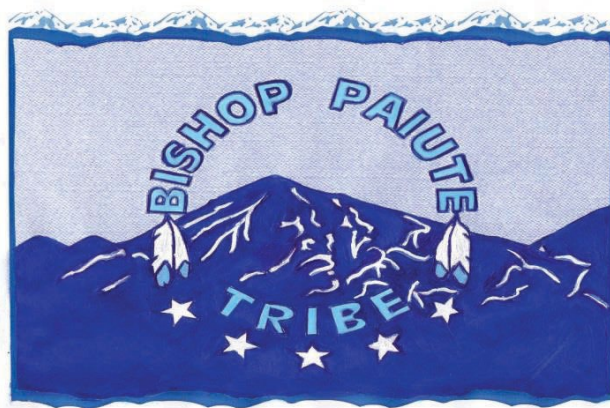


LONG RANGE TRANSPORTATION
IMPROVEMENTS PLAN

BISHOP PAIUTE RESERVATION



NOVEMBER 2013

Prepared By



Bishop, CA

CONTENTS

INTRODUCTION.....	2
PURPOSE.....	2
MODES OF TRANSIT.....	3
AUTOMOBILE.....	3
PUBLIC TRANSIT	3
BICYCLE AND WALKING.....	3
EXISTING CONDITIONS.....	3
ROADS.....	3
BICYCLE ROUTES.....	6
WALKING PATHS.....	6
PRIOR STUDIES.....	7
PROPOSED PROJECTS.....	8
TRANSPORTATION IMPROVEMENT PLANS	10
WINUBA NORTH EXTENSION	10
WINUBA LANE SOUTH EXTENSION.....	18
INTERIOR ROADS	23
STREET LIGHTING	32
WALKING AND BICYCLE TRAILS	34
SIDEWALKS	38
PARKING LOTS	42

INTRODUCTION

The Bishop Paiute Reservation was formed via a land exchange in 1939 with the City of Los Angeles. The current Reservation consists of approximately 875 acres of land adjacent to and west of the City of Bishop. It is centrally located between the major population areas of the City of Bishop to the east, and the unincorporated residential areas to the west and north of the Reservation. The current population of the Bishop Reservation is approximately 2,500 persons with about 1,500 of those being enrolled tribal members.

The Bishop Paiute Reservation is also home to many commercial and economic developments, including the Paiute Palace Casino and Gas Station, U.S. Forest Service and Bureau of Land Management Headquarters, California Department of Motor Vehicles, as well as numerous other small businesses.

Also located on the Bishop Paiute Reservation are numerous Tribal entities including the Bishop Paiute Tribe's government and administrative offices, Toiyabe Indian Health Project clinic and dialysis center, Owens Valley Career Development Center, Head Start School, and Bishop Paiute Development Corporation.

Because of these many residential, commercial and governmental facilities on the Bishop Paiute Indian Reservation, it is important that the transit and transportation needs of the Reservation be thoroughly studied, and any deficiencies be identified and addressed.

PURPOSE

The primary purpose of this report is to identify potential transit and transportation improvement projects within the Bishop Paiute Reservation, and further explore these projects in terms of benefits and costs and identify the costs and steps needed to complete these projects. This report should allow for accurate pre-planning and funding information to allow for projects to be selected and funded for future construction.

MODES OF TRANSIT

Most residents of the Bishop Paiute Tribe Reservation rely on one of four basic modes of transit: private automobile, public transportation, bicycling or walking.

AUTOMOBILE

The primary mode of transportation on the Bishop Reservation is via private automobile. Because of the distance from the Reservation and the commercial center of downtown Bishop as well as Bishop's remoteness from other major population centers, most people on the Reservation rely on private automobile to get to and from home and/or work each day.

PUBLIC TRANSIT

Because of Bishop's relatively small population and rural nature, public transit is limited. Currently, the main form of public transit is through the Eastern Sierra Transit Authority (ESTA). ESTA operates and maintains the Dial-a-Ride system which works much like a taxi service in that residents can call and have the on-duty Dial-a-Ride bus pick them up and drop them off at their destination for a fixed fee. This is a popular choice for many people on the Reservation who do not have their own automobile.

In addition to ESTA, the local schools also maintain and operate buses that transport children to and from school each day. These buses generally follow a fixed route with regular bus stops that pick up and drop off children.

BICYCLE AND WALKING

Many people choose to ride a bicycle or walk to their chosen destination. Bicycles and walking are common among children coming and going to school. It is also a common mode of transit for trips within the Reservation either to the Casino or to the Tribal government center and Toiyabe Indian Health Clinic.

EXISTING CONDITIONS

ROADS

Currently the Reservation has two State Highways that border and run through the Reservation. Us Hwy 395 runs along the northern border of the Bishop Reservation and State Route 168 which is also known as West Line Street runs east-west through the south central portion of the Bishop Reservation. Both of these Highways are 4 lane roads owned and maintained by the California Department of Transportation and are in excellent to good condition. These two highways

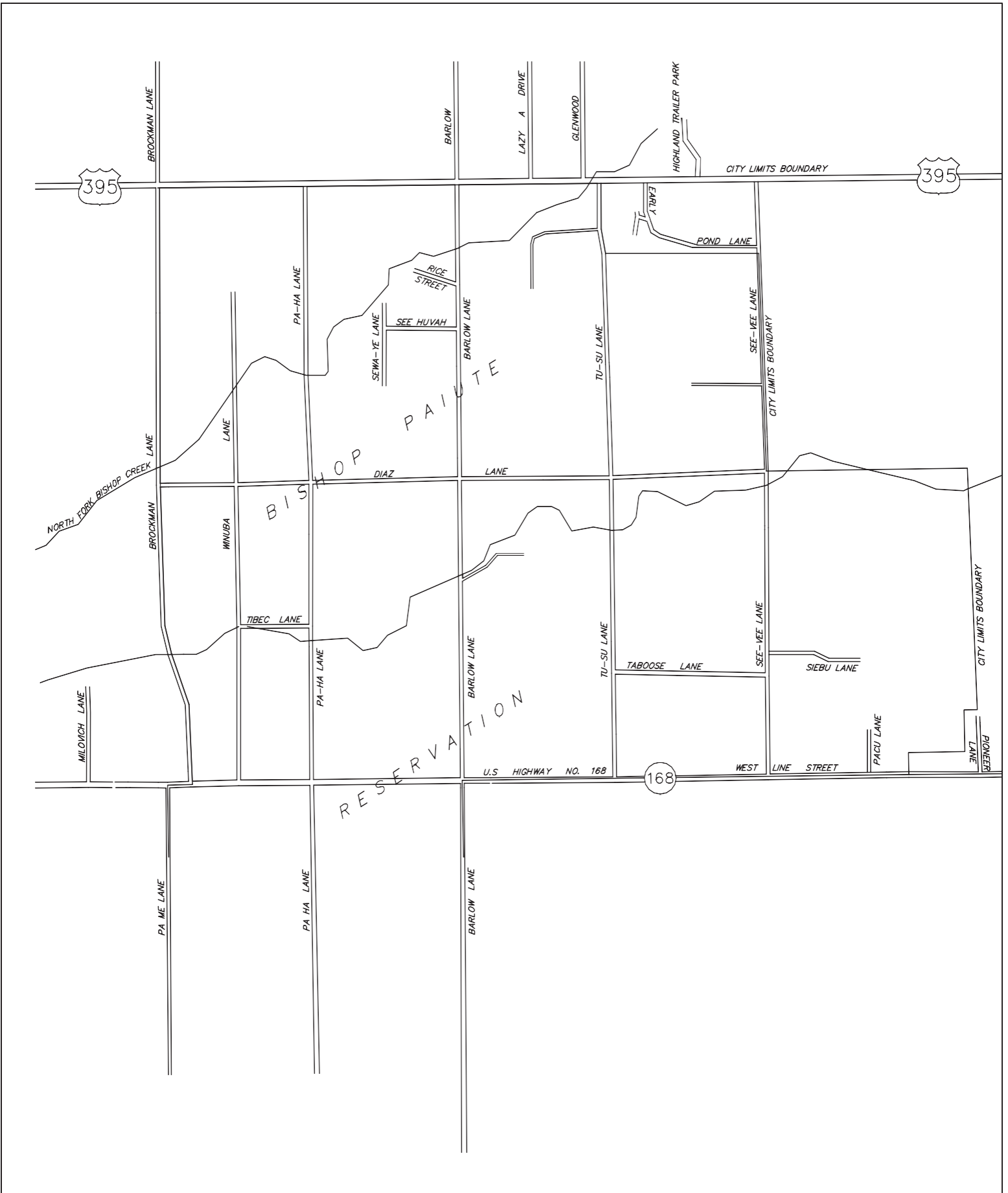
connect to several County and Tribe owned roads that comprise the circulation network for the Bishop Reservation.

Overall, traffic circulation is good on the Bishop Reservation. Traffic counts are low in comparison to the level of service each road provides and overall circulation is good. Most of the County and Tribe owned roads have been recently resurfaced and restriped.

The current deficiencies in traffic circulation exist in not having enough interior roads within the Reservation to access interior land assignments. Many land assignments slated for future housing are land locked and access is by the use of long dirt driveways usually across a neighboring land assignment. This makes it very difficult particularly for access for Dial-a-Ride service as the buses often cannot access and turn around on these driveways. In addition several of the existing interior roads end in abrupt dead ends and lack either a cul-de-sac type of turn around or alternate access route for buses, trash trucks and delivery vehicles to safely gain access and egress to many homes on the Reservation.

For the most part the Bishop Reservation roads have street lights at most major intersections and along the county roads and US 395 and Hwy 168, but some of the interior streets of the Reservation do not have street lights or have very few to provide adequate lighting for pedestrians at night. The addition of more street lighting in some areas of the Reservation would be beneficial.

Another issue is a lack of adequate off street parking at the Owens Valley Career Development Center area which cause workers to have to park along Diaz Lane and presents a traffic hazard at this location. Parking improvements are also needed at other locations on the Reservation.



RESERVATION STREET MAP

SCALE
NO SCALE

BISHOP PAIUTE RESERVATION



BICYCLE ROUTES

Currently the Bishop Reservation has very few dedicated bicycle paths. Both US 395 and Hwy 168 have dedicated bicycle lanes on both sides. The bicycle path on the east side of South Barlow Lane is the only other current improved path for bicycles. In general, bicycles share the travel lanes with automobiles on the county and Tribe owned roads. There are also several unimproved paths throughout the Reservation that are being used by bicycles as shortcuts to various locations, but none of these can be considered true bicycle paths.

WALKING PATHS

There are very few sidewalks or walking trails on the Reservation. The only sidewalks are along US 395 and along the eastern portion of Hwy 168. Currently there are plans in place to extend the existing sidewalks on the north side of State Route 168 which will help provide safer pedestrian routes to and from the local area schools and hospital. Most of the reservation has wide dirt shoulders for pedestrian access which are often overgrown with weeds and tree branches which can make transit difficult for pedestrians and bicycles. There currently exists a dirt path between the Reservation and the schools to the east known as the Indian Trail which is used often, but it is unmaintained and poorly graded. There is also a series of trails leading to and from the Conservation and Open Space (COSA) area that were constructed recently, but the connector trails to West Line Street, and other areas have yet to be constructed.



Walking Path behind Cultural Center west of Tu Su Lane leading to COSA area

PRIOR STUDIES

The following prior studies were reviewed for this report and various projects were selected based on the findings of these reports. Most of the reports are now quite dated so many of the highlighted projects from these past reports have either been completed or are no longer being considered.

- Bishop Reservation Transportation Plan – October 1996
 - Prepared by ASCG, Inc. for the Bureau of Indian Affairs is a thorough transportation plan for the Bishop Paiute Reservation. It is rather dated at this time though.
- Bishop Reservation Traffic Circulation Report – September 2003
 - Prepared by Caltrans give a good description of circulation on the Reservation including traffic volumes and trip generation data.
- Bishop Reservation Pedestrian and Bicycle Safety Plan – 2007
 - This report addresses safety issues for bicyclists and pedestrians within the Reservation and recommends various projects to improve safety.
- Inyo County Collaborative Bikeways Plan – November 2008
 - A collaborative effort from Caltrans, Inyo County, City of Bishop and Bishop Paiute Tribe to improve bicycle transit. The plan contains several recommended projects for the Bishop Paiute Reservation.
- Bishop Paiute Indian Tribe, A Traffic Safety Evaluation – January 2006
 - Prepared by UC Berkeley this study looked at safety issues in regards to traffic and made several recommendations in terms striping, signage, street lighting, etc.

PROPOSED PROJECTS

From the prior reports studied as well as from discussion with Tribal staff the following list of needed transit and transportation projects was generated. Detailed discussions of each project are contained in the next section.

Winuba North Extension

This project involves extending Winuba Lane to the North to connect with Hwy 395 to provide better access and circulation for traffic and to provide better services to residents in this area.

Winuba South Extension

The Winuba South Extension involves extending Winuba lane from Hwy 168 south to the southern boundary of the Reservation. A connector road to South Pa Ha lane or to Pa Me lane would also be considered in this project to improve circulation.

Interior Roads

There are numerous interior roads within the Reservation that are mapped out but not yet built. These interior roads would provide better access to land locked assignments and would help to improve circulation and accessibility throughout the Reservation. Currently the Bishop Paiute Tribe is constructing three of these roads, presently named Roads F, G and H. These roads are located between North Barlow and Tu Su Lane and between Tu Su Lane and See Vee Lane. Both Roads provide connection points to Diaz lane and connect to Tu Su lane to improve circulation and access.

Street Lighting

This project would involve upgrading existing street lights and adding additional street lights on the Reservation to improve night safety for both vehicles and pedestrians.

Walking and Bicycle Trails

Currently there are plans to add additional trails in the Conservation and Open Space Area (COSA) located on the eastern portion of the Reservation for recreational use as well as to provide better access for pedestrians and bicycles to local area schools and hospitals. There are also plans for the City of Bishop to provide a bicycle and pedestrian trail from the local schools to the boundaries of the Reservation. Additional trails to connect to this pathway or improvements to the Indian Trail would also be considered in this project(s).

Sidewalks

Currently there are sidewalks along the northern boundary of the Reservation on US 395 and sidewalks on Hwy 168 in front of the commercial area near Pacu lane. There are no other sidewalks along the existing county or tribal roads. There are plans currently underway by Caltrans to extend the sidewalks on the north side of Hwy 168 to the west to Barlow Lane. Additional sidewalk projects to be considered would be sidewalks connecting to the new Hwy 168 sidewalks on Barlow, Tu Su and See Vee lanes to improve pedestrian and wheelchair access between the Reservation and City of Bishop.

Parking Lots

Currently there is a lack of off street parking in some areas of the Reservation. Projects should be considered to add parking at the OV CDC center at Barlow Lane and Diaz Lane to help eliminate the on street parking along Diaz Lane. In addition, expanded parking at the Tribal Headquarters and an improved parking lot and driveway access at the Cultural Center should be considered.

TRANSPORTATION IMPROVEMENT PLANS

WINUBA NORTH EXTENSION

General Discussion

Presently, Winuba Lane dead ends on the north end and turns to a dirt driveway which accesses several residences. The current configuration creates numerous problems. One, mail and package delivery services will not utilize the dirt road and instead enter through a driveway off of US 395 to access some residences. The same is also true for residential trash collectors. In addition there is insufficient room at the end of Winuba Lane to allow for a proper turn around for the school bus or for the Dial-a-Ride transit service. It is desirable to improve the circulation of traffic and access for residents in this area.

There are three available options to improve this area. The first is to extend Winuba Lane north all the way to US 395 creating a through route for traffic from Diaz Lane to the south all the way to US 395. The second option is to extend Winuba Lane partially and place a cul-de-sac at the end and then provide a second access road east to Pa Ha Lane. The third option is similar to the second option only the second access would route west to Brockman Lane. Each option presents its own challenges and benefits.



End of Winuba Lane to the North

Option 1 – Extension North to US 395

The first option for improving traffic flow is extending Winuba Lane approximately 900 feet directly north to US 395. This option presents the cleanest alternative in terms of access to US 395. However, it encroaches on some existing home sites currently along US 395 in the location of the extension. This alternative requires coordination and permitting through Caltrans which has shown a willingness to work with the Tribe if this option is selected. In terms of cost, this alternative is the cheapest as it represents the shortest amount of new road being built, but it may require relocation of existing homes or sheds. One of the benefits of this option is that many residential driveways that currently access directly to US 395 could now access the newly extended Winuba Lane and would result in a safer alternative for residential ingress and egress.

Option 2 - Cul-de-Sac Extension with Pa Ha Lane Connector

The second available option for improving circulation in this area is to extend Winuba Lane north to the existing home sites and place a cul-de-sac at the end to provide access to homes and a turnaround area for delivery vehicles, transit buses, and other large vehicles. By adding a connector to the east to connect with the existing Pa Ha Lane, quicker access to US 395 will also be obtained. This option results in more road length to build, but does not encroach as heavily on existing homes.

Option 3 – Extension with Brockman Lane Connector

The third option for area involves extending Winuba lane north and then turning to the west for a connection to the existing Brockman Lane. This option results in the longest length of new road, but eliminates any cul-de-sac and also has less potentially impact on existing homes. In terms of circulation and access it is also the poorest choice as Brockman Lane is a less convenient access point than either an extension to US 395 or a connector to Pa Ha Lane.

For purposes of this report, it is assumed that Option 1, the extension of Winuba Lane directly to US 395 is the preferred alternative. The following analysis pertains to this option. If one of the other options is selected, the analysis would be similar.

Environmental and Cultural Concerns

Because of the short length of this project and because the area planning to be used for new road is mostly disturbed, it is not likely that a detailed environmental assessment would need to be performed. Performing a basic environmental survey is likely to result in a finding of no significant impacts. This is also likely for cultural aspects as well. It would be best to utilize tribal environmental and cultural staff to make these final determinations.

Right of Way and Survey

The Tribe possesses currently a 50' right of way in this area, however it may be necessary to shift the Winuba Lane extension to the west to avoid conflict with existing home sites and large trees. Should this be necessary it would require the Tribal Council to realign and rededicate the existing right-of-way to fit the project's needs. A surveyor would likely need to be hired to mark these locations in the field and also to provide a topographic survey of the area for design purposes. Appropriate notice should be given to affected assignment holders as well.

In addition, the Tribe will need to coordinate and get permits from Caltrans for the new Winuba US 395 intersection. It is important to begin this process early so that the requirements Caltrans may have for site distance, signage, striping, etc. can be incorporated into the design process.

Engineering and Design

The engineering and design of the Winuba Lane extension should follow similar designs for the new Roads F, G and H currently under construction. These roads are designed to be similar to the existing county and tribal roads within the Reservation with a 24' paved two lane road.

Because this area is similar to other areas on the Reservation, it is not necessary to perform a detailed geotechnical study on the area. The analysis performed for the recent Roads F, G and H would be sufficient for design purposes. It will likely be necessary to take additional test pits to determine the limits of the unsuitable soil removals and during stripping and grading operations it would be prudent to have a soils engineer or geologist onsite to determine suitability of the subgrade prior to building fill for the roadway.

Construction

It is anticipated that the construction work would take approximately 6-8 weeks in total length. Scheduling would need to occur so that the paving portion could be completed during the early spring to late fall period to avoid freezing temperatures.

Costs

The following table summarizes the anticipated costs to complete the project:

WINUBA LANE EXTENSION TO US 395				
Description	Quantity	Unit	Unit Price	Total Cost
Engineering and Design	1	LS	\$ 20,000.00	\$ 20,000.00
Clearing and Grubbing	1	LS	\$ 10,000.00	\$ 10,000.00
Grading	1	LS	\$ 45,000.00	\$ 45,000.00
Base and Paving	22000	SF	\$ 4.00	\$ 88,000.00
Sidewalks, Curb and Gutter	1	LS	\$ 25,000.00	\$ 25,000.00
Striping, Fencing, Signs and Misc.	1	LS	\$ 15,000.00	\$ 15,000.00
Contingencies (10%)	1	LS	\$ 18,000.00	\$ 18,000.00
PROJECT TOTALS				\$ 221,000.00



PROPOSED NORTH WINUBA EXTENSION
TO US 395

SCALE
1" = 200'

BISHOP PAIUTE RESERVATION





PROPOSED NORTH WINUBA EXTENSION
TO PA HA LANE

SCALE
1" = 200'

BISHOP PAIUTE RESERVATION





CALIFORNIA ST. HWY. 395

LANE

LANE

LANE

BROCKMAN

STREET

WINUBA

FUTURE

PA-HA

NORTH

FUTU

FUTURE

STREET

LANE

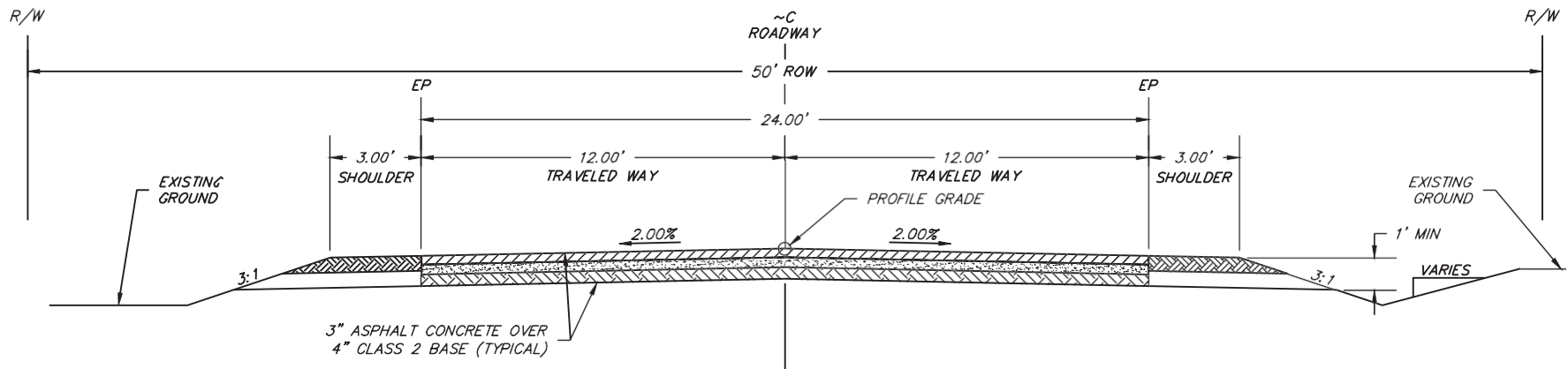
LANE

PROPOSED NORTH WINUBA EXTENSION TO BROCKMAN LANE

SCALE 1" = 200'

BISHOP PAIUTE RESERVATION





TYPICAL ROADWAY SECTION DESIGN

SCALE
NONE

BISHOP PAIUTE RESERVATION

WINUBA LANE SOUTH EXTENSION

General Discussion

The Winuba Lane South Extension project would consist of extending Winuba Lane on the South side of Hwy 168 to the south border of the Reservation. Ideally this road would also have a connector road to either Pa Ha lane to the east or to Pa Me lane to the west to improve overall circulation. Presently there is no right of way established for either of these connector roads and so they are not included in this project discussion, however they should be considered in future planning efforts.

The Winuba South Extension would provide access to many home assignments that are currently landlocked and require access through neighboring assignments located either on Pa Ha Lane or Pa Me Lane. In addition it would provide better access to existing utility services which are already located within the right of way established for this project.



The current terminus of Winuba Lane to the South

Environmental and Cultural Concerns

The project is approximately 1/2 mile long through mostly undeveloped irrigated pasture lands. In keeping consistent with the Bishop Paiute Tribe environmental ordinances it is likely that a detailed environmental and cultural study would need to be performed in the area to determine if there are potentially any threatened or endangered species that may be affected by the project and to determine the likelihood of any cultural artifacts that may be uncovered during construction. Generally a project of this size would require hiring an outside consultant to perform the necessary environmental and cultural studies.

Right of Way and Survey

A 50 foot right of way currently exists for this project. Presently there are sewer, water and irrigation mains in the area that are near the edges of this right of way. No new right of way or land acquisition would be needed. Presently there are some structures that were built within the current right of way that would need to be relocated including one home. A detailed topo survey of the area would need to be performed to determine the exact extent of the encroachment of these structures as well as the location of any existing utilities within the right of way. Proper notification should also be given to affected assignment holders so they can prepare for the arrival of the new road.

The tie in of Winuba Lane with the existing Hwy 168 will require permits from Caltrans and their design requirements for the roadway section, signage, striping and sight distance will need to be adhered to. These permits can at times be a lengthy process, so the sooner Caltrans is brought into the planning effort, the better for all parties involved.

Engineering and Design

The design of the South Winuba Lane Extension should model closely the design of Roads F, G and H which are currently being constructed on the Bishop Reservation. A licensed civil engineer should be hired to provide the final design and construction documents. The project should follow Federal Highway Administration standards and/or Caltrans Standards for design and construction.

This area of the Bishop Reservation generally has better soils than other areas. Because the area is closer to the alluvial fans to the south west of Bishop, and because it is further from the two forks of Bishop Creek, it is less likely to encounter deep areas of unsuitable material and/or groundwater during any excavations. This should result in a lower cost for earthwork as there would not be a large amount of unsuitable soil removals from the project. In order to verify these observations this project would necessitate a detailed geotechnical analysis of the area including test pits along the proposed alignment to determine the suitability of the underlying soils.

Construction

The construction of the project should take about 10-12 weeks. The necessary phases of work include clearing and grubbing, relocating any conflicting utilities, installing utility sleeves or laterals for future construction, earthwork, road base, asphalt paving, and any miscellaneous features such as striping, signage and right of way fences. Scheduling of the work should take place so that paving operations will occur in the warmer parts of the year from early spring to late fall.

Costs

The following table summarizes the anticipated costs to complete the project:

WINUBA LANE SOUTH EXTENSION				
Description	Quantity	Unit	Unit Price	Total Cost
Engineering and Design	1	LS	\$ 60,000.00	\$ 60,000.00
Environmental and Cultural	1	LS	\$ 15,000.00	\$ 15,000.00
Clearing and Grubbing	1	LS	\$ 35,000.00	\$ 35,000.00
Grading	1	LS	\$ 200,000.00	\$ 200,000.00
Base and Paving	64000	SF	\$ 4.00	\$ 256,000.00
Culverts and Drainage	1	LS	\$ 35,000.00	\$ 35,000.00
Striping, Fencing, Signs and Misc.	1	LS	\$ 35,000.00	\$ 35,000.00
Contingencies (10%)	1	LS	\$ 65,000.00	\$ 65,000.00
PROJECT TOTALS				\$ 701,000.00

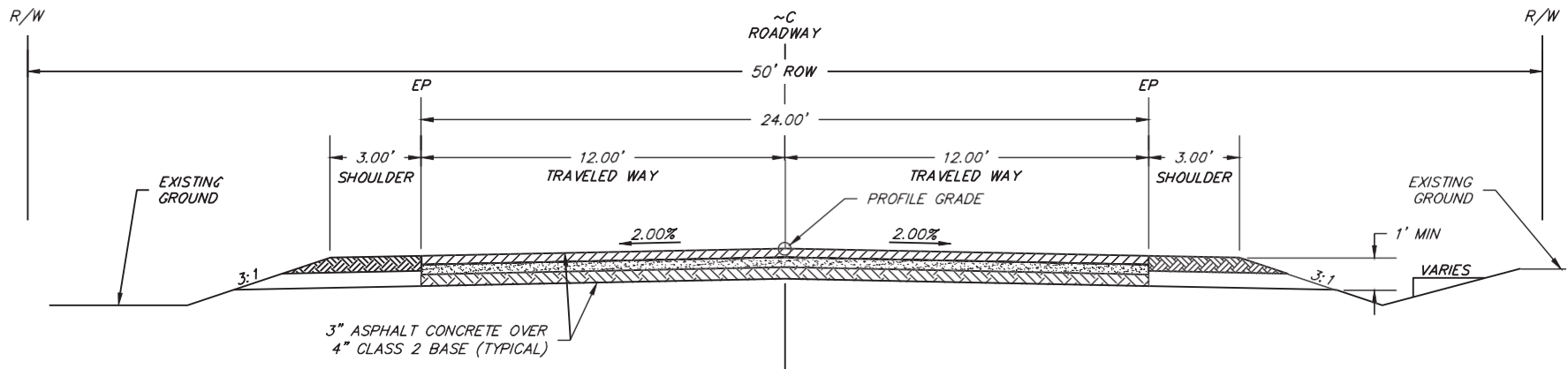


PROPOSED SOUTH WINUBA EXTENSION

SCALE 1" = 300'

BISHOP PAIUTE RESERVATION





TYPICAL ROADWAY SECTION DESIGN

SCALE
NONE

BISHOP PAIUTE RESERVATION

INTERIOR ROADS

General Discussion

Currently the Bishop Reservation has numerous right of ways established for future interior roads that would provide access to existing home assignments that are currently land locked. These additional roads would also provide better circulation and emergency response to areas of the Bishop Reservation that are difficult to access. It has yet to be decided which of these roads should be built, but likely future home developments will dictate this choice. The following analysis is performed for a typical 1/2 mile section of road or roads and the associated costs are priced in a per 1/2 mile basis for a typical road(s). The actual costs will vary somewhat depending upon which roads are selected and how many roads are done in any given project.



Construction of an interior road on Bishop Reservation in 2013

Environmental and Cultural Concerns

Nearly all of the interior road segments on the Bishop Reservation would pass through undeveloped pasture land. Because of this, it is likely that an environmental and cultural analysis will need to be performed to satisfy any concerns that may arise from the impacts of the project. The length of the section(s) and how many roads are included in a particular project will

determine whether it is more feasible to hire an outside consultant to perform the necessary studies or to utilize Tribal Environmental staff to perform the analysis.

Right of Way and Survey

Most of the interior roads needed on the Bishop Reservation have dedicated right of ways already established. Some of the roads may need to be rerouted due to existing structures or to better facilitate traffic circulation and would require a change of right of way. In all cases the existing facilities and topography in the area should be surveyed to determine the extent of any encroachment. Appropriate notice should be given to affected assignment holders in the area as well so that they can prepare for the effects of the new roads.

Engineering and Design

The engineering and design of the interior roads would be similar to the newly built Roads F, G and H built in 2013. The design standards should be either Federal Highways Administration standards or Caltrans standards. Many of the interior roads will connect with either existing county roads or Caltrans state highways. In these cases permits from the appropriate agency will be required.

The soil underlying the interior road locations vary depending upon their location on the Bishop Reservation. Therefore it will be necessary to perform an individual geotechnical analysis of the soils for each road section chosen in the project. It will be necessary to determine the amount of unsuitable material that will need to be removed to accurately obtain estimates for construction. It will likely be necessary to have a soils engineer on site during construction to assist in determining the suitability of the soils as they are encountered.

Construction

Depending upon the length of any segment it would be anticipated that construction times would be approximately 10-12 weeks per mile or new road segment. Construction should be scheduled such that paving operations can take place in the warmer months of spring, summer or fall to avoid freezing temperatures. For most sections of roads it will be necessary to hire outside contractors with the appropriate equipment to construct the roads, although it may be possible for shorter segments of the roads to be built using Tribal crews.

Costs

The following table summarizes the anticipated costs to complete a typical 1/2 mile section of new road:

Interior Reservation Roads (Costs Per 1/2 Mile)				
Description	Quantity	Unit	Unit Price	Total Cost
Engineering and Design	1	LS	\$ 60,000.00	\$ 60,000.00
Environmental and Cultural	1	LS	\$ 20,000.00	\$ 20,000.00
Clearing and Grubbing	1	LS	\$ 35,000.00	\$ 35,000.00
Grading	1	LS	\$ 200,000.00	\$ 200,000.00
Base and Paving	64000	SF	\$ 4.00	\$ 256,000.00
Culverts and Drainage	1	LS	\$ 35,000.00	\$ 35,000.00
Striping, Fencing, Signs and Misc.	1	LS	\$ 35,000.00	\$ 35,000.00
Contingencies (10%)	1	LS	\$ 70,000.00	\$ 70,000.00
PROJECT TOTALS				\$ 711,000.00



PROPOSED INTERIOR ROADS NORTHWEST

SCALE
1" = 400'

BISHOP PAIUTE RESERVATION





PROPOSED INTERIOR ROADS NORTHEAST

SCALE
1" = 400'

BISHOP PAIUTE RESERVATION





PROPOSED INTERIOR ROADS WEST CENTRAL

SCALE
1" = 400'

BISHOP PAIUTE RESERVATION





PROPOSED INTERIOR ROADS EAST CENTRAL

SCALE
1" = 400'

BISHOP PAIUTE RESERVATION



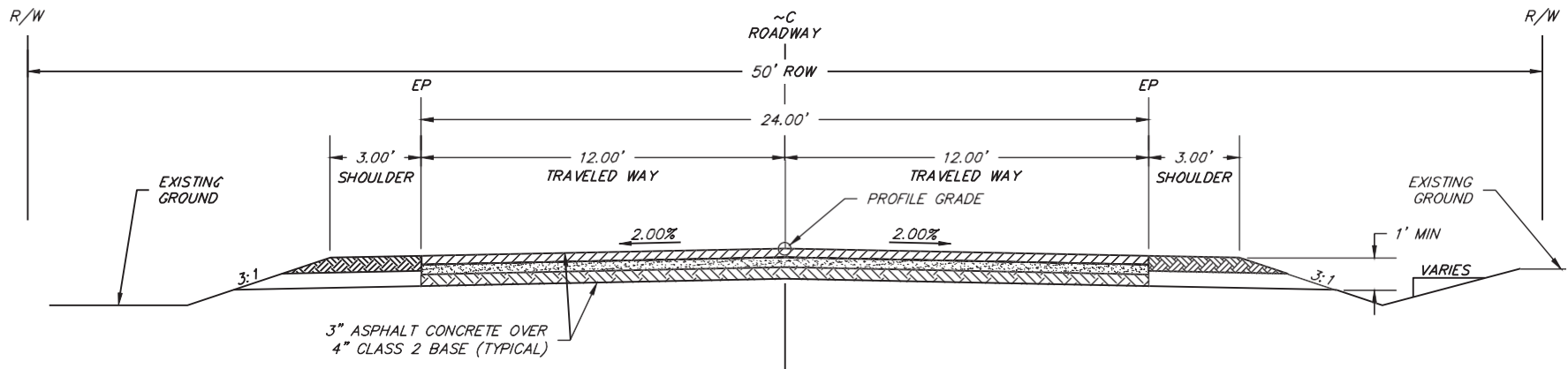


PROPOSED INTERIOR ROADS SOUTH

SCALE
1" = 400'

BISHOP PAIUTE RESERVATION





TYPICAL ROADWAY SECTION DESIGN

SCALE
NONE

BISHOP PAIUTE RESERVATION

STREET LIGHTING

General Discussion

Adding street lights to some of the interior roads on the Bishop Reservation is a smaller project that could add a lot of potential benefit. Currently there is insufficient street lighting within the Reservation which makes it difficult to see pedestrians and bicyclists at night or in the late evenings or early mornings when many people are commuting between home and work. Street lighting also adds an element of security and safety which is important on the Bishop Reservation. Currently most of the street lighting exists on the two state highways and along the county roads. There is no little lighting on the Reservation owned roads and not enough lighting on most of the county roads.



Typical Pole Mounted Street Light on Diaz Lane

Environmental Concerns

The main environmental concerns would be impacts from the additional lighting. Residents who live directly adjacent to a street light may complain about the additional lighting and steps would need to be made to insure that the type of lighting was both adequate to serve its purpose but not overly bright to cause excessive light pollution. Residents would need to be notified and their concerns taken into account prior to implementing the new lights.

Right of Way and Permits

The new lights would need to be coordinated with Southern California Edison (SCE) which currently provides electricity to the Bishop Reservation. The new lights would be provided by SCE and installed on existing power poles. Coordination with SCE and the County would be necessary to secure the necessary permits for the lighting.

Engineering, Design and Construction

The engineering and design would be typically handled by SCE in coordination with the Tribe and the County as to the locations and amount of desired lighting. The installation of the lights would also be performed by SCE. The Tribe would only need to facilitate installation on the existing poles or provide locations for new poles if they do not exist.

Costs

For street lights mounted on SCE wood poles which are what exist on the Bishop Reservation, the cost of the installation of the light is borne by SCE. There is a monthly charge per light of approximately \$15-\$20 per month to cover maintenance and electrical charges. The lights typically are turned on and remain on all night. The Tribe can work with SCE to decide what wattage and type of lamps to use based on lighting needed and monthly costs.

The following table represents some costs for installing street lights on the Bishop Reservation.

Street Lighting Project				
Description	Quantity	Unit	Unit Price	Total Cost
Preliminary Engineering and Analysis *	1	LS	\$ 7,500.00	\$ 7,500.00
Annual Charge per Light (Estimated)	20	EA	\$ 200.00	\$ 4,000.00
PROJECT TOTALS (Installation and First Year)				\$ 11,500.00

* These charges may be covered by SCE at no cost.

WALKING AND BICYCLE TRAILS

General Discussion

A large number of people walk or ride a bicycle on the Bishop Reservation. Walking and bicycle riding is an effective mode of transit on the Bishop Reservation because of its proximity to the local schools, hospitals and adjacent commercial centers. Automobile traffic is light on most roads and there is ample shoulder width in most areas for bicycles or pedestrians. The problem is that most of the shoulders are dirt which at times can be very soft or muddy and difficult for people to walk or ride on. There is a need on the Bishop Reservation for additional walking and bicycle trails not only to improve transit for bicyclists and pedestrians but to encourage recreation and outdoor exploration.

The locations for potential trails would include the new trails within the Conservation and Open Space Area (COSA) located in the southeast corner of the Bishop Reservation. Other trails would be improvements to the existing Indian Trail which connects the Bishop Reservation to the local schools and runs partly on tribal land and partly on City of Los Angeles land. Other trails might be considered in areas where the Tribe has right of way for a future road, but does not currently have funding or need to build a full road.



The West End of the Indian Trail at See Vee Lane and Diaz Lane

Environmental and Cultural Concerns

The Tribes environmental department has already identified a system of walking and bicycle trails within the existing Conservation and Open Space Area (COSA) designated on the Bishop Reservation. Some of the trails have already been built and others are currently mapped out to connect the existing trails to other future trails as well as locations such as the hospital, schools and Department of Motor Vehicles. The COSA area is already designated for trails and as such would make a good location to add trails.

Cultural concerns would likely be limited to the potential for artifacts to be disturbed during the construction process. Likely a cultural monitor would need to be in place during construction.

Right of Way and Survey

Within the COSA area there is no need for right of way acquisition. Some basic surveying of alignment would be needed to keep the trails out of the lower areas that tend to collect water in the winter months.

Improvements to the Indian Trails would require cooperation with the City of Los Angeles if any work was to occur within their right of way. Currently the City of Bishop has plans to build an improved trail in this area and so coordinating efforts with these agencies would be the most prudent course of action.

Engineering and Design

Most of the existing trails on the Bishop Reservation are made from graded dirt. The use of decomposed granite as a trail surface has worked well in the past. In the COSA area these trails were treated with a polymer stabilizer to provide a more permanent and durable surface especially in winter months. For this reason it would be suggested that the new trails be designed with this type of trail in mind to provide uniformity and lower construction and maintenance costs than asphalt paving.

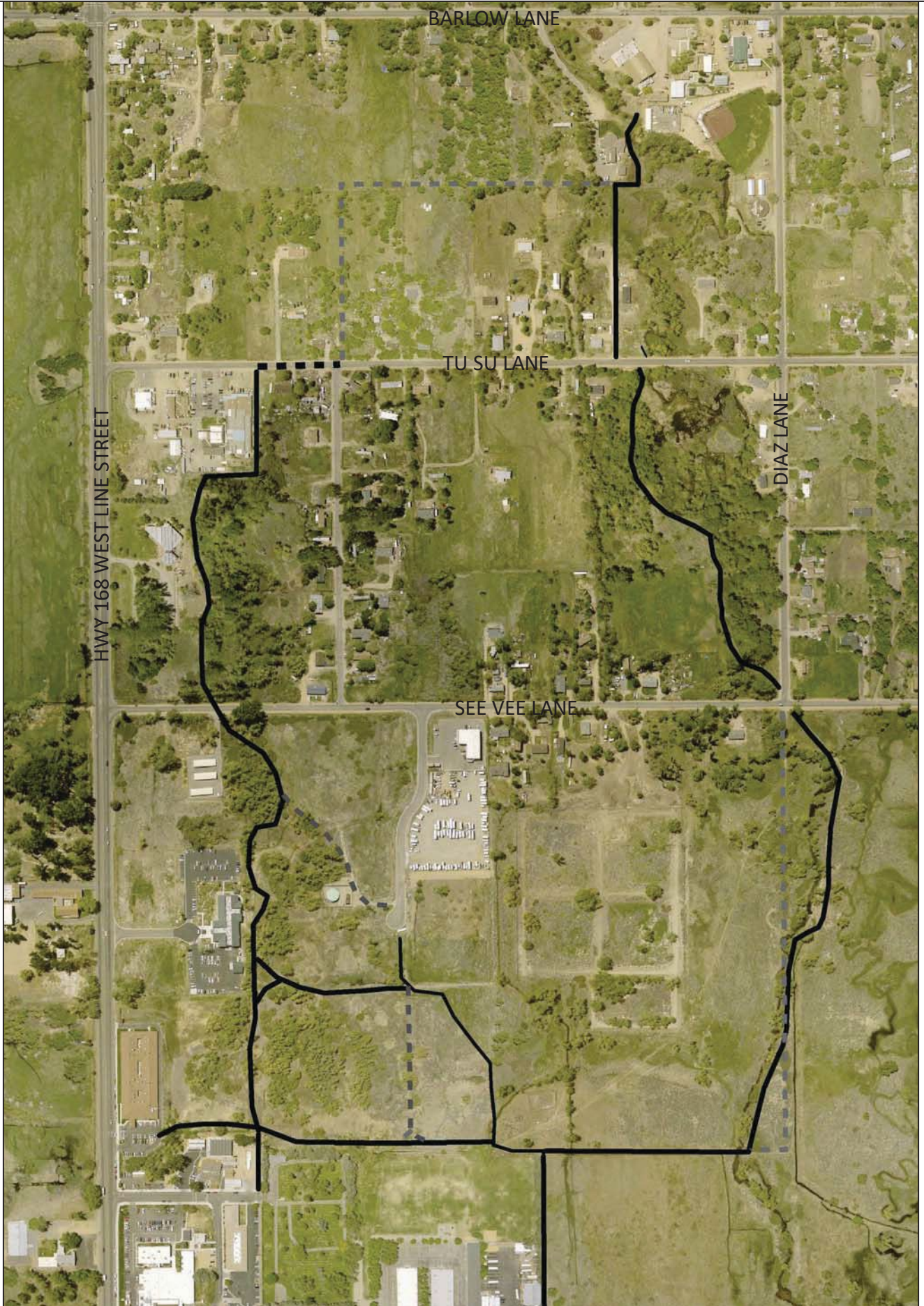
Construction

Depending on availability of funds it is possible for any new trails to be hired out to outside contractors or to be performed in house using Tribal crews. The Tribe currently possesses most if not all of the tools and equipment needed to build any new trails. It would be best to perform this construction in the non-winter months to avoid issues with ponding water and freezing temperatures though neither is as critical with dirt paths as with asphalt paths.

Costs

The Bishop Paiute Tribe has recently completed some trails in the COSA area and so those costs can be used as an estimate for building new or improving existing trails. The table below summarizes the estimated costs to construct one mile of new trail:

Walking and Bicycle Trails (Costs for 1 Mile of Trail)				
Description	Quantity	Unit	Unit Price	Total Cost
Engineering and Design	1	LS	\$ 15,000.00	\$ 15,000.00
Environmental and Cultural	1	LS	\$ 7,500.00	\$ 7,500.00
Clearing and Grubbing	1	LS	\$ 10,000.00	\$ 10,000.00
Grading	1	LS	\$ 60,000.00	\$ 60,000.00
Trail Soil Stabilization	5280	LF	\$ 5.00	\$ 26,400.00
Signage, Gates, etc.	1	LS	\$ 5,000.00	\$ 5,000.00
Contingencies (10%)	1	LS	\$ 14,000.00	\$ 14,000.00
PROJECT TOTALS				\$ 137,900.00



PROPOSED TRAIL NETWORK

SCALE
NONE

BISHOP PAIUTE RESERVATION

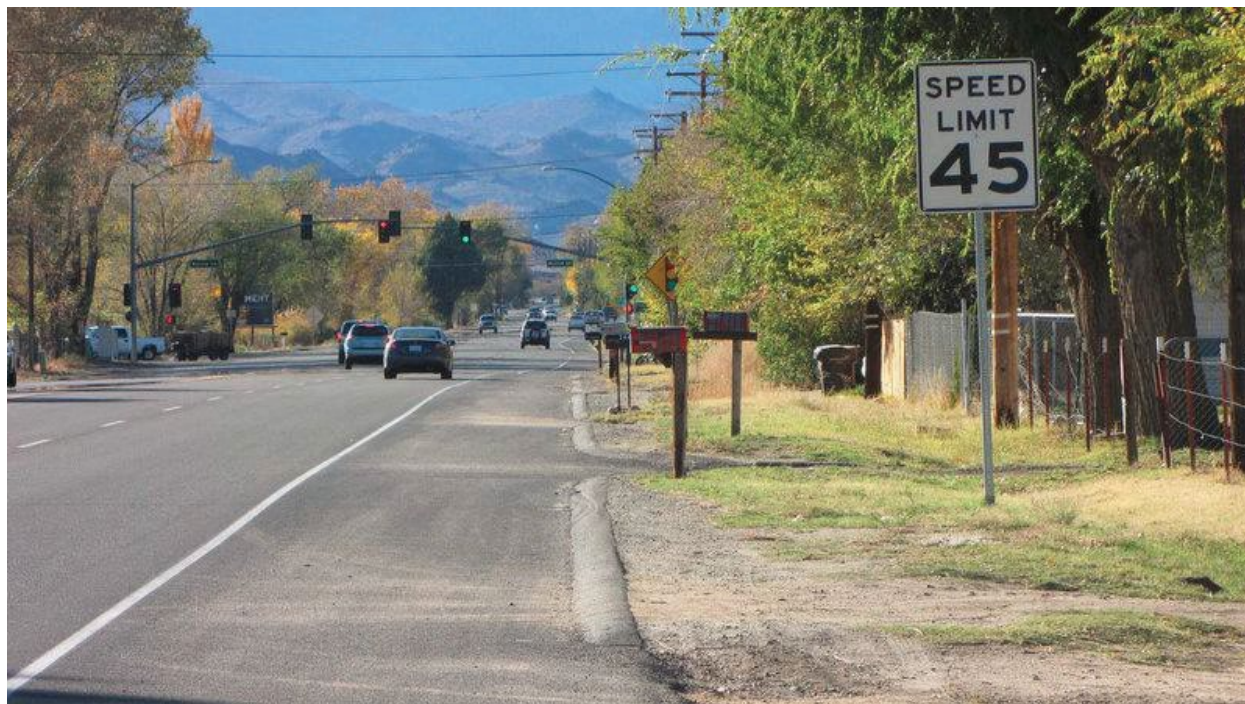


SIDEWALKS

General Discussion

By and large the roads on the Bishop Reservation do not have sidewalks. This is mostly due to the rural setting of the reservation. In recent years Caltrans added sidewalks to US 395 along the northern boundary of the Reservation from Brockman Lane to Barlow Lane and has plans to extend these sidewalks in the future east to See Vee Lane. In addition there are plans to add sidewalks along the north side Hwy 168 from Pacu Lane to Barlow Lane. Once this segment is in place there will be continuous sidewalks along Hwy 168 all the way into downtown Bishop.

Aside from these sidewalks there are no other sidewalks within the boundaries of the Bishop Reservation. In most places they do not make sense due to the high cost and the rural nature of the reservation. However in some cases it does make sense to add sidewalks that connect to the sidewalks along US 395 and Hwy 168. These locations would include sidewalks on Tu Su lane in front of the Tribe’s administrative offices and Toiyabe Indian Health Clinic, along Barlow lane and Diaz lane in front of the Head Start School and the OV CDC complex near Diaz lane. Barlow lane is the busiest street on the Bishop Reservation and so extending these sidewalks to US 395 or Hwy 168 would improve safety and circulation along this route.



View Looking West on Hwy 168 showing location of future sidewalks

Environmental and Cultural Concerns

There would be little to no impacts from an environmental or cultural view. The sidewalks would all be located adjacent to existing paved roads within established right of ways. The only concern would be to make sure that runoff from gutters did not enter into any protected waters within the boundaries of the Reservation.

Right of Way and Survey

The sidewalks would all be within the already designated right of ways adjacent to existing paved roads. There would be no need to acquire any new right of way. A permit with Caltrans or with the county would be needed for sidewalks on those routes. Since most of the proposed sidewalks are located on existing county roads it would require coordination and permitting with the county to perform the necessary design and construction.

Engineering and Design

A standard 5 foot wide sidewalk with curb would be the mostly likely choice for the proposed routes. Handicap ramps would need to be installed at all intersections, and driveway approaches would need to be designed as well. Whether a gutter is needed or not would depend on the level of funding available and the topography of the road alignment. Attention will need to be taken to how runoff water is directed to avoid flooding and any storm water pollution concerns.

Construction

The size of the project and the source of the funding will determine whether this work is contracted out to outside contractors or performed in house with tribal forces. It is likely that the majority of the work could be done in house with only some of the specialty work being contracted out. Most of the sidewalk sections could be done in phases and extended as funding became available. It would be estimated that any sidewalk project would be able to be completed in about 6-10 weeks and like other projects should be scheduled outside the winter months to prevent freezing of concrete after placement.

Costs

Each individual project would have different costs depending on the length of the project and whether or not gutters are installed. The following table summarizes the costs to perform a typical 1000’ section of sidewalk, with pricing for adding a gutter to the curb section if necessary or feasible.

Sidewalks (Costs for 1000 ft of New Sidewalk)				
Description	Quantity	Unit	Unit Price	Total Cost
Engineering, Design and Survey	1	LS	\$ 15,000.00	\$ 15,000.00
Clearing and Grubbing	1	LS	\$ 5,000.00	\$ 5,000.00
Grading	1	LS	\$ 20,000.00	\$ 20,000.00
Concrete Sidewalk (5' Width)	1000	LF	\$ 25.00	\$ 25,000.00
Concrete Curb (6")	1000	LF	\$ 15.00	\$ 15,000.00
Concrete Gutter (18" wide)	1000	LF	\$ 15.00	\$ 15,000.00
Contingencies (10%)	1	LS	\$ 10,000.00	\$ 10,000.00
PROJECT TOTALS				\$ 105,000.00



SIDEWALKS MAP

SCALE
1" = 1000'

BISHOP PAIUTE RESERVATION



PARKING LOTS

General Discussion

Because there is no curb and gutter on most of the tribal roads, parking along the side of the road presents a traffic hazard. Site distance is severely restricted with on street parking and pedestrians and bicyclists have nowhere to walk when cars are parked on the shoulder. Because of these concerns, it is necessary that the Bishop Reservation have adequate off street parking facilities to reduce the number of vehicles parked on the side of the road.

Currently the Tribe has parking lots at nearly all of its major buildings and offices. Some of these are paved and striped while others are just dirt lots available but not specifically designated for parking. The OVCDC center at Barlow Lane and Diaz Lane is specifically lacking in off street parking and has the greatest number of on street vehicles that pose traffic hazards. Crating a paved designated parking area for these employees would help to alleviate traffic concerns at this intersection. In addition paving and striping several of the dirt parking lots would provide for safer more convenient parking areas for employees.



Vehicles parked along Diaz Lane near OVCDC Center

Environmental and Cultural Concerns

The concerns for environmental and cultural are not much different for this project as any other. The main environmental concern would have to do with runoff water from the parking area and the oils and grease that tend to be in that runoff. Installing an oil/water separator would be a minimal design feature for any new parking areas. Cultural concerns would be limited as most the parking areas are previously disturbed dirt lots, but monitoring during ground disturbing activities would be a good idea if feasible.

Right of Way and Survey

Most if not all of the parking areas occur within Tribal right of way and are already designated for parking. Little would need to be done in terms of acquisition of right of way. Any of the parking areas that are adjacent to county roads would require an encroachment permit from the county. A good topographic survey is recommended on any parking lot to ensure adequate drainage of the lot and to prevent ponding and puddling on the new asphalt surface.

Engineering and Design

The main concerns in terms of engineering and design would be to provide adequate drainage for the new parking surface and to provide for good ingress and egress for the new parking lot while maintaining the maximum number of parking spaces. Underground utilities in the area would need to be factored into the design as well to accommodate any existing sewer, water or electrical lines in the area. Additional concerns may be for landscaping, signage and striping of the new parking lot.

Construction

Construction of a new parking lot generally takes 6-8 weeks or less. Temporary parking will have to be provided for employees in an area that is safe and avoids employees crossing the new parking lot during construction. The winter months should be avoided for the paving portion of any new parking lots.

Costs

Costs of any parking lot can vary depending on their size and location but the table below summarizes some anticipated costs for a medium sized parking lot of about 10,000 SF capable of accommodating about 30-35 vehicles:

Parking Lots (Price for 10,000 SF Parking Lot)				
Description	Quantity	Unit	Unit Price	Total Cost
Engineering, Design and Survey	1	LS	\$ 25,000.00	\$ 25,000.00
Clearing and Grubbing	1	LS	\$ 5,000.00	\$ 5,000.00
Grading	1	LS	\$ 15,000.00	\$ 15,000.00
Asphalt Paving and Base	10000	SF	\$ 5.00	\$ 50,000.00
Striping, Signage, Bumpers	1	LS	\$ 10,000.00	\$ 10,000.00
Lighting	1	LS	\$ 10,000.00	\$ 10,000.00
Contingencies (10%)	1	LS	\$ 12,000.00	\$ 12,000.00
PROJECT TOTALS				\$ 127,000.00