Line	@ $		/ft	= $		= $	
600	ft of UG Telephone Line	@ $	60	/m	= $	36,000	= $	
600	Ft Telephone Line	@ $	50	/ft	= $	30,000	= $	
	Wood Poles (Telephone)	@ $		/Pole	= $		= $	
6	Wood Poles (Electric)	@ $	15,000	/Pole	= $	90,000	= $	
	Steel Poles H-Poles	@ $		/Pole	= $		= $	
	Steel Towers	@ $		/Twr.	= $		= $	
	Water Line lids	@ $		/m	= $		= $	
	Fire Hydrants	@ $		/F.H.	= $		= $	
1	Sewer Line lids	@ $	250	/m	= $	250	= $	
	m of Fiber Optics Line	@ $		/ft.	= $		= $	
5	Other Pot Holing	@ $	600	/	= $	3,000	= $	

TOTAL ESTIMATE (State's Share) =$ 159,250

Remarks: Edison, Verizon, City of Bishop

Date:2-2-09
P.M.: **EA:33270K**

UTILITIES	
U4-1	2
-2	
-3	1
-4	
U5-7	3
-8	
-9	3

Description of Project: Bishop Wye Rd.

Estimate for: [] Preliminary Route Estimate

[ ] R/W Data Sheet (Alternate #3)

Evidence of Utilities:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Anticipated Utility Relocations:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Estimated Cost of Utility Relocations:

						INITIAL RELOCATE		MOVE BACK
	Fiber Optic Line	@ $		/ft	= $		= $	
600	ft of UG Telephone Line	@ $	60	/m	= $	36,000	= $	
600	Ft Telephone Line	@ $	50	/ft	= $	30,000	= $	
	Wood Poles (Telephone)	@ $		/Pole	= $		= $	
12	Wood Poles (Electric)	@ $	15,000	/Pole	= $	180,000	= $	
	Steel Poles H-Poles	@ $		/Pole	= $		= $	
100	Ft Water lines	@ $	100	/Twr.	= $	10,000	= $	
6	Water Line lids	@ $	50	/m	= $	300	= $	
	Fire Hydrants	@ $		/F.H.	= $		= $	
1	Sewer Line lids	@ $	250	/m	= $	250	= $	
	m of Fiber Optics Line	@ $		/ft.	= $		= $	
25	Other Pot Holing	@ $	600	/	= $	15,000	= $	

TOTAL ESTIMATE (State's Share) =$ 271,550

Remarks: Edison, Verizon, City of Bishop

Date:2-2-09
P.M.: **EA:33270K**

UTILITIES	
U4-1	2
-2	
-3	1
-4	
U5-7	3
-8	
-9	3

Description of Project: Bishop Wye Rd.

Estimate for: [] Preliminary Route Estimate

[ ] R/W Data Sheet (Alternate # 4)

Evidence of Utilities:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Anticipated Utility Relocations:

[ ] Gas [x] Electric [x] Telephone [ ] Cable TV [x] Water
[x] Sewer [ ] Fiber Optics [ ] Other (explain in remarks)

Estimated Cost of Utility Relocations:

						INITIAL RELOCATE		MOVE BACK
	Fiber Optic Line	@ $		/ft	= $		= $	
200	ft of UG Telephone Line	@ $	60	/m	= $	12,000	= $	
600	Ft Telephone Line	@ $	50	/ft	= $	30,000	= $	
	Wood Poles (Telephone)	@ $		/Pole	= $		= $	
9	Wood Poles (Electric)	@ $	15,000	/Pole	= $	135,000	= $	
	Steel Poles H-Poles	@ $		/Pole	= $		= $	
	Ft Water lines	@ $		/Twr.	= $		= $	
6	Water Line lids	@ $	50	/m	= $	300	= $	
	Fire Hydrants	@ $		/F.H.	= $		= $	
1	Sewer Line lids	@ $	250	/m	= $	250	= $	
	m of Fiber Optics Line	@ $		/ft.	= $		= $	
5	Other Pot Holing	@ $	600	/	= $	3,000	= $	

TOTAL ESTIMATE (State's Share) =$ 180,550

Remarks: Edison, Verizon, City of Bishop

ATTACHMENT C

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: **RON CHEGWIDDEN**
Design J

Date: May 19, 2009

File: 09-33270K
INY-6-PM 0.00/0.45
Bishop Wye Traffic Circulation

From: **DONNA HOLLAND**
Traffic Operations

Subject: Traffic Index (TI) Calculations and Design Designation

Attached you will find the Traffic Index (TI) Calculations and Design Designation for the Bishop Wye Traffic Circulation project. This report is for the segment of the project on 6 between PM's 0.00 to 0.45 only. This report updates and replaces any report you may have received previously. Please include the DHV below as your Design Designation on your plan sheets.

Data Year……2007 AADT = 3800
Construction Year AADT……2017 AADT = 4450
5 Year AADT……..…… 2022 AADT = 4820
10 Year AADT…… 2027 AADT = 5220
20 Year AADT…… 2037 AADT = 6120
5 Year TI……..……2022 TI = 9.0
10 Year TI……..…… 2027 TI = 10.0
20 Year TI……..…… 2037 TI = 11.0
Construction Year DHV……..…..… 2017 DHV = 410
5 Year DHV……..…… 2022 DHV = 450
10 Year DHV……..……2027 DHV = 480
20 Year DHV……..……2037 DHV = 570
2007 Directional Split = 71.21 %
2007 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-PM 0.00/0.45
EA 09-33270K
JOB NAME Bishop Wye Traffic Circulation

Requested by: Ron Chegwidden
Unit: Design J
Date: 05/19/09

Census Year 2007
Construction Year 2017
Complete Construction Year 2017
2 Way AADT 3,800
Lane Distribution Factor 1.0 (Table 602.3B, Highway Design Manual)

	AM Peak	PM Peak
Peak Hour Percent, K	8.47	9.28
Directional Split, D	71.21	61.30
Product of K and D, KD	6.03	5.69
DHV = AADT x K /100	322	353

PERCENT TRUCKS (%) 12.0
1 WAY TRUCK VOLUME 325
GROWTH FACTOR, %/Year 1.6

----------TRAFFIC INDEX CALCULATIONS----------

Traffic Index Calculations are based on completion of construction per HDM 103.2

FIVE YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	5 Year Constant	Lane Factor	ESALs
2 axle	12.9	42.0	1.2195	51.0	345	1	17,595
3 axle	4	13.0	1.2195	16.0	920	1	14,720
4 axle	0	0.0	1.2195	0.0	1470	1	0
5 axle	83.1	270.0	1.2195	329.0	3445	1	1,133,405
TOTALS	100	325.0		396.0			1,165,720

Five Year TI **9.0**

TEN YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	10 Year Constant	Lane Factor	ESALs
2 axle	12.9	42.0	1.2688	53.0	690	1	36,570
3 axle	4	13.0	1.2688	16.0	1840	1	29,440
4 axle	0	0.0	1.2688	0.0	2940	1	0
5 axle	83.1	270.0	1.2688	343.0	6890	1	2,363,270
TOTALS	100	325.0		412.0			2,429,280

Ten Year TI **10.0**

TWENTY YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	20 Year Constant	Lane Factor	ESALs
2 axle	12.9	42.0	1.3736	58.0	1380	1	80,040
3 axle	4	13.0	1.3736	18.0	3680	1	66,240
4 axle	0	0.0	1.3736	0.0	5880	1	0
5 axle	83.1	270.0	1.3736	371.0	13780	1	5,112,380
TOTALS	100	325.0		447.0			5,258,660

Twenty Yr TI **11.0**

SHOULDER TIs

Design Life	2% ESALs	TI
5 Year	23,314	**5.5**
10 Year	48,586	**6.5**
20 Year	105,173	**7.0**

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

Design Designation is based on year of construction per HDM 103.1

Construction Year AADT..... AADT (2017) = 4450
Five Year AADT..... AADT (2022) = 4820
Ten Year AADT..... AADT (2027) = 5220
Twenty Year AADT..... AADT (2037) = 6120
Construction Year DHV..... DHV (2017) = 410
Five Year DHV..... DHV (2022) = 450
Ten Year DHV..... DHV (2027) = 480
Twenty Year DHV..... DHV (2037) = 570
D = 71.21 %
T = 12.0 %

TRAFFIC OPERATIONS

May 19, 2009
DATE

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: **RON CHEGWIDDEN**
Design J

Date: May 19, 2009

File: 09-33270K
INY-395-PM 116.0/116.70
Bishop Wye Traffic Circulation

From: **DONNA HOLLAND**
Traffic Operations

Subject: Traffic Index (TI) Calculations and Design Designation

Attached you will find the Traffic Index (TI) Calculations and Design Designation for the Bishop Wye Traffic Circulation project. This report is for the segment of the project on 395 between PM's 116.0 to 116.70 only. This updates any previous letter you have received. Please include the DHV below as your Design Designation on your plan sheets.

Data Year……2007 AADT = 15900
Construction Year AADT……2017 AADT = 16710
5 Year AADT……2022 AADT = 17140
10 Year AADT……2027 AADT = 17570
20 Year AADT……2037 AADT = 18470
5 Year TI……2022 TI = 8.5
10 Year TI……2027 TI = 9.0
20 Year TI……2037 TI = 10.0
Construction Year DHV……2017 DHV = 1780
5 Year DHV……2022 DHV = 1820
10 Year DHV……2027 DHV = 1870
20 Year DHV……2037 DHV = 1960
2007 Directional Split = 59.82 %
2007 Trucks = 3.0 %

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-395-PM 116.0/116.70
EA 09-33270K
JOB NAME Bishop Wye Traffic Circulation

Requested by: Ron Chegwidden
Unit: Design J
Date: 05/19/09

Census Year	2007	
Construction Year	2017	
Complete Construction Year	2017	
2 Way AADT	15,900	
Lane Distribution Factor	1.0	(Table 602.3B, Highway Design Manual)

	AM Peak	PM Peak
Peak Hour Percent, K	10.63	9.88
Directional Split, D	54.97	59.82
Product of K and D, KD	5.84	5.91
DHV = AADT x K /100	1690	1571

PERCENT TRUCKS (%)	3.0
1 WAY TRUCK VOLUME	285
GROWTH FACTOR, %/Year	0.5

----------TRAFFIC INDEX CALCULATIONS----------

Traffic Index Calculations are based on completion of construction per HDM 103.2

FIVE YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	5 Year Constant	Lane Factor	ESALs
2 axle	35	100.0	1.0643	106.0	345	1	36,570
3 axle	19	54.0	1.0643	57.0	920	1	52,440
4 axle	1.1	3.0	1.0643	3.0	1470	1	4,410
5 axle	44.9	128.0	1.0643	136.0	3445	1	468,520
TOTALS	100	285.0		302.0			561,940

Five Year TI **8.5**

TEN YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	10 Year Constant	Lane Factor	ESALs
2 axle	35	100.0	1.0777	108.0	690	1	74,520
3 axle	19	54.0	1.0777	58.0	1840	1	106,720
4 axle	1.1	3.0	1.0777	3.0	2940	1	8,820
5 axle	44.9	128.0	1.0777	138.0	6890	1	950,820
TOTALS	100	285.0		307.0			1,140,880

Ten Year TI **9.0**

TWENTY YEAR TRAFFIC INDEX

Vehicle Type	Trucks (%)	Present ADT One Way	Expansion Factor	Expanded ADT One Way	20 Year Constant	Lane Factor	ESALs
2 axle	35	100.0	1.1049	110.0	1380	1	151,800
3 axle	19	54.0	1.1049	60.0	3680	1	220,800
4 axle	1.1	3.0	1.1049	3.0	5880	1	17,640
5 axle	44.9	128.0	1.1049	141.0	13780	1	1,942,980
TOTALS	100	285.0		314.0			2,333,220

Twenty Yr TI **10.0**

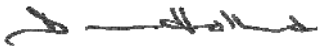
SHOULDER TIs

Design Life	2% ESALs	TI
5 Year	11,239	**5.5**
10 Year	22,818	**5.5**
20 Year	46,664	**6.0**

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

Design Designation is based on year of construction per HDM 103.1

Construction Year AADT..... AADT (2017) = 16710
Five Year AADT..... AADT (2022) = 17140
Ten Year AADT..... AADT (2027) = 17570
Twenty Year AADT..... AADT (2037) = 18470
Construction Year DHV..... DHV (2017) = 1780
Five Year DHV..... DHV (2022) = 1820
Ten Year DHV..... DHV (2027) = 1870
Twenty Year DHV..... DHV (2037) = 1960
D = 59.82 %
T = 3.0 %



TRAFFIC OPERATIONS

May 19, 2009
DATE

May 13, 2009

TRAFFIC DATA REPORT

Project: **Bishop Wye Traffic Circulation, Inyo 395 and Inyo 6, EA 33270K**

Speed: The following information was compiled from the speed zone survey within the project limits on Inyo 6. At PM 0.15, the northbound 85th percentile speed is 47 mph and the southbound is 47 mph. The northbound pace speed is 36-45 mph and the southbound is 33-42 mph. The posted speed limit is 35 mph.

The following information is from the speed zone survey for Inyo 395 within the project limits at PM 116.25. The project is in a 25 mph speed zone to the signalized intersection at PM 116.25 and 35 mph speed zone after PM 116.25. The northbound 85th percentile speed is 39 mph and the southbound speed is 37 mph. The northbound pace speed is 30-39 mph and the southbound pace speed is 28-37 mph.

Accident Data: The following information was collected from a 3 year Table B (dated April 1, 2005 to March 31, 2008) along Inyo 395 (PM 116.0 to PM 116.7) and Inyo 6 (PM 0.0 to 0.5). Intersection analyses were also completed for Inyo 395 / Inyo 6, Inyo 395 / Wye Road at PM 116.45 and Inyo 6 / Wye Road at PM 0.13. This is the most current data available.

Accident Rates expressed in Million Vehicle Miles (MVM).

Inyo 395 PM 116.0 to PM 116.7 Accident Rates (Per MVM)*		
Types	Actual Avg.	Statewide Avg.
Fatal	0.000	0.026
F + I*	0.26	0.54
Total	0.78	1.35
* Accidents per Million Vehicle Miles		
* Fatal plus Injury		

Summary:

There were nine collisions recorded during the three-year study period. Of the nine collisions there were zero fatal accidents, three injury accidents and six accidents recorded as property damage only (PDO). Eight of the nine collisions involved multiple vehicles and one was recorded as vehicle verses pedestrian.

See individual accident data in attached spreadsheet.

Accident Statistics:

General Information
(6) 66.7% Northbound
(6) 66.7% Occurred at an Intersection
(8) 88.9% Multiple Vehicles

The types of accidents and the primary collision factors are as follows:

Primary Collision Factor	Type of Collision				
	Side-Swipe	Rear-End	Broad-side	Hit Object	Auto/Ped
Failure to Yield	1		2		
Speeding		4			
Other Violation				1	1
Total	1	4	2	1	1

Inyo 6 PM 0.0 to PM 0.5 Accident Rates (Per MVM)*		
Types	Actual Avg.	Statewide Avg.
Fatal	0.000	0.024
F + I*	2.46	0.41
Total	3.94	0.97
* Accidents per Million Vehicle Miles		
* Fatal plus Injury		

Summary:

There were eight collisions recorded during the three-year study period. Of the eight collisions there were zero fatal accidents, five injury accidents and three accidents recorded as property damage only (PDO). Seven of the eight collisions involved multiple vehicles and one was recorded as vehicle verses dismounted pedestrian.

See individual accident data in attached spreadsheet.

Accident Statistics:

General Information
(5) 62.5% Northbound
(5) 62.5% Occurred at an Intersection
(7) 87.5% Multiple Vehicles

The types of accidents and the primary collision factors are as follows:

Primary Collision Factor	Type of Collision			
	Side-Swipe	Broad-side	Hit Object	Auto/Ped
Influence of Alcohol			1	1
Failure to Yield		3		
Improper Turn	1			
Other Violation	1		1	
Total	2	3	2	1

Individual Intersection Analysis:

Inyo 395 and Inyo 6

The intersection accident history for Inyo 395 and Inyo 6 indicates that the fatal accident rate, actual fatal plus injury and the total accident rate is lower than the statewide average accident rates. Therefore, further analysis is not required. The accident history was collected from a three year table b dated April 1, 2005 to March 31, 2008. The accident rates in accidents per million-vehicles (MV) are:

Intersection	Actual (MV)			Statewide Average (MV)		
Inyo 395 / Inyo 6	Fatal	F+I	Total	Fatal	F+I	Total
PM 116.45 / PM 0.00	0.000	0.05	0.19	0.002	0.11	0.30

Inyo 395 and Wye Road (PM 116.45)

The intersection accident history for Inyo 395 and Wye Road (PM 116.45) indicates that the actual fatal plus injury is equal to the statewide average fatal plus injury and total accident rate is higher than the statewide average total accident rate. The accident history was collected from a three year table b dated April 1, 2005 to March 31, 2008. The accident rates in accidents per million-vehicles are:

Intersection	Actual (MV)			Statewide Average (MV)		
Inyo 395 / Wye Road	Fatal	F+I	Total	Fatal	F+I	Total
PM 116.45	0.000	0.06	0.18	0.001	0.06	0.15

This is a three-legged "T" intersection controlled with a 30in R1-1 (STOP) sign for traffic turning from Wye Road to the southbound lanes of Inyo 395. For traffic entering northbound Inyo 395 from Wye Road the entrance ramp is controlled by a R1-2 (YIELD) sign. The intersection is relatively flat with adequate sight distance. There is no street lighting at this intersection. There were three accidents (0-Fatal, 1-Injury, 2-PDO) reported for this intersection. The type of accidents and the primary collision factors are as follows:

Primary Collision Factor	Type of Collision		
	Side-swipe	Rear End	Broad-side
Failure to Yield	1		1
Speeding		1	
Total	1	1	1

Accident Summaries:

Inyo 395 (PM 116.45) – Party 1 was traveling northbound on Inyo 395 in the number 2 lane. Party 2 was merging onto northbound Inyo 395 from Wye Road and failed to yield right of way to party 1. Party 2 caused this two vehicle side swipe collision by failing to yield right of way to approaching vehicles on the intersection highway. This was a non injury collision.

Inyo 395 (PM 116.45) – This non injury rear end accident occurred when party 2 failed to notice that party 1 was stopped waiting to enter northbound Inyo 395 from westbound Wye Road. Party 2 was cited as the causer of the collision by driving at an unsafe speed for the roadway conditions.

Inyo 395 (PM 116.45) – This injury broadside collision was caused by party 1 who failed to yield right of way to party 2. Party 1 attempted to make a left turn from southbound Inyo 395 onto eastbound Wye Road. Party 1 failed to see party 2 in the northbound #2 lane of Inyo 395 and pulled directly into the traveling path of party 2.

Inyo 6 and Wye Road (PM 0.13)

The intersection accident history for Inyo 6 and Wye Road (PM 0.13) indicates that the actual fatal plus injury and total accident rate are higher than the statewide average fatal plus injury and total accident rate. The accident history was collected from a three year table b dated April 1, 2005 to March 31, 2008. The accident rates in accidents per million-vehicles are:

Intersection	Actual (MV)			Statewide Average (MV)		
Inyo 6 / Wye Road	Fatal	F+I	Total	Fatal	F+I	Total
PM 0.13	0.000	0.67	0.90	0.006	0.13	0.30

This is a four-legged intersection with no controls along Inyo 6. Wye Road (eastbound and westbound) is controlled by 30in R1-1 (STOP) signs. The intersection is relatively flat with adequate sight distance. There is a street light located at the northeast corner of the intersection. There were four accidents (0-Fatal, 3-Injury, 1-PDO) reported for this intersection. The type of accidents and the primary collision factors are as follows:

Primary Collision Factor	Type of Collision	
	Sideswipe	Broadside
Failure to Yield		3
Improper Turn	1	
Total	1	3

Accident Summaries:

Inyo 6 (PM 0.13) – This injury broadside collision was caused by party 1 failing to yield right of way to traffic on Inyo 6. Party 1 was stop in the westbound lane of Wye Road and did not see the approaching vehicle of Party 2 traveling northbound on Inyo 6. After Party 1 entered the intersection Party 2 tried to avoid the collision but was unsuccessful.

Inyo 6 (PM 0.13) – Party 1 was driving northbound on Inyo 6 approaching Wye Road when Party 2 entered the intersection from the west leg of Wye Road. Party 2 caused this injury broadside collision by failing to yield right of way to party 1 driving on Inyo 6.

Inyo 6 (PM 0.13) – This non injury side swipe collision was caused by party 1 making a unsafe turning movement from eastbound Wye Road to northbound Inyo 6 in front of party 2 who was traveling southbound on Inyo 6.

Inyo 6 (PM 0.13) – This injury broadside collision occurred in the northbound lane of Inyo 6, party 1 was traveling westbound on Wye Road, stop at the stop sign then continued across the intersection into the path of party 2 who was traveling northbound on Inyo 6. Party 1 was cited as the cause of the collision by failing to yield right of way to approaching traffic.

ATTACHMENT D

Bishop Wye Traffic Circulation Improvement
Summary of Alternatives

	Roadway Cost	Right of Way Cost	Total
Alternative 1	$2,285,200	$888,000	***$3,173,000***
Alternative 2	$3,019,000	$1,919,800	***$4,939,000***
Alternative 3	$2,377,500	$1,850,000	***$4,228,000***
Alternative 4	$2,220,500	$1,267,800	***$3,488,000***

Bishop Wye Traffic Circulation Improvement
Alternative 1 - Roadway Cost

ITEM *DESCRIPTION*	*UNIT*	*QUANTITY*	*PRICE*	*AMOUNT*
Imported Borrow	CY			
Asphalt Concrete	TON	2,755	$ 200.00	$551,000
Class 2 Aggregate Base	CY	660	$ 100.00	$66,000
Sidewalks, Curb and Gutter (minor Concrete)	CY	612	$ 650.00	$397,800
Drainage	LS	1	$ 50,000.00	$50,000
Traffic Signals	LS	1	$ 400,000.00	$400,000
Minor Items (10%)	LS			$146,480
Roadway Mobilization (10%)	LS			$146,480

PROJECT SUBTOTAL = $1,757,800

SUPPLEMENTAL WORK 10% = $175,800
CONTINGINCIES 20% = $351,600

Apr 2009 PROJECT TOTAL = **$2,285,200**

Bishop Wye Traffic Circulation Improvement
Alternative 2 - Roadway Cost

ITEM *DESCRIPTION*	*UNIT*	*QUANTITY*	*PRICE*	*AMOUNT*
Imported Borrow	CY	7,200	$ 40.00	$288,000
Asphalt Concrete	TON	2,770	$ 200.00	$554,000
Class 2 Aggregate Base	CY	1,300	$ 100.00	$130,000
Sidewalks, Curb and Gutter (minor Concrete)	CY	405	$ 650.00	$263,250
Drainage	LS	1	$ 100,000.00	$100,000
Traffic Signals	LS	1	$ 600,000.00	$600,000
Minor Items (10%)	LS			$193,525
Roadway Mobilization (10%)	LS			$193,525

PROJECT SUBTOTAL = $2,322,300

SUPPLEMENTAL WORK 10% = $232,200
CONTINGINCIES 20% = $464,500

Apr 2009 PROJECT TOTAL = **$3,019,000**

Bishop Wye Traffic Circulation Improvement
Alternative 3 - Roadway Cost

ITEM *DESCRIPTION*	*UNIT*	*QUANTITY*	*PRICE*	*AMOUNT*
Imported Borrow	CY	5,850	$ 40.00	$234,000
Asphalt Concrete	TON	3,200	$ 200.00	$640,000
Class 2 Aggregate Base	CY	1,330	$ 100.00	$133,000
Sidewalks, Curb and Gutter (minor Concrete)	CY	680	$ 650.00	$442,000
Drainage	LS	1	$ 75,000.00	$75,000
Traffic Signals	LS			
Minor Items (10%)	LS			$152,400
Roadway Mobilization (10%)	LS			$152,400

PROJECT SUBTOTAL = $1,828,800

SUPPLEMENTAL WORK 10% = $182,900
CONTINGINCIES 20% = $365,800

Apr 2009 PROJECT TOTAL = **$2,377,500**

Bishop Wye Traffic Circulation Improvement
Alternative 4 - Roadway Cost

ITEM *DESCRIPTION*	*UNIT*	*QUANTITY*	*PRICE*	*AMOUNT*
Imported Borrow	CY	3,360	$ 40.00	$134,400
Asphalt Concrete	TON	2,460	$ 200.00	$492,000
Class 2 Aggregate Base	CY	895	$ 100.00	$89,500
Sidewalks, Curb and Gutter (minor Concrete)	CY	550	$ 650.00	$357,500
Drainage	LS	1	$ 50,000.00	$50,000
Traffic Signals	LS	1	$ 300,000.00	$300,000
Minor Items (10%)	LS			$142,340
Roadway Mobilization (10%)	LS			$142,340

PROJECT SUBTOTAL = $1,708,100

SUPPLEMENTAL WORK 10% = $170,800
CONTINGINCIES 20% = $341,600

Apr 2009 PROJECT TOTAL = **$2,220,500**