



**Long Range  
Transportation  
Plan  
for the  
Pyramid Lake  
Paiute  
Reservation**

**Prepared for:  
The Pyramid Lake Paiute Tribe  
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**Long Range Transportation Plan for the Pyramid Lake Paiute Reservation  
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## **EXECUTIVE SUMMARY**

### **Purpose and Scope**

The purpose of this study is to identify and evaluate present and future transportation needs of the Pyramid Lake Paiute Tribe. Present needs are determined by evaluating present conditions including traffic volume, existing hazards, the conditions of roads and other transportation infrastructure, and the current goals of the Pyramid Lake Tribe. Future needs are evaluated based on the Tribe's social, economic and development goals and objectives, including specific development proposals, and the land use and transportation plans of the surrounding area.

Transportation planning on the tribal level is a critical part of the overall system of prioritizing and funding transportation improvements on tribal lands. Federal transportation legislation, implemented by BIA regulations, requires that tribal transportation improvement projects, in order to be funded by federal sources, must be a part of an adopted Long Range Transportation Plan (LRTP). The LRTP is the result of a transportation planning process with a 20-year time horizon. The planning effort for the Tribe began with an update to the inventory of the Indian Reservation Roads (IRR) system on the Pyramid Lake Reservation. It continued with the preparation of this ***Long Range (20-Year) Transportation Planning Study***. The study includes a ***Transportation Improvement Projects Priority List*** that will be forwarded to the BIA for the preparation of an IRR Transportation Improvement Plan (TIP) for the Pyramid Lake Paiute Tribe.

### **Study Period and Study Methodology**

The Transportation Planning Study was a three-part process. In the first part, consultants Lumos & Associates, Inc. gathered data about existing conditions on the Reservation including the existing transportation system; existing Reservation and surrounding land use and natural resources; regional context, and demographics. The second part of the study was a comprehensive study and analysis of transit and transportation needs, including analysis of the condition of existing roads, as reported in the road inventory update, meetings with tribal leaders and staff, and a public workshop. In the final phase of work, Lumos developed a list of priority transportation projects and finalized the plan.

### **Summary of Transportation Plan**

The current condition of the Tribe's transportation system, the Tribe's short and long range development plans, and potential future traffic levels were described and evaluated during the planning process. The following transportation issues were identified:

- Road and traffic safety, especially on state highways
- Need for transportation improvements to serve economic development goals
- Pedestrian safety improvements
- Condition of unpaved roads
- Safety signage
- Regular roadway maintenance
- Safety improvements around schools and preschools
- Potential need for a public transit system

- Maintenance and continued development of tourism infrastructure

Proposed transportation improvements were then identified. In Resolution PL 42 11 adopted on May 6, 2011, the Pyramid Lake Tribal Council approved the following list of priority transportation improvements. The projects are presented in more detail in **FIGURE 10** in this report.

1. (0035-010) Wadsworth By-pass
2. (0205-010) Pelican Point Access
3. (0101-105) Capitol Hill Road
4. (P101-050) Administration building parking areas
5. (No route number yet) Wadsworth Community Center access loop and parking
6. (0102) all sections Ranch/Big Bend Road
7. (0201-030) Lakeview Drive
8. (0021-010) Warrior Point
9. (0002-010 and 020) Pyramid Lake Road
10. (0005-010) Pyramid Road

Tribal staff and consultants also identified several non-road transportation improvement projects. While not currently a part of the adopted priority list, these projects are listed and described in **FIGURE 11** of this report.

The Tribe expects that transportation improvement projects and programs contained in this Transportation Plan will be implemented using the funding sources identified in the Transportation Improvement Projects Priority List. Projects potentially funded by the BIA will be added to the BIA regional IRR Transportation Improvement Program (TIP). The Tribe will receive funding for these projects based upon the allocation formula described in section 1.2.3 of this report.

For any projects on non-BIA IRR roads, the Tribe will coordinate with the Nevada Department of Transportation, Washoe County and Lyon County to identify funding for priority tribal transportation projects.

Some of the projects might take place as a part of tribal development efforts. In this case, transportation improvements might be funded and constructed, at least partly, by the developer, and subsequently maintained by businesses on the site. Some transportation projects or maintenance improvements might be made as a part of an overall capital improvements program.

The priority list will be updated periodically to reflect the completion of current projects and the inclusion of new priority projects, contingent on anticipated available funding. The Transportation Plan will be reviewed and updated every five years, based upon the direction of the Tribal Council and/or tribal staff.

## **INTRODUCTION**

### **Purpose of the Study**

The purpose of this study is to identify and evaluate present and future transportation needs of the Pyramid Lake Paiute Tribe. Present needs are determined by evaluating present conditions including traffic volume, existing hazards, the conditions of roads and other transportation infrastructure, and the current goals of the Pyramid Lake Tribe (Tribe). Future needs are evaluated based on the Tribe's social, economic and development goals and objectives, including specific development proposals, and also the land use and transportation plans of the surrounding area.

### **Description of the Long Range Transportation Planning Study and Project Priority List**

Transportation planning on the tribal level has become a critical part of the overall system of prioritizing and funding transportation improvements on tribal lands. Federal regulations require that transportation improvement projects on routes within the Tribe's IRR System that are going to be funded with Federal sources be part of an adopted Long Range Transportation Plan (LRTP) and be included in the Region's IRR TIP. The TIP is the result of a transportation planning process with a 20-year time horizon. The planning effort for the Tribe began with an update to the inventory of the Indian Reservation Roads (IRR) system on the Pyramid Lake Reservation. It continued with the preparation of this Long ***Range (20-Year) Transportation Planning Study***. The study includes a ***Transportation Projects Priority List*** that will be used by the Tribe and by the BIA to program projects for tribal and agency Transportation Improvement Programs (***TIPs***).

### **Organization of Study**

The Transportation Planning Study was a three-part process. In the first part, consultants Lumos & Associates, Inc. (Lumos) gathered data about existing conditions on the Reservation including the existing transportation system; existing Reservation and surrounding land use and resources; regional context; and demographics.

The second part of the study was a comprehensive study and analysis of transit and transportation needs, including analysis of the condition of existing roads as reported in the road inventory update, meetings with tribal leaders and staff, and a public workshop. This workshop took place on May 15, 2010. Also in this phase, Lumos evaluated road maintenance needs in the context of available BIA funding, and identified and evaluated community development patterns that could affect future travel demand.

In the final phase of work, Lumos developed a list of priority transportation projects and finalized the plan. This plan was presented to the Pyramid Lake Tribal Council. Any subsequent comments and changes by Tribal staff or the BIA will be incorporated into the plan at a later date.

## **Regional Context**

The Pyramid Lake Reservation is located in northwestern Nevada, approximately 35 miles northeast of Reno. It is mostly adjacent to Washoe County, but portions of the Reservation are adjacent to Lyon, Storey and Pershing Counties. At 475,000 acres, the Pyramid Lake Reservation is the largest reservation in Nevada.



## **PART ONE – EXISTING CONDITIONS**

### **1.1. BACKGROUND DATA**

#### **1.1.1. Community Profile**

##### **Location**

The 475,000-acre Pyramid Lake Reservation is located in northwestern Nevada, approximately 35 miles northeast of Reno. See **Map 1 – Location Map**.

##### **History and Government**

The Pyramid Lake Paiute Tribe are Northern Paiute people. The bands of Paiute people who lived in the vicinity of Pyramid Lake were known as Kuyuidökadö; this name refers to the people's characteristic food source, the cui-ui, or Pyramid Lake sucker fish. The Kuyuidökadö territory incorporated about 2,000 square miles, including both Pyramid and Winnemucca Lakes.

In 1859, the U.S. Commissioner of Indian Affairs reserved for the Pyramid Lake Paiute Tribe 470,000 acres of land surrounding Pyramid Lake. In 1874, President Ulysses S. Grant signed an Executive Order confirming the status of the Tribal Reservation.

The Pyramid Lake Paiute Tribe is organized pursuant to the provisions of Section 16 of the Indian Reorganization Act of 1934, and is a federally recognized tribe. It is governed by a ten-member Tribal Council consisting of a Chairman, Vice-Chairman, and eight Council Members. The Tribe operates under a Constitution and By-Laws approved on January 26, 1936.

#### **1.1.2. Economy and Demographics**

##### Regional Context

The Pyramid Lake Reservation is located adjacent to Washoe, Lyon, Storey and Pershing Counties in northwestern Nevada. During the 1990-2008 period, the population and economy of these counties boomed: the population of Washoe County increased from 257,120 in 1990 to 423,833 in 2008; Lyon County grew from 20,590 to 55,820; and Storey County grew from 2,560 to 4,384 people. Since then the population of these areas has decreased 1.7% in Washoe County; 3.6% in Lyon County; and 1.5% in Storey County.

With the development of the 30,000-acre Tahoe Reno Industrial Center in Lyon and Storey Counties, and the Nevada Industrial Park near the town of Fernley, the area south of the Reservation along the Interstate Highway 80 corridor became a center for manufacturing and logistics, with Fortune 500 companies including Amazon.com, Trex, Johns Manville, MSC Industrial Direct, UPS Worldwide Logistics, Quebecor World Nevada, and Sherwin-Williams locating facilities there.

During the period 2001 – 2007, the number of jobs in Lyon County grew by 26%, a total of 3,932 new jobs. The industry sectors that contributed the most to this growth were real estate rental and leasing; manufacturing; construction; arts, entertainment and recreation; and accommodation and food services. Since the region was heavily concentrated in real estate and construction-related employment, the economic recession that began in 2007 has hit the region

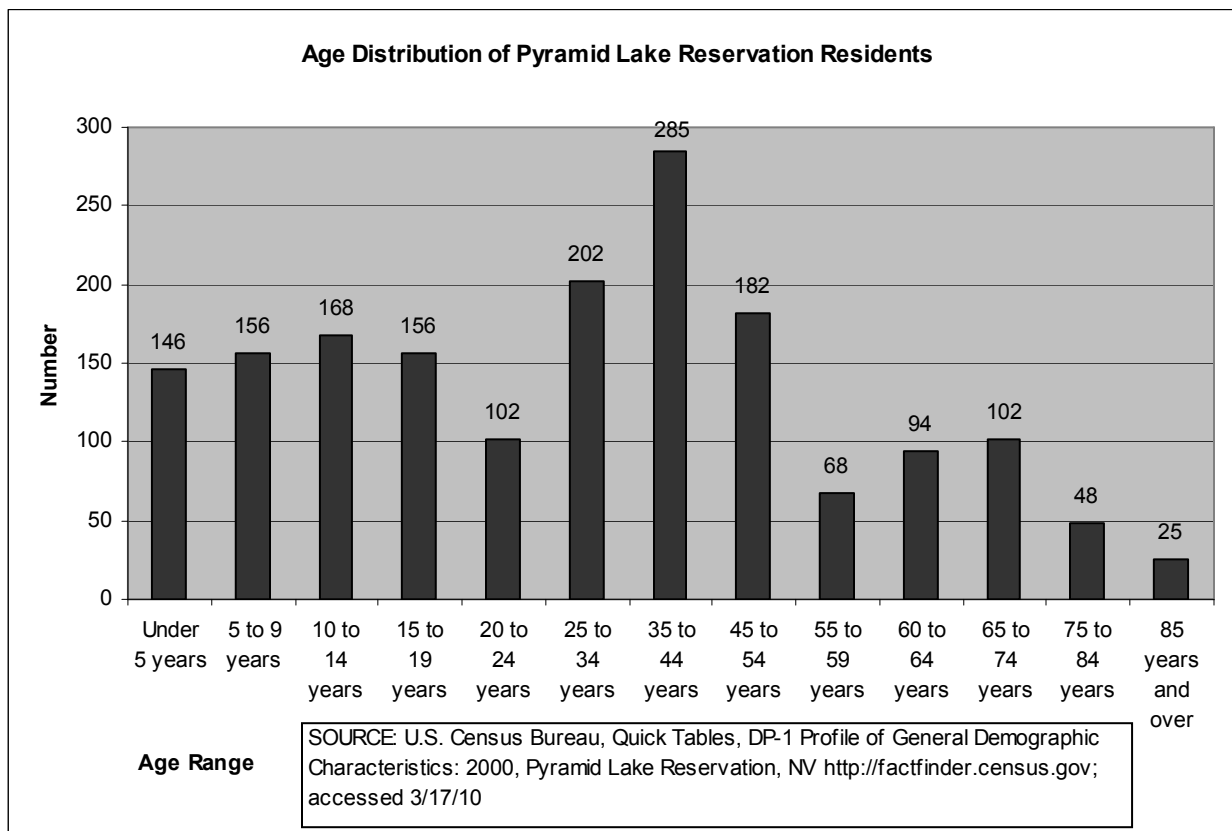
hard resulting in the population losses cited above, and unemployment rates in January, 2010 of 19% in Lyon County, 14% in Storey County, and 13.5% in Washoe County.

Tribe and Tribe Demographics

*Population*

Total Pyramid Lake Paiute tribal membership is 2,161 people. The year 2000 U.S. Census shows a total population of 1,734 individuals on the Pyramid Lake Reservation. As the following chart shows, the Reservation has a relatively young population, with a median age of 32 years.

**Figure 1**



*Housing*

There are three communities on the Pyramid Lake Reservation: Wadsworth on the southern end of the reservation close to Interstate Highway 80 and the Big Bend of the Truckee River; Nixon, the Tribe’s administrative center, about five miles from the southern shore of Pyramid Lake, and Sutcliff, on the southwestern shore of the lake. Most of the Reservation population resides in these communities, with over 50% of the population in Wadsworth, 25% in Nixon, and 16% in Sutcliffe. Between 1963 and 2000, 440 new homes were constructed on the Reservation. Of these, 382 are considered mutual help units and 58 are rental units. More

recently, five new homes were constructed through the BIA's Housing Improvement Program, and renovations of existing units regularly take place.

*Economy and Employment*

Outdoor recreation is a primary driver of the Reservation economy. Pyramid Lake is a recreational resource that attracts visitors from throughout northern Nevada and beyond for fishing, boating, bird watching, camping, and other outdoor pursuits. The Tribe continues to implement economic development and resource protection strategies centered on the unique lake and its scenic and natural resources. These include a fisheries program with three hatcheries that raise Lahontan cutthroat trout and cui-ui; small businesses at Sutcliffe catering to recreationists; designation of portions of State Routes 445 and 447 as the Pyramid Lake National Scenic Byway; a newly-developed mountain bike trail that follows the Truckee River between Wadsworth and the northern shore of Pyramid Lake; a tribal museum in Nixon; the Big Bend RV park at Big Bend on the Truckee River near Wadsworth; and a gas station/convenience store in Wadsworth. The Tribe requires permits for all recreational use on the Reservation. The table below shows recreational permits issued over the most recent 5-year period.

**Figure 2**

<b>Pyramid Lake Recreational Permits, 2005-2009</b>					
	2009	2008	2007	2006	2005
Total Visitors	74,287	72,555	73,944	68,669	58,695

Source: Johnnie Garcia, PLPT Transportation Planner

Agriculture also contributes to the Reservation economy. Several tribal members belong to the Pyramid Lake Cattlemen's Cooperative Association, grazing around 1,600 head of cattle on 300,000 acres of range on the Reservation, and raising hay for winter feed in agricultural areas near Nixon and Wadsworth. There is a sand-and gravel operation operated by RMC Nevada, Inc.– the Paiute Pit – located on the Truckee River on the Reservation. Approximately 25% of the population works for the tribal government or other governmental operations including the two schools on the Reservation, Pyramid Lake High School in Nixon and Natchez Elementary School in Wadsworth.

In the community of Nixon, the primary employment is tribal government or agriculture. Some additional employment is provided by a combined gas station and convenience store. Sutcliffe is the principal gateway to Pyramid Lake, thus the Sutcliffe economy is primarily based on recreation and small commercial enterprises. Wadsworth, with over 50% of the Reservation's population, is the largest town on the Reservation. A tribal smoke shop, gas station and convenience store is located in Wadsworth and provides some employment for tribal members. Wadsworth is close to the recently developed industrial centers in Lyon and Storey County, and close to I-80, so many Wadsworth residents commute off the Reservation to jobs in adjoining counties. Employment includes office and sales occupations, construction, service industries, and professional or other management occupations.

Unemployment on the Reservation has historically been high, with unemployment rates between 30 and 40 percent.

## *Commuting*

U.S. Census 2000 reports that 95.5% of workers drive alone to work, the rest walk to work, carpool, or work at home. The mean travel time to work is 27 minutes.

### **1.1.3. Physical Characteristics of Tribal Land; Natural Resources**

475,000-acre Pyramid Lake Reservation lies in northern Nevada within the Basin and Range physiographic province, an area characterized by alternating, north-south-trending mountain ranges and flat valley floors. The Reservation covers one of these valley floors - including 117,400-acre Pyramid Lake - and portions of adjoining mountain ranges and valleys. Elevations range from 3820 feet at lake level to 8182 feet at Tohakum Peak east of Pyramid Lake. Winnemucca Lake (since diversion of the Truckee River a dry playa moistened only by seasonal precipitation) is located on the eastern boundary of the Reservation and the Smoke Creek Desert lies to the northwest. Pyramid Lake still receives water from the Truckee River, but its level has dropped nearly eighty feet since the Derby Dam diversion was installed in 1905. Similar to other Great Basin lakes, Pyramid Lake has no outlet.

The Pyramid Lake Reservation has a semi-arid climate, with an annual precipitation range of less than seven inches in the basins and up to eighteen inches in the mountains. Most precipitation falls as snow in the mountains, providing stream runoff with peak flow in early spring. Summers are dry, with very little rainfall in July and August.

Pyramid Lake is noted for its interesting tufa formations, which are formed when calcium-rich spring water comes into contact with the carbonates in the water of the lake. The Pyramid, which gives the lake its name, is one such formation. The Reservation also contains several areas of geothermal activity.

Pyramid Lake is home to the endangered and endemic cui-ui sucker fish and the threatened Lahontan cutthroat trout. Historically, the Kuyuidökadö and other Paiute bands harvested these abundant fish at their spawning grounds at the mouth of the Truckee River. Diversion of Truckee River water by the U.S. Bureau of Reclamation's Newlands Project in 1905 reduced water flows to the lake by around fifty percent, resulting in the loss of the Pyramid Lake strain of Lahontan cutthroat and a drastic reduction in the cui-ui population. Since then, the Pyramid Lake Tribe has made concerted efforts to restore the land and waters of their Reservation, including a successful fisheries program to restore the lake's fish populations.

Much of the Pyramid Lake Reservation consists of rangeland with native plant communities consisting of sagebrush and salt shrub communities and associated species, depending on elevation and exposure. The condition of the rangeland has been affected by periodic droughts and overgrazing, in some places, by cattle and feral horses. Wildfires have also burned areas of the Reservation. The resulting vegetation is thus a mixture of the native perennial herbaceous vegetation, and invasive species resulting from drought, wildfire, and grazing.

### **1.1.4. Land Ownership**

While most of the Pyramid Lake Reservation consists of tribal lands (lands held in trust for the Pyramid Lake Tribe by the U.S. Government), due to the settlement history of the area, there are several inholdings of private land within the Reservation boundary - these are referred to as "fee lands" by the Tribe. The "fee lands" consist of ranches on the western side

of Pyramid Lake and plots of land within and adjacent to the community of Wadsworth and along the Truckee River. The Tribe is acquiring these “fee lands” as they become available, and has also acquired adjacent lands that are part of their traditional homeland.

### **1.1.5. Existing Land Use**

Land on the Pyramid Lake Reservation is used for open range livestock grazing; residential areas; agriculture; recreation; administrative and public uses including administration buildings, schools, parks, and public works facilities; and some small commercial areas. Certain areas of the Reservation are reserved for traditional or ceremonial uses. The rangeland is divided into management units based on the nature and location of the grazing resource. Resource management strategies for the rangeland and other areas of the Reservation are presented in a Pyramid Lake Indian Reservation Comprehensive Resource Management Plan adopted in 2005.

Pyramid Lake’s General Land Use Plan designates Pyramid Lake, the Truckee River and its shoreline for recreation and wildlife; Sutcliffe, Nixon, Wadsworth and adjacent lands for residential communities; an area to the northeast of the lake as critical wildlife habitat; and the rest of the Reservation for grazing and wildlife habitat. Certain areas along the Truckee River and the “fee lands” (described above) were not designated any land use.

In 2001 the Tribe completed a 50-year Land Use Plan for each of the three communities on the Reservation. The Resource Management Plan and the Land Use Plan describe land uses in the three Reservation communities as follows.

#### *Wadsworth*

Wadsworth is predominately a residential community housing over 50% of the Reservation population. A number of tribal facilities including the I-80 Smokeshop; Big Bend Ranch RV Park; a sewage treatment plant, and solid waste transfer facility are located in Wadsworth. The Paiute Pit is located near Wadsworth. Natchez Elementary School and a U.S. Post Office also are located in Wadsworth.

#### *Nixon*

Nixon is the seat of tribal government, holding the Pyramid Lake Tribal Headquarters which includes the main administrative office, the Housing Authority, Tribal Police, Tribal Court, and the Natural Resources Division. Nixon also holds a U.S. Post Office, the Tribal Visitor Center and Museum, a Head Start Program, the Pyramid Lake Junior Senior High School, the Nixon Store, and the Pyramid Lake Health Clinic. There also are housing areas in Nixon. A fishery facility is located at Marble Bluff north of Nixon, and is operated jointly by the Tribe and the U.S. Fish and Wildlife Service. Alfalfa is grown on agricultural fields on the Truckee River near Nixon.

#### *Sutcliffe*

Sutcliffe is located on the western shore of Pyramid Lake. It is the main access to the lake and is a destination for recreationists. Pyramid Lake Fisheries offices are located here, as well as the David Dunn LCT Hatchery, the Koch Cui-ui Hatchery, a ranger station, a campground, and a marina operated by a private business under lease from the Tribe. Housing for some tribal members is located in Sutcliffe. Sutcliffe is served by a solid waste transfer station and a sewage lagoon system. Some private in-holdings (“fee lands”) are also located in the Sutcliffe area.

### Surrounding Land Use

The Pyramid Lake Reservation is surrounded on all sides by public land managed by the Bureau of Land Management (BLM). There are scattered parcels of private land within the public land area, and to the south and east the public land is interspersed with a great deal of private land in a "checkerboard" land ownership pattern. All of this land is currently undeveloped and in rural land uses including grazing, some resource extraction, and open space. The combination of currently poor economic conditions, steep slopes, lack of infrastructure, and the presence of large amounts of public land make it likely that Washoe County and Pershing County lands adjacent to the Pyramid Lake Reservation will generally remain undeveloped, and will be used for rural uses only.

The Reservation is located adjacent to the Warm Springs, High Desert, and Truckee Canyon planning areas of Washoe County. Washoe County's Comprehensive Land Use and Transportation Plan describes several land use groups and their accompanying appropriate level of development. Washoe County lands adjacent to the Pyramid Lake Reservation fall within the "Rural Lands Group." According to the Washoe County plan, "The rural lands group recognizes the important contributions that ranching and other rural activities make to Washoe County. The rural lands group is intended to preserve areas where agriculture, grazing and/or open space predominate; and to discourage suburban sprawl into areas that lack essential infrastructure and services for intensification, or that have resource constraints such as steep slopes. In limited cases, rural resorts or low intensity commercial or industrial uses may be appropriate when they respect the greater purpose of the land group."

Closer to the towns and cities of Sparks, Reno, and Fernley (on the southwest and southern sides of the reservation) the open space and public land gives way to private land. The Sun Valley, Spanish Springs and Fernley areas experienced much urban growth during the 1990's and 2000's, resulting in an expansion of urban and suburban land uses closer to the Reservation. In Spanish Springs and Sun Valley most of this land use is suburban residential development with associated commercial areas. In Lyon and Storey Counties, land close to the Reservation along the Highway 80 corridor has been developed with several large business and industrial parks.

To the northwest of the Reservation lies Honey Lake, the town of Herlong, and the Sierra Army Depot. The Sierra Army Depot receives, stores, maintains, and treats munitions from military and non-military sources. Operations at the depot have resulted in the generation of various kinds of contaminants across the installation and surrounding areas including the northern part of the Pyramid Lake Reservation.

## 1.2 TRANSPORTATION SYSTEM

### 1.2.1 Existing Transportation System

Public roads within the Pyramid Lake Indian Reservation current (2010) IRR system were constructed by the State, BIA and Tribe; and maintained by the State and the BIA. A summary of this system, by ownership and surface Type, is shown in **Figure 3**.

**Figure 3**  
**Current Indian Reservation Road System Characteristics**

Jurisdiction	Road Mileage by Surface Type*						Total
	Paved	Gravel	Concrete	Earth	Primitive/Trail	Proposed	
BIA Roads	29.4	29.1	0.0	71.0	9.0	13.5	152.0
State Highways	72.6	0.0	0.0	0.0	0.0	0.0	72.6
County Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tribal Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Urban Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>102.0</b>	<b>29.1</b>	<b>0</b>	<b>71.0</b>	<b>9.0</b>	<b>13.5</b>	<b>224.6</b>
BIA Roads as % of Total	28.0%	100%	N/A	100%	100%	100%	67.7%

\*IRR mileage figures based on 2010 *Miles of Road by Organizational Responsibility and Surface Type* report from BIA Division of Transportation's Road Inventory Field Data System (RIFDS).

### 1.2.2 Road Maintenance

#### **BIA System**

The BIA is obligated by CFR 25, Part 170 to maintain the BIA Road System to a safe and satisfactory condition based upon the availability of funds and the roads' as-built condition. Road maintenance funds are appropriated by Congress and allocated to the BIA separately from construction funds.

Road maintenance funds are used to maintain an optimal level of road maintenance, at the least cost, based on the road condition. BIA road engineers/managers work with tribes in determining the level of maintenance to be performed within budgetary constraints, and establish a road maintenance program for each tribe. Maintenance priorities are frequently based on the need to provide community members safe access to and from homes and facilities. Emergency conditions have the highest priority for road maintenance funding. Other priorities are determined by roadway surface type and level of use.

BIA policies and regulations state that road maintenance activities can include the preservation and repair of the road surface, blading roadway shoulders and ditches, clearing drainage structures, snow removal, and the installation/replacement of traffic control, directional and street signs. In practice, however, surface preservation and repair is frequently

funded using construction funding, while maintenance funding covers regular, annual activities such as snow removal.

Funds for the maintenance of BIA roads on the Pyramid Lake Reservation are provided to the Tribe under a PL 93-638 (*Indian Self-Determination and Education Assistance Act*) Contract by the BIA's Western Nevada Agency. The Pyramid Lake Paiute Tribe has a maintenance department with a two-person maintenance crew and one snowplow. Maintenance activities consist of winter snow plowing, debris clearing, and blading of dirt roads. In the years 2005-2010, the Tribe received the following for road maintenance.

**Figure 4: PLPT Road Maintenance Funding**

2005	\$64,797
2006	\$54,466
2007	\$129,617
2008	\$110,380
2009	\$109,607
2010	\$194,900

SOURCE: Johnnie Garcia, PLPT Transportation Planner

The funds were used for purchasing supplies and equipment used for maintaining the current inventory of BIA Reservation Roads. The table in **Appendix C** shows estimated per-mile maintenance costs for paved Pyramid Lake roads. The estimated per-mile annual cost of road maintenance is \$6,325. This includes only preservation and repair of the road surface.

### **State System**

State Routes 445, 446 and 447 cross the Reservation and provide access to Reservation towns and other areas of the Reservation. Interstate Highway 80 crosses the Reservation on its southern edge. These roads are constructed and maintained by NDOT. SR 445, 446, and 447 are classified by the Nevada Department of Transportation (NDOT) as Minor Arterials from where they enter the Reservation to the various Reservation towns. Gerlach Road between Nixon and Gerlach (the continuation of SR 447) is classified as a Rural Major Collector, and Surprise Valley Road (the continuation of the road traversing the western shore of the lake that starts out as SR 445 and 446) between Pyramid and the Cedarville Highway north of the Reservation is classified as a Rural Minor Collector. I-80 is classified as an Interstate Highway.

Maintenance of the state roadways is carried out by the NDOT. NDOT monitors state highways annually in a Pavement Management System, in which the "health" of the pavement is assessed based on measured pavement distress. The distresses and other factors are summed, and a repair strategy is assigned. Prioritization of projects is based on the points assigned in the Pavement Management System evaluation, as well as the pavement age, traffic loading, and maintenance costs. Once pavement maintenance project priorities are determined, the projects are included NDOT's Annual Work Program.

NDOT's FY 2011 Annual Work Program (AWP) for Washoe County shows the following projects on the Pyramid Lake Reservation:



**Figure 5: NDOT FY 2011 Projects**

<b>NDOT PROJECT NUMBER</b>	<b>LOCATION</b>	<b>DESCRIPTION</b>
WA20090179-11	1-80 from 1.41 mile east of Painted Rock Interchange to Lyon/Storey county line	Coldmill resurfacing
WA20100199-11	SR446 2.8 miles east of junction SR445	Construct energy dissipation structure and stabilize embankment
WA20100173-11	SR446 Nixon	Bridge maintenance
WA20100208-11	12.94 miles north of junction SR446	Remove and replace cattle guard

SOURCE: Nevada Department of Transportation Annual Work Program

**County Roads**

Washoe County owns and maintains nineteen county roads on the Pyramid Lake Reservation in the community of Wadsworth. Washoe County also maintains portions of State Route 33, an unpaved road which runs along the northwest boundary of the Reservation, and Olinghouse Road, an unpaved road near Wadsworth.

**1.2.3 Road Construction**

**Current or Recently Completed Projects**

The Tribe is currently carrying out the following road transportation improvement projects:

1. ARRA Restoration & Repair roads project
  2. ARRA Safety No. 1
  3. ARRA Pelican Point Design
  4. Wadsworth Bypass Road Construction beginning with the design.
  5. Long Range Transportation Plan with Inventory Update.
- (SOURCE: Johnnie Garcia, PLPR Transportation Planner)

**Construction - BIA System**

BIA roads on the Pyramid Lake Reservation’s inventoried IRR road system are constructed with federal funding from the Indian Reservation Roads portion of the Federal Lands Highway Program. These funds are administered and allocated by the BIA. The Transportation Equity Act for the 21st Century (TEA-21) required the Secretary of the Interior to enter into negotiated rulemaking with tribal governments to develop new IRR Program regulations and establish a new funding formula. The result of this negotiated rulemaking, a “Final Rule”, which contained a new funding allocation process, went into effect on November 13, 2004. (See **Appendix D**) While new federal transportation legislation -- “SAFETEA-LU” and other successor legislation— has since been passed, the funding allocation formula remains and is expected to remain essentially the same under the new legislation. BIA has also received funding for transportation

improvements through the American Recovery and Reinvestment Act of 2009, and several transportation improvement projects on tribal land currently (2010) are being completed with this funding source.

*Relative Need Distribution Factor (RNDF)*

A certain percentage of the overall transportation funding allocation is set aside to be used for tribal transportation planning. Of the remainder of the funds, 5% are set aside in a discretionary pool to be used for high priority projects. The rest of the funds are allocated to tribes based upon a “**Relative Need Distribution Factor**” (RNDF). The population data used in the RNDF is the American Indian and Alaska Native Service population developed by the Department of Housing and Urban Development (HUD), under the Native American Housing Assistance and Self-Determination Act (NAHASDA). This is a mathematical formula that calculates the “relative need” of tribes for transportation funding based upon

- Cost to construct (CTC) – 50%
- Vehicle Miles Traveled (VMT)– 30%
- Population – 20%

The CTC is the cost required to improve a transportation facility from its existing condition to a condition that would meet adequate standards. The VMT is estimated by the BIA using traffic counts conducted during the road inventory times the length of the IRR roads in the inventory. Using this formula, annual funding for the Pyramid Lake Tribe has been as follows:

**Figure 6:  
Pyramid Lake Paiute Tribe  
2005-2010 IRR Program Funding**

Fiscal Year	IRR Const.	PAF	(2%) Tribal Trans Plng	Annual Total
2005	\$430,909	\$5,246	\$10,276	\$446,431
2006	\$437,423	\$11,926	\$10,557	\$459,906
2007	\$370,609	\$22,592	\$9,083	\$402,284
2008	\$291,285	\$31,878	\$7,281	\$331,444
2009	\$290,339	\$42,156	\$7,307	\$339,802
2010	\$258,502	\$41,735	\$6,500	\$306,737
<b>Totals</b>	<b>\$2,079,067</b>	<b>\$155,533</b>	<b>\$51,004</b>	<b>\$2,285,604</b>

Source: Bob Maxwell, Regional Transportation Planner, BIA-WRO Division of Transportation

This includes a 2% set-aside for transportation planning purposes. If unused, the allocated funds can be carried over from year to year.

BIA construction funds are allocated to self-governance tribes according to BIA procedures; for other tribes, construction funds are allocated to regional offices. Tribes can issue bonds or obtain loans to finance road construction projects, using IRR funds as collateral, and then repay the bonds or loans as the annual allocation of construction funds is received.

It becomes clear from the formula that the larger the tribal population, the higher the traffic counts, and the more miles of inventoried roads, the more transportation funding a tribe will receive. This puts small tribes at a disadvantage: it is conceivable that some tribes may never receive enough funding under this formula to complete high-priority transportation projects, even if they are critical to health and safety.

### *IRR High Priority Project Program (IRRHPP)*

This program is a set aside of IRR funding, within the IRR Program annual Tribal Transportation Allocation Methodology (TTAM), that is meant to be used by tribes whose annual allocation of IRR construction funds is insufficient to complete their highest priority project and/or by any tribe impacted by an emergency/disaster to make repairs to any IRR facility. IRRHPP funds are allocated to tribes on a competitive basis following the submission and approval of applications to BIADOT, and cannot exceed \$1,000,000 per project. Approved IRRHPP funding is obligated and distributed to tribes by the BIA regional offices.

### *The Role of Transportation Planning*

It is important to note that transportation planning on the tribal and reservation level is an important part of this funding allocation system. Only projects in a FHWA-approved transportation improvement plan (TIP) are eligible for funding, and these projects are identified through the long-range transportation planning process. This requirement became quite clear with language in the SAFETEA-LU legislation stating that IRR funds "shall only be expended on projects identified in a transportation improvement program approved by the Secretary [of the Interior]." [Federal Highway Administration]

## **Nevada Department of Transportation (NDOT) Planning and Construction**

NDOT's mission is to efficiently plan, design, construct and maintain a safe and effective seamless transportation system for Nevada's economic, environmental and social needs. NDOT administers and implements programs for the planning, development, construction, and operation of the state's transportation system. The transportation planning process sets the stage for fulfilling this mission by balancing needs with limited resources. Specific transportation improvement projects are set forth in the State Transportation Improvement Program (STIP) and Annual Work Program (AWP).

The STIP is the instrument used to implement the plans resulting from the statewide transportation planning process. The planning process sets long-range funding strategies statewide, and the transportation needs identified are used in developing a financially constrained STIP. The Annual Work Program lists transportation projects that NDOT intends to work on during the current fiscal year. The Short Range Element (SRE) consists of projects scheduled for the second and third years and the Long Range Element (LRE) are projects NDOT plans on working on, when funding is identified in the fourth through tenth years.

SAFETEA-LU included a new emphasis on consultation during the planning process with agencies, including tribal agencies, charged with natural and cultural resource preservation, and a new requirement to consult with representatives of bicycle and pedestrian users and the disabled.

## **Planned NDOT Road/Transit Projects in the Area**

In addition to the projects described in the previous section, several projects to add lanes to SR 445, the Pyramid Highway through Sparks and Spanish Springs are shown in the Long Range Element. The estimated cost of these projects is around \$325 million, to take place in many phases. There is no committed funding source yet, nor are construction dates shown. While this work will not take place on the Reservation, it is listed here because, by widening and adding lanes to the existing highway, the projects may both shorten the time it takes to drive to the Reservation from the cities of the Truckee Meadows, and potentially induce growth in the further-out subdivisions of the Spanish Springs area. Both of these effects may in turn affect the type and amount of automobile traffic on the Pyramid Lake Reservation.

### **1.2.4 Roadway Functional Classification**

Roads are classified as to the functions they perform with regard to the movement of traffic and access to property. These functional classifications become important to transportation planning when new roadways are being designed and developed. The type of land use and the overall population of an area served by a road determine its functional classification. The function of a road serving a few houses is to provide access to those houses, while the function of an arterial highway is to provide higher-speed travel for a greater volume and variety of traffic through an area.

Within the IRR system there are two types of road classifications: State Highway Classifications and BIA Road Classifications. Both the state and the BIA use functional classifications as the basis for classifying their roads: these systems are similar, but the road types are given different names or labels.

A description of the two systems of functional classifications is in **Appendix E**. BIA functional classifications of all Pyramid Lake Reservation roads are shown in **Appendix B**.

### **1.2.5 Road Inventory**

A physical inventory of the public roads serving the Pyramid Lake Reservation was performed by Lumos & Associates in 2010. This inventory found that there were approximately 106.4 miles of public roads and trails that were eligible to be included in the IRR system and 25.6 miles of existing BIA roads that needed to be deleted and/or removed from the BIA system and placed in the County Road System. Future changes to the IRR inventory – for example; new roads, corrected road mileage, updated traffic data, etc. – should be added annually, as needed, to maintain a current IRR inventory. An Inventory Comparison List identifying all the proposed IRR system revisions are contained in **Appendix B**, which lists BIA, Tribal and State Route Numbers, road names (if any), BIA functional Classification, Length, Surface Type and Construction Need. A summary of proposed mileage revisions to the Pyramid Lake Tribe's IRR system are shown in Figure 7.

**FIGURE 7  
PROPOSED IRR SYSTEM REVISIONS**

**SUMMARY OF PROPOSED BIA ROAD SYSTEM MILEAGE REVISIONS**

	Miles
Existing BIA DOT Inventory	152.0
Roads to be Added to BIA System	0.0
Roads to be Deleted from BIA System	(5.6)
Other Route Mileage Corrections (Net Deletion)	(1.3)
<b>Proposed BIA Road System</b>	<b>145.1</b>

**SUMMARY OF PROPOSED TRIBAL SYSTEM MILEAGE REVISIONS**

	Miles
Existing BIA DOT Inventory	0.0
Roads to be Added to Tribal System	40.8
Roads to be Deleted from Tribal System	0
Tribal Trails to be Added - Tahoe Pyramid Bikeway (TPB)	14.5
Other Tribal Route Mileage Corrections (Net Deletion)	0.0
<b>Proposed Tribal (IRR) System</b>	<b>55.3</b>

**SUMMARY OF PROPOSED NON-BIA IRR SYSTEM MILEAGE REVISIONS**

	Miles
Existing non-BIA Inventory	72.5
Roads to be Added to non-BIA IRR System	48.7
Roads to be Deleted from non-BIA IRR System	0.0
Other Route Mileage Corrections (Net Deletion)	1.4
<b>Proposed Non-BIA (IRR) System</b>	<b>122.6</b>

**TOTAL IRR SYSTEM      323.0**

**1.2.6 Rights-of-way**

The only right-of-way issue identified on the Pyramid Lake Reservation was the lack of valid rights-of-way on housing subdivision streets constructed by the Indian Housing Authority and unimproved BIA and Tribal roads. A valid right-of-way (grant of easement) approved by the Superintendent – Western Nevada Agency, must be in place before IRR funds or any other

federal funds can be expended to improve these roads. This applies to both BIA and tribal roads. A valid right-of-way is also needed to transfer ownership and maintenance responsibility from the Tribe to the BIA.

**1.2.7 Traffic Control**

Traffic control devices on the Reservation consist of stop and yield signs, and speed limit signs.

**1.2.8 Drainage and Bridges**

*Bridges:* The Reservation’s BIA IRR system includes a bridge over the Truckee River in Nixon as well as smaller bridges and culverts over irrigation ditches and drainages throughout the Reservation.

*Drainage:* The current road inventory revealed “Severe drainage problems” on the following road segments.

**Figure 8: PLPT Road Segments with “Severe Drainage Problems”**

Route Number	Section Number	Name (if named)
0002	040	The Willows Road (beach access)
0002	050	Beach access
0006	026	break-off from "Recreational Road"
0008	020	Unnamed
0008	025	Unnamed
0008	040	Sand Road
0011	010	Sweetwater
0101	170	Winnemucca Street
0102	240	unnamed access road to rodeo grounds (Ranch Road extension)
0205	007	Road along Separator Beach
0205	008	Road along Separator Beach
0205	040	Beachfront road connects Pelican Beach to Windless Bay fishing area
9035	810	Olinghouse Road
P101	055	Day Care facility parking lot (Nixon)
P102	101	Day Care facility parking lot (Wadsworth)
T100	100	Tahoe Pyramid Bikeway #10

In addition, the PLPT Transportation Planner lists the following drainage problems based upon field observations:

1. 9<sup>th</sup> street east portion in Wadsworth
2. Road to the Tribal Administration Offices
3. Parking area at the Tribal Court House
4. Route #3 Wadsworth near the Paiute pit gravel quarry
5. Culvert pipes on S. Hollywood Road and W. Pyramid Lake Road are nearing their life expectancy and need replacing.

### **1.2.9 Street Lighting**

Street lights are located in the housing subdivisions, Tribal yards, Tribal administration buildings, Tribal Clinic, Tribal enterprises, and the Pyramid Lake High School. In the transportation workshop held on May 15, 2010, participants suggested that streetlights be installed at the bus stop in front of Natchez School in Wadsworth, and also at the intersection of Highway 40 and State Route 447 in Wadsworth for safety and visibility.

### **1.2.10 Public Transit, School Bus and Mail Routes**

Natchez Elementary in Wadsworth has 141 students in grades K through 6 using bus routes on the Reservation. Students in Nixon and Wadsworth have the choice to go to and are bused to Mendive Middle School in Sparks, Reed High School in Sparks, Fernley Intermediate School, Fernley High School, or Pyramid Lake High School. Sutcliffe Students can attend and are bused to Alice Taylor Elementary in Spanish Springs, Shaw Middle School in Spanish Springs, and Spanish Springs High School or Pyramid Lake High School in Nixon. U.S. Mail deliveries on the reservation are to post offices in Nixon and Wadsworth. The Pyramid Lake Tribe provides transportation for elders as needed to the senior center.

### **1.2.11 Bicycle and Pedestrian Routes**

Most bicycle and pedestrian use on the Reservation takes place in the three towns. Most of the residential streets on the Reservation have either curb and gutter or dirt shoulders, with no sidewalks. Children walk to the Natchez Elementary School in Wadsworth: pedestrian crosswalks across SR 447 by Natchez School have warning lights and signs. A recreational mountain bike trail runs from Wadsworth to the south shore of Pyramid Lake. Running along the west side of the Truckee River, the trail is about 26 miles long, alternating between dirt and paved surfaces.

### **1.2.12 Pyramid Lake National Scenic Byway**

Portions of State Routes 445, 446, and 447 on the Pyramid Lake Reservation are designated as a National Scenic Byway. The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration. The program is a grass-roots collaborative effort established to help recognize, preserve and enhance selected roads throughout the United States. The U.S. Secretary of Transportation recognizes certain roads as All-American Roads or National Scenic Byways based on one or more archeological, cultural, historic, natural, recreational and scenic qualities. The Pyramid Lake route was designated as a Scenic Byway in September, 1996.

### 1.2.13 Motor Vehicle Accident Data

A March 18, 2010 memo from Sergeant S. Miller of the tribal police (**Appendix F**) describes motor vehicles crashes on the Reservation in the period 2005-2010. In that period, the tribal police investigated approximately 200 accidents. The Nevada Highway Patrol investigated approximately 20 accidents outside of the annual "Burning Man" event (in which thousands of event participants drive through the Pyramid Lake Reservation in route to the Black Rock Desert north of the Reservation) and 90 accidents during Burning Man. There were three fatal accidents in the 2005-2010 time period. The memo lists and describes 5 frequent accident sites – they are all on State Routes 445 and 447. Accident causes include narrow roadway with restricted vision, soft shoulders, curves, and driving too fast for conditions.

Crash data for 2005-2010 were obtained from NDOT for state highways on the Reservation. The table below shows the number of crashes on each State Route during that period.

**Figure 9: Traffic Crashes on State Routes on the Pyramid Lake Reservation, 2005-2010**

Route Number	Number of Crashes
SR 427	13
SR 445*	18
SR 446	3
SR447*	113

\* includes portion north of Reservation boundary  
SOURCE: Nevada Department of Transportation

Most crashes took place on SR 447. This is the longest route on the Reservation. The crashes were predominately single-car accidents. The most common vehicle factor was failure to keep in proper lane and run off road. The most common "most harmful event" in injury crashes was vehicle rollover. Weather did not appear to be an important factor, as most crashes took place in clear weather with good visibility. Under "driver factor" the most common was "apparently normal," followed by "fatigued driver." Only three drivers were reported as had been drinking. Crashes on SR 445 and 446 had similar factors. There were few crashes on SR427, but more 2-vehicle crashes in proportion to the total number – this may be because the route segment is more urban.

### 1.2.14 Traffic Hazards

According to law enforcement reports and tribal staff and member observations, traffic hazards on the Reservation are as follows:

- Narrow roadway, soft shoulders or no shoulders, and debris on roadway (Dead Ox area) on portions of SR 447 and SR 445.
- Inadequate street lighting in some areas leading to hazardous conditions for drivers and pedestrians.
- The annual Burning Man event which brings thousands of participants across the Reservation who have come from long distances and who are not accustomed to local driving conditions.



- Dust blowing from trucks hauling material from quarries on and adjacent to the Reservation, which often but temporarily diminishes visibility on Reservation highways used by these trucks.
- Not enough marked and signed pedestrian crosswalks and other pedestrian improvements across and along state highways through the residential areas.
- Missing speed limit and other traffic signs.

#### **1.2.15 Law Enforcement**

The Pyramid Lake Tribe exercises civil and criminal jurisdiction over Indians and civil jurisdiction over non-Indians where the non-Indians have caused an event to occur within the Reservation that gives rise to some legal claim. Law enforcement is provided by tribal police officers. Their services are supplied by the BIA under a contract with the Tribe.

## 1.3 EXISTING TRAFFIC VOLUME

### 1.3.1 Methodology and Results of Traffic Study

#### *Methodology*

The Federal Highway Administration's publication *Developing a Long Range Transportation Plan – Information Tools for Tribal Governments* was reviewed for guidelines, recommendations and scope. Data sources were identified and reviewed for their ability to function as indicators of travel demand. Due to the rural nature of the PLPT Reservation and the availability of data, a simplified historical trend analysis was selected.

Population and Annual Average Daily Traffic (AADT) information sources were identified and found to have enough historical data to support a trend analysis. Population data was supported by three sources; the U.S. Census, PLPT, and BIA Labor Force Reports. The numbers for tribal enrollment were utilized instead of numbers for total eligible for services due to the consistency of the tribal enrollment numbers, as the total eligible for services varied greatly from year to year. Datasets for the following years were obtained based on availability: 1990, 1993, 2000, 2001, 2003, 2004 and 2005. Population for years where datasets were not available was derived by establishing trends and applying the growth factors accordingly.

#### *Results*

The Travel Demand study reviewed the recent trends in population and traffic to establish a growth rate which was then applied to current information to project population and traffic in the future, to the years 2020 and 2030. The recent population and traffic growth was consistent with the BIA's annual growth rate of 2.0%.

Accident occurrences and history were evaluated to assess the location, type and cause of accidents. Corrective measures to reduce accidents on the Reservation may be beneficial to motorists and the population in general. While traffic accidents and their causes may be due to operator error, an evaluation of existing conditions per the 2010 NDOT Road Design Guide is recommended if not already completed.

The PLPT Reservation experiences increased traffic on weekends and holidays from recreational users traveling to and from Pyramid Lake. Increase education, patrol and enforcement may be beneficial to reducing accidents and enhancing visitor experiences.

In an effort to enhance mobility for the residents and visitors to the PLPT Reservation, a ride share program or mobility center may be a beneficial and relatively cost effective means of providing additional opportunities for residents to get to their destinations. Bicycling and pedestrian facilities should be enhanced and incorporated into new development and roadway reconstruction efforts, particularly around schools and between housing and commercial land uses.

The full Travel Demand study is included as **Appendix G**

## **PART TWO – TRANSPORTATION PLAN**

### **2.1.1 Background on Pyramid Lake Tribe Planning Efforts**

The Pyramid Lake Paiute Tribe does not regulate development through a land use plan implemented by zoning regulations. Instead, the Tribe has a 50-year map that depicts areas for different land uses around the existing communities of Wadsworth, Sutcliffe, and Nixon. All other land on the Reservation is designated on the maps as land to be used for livestock grazing.

In 2005 the Pyramid Lake Paiute Tribe, in partnership with the Natural Resources Conservation Service, prepared a *Comprehensive Resource Management Plan* for the Pyramid Lake Reservation. This plan lays out resource management objectives for the Pyramid Lake Reservation.

Currently (November, 2010), the Tribe is preparing a *Pyramid Lake Economic Development Plan*. In November 1990 Congress passed Public Law 101-618, the Truckee-Carson-Pyramid Lake Water Settlement Act. Section 208(3)a of PL-101-618 requires that the Tribe adopt an Economic Development Plan that identifies and outlines long-term profit making opportunities for the Tribe and optimal employment opportunities for Tribal Members and establishes a high quality recreational area at Pyramid Lake. This Economic Development Plan has two sections. The first, a *Strategic Development Plan*, was completed and approved by the Tribal Council on July 2, 2010. The second part of the plan, an *Investment and Management Plan*, will be completed in 2011. The recently completed *Strategic Plan* identifies ways to create jobs and growth on the Reservation through generalized goals and policies. The *Investment and Management Plan* will lay out specific strategies to accomplish the goals. The purpose of the plan is to create long term profit-making opportunities, to create optimum employment opportunities, and to establish a high quality recreation area at Pyramid Lake for the Pyramid Lake Paiute Tribe and its Members.

### **2.1.2 Long Range Transportation Plan Goals and Objectives**

Based on an evaluation of existing conditions and a review of existing Tribal plans, transportation goals and objectives were drafted. Tribal staff reviewed the draft goals and objectives and changed them to make them more consistent with tribal policies and responsive to tribal needs. In addition, tribal staff and tribal member ideas gathered at a transportation workshop held on May 15, 2010, were used to formulate the goals and objectives.

**Goal 1** Provide tribal members with safe, convenient access to administration areas, housing, and other tribal services.

**Objective 1.1** Provide paved, improved parking areas for all Tribal public facilities including community centers, schools, and administrative areas.

**Objective 1.2** Improve and pave existing parking area at Tribal Administration area in Nixon.

**Objective 1.3** Regularly maintain roads serving housing areas and tribal services.

**Objective 1.4** In all transportation improvements and maintenance, ensure that safe and convenient access by bicycling and walking is provided and/or maintained.

**Objective 1.5** Improve school bus stops.

**Goal 2** Implement transportation improvement projects and programs that enhance the safety of all users, including pedestrians and bicyclists, as well as motorists, should be top a priority.

**Objective 2.1** Develop a Safe Routes to School plan for Natchez School in Wadsworth, and implement the plan, including infrastructure improvements and in-school programs educating families about and encouraging safe biking and walking.

**Objective 2.2** Develop a Tribal Highway Safety Improvement Program (THSIP) to identify and decrease the potential for motor vehicle crashes on the Pyramid Lake Reservation, including road safety audits for identified sections of concern including Dead Ox and Marble Bluff areas.

**Objective 2.3** Work with the Nevada Department of Transportation to monitor and verify traffic counts on State Routes on the Reservation.

**Objective 2.4** Work with the Nevada Department of Transportation to improve and widen shoulders on State Routes on the Reservation to minimize rollover crashes.

**Goal 3** Assure that all proposed transportation improvement projects are consistent with the Tribe's Economic Development Plan, and help move the Tribe toward attainment of those goals.

**Objective 3.1** Develop a system of regular communication between tribal transportation planning and economic development staff regarding coordination of transportation improvements with economic development.

**Objective 3.2** Development plans for new tribal enterprises and other industrial and/or commercial areas should include traffic studies estimating the traffic generated by the new facilities and plans for transportation improvements providing access to the facilities.

**Objective 3.3** Access to and within tribal enterprise, industrial, and commercial areas by all transportation modes including pedestrian, public transit, and bicycling should be considered and accommodated in development plans.

**Objective 3.4** When planning for and developing energy projects on the Reservation, the potential impact of heavy construction and maintenance vehicles on Reservation roads should be assessed and a plan should be in place for

- A. Repairing road damage from heavy construction traffic after the construction is completed, and
- B. Maintaining roads subject to heavy truck traffic during the operation of the energy production facility.

**Goal 4** Carry out transportation improvement projects that would improve the recreational resources of the Pyramid Lake Reservation, including construction and rehabilitation of boat docks; providing appropriate access to camping, fishing, and scenic areas; providing parking for recreational visitors; providing interpretive opportunities such as scenic turnouts and gateway features; and providing recreational trails are high transportation improvement priorities.

**Objective 4.1** In coordination with economic development staff and tribal leaders, continue to develop and implement an interpretive plan for the Pyramid Lake Scenic Byway, including the design of gateway features or signage, kiosks, an interpretive center, and scenic turnouts.

**Objective 4.2** In coordination with economic development staff and tribal leaders, develop a phased plan to improve recreational access to the lake and other recreational areas on the Reservation.

**Objective 4.3** Programs developed to provide long term maintenance and management of recreational facilities should include strategies for the regular maintenance and management of transportation improvements serving those facilities.

**Objective 4.4** Expand a voluntary trailhead registration system to track use of the Tahoe Pyramid Bikeway on the Reservation.

**Objective 4.5** Evaluate need for more boat docks on Pyramid Lake to enhance recreational access and safety/emergency response.

**Objective 4.7** In coordination with economic development staff, promote Pyramid Lake and the Pyramid Lake Scenic Highway as destinations for guided tours and tour bus routes.

**Goal 5** Assure that all transportation improvement projects are context sensitive and enhance, rather than detract from, the scenic, natural and cultural resources of Pyramid Lake.

**Objective 5.1** In planning for and designing transportation improvements, develop a system to coordinate with tribal natural resources staff, cultural resources staff, elders and tribal leaders, and outside specialists regarding the location of critical natural and cultural resources, the potential impact of the proposed improvement on these resources, and strategies for mitigating the impact.

**Objective 5.2** Develop a cultural resources inventory that can be used so transportation improvement projects are located and designed to minimize impact on cultural resources.

**Objective 5.3** All transportation improvement projects will comply with federal and tribal environmental laws and regulations.

**Goal 6** Consider the impact of transportation availability on tribal members' access to higher education opportunities, job training, health care and employment, and consider implementing a transit service to provide access for tribal members to these and other opportunities and services.

**Objective 6.1** Study the feasibility of initiating a public transit service for tribal members to access services on and outside of the Reservation. In developing this plan, work cooperatively with social service providers to identify potential transit service users, funding opportunities, and the potential for joint operation of the service.

**Objective 6.2** Study the feasibility of initiating mass transit for recreational visitors including park and ride facilities in Wadsworth, and transportation to/from the Reno Tahoe Airport and from resort/casinos.

**Goal 7** In drafting and implementing future land use plans for the Reservation, consider the interrelationship of land use and transportation and develop the land use plans in coordination with updates to this Long-Range Transportation Plan.

**Objective 7.1** Work with transportation, planning, natural resources, and cultural advisory committees in evaluating transportation improvement projects.

**Goal 8** Provide appropriate transportation improvements to serve ranching and agriculture.

**Objective 8.1** Coordinate with the Pyramid Lake Cattlemen’s Association to identify, improve, and regularly maintain roads critical to the operation of agricultural and grazing uses.

**Objective 8.2** Remove unnecessary cattleguards.

**Goal 9** Regularly maintain existing transportation improvements (roads, parking areas, bus stops, scenic turnouts, bike paths, sidewalks).

**Objective 9.1** Draft and implement a road and transportation maintenance plan and/or a pavement management program

**Objective 9.2** Maintenance should consist of not only regular surface repair and snow removal when necessary, but also litter and debris pick-up, clearing of drainage structures, and removal of invasive plants.

**Objective 9.3** Work with the BIA and NDOT to identify and obtain adequate funding to carry out Reservation transportation maintenance needs.

**Goal 10** Improve pedestrian and bicycle conditions on the Pyramid Lake Reservation.

**Objective 10.1** Evaluate need for and potential locations of new walking paths, sidewalks and bicycle trails throughout the Reservation.

**Objective 10.2** Develop a “rails to trails” bicycle and pedestrian trail along the abandoned railroad grade through Wadsworth, to provide nonmotorized access to the school and community center, housing areas, and recreation.

**Objective 10.3** Develop a plan to improve, maintain, and extend the Tahoe Pyramid Bikeway. This plan should include.

A. An evaluation of the present location of the bikeway and alternatives for redesign and/or relocation of the facility to

- minimize impact on the privacy of tribal members residing in the housing areas on the Reservation
- B. Preliminary and/or final design of a continuation of the bikeway along the western shore of Pyramid Lake to Sutcliffe.
  - C. An assessment of the potential impact of the bikeway extension on the Reservation's natural and cultural resources and a plan to mitigate the impact.
  - D. Design of interpretive/directional signs or features.
  - E. Plans for special events on the bikeway.
  - F. Continued coordination with the nonprofit Tahoe Pyramid Bikeway organization regarding volunteer bikeway construction and maintenance and special events.
  - G. A plan for maintenance of the bikeway.
  - H. Identification of funding sources for the construction of the bikeway extension and for ongoing maintenance.

### **2.1.3 Short and Long Range Development Plans**

Overall, tribal economic development goals consist of the following:

"To create long term profit-making opportunities, to create optimum employment opportunities, and to establish a high quality recreation area at Pyramid Lake for the Pyramid Lake Paiute Tribe and its Members."

Tribal resource management goals include the following:

"To enhance natural resources that sustain agricultural productivity and environmental quality while supporting economic development, recreation and scenic beauty...to sustain the ecology of the entire watershed encompassing the Pyramid Lake Reservation...to maintain and improve the biotic and abiotic conditions of the Pyramid Lake ecosystem...to improve conditions in the Lower Truckee River and in Pyramid Lake so Lahontan cutthroat trout and cui-ui populations...are self-sustaining."

As this Long Range Transportation Plan, as well as the *Comprehensive Resource Management Plan* and the *Economic Development Plan* are implemented, the following future conditions on the Reservation may occur.

### **2.1.4 Assumptions for the Years 2015 (five-year) and 2030 (20-year)**

#### Year 2015

It is assumed that by the year 2015:

- The Tribe's *Economic Development Plan* has been completed and is in the process of being implemented.
- The Wadsworth Bypass project has been completed.

- Projects to improve the safety of students walking to Natchez School in Wadsworth have been completed.
- A phased plan for recreational improvements has been completed and some recreational development projects providing access to Pyramid Lake, including potentially a new paved road to Pelican Point, and new, appropriately-sized parking lots for recreational visitors, have been completed.
- Use of the Tahoe Pyramid Bikeway has increased, and a plan is being implemented to extend the facility north to Sutcliffe.
- A geothermal, solar, or wind energy project on the Reservation will be either in final planning and construction phases or completed.
- The Tribe has assessed the feasibility of a public transit system providing access to destinations on and off the Reservation, and depending on the results of the feasibility study, has either sought other means to increase tribal member access to employment and other services, or received funding for, designed, and implemented the transit system.

It is assumed that by the year 2030:

- A comprehensive strategy to develop and manage the Reservation's recreational resources has been designed and implemented, including new boat docks, parking areas, camping areas, trails, and interpretive facilities.
- New commercial enterprises have been developed on the Reservation to serve Reservation residents, recreational visitors, and others.
- The industrial park near Wadsworth has been developed and partly occupied.
- The Reservation now holds one or more completed and functioning alternative energy facilities.
- Tribal members continue to relocate back to the Reservation due to improved jobs and housing, business development, and educational opportunities.
- Grazing and other agricultural use, with improved grazing conditions and possibly new crops, continues as a major use of Reservation land outside of existing communities.
- Pyramid Lake continues to hold a thriving fishery that draws visitors both regionally and nationally.

## **2.2 PROJECTED TRAVEL DEMAND**

### **2.2.1 Projected Traffic Volumes and Analysis of Demand and Capacity**

In the Road Inventory Update, Lumos and Associates was directed by BIA/WRO to use a standard 2% annual growth rate to project the 20-year Average Daily Traffic (ADT) on Reservation and Colony roads. The Travel Demand Study (**Appendix G**) shows that this standard growth rate is consistent with the actual growth rate on the Reservation. As the Travel Demand Study indicates, at this growth rate, Reservation roads will continue to exhibit the current minimal traffic congestion: they will remain rural roads.

However, the Travel Demand Study also shows that since Pyramid Lake is a recreational destination from adjacent cities, weekend daily traffic increases dramatically – up to a sevenfold increase – on busy holiday weekends. If the population of the adjoining urban areas begins to grow again after the 2009 recession, and if the Tribe implements improvements and programs designed to draw recreational visitors to Pyramid Lake, segments of the Reservation road



system will become more congested on weekends, potentially resulting in increased crashes and slower travel speeds.

In addition, the Tribe's economic development plans call for industrial development in designated areas. Without plans for the development, it is not yet possible to estimate potential traffic volume added by the development. If significant commercial, residential or industrial development projects do take place on the Reservation within the 20-year time frame of this plan, the Tribe should determine during the process of project planning and development whether a separate travel demand analysis should be prepared and incorporated into the Long Range Transportation Plan.

## **2.3 METHOD USED TO IDENTIFY POTENTIAL TRANSPORTATION IMPROVEMENT PROJECTS**

In addition to evaluating Tribal development plans and future traffic generation, Lumos used the following strategies to further identify and define transportation needs and potential transportation improvement projects:

- *Existing priority list*

In May 2009, the Pyramid Lake Tribal Council adopted a revised Transportation Improvement Projects Priority List. The projects currently on this list were taken as a starting point in formulating an expanded and revised list based on the information developed in the planning process.

- *Review of Road Inventory*

In the 2010 draft road inventory update, roadway conditions were evaluated and potential hazards identified. Lumos reviewed this information to identify road segments most in need of repair or reconstruction.

- *Review of previous plan*

In 2004 Ayala and Associates completed a Transportation Plan for the Pyramid Lake Tribe. Lumos evaluated the potential transportation projects in that plan in light of the Tribe's current needs and priorities.

- *Staff meetings and review*

Lumos met several times with tribal leaders and staff to further identify and evaluate potential projects. In these meetings, consultants and staff reviewed tribal plans and priorities and conditions on the ground.

- *Transportation Workshop, public review*

On May 15, 2010 a transportation workshop was held at the tribal headquarters in Nixon on the Pyramid Lake Reservation. Attendees were given the opportunity to comment on traffic safety hazards, transportation needs, and potential transportation improvement projects on the reservation. Six tribal members and/or staff attended and commented on many aspects of transportation on the Reservation. Materials from the workshop are in **Appendix H**. Tribal members and the public were also given the opportunity to review and comment upon this draft plan. A notice of the review period and availability of the document, with any comments, are in **Appendix H**.

- *Plan Goals and Objectives*

The goals and objectives listed in Section 2.1.2, above, were reviewed to identify potential transportation projects that would implement the goals or objectives.

## 2.4 RECOMMENDED TRANSPORTATION PLAN

### 2.4.1 Transportation Improvement Issues Identified through Planning Process

The following transportation issues were identified through the planning process.

- *Road and traffic safety, especially on state highways*

Several safety issues were identified. These include uneven cattle guard grates on state highways; lack of adequate street lighting in some areas; sharp curves; the huge seasonal influx of traffic travelling to the Burning Man festival in the Black Rock Desert each September; debris on the highway; soft shoulders, nonexistent shoulders, and narrow travel lanes in some areas

- *Need for transportation improvements to serve economic development goals*

The Tribe has ambitious economic development goals for the Reservation. Coordination among planning, transportation, and economic development staff should take place to assure that transportation system improvements are coordinated with economic development projects.

- *Pedestrian safety improvements*

Staff and tribal members identified insufficient safety improvements for pedestrians in places where state highways go through the Reservation towns.

- *Condition of unpaved roads*

Many of the roads on the Pyramid Lake roadway system are unpaved, either graded dirt/gravel or primitive/unimproved. Many of these roads are used by recreational visitors and tribal members to access lakeshore recreational areas, so they get moderately heavy use, and consequently develop washouts, washboarding, and potholes.

- *Safety Signage*

The Road Inventory Update noted a lack of safety signs on Reservation roads, and many existing signs were damaged.

- *Regular roadway maintenance*

Regular maintenance of existing Reservation roads was identified as a priority, so members could safely access homes, services, and administrative areas.

- *Safety improvements around schools and preschools.*

Pyramid Street, the location of the Wadsworth Headstart, has no safety signage, no marked crosswalks, and no sidewalks to allow safer access to the preschool by students, parents, and teachers. Other schools need safer pedestrian and bicycle access as well.

- *Potential need for a public transit system*

Some participants indicated a need for a public transportation system to increase transportation options for tribal members – especially to work and schools.

- *Maintenance and continued development of tourism infrastructure*

Roads accessing recreation areas, the Tahoe Pyramid Bike Trail, boats docks, trailer and recreational vehicle parking, and the Pyramid Lake Scenic Byway should be regularly maintained, and improved in order make Pyramid Lake a high-quality recreational destination while protecting and interpreting the scenic resources.

## 2.4.2 Transportation Improvement Projects Priority List

Tribal priority lists are analyzed and used by the BIA to generate an IRR TIP for the tribes that identify anticipated preconstruction and construction project costs and the disbursement of funds for pre-construction and construction activities based on the Tribe's annual percent share of IRR program funds.

In Resolution PL 42 11 adopted on May 6, 2011, the Pyramid Lake Tribal Council approved a list of ten priority transportation improvements. These projects are presented in detail in **FIGURE 10**. The location and length in miles of the project are given (if applicable). The project, the need for the project, and the areas or population served by the project are described. Cost estimates (for planning purposes only) are given for each project. The potential responsible agency and funding source are listed for each project. In Resolution PL 42 11 the Tribe assigned a priority to each project: these priorities are shown in the chart in column one. The Tribe expects and requests that projects will become part of a regional BIA Transportation Improvement Program (TIP) and will be funded with the Tribe's annual RNDF funding allocations, or from other sources specified in the list. The proposed transportation improvement projects also are shown on the **20-Year Transportation Plan Maps 12 Through 20**.

Tribal staff and consultants also identified several non-road transportation improvement projects. While not currently a part of the adopted priority list, these projects are listed and described in **FIGURE 11** of this report.

## 2.4.3 Government Agency Responsibility

Indian Reservation Road transportation studies such as this one are intended to serve Indian reservations that have previously lacked this planning tool. Long Range Transportation Planning Studies consisting of 20-Year Transportation Plans implemented by 5-Year Transportation Improvement Programs are standard transportation planning practice for municipalities, counties, and states. Indian Reservation Road transportation studies are somewhat different, however, than those conducted by other government entities because they may include roads maintained and improved by several different government entities.

It is critical to note that this long-range study is not intended to relieve the Washoe County Regional Transportation Commission, Storey and Lyon Counties, the state of Nevada, or any federal land management agencies of their responsibility to obligate a fair share of federal aid highway funds for the improvement and maintenance of state and county roadways within and adjacent to the Pyramid Lake Reservation. As described in Section 1.2, government entities share responsibility for maintenance and improvements of roads providing access to or on the Pyramid Lake Reservation. NDOT maintains State Routes 445, 446, and 447 and Interstate 80. Lyon County and Storey County maintain roads providing access to housing, commercial, and industrial areas adjacent to the Reservation.

NDOT roadway improvements are made based upon the planning process described in Section 1.2.1. Improvements made by the counties (or in Washoe County, by the Washoe County Regional Transportation Commission) are considered in a transportation planning process by which they are placed by priority in a five-year Transportation Improvement Program. BIA road system projects are given consideration based upon a five-year priority list submitted to the BIA by Tribes. In **Figure 11** potential responsible agencies and funding sources are listed for each project.

## **2.4.4 Proposed Revisions to BIA and non-BIA Road System**

**Figure 3** show the mileage that was added to and deleted from the BIA and non-BIA IRR system on the Pyramid Lake Reservation in the latest Road Inventory Update.

## **2.5 PLAN IMPLEMENTATION AND UPDATING**

### **2.5.1 Funding**

The Pyramid Lake Tribe expects that transportation improvement projects and programs contained in this Long Range Transportation Planning Study and Transportation Improvement Projects Priority List will be implemented using the funding sources identified in the Priority List. Projects potentially funded by the BIA will be added to the BIA regional IRR TIP. The Pyramid Lake Paiute Tribe will receive funding for these projects based upon the allocation formula described in section 1.2.3

For projects on non-BIA IRR roads, the Tribe or Tribe will coordinate with the Nevada Department of Transportation and/or the county to identify funding for priority tribal transportation projects.

Some of these projects might take place as a part of tribal development projects. In this case, transportation improvements might be funded and constructed, at least partly, by the developer, and subsequently maintained by businesses on the site. For projects on the Reservation but not on the BIA or IRR system, improvements might be made as a part of an overall capital improvements program.

Pedestrian and bicycle improvements can be funded both as a part of road improvement projects as they are completed, or separate funding can be sought from other sources, such as Transportation Enhancements (TE), Safe Routes to Schools (SRTS), or Recreational Trails (Rec trails). These are federal programs administered by NDOT or Nevada state parks. TE funds enhancements to transportation systems including bicycle and pedestrian facilities; SRTS provides funding for programs and projects that enhance and encourage walking and bicycling to school, and Rec Trails provides funding for recreational trails including bicycle and walking paths.

For potential improvements to the Pyramid Lake Scenic Byway, the Secretary of Transportation makes discretionary grants to States and Indian tribes to implement projects on highways designated as National Scenic Byways or All-American Roads, or as State or Indian tribe scenic byways. Projects submitted for consideration should benefit the byway traveler's experience, whether it will help manage the intrinsic qualities that support the byway's designation, shape the byway's story, interpret the story for visitors, or improve visitor facilities along the byway.

It also is suggested that the Tribe coordinate with the BIA to identify critical projects that may become a part of national economic recovery efforts, if the efforts continue.

### **2.5.2 Plan Updating**

The priority list will be updated periodically to reflect the completion of current projects and the inclusion of new priority projects, contingent on anticipated available funding. The Transportation Plan will be reviewed and updated every five years, and may be updated sooner if there are additions to the Tribe's land base, major changes in land use and/or economic development strategies, or when changes in the regional economy and transportation system necessitate an earlier update. These changes, redrafts, or revisions will be initiated based upon the direction of the Tribal Council and/or tribal staff.

### **2.5.3 Transportation improvement Program**

The BIA Regional Office is required to produce and submit an annual four-year IRR-TIP for each Tribe within its jurisdiction to BIADOT and FHWA for review and approval. The current year TIP amount for each Tribe must equal their current year allocation, and the TIP amounts for the +1, +2 + 3 years must be within plus or minus ten percent ( $\pm 10$ ) of their current year allocation. The IRR-TIP is generated by the Control Schedule/Transportation Improvement Plan System (CSTIPS) program which is used to enter relevant project information and yearly cost estimates for project activities.

A Tribal TIP is a multi-year, financially constrained, list of proposed transportation projects to be implemented during a 3 to 5 year period on roads with or providing access to Indian trust land. It is developed from a Tribal transportation improvement priority list and must be consistent with the Tribe's Long Range Transportation Plan. Projects on the Tribal TIP must be on route in the IRR inventory. It may also contain projects funded by the Tribe and other Federal, State, and/or township DOT's initiated by or developed in cooperation with the Tribe. Only those projects approved by the sponsoring governmental entity may be included in a Tribal TIP. An "Example" Tribal TIP form is contained in Appendix I. Tribal TIP's containing IRR funded projects need to be submitted to the BIA Regional Office for inclusion in the IRR TIP and must contain relevant project information needed by the BIA to enter the project in the IRR TIP. Information needed by the BIA is identified in the Project Detail Report for BIA Funded Projects form which is also contained in Appendix I.

IRR funded projects identified in the Tribal TIP are reviewed by the Region BIA Office to insure that they contain sufficient project information to create or update a project in the IRR TIP, and that the project totals are within plus or minus ten percent ( $\pm 10$ ) of the Tribe's annual share of IRR funds. Acceptable Tribal TIP projects are included in the IRR TIP unchanged. Tribal TIPs requiring additional project information or that have project totals exceeding their annual share are returned to the Tribe for correction and re-submittal.

### **2.5.4 Procedures For Development of Roads and Transportation Improvements**

For the most part, tribal governments have not established policies or guidelines to monitor and control the construction of roads and other transportation improvements. It is the recommendation of this study that the Tribe adopt a process for approving and monitoring transportation improvement projects to ensure that the improvements will be constructed to an

adequate standard, and properly maintained. The essential elements of such a process are outlined below.

### **Design Standards**

The first element of the process is to define what is expected. When a transportation project is submitted for review, it should be given conditional approval only, subject to the improvements being constructed to proper standards. Roads should be designed to meet minimum geometric and structural standards for the anticipated volume and vehicle loads. Pedestrian improvements such as sidewalks, multi-use paths for non-motorized transportation, and improvements associated with public transit also should be designed to meet proper standards; these are generally determined based on the location of the facility and the type of use it will receive. Standards for roadways and other transportation improvements should be adopted by the Tribe and made available to developers. The Tribe could use, as a basis for its standards, those currently in place in Washoe County, BIA standards, or State standards.

These design standards could be adopted "as-is," or modified based upon the specific needs of the Tribe. Most cities in Nevada have adopted either NDOT or local standards, so developers and design engineers should be familiar with the requirements.

### **Plan Submittal and Review**

The second element in the approval process is the submittal and review of construction documents (plans and specifications). The Tribe should employ experienced staff or consultants to review proposals and to ensure that the plans and specifications meet minimum design standards. Road plans and plans for other transportation improvements should only be approved for construction if they conform to minimum design standards based on anticipated use and traffic loads. The Tribe should also seek review and approval of construction documents from the BIA if the Tribe anticipates adding the road or improvement to the BIA road system.

### **Construction Monitoring**

Another essential step is the monitoring of the actual construction. The project should be inspected periodically by a qualified representative of the Tribe to ensure that construction is proceeding in accordance with approved plans and specifications. A final inspection should be performed prior to acceptance of responsibility for maintenance of the road or other transportation improvement. The Tribe should consider requiring a performance bond. Common in most jurisdictions, a performance bond is held until the improvement has been accepted and conditions for release have been met.

### **Maintenance Funding**

The process should also address a method for financing the long-term maintenance of roads and other transportation improvements. For example, the Tribe could generate revenue for maintenance of transportation improvements by assessing a fee or tax on private properties or leases that benefit from the improvement, similar to a local ad valorem, or "property" tax. Revenues from this fee or tax could be deposited into a fund reserved for maintenance of

improvements. Or alternatively, a portion of tribal enterprise revenues could be deposited into a fund dedicated to maintenance of the transportation improvements.

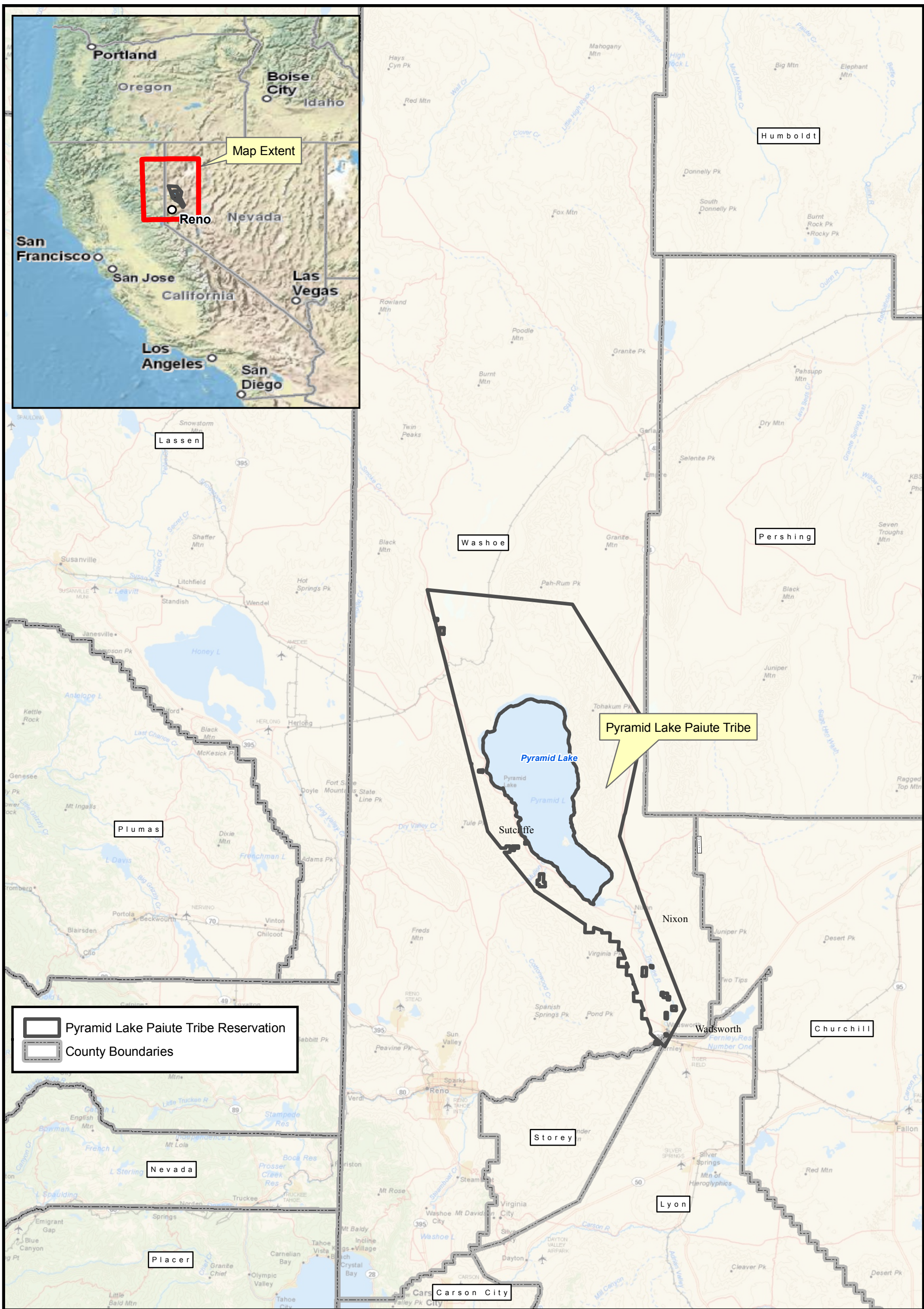
Figure 10

Pyramid Lake Paiute Tribe Transportation Improvement Projects (Roads) Priority List (Resolution PL 42 11 Adopted May 6, 2011)															
Priority	Project Name	Location	BIA Route Number	BIA Section Number	Route Name	Route Classification	Length (miles)	Width of Pavement (ft)	Condition	Project Description	Serves	ADT*	Project justification	Potential Funding Source and/or Responsible Agency	Estimated Cost
1	Wadsworth By-pass	Wadsworth	0035	010	Wadsworth By-Pass	5	3.00 miles	proposed road	proposed road	new road to link SR 427 and SR447, bypassing center of Wadsworth	town of Wadsworth, Reservation residents, recreational visitors		traffic safety - by routing state highway traffic around Wadsworth, traffic safety - for pedestrians and bicyclists as well as motorists - will be improved	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe; BIA - IRRHPP; NDOT - project submittal process	\$ 4,796,000
2	Pelican Point Access	Sutcliffe	0205	010	Pelican Point Road	5	1.00 mile	31 (currently unpaved)	gravel road to beach access and boat ramp	improve/pave existing gravel road to principal recreational access point to Pyramid Lake	recreational visitors and tribal economic development goals		By improving recreational access to Pyramid Lake, this project will help implement the Pyramid Lake Tribe's economic development goals.	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe; BIA - IRRHPP; NDOT - project submittal process	\$ 933,000
3	Capital Hill Road	Nixon	0101	105	Capital Hill Road	3	0.05 miles		gravel/dirt road, no shoulders, hill, leads to tribal administration area	grade, drain, pave road	Tribal administrative area including administrative offices, council chambers, tribal housing authority		Improve all-weather access and parking to key administrative area	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe	\$ 70,600
4	Administration building parking areas	Nixon	P101	050	administration building parking areas	9	0.1	unpaved	parking area for tribal administration buildings is unpaved	grade, drain, pave, and stripe parking lot	Tribal administration area including administrative offices, council chambers, tribal housing authority		Improve all-weather access and parking to key administrative area	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe	\$ 50,400
5	Wadsworth Community Center access loop and parking	Wadsworth	planned route not yet on inventory	not yet on inventory	Wadsworth Community Center Loop and Parking	5	approx 0.2 miles	standard	proposed access loop road and parking	develop access loop road and parking to serve proposed community center in Wadsworth	will serve a community center serving all tribal members especially Wadsworth residents		To allow tribal members access to a community center offering educational, administrative, recreational, and cultural activities.	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe; Indian Community Development Block Grant (HUD)	\$ 257,000
6	Ranch/Big Bend Road	Wadsworth	0102	all sections	Big Bend Road - also called Ranch Road	5	.05 miles		Pavement is in fair condition, but narrow single-lane road	Widen paved sections to 2-lane paved road with shoulders; pave dirt section that leads to rodeo grounds; develop loop road with parking to access pow wow grounds	serves Big Bend RV park, youth treatment center, tribal victims services, pow wow grounds, rodeo grounds		To improve access to critical economic/ recreational development area, also to social services facilities.	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe	\$ 1,396,000
7	Lakeview Drive	Sutcliffe	0201	030	Lakeview Drive	5	0.15 miles	30 (existing gravel road width)	gravel/dirt road leads to beach and camping	pave existing dirt road and improve parking for recreational users	recreation area/ lakeshore		economic/ recreational development	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe	\$ 498,000
8	Warrior Point	Sutcliffe	0021	010	Warrior Point	5	1.4	21 (existing gravel road width)	dirt/ gravel road - main beach access	grade, drain and pave existing beach/ camping access road. Provide parking at road terminus for beach access.	principal beach access for Reservation residents and recreational visitors		By improving recreational access to Pyramid Lake, this project will help implement the Pyramid Lake Tribe's economic development goals.	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe	\$ 1,184,000
9	Pyramid Lake Road	Sutcliffe	0002	010 and 020	road north from Sutcliffe to Honey Lake, Smoke Creek desert	4	11	22 (existing gravel road width)	dirt/ gravel road	Pave unpaved section on Reservation or carry out regular blading to improve surface and minimize washboarding	Northern access to Reservation. Also serves Aster Pass Geothermal Project.		It is important to maintain this road that provides access to northern Reservation areas, as well as providing northern entry to Reservation. Also serves important geothermal resource sites (Aster Pass) and important cultural site (The Needles)	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe	\$108,000 (annual grading) to \$8,899,000 (paving)
10	Pyramid Road	Nixon	0005	010		5	12.00 miles		dirt road	grade, drain, gravel and regularly blade existing dirt road	provides access to The Pyramid and the Stone Mother, important scenic and cultural features on the Reservation		economic/ recreational development	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe	\$ 2,071,000



Figure 11  
Priority Non-Road Projects

Other Pyramid Lake Paiute Tribe Transportation Improvement Projects, Non-roadway Projects, Unprioritized. Not part of Priority List (Resolution PL 42 11) Adopted by Tribal Council May 6, 2011											
Project Name	Location	BIA Route Number (if applicable)	BIA Section Number (if applicable)	Route Name (if applicable)	Condition	Project Description	Serves	Project Justification	Potential Funding Source and/or Responsible Agency	Estimated Cost	
Wadsworth and Nixon Safe Routes to School Programs	Wadsworth and Nixon	0102 and 0447 and 0447	0101 100 066, 063, 060, and 0447-810, 820	Pyramid Street and SR 447; High School Road and SR 447	elementary school and HeadStart preschool in Wadsworth; day care facility and High School in Nixon; state highway and local streets with inadequate facilities to allow safer use by bicyclists and pedestrians especially parents and children walking to school	working with administrators and parents at Natchez Elementary School, Pyramid Lake High School and the two preschool/ daycare facilities, the Pyramid Lake transportation department will initiate Safe Routes to School plan and program at the schools that will include enhanced traffic enforcement, engineering (design and installation of bicycle and pedestrian safety features); and education and encouragement to walk to school (by way of in-school and after-school programs)	students and families of Natchez School and Wadsworth Head Start preschool. Students and families of Pyramid Lake High School and Nixon Day care facility.	existing unsafe conditions for children, family and youth bicyclists and pedestrians in and around four schools.	Safe Routes to School grant through NDOT; tribal funding	to be determined once Safe Routes plan is completed	
Preventative Maintenance Program	all Reservation				roads will be evaluated for best repair/maintenance strategy (14 road segments currently have SCI of "poor"; 68 have SCI of "fair")	a plan/strategy to evaluate, repair, and maintain reservation roads	all Reservation	this strategy will provide the tribe with a system to evaluate and forecast road surface repair/maintenance needs and to repair/maintain roads in the most timely cost-effective manner.	BIA/FHWA RNDP annual funding allocation for Pyramid Lake Tribe - 2% planning set-aside	to be determined	
Public transportation system for Pyramid Lake	between Reservation towns and surrounding urban areas				There is currently no public transportation system serving the Reservation	1. Carry out needs assessment and route/fare study; 2. Identify and apply for funding; 3. If/when funding is received, purchase vehicles, hire and train drivers, etc.	Reservation residents especially low-income elderly and disabled.	community development; economic development	Federal Transit Administration (FTA) Tribal Transit Program		
Tahoe Pyramid Bikeway	Tahoe Pyramid Bikeway; existing section Wadsworth to Nixon; proposed route Nixon to Sutcliffe and north.	T100		all sections	Tahoe Pyramid Bikeway	existing route between Wadsworth and Nixon has infrequent maintenance, minimal signs. No improvements at all yet north of Nixon	Draft a regular maintenance plan or schedule; evaluate need for and install additional directional, trailhead, and interpretive signs; do an alignment/ feasibility study for Nixon- Sutcliffe - north route and design an alternative alignment that bypasses Nixon residential areas including Basin Street and homes along west Pyramid Lake Road	recreational users	Recreation; economic development; safety	Transportation Enhancements; Recreational Trails program (Land and Water Conservation Fund)	\$ 60,000
Recreational Trails Project	to be determined				trails not yet named	no existing trails	In this project tribal staff will identify potential locations for recreational trails in scenic areas of the Reservation and seek funding for trail design and construction.	Tribal members and recreational visitors	Recreational/ economic development; public health	Recreational trails program	to be determined when trail locations are identified
Pyramid Lake Scenic Byway Improvements	Scenic Byway	SR 445, 446, 447			Pyramid Lake Scenic Byway	Scenic Byway has inadequate signs and interpretive facilities to draw visitors and to explain scenic and historical/cultural features of Pyramid Lake	In coordination with economic development staff and tribal leaders, and following an existing interpretive plan for the Pyramid Lake Scenic Byway, design gateway features or signage, kiosks, an interpretive center, and scenic turnouts, and seek funding for improvements	reservation visitors	economic development; development of scenic recreational resource.	National Scenic Byways discretionary grant program; Transportation Enhancements (TE)	\$ 193,000
Safety signage	all Reservation					many roads are missing traffic signs, especially stop, yield, curve warning signs	this project would evaluate current signage on the Reservation, then install missing signs.	all Reservation and all Reservation visitors - safety	safety for road users. Lack of stop, yield, speed, and curve warning signs may lead to increased crashes; reinstalling these signs should diminish crashes.	Highway Safety Improvement Program (HSIP) through NDOT; Indian Highway Safety Grant (FHWA) tribal funds	\$ 49,000
Streetlights	Wadsworth at intersection of Old Highway 40 and SR 447; Wadsworth - in front of Natchez School by bus stop	SR 447 and SR 427				inadequate lighting at a key intersection and at an elementary school	install 2-4 streetlights	Schoolchildren; Wadsworth residents; all users of SR447	safety	Highway Safety Improvement Program (HSIP) through NDOT; Indian Highway Safety Grant (FHWA) tribal funds	\$ 48,000
Valley Road bridge replacement	Truckee River between Nixon and Wadsworth	0006	020	Valley Road Bridge	bridge over Truckee River is gone	replace bridge	rural housing	Provides access to rural housing. Also provides alternate bridge over Truckee River for potential emergency access.	BIA bridge replacement program	\$ 4,038,000	
New Boat Docks	to be determined				there are three boat docks currently - at Sutcliffe, Warrior Point, and Pelican Point	Using existing boat dock studies done by the Tribe construct a new boat dock for recreational boaters, public safety and fisherman on Pyramid Lake. Design dock. Identify funding sources. Apply for grant funding.	recreational boating	Economic/ recreational development	not yet identified. Potentially tribal economic development funding	to be determined once location and number of docks are determined	
Nixon Airstrip	Nixon				Nixon Airstrip	no existing airstrip	Design and construct airstrip adjacent to Nixon with a single paved runway and a base building	tribal members and recreational visitors	economic/ recreational development; emergency medical transport	FAA Airport Capital Improvement Grant	\$ 5,819,000
Bicycle and pedestrian improvements	all Reservation				all as necessary	Reservation roads lack pedestrian and bicycle improvements including bike lanes, sidewalks, safety signage, and pavement markings/crosswalks	this project would evaluate bike and pedestrian use on the Reservation, and identify improvements in key use areas (Nixon, Wadsworth, Sutcliffe) to improve safety for bicyclists and pedestrians using Reservation roads.	all Reservation residents, especially those who walk or bicycle	currently Reservation roads have few or no facilities to accommodate safer bicycling and walking, yet there are places - especially in the three towns on the Reservation, where people bike and walk. This program would identify areas of bicycle and pedestrian use, and design and construct improvements that would enhance safe bicycle and pedestrian use.	Transportation Enhancements; RNDP annual funding allocation for Pyramid Lake Tribe - 2% planning set-aside	
Cattleguards on state highways		SR 447, 445, 427, 446		as necessary	SR 447, 445, 427, 446	unnecessary cattleguards in some areas, some cattleguards not at road surface level due to resurfacing	Evaluate cattleguards. Remove those that are no longer necessary. Repair uneven surfaces on those that are not at road surface level	all Reservation residents and visitors	Safety		
Traffic Safety Review Program	all Reservation				all	Single-car crashes - often run-off-the-road, rollover crashes - are the most frequent crash type on state highways on the reservation. NDOT crash data indicate portions of state highways on the reservation where accidents are most frequent	evaluate and install safety improvements including pavement markings, warning signs with current retroreflective standards, curve delineation treatments; edge lines, barriers and rumble stripes in high-accident portions of state highways and other local roads	all reservation residents and visitors	Safety.		
Seat belt awareness campaign	all Reservation					Single-car crashes - often run-off-the-road, rollover crashes - are the most frequent crash type on state highways on the reservation. NDOT crash data indicate portions of state highways on the reservation where accidents are most frequent			safety		



DATE: 03-07-2011  
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 DESIGNED BY:  
 CHECKED BY: AM  
 JOB NO.: 7653

**Map 1 - Location**

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**Pyramid Lake Paiute Tribe Long Range Transportation Plan**

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**Existing Conditions**

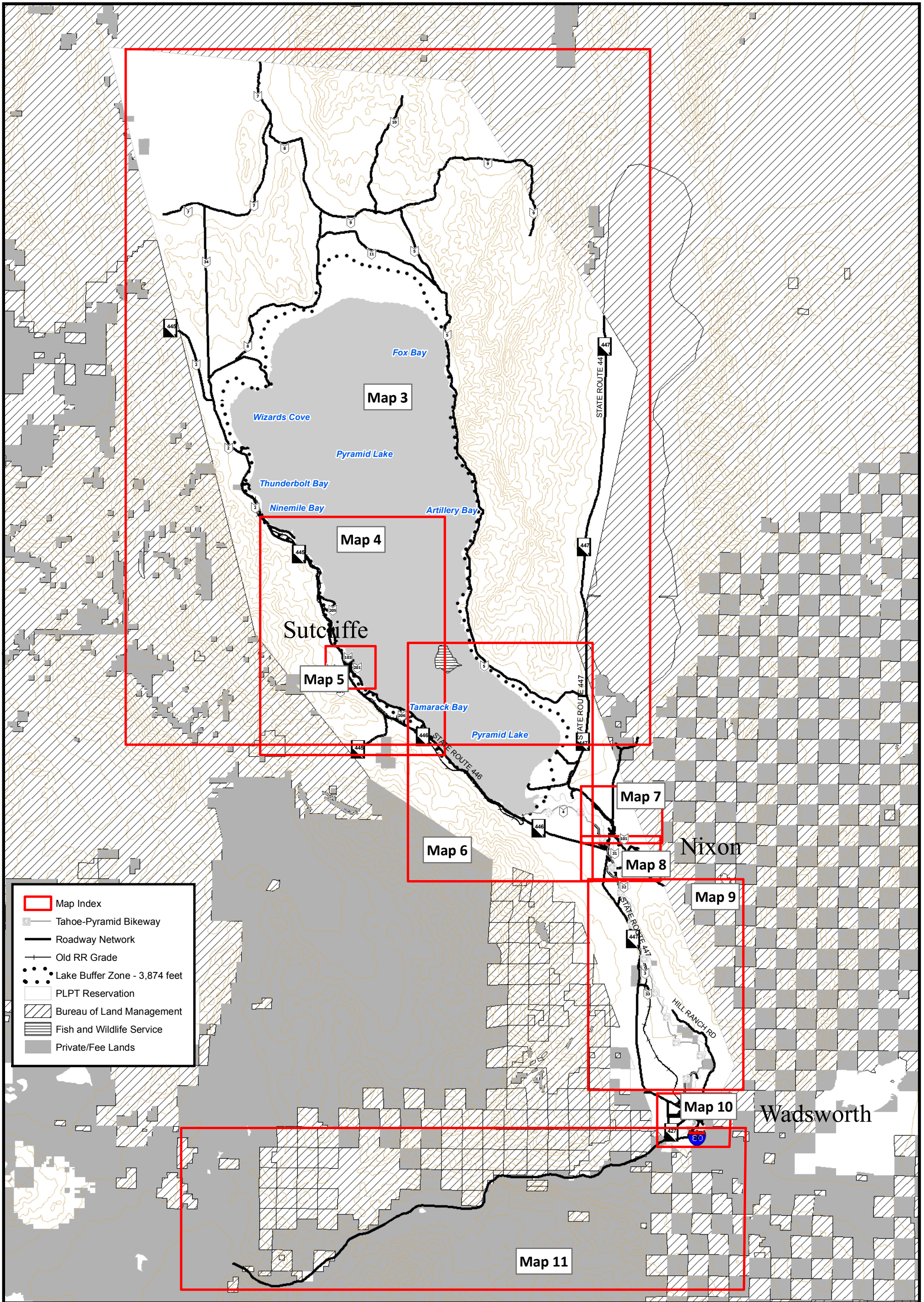
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**Map 2 - Index**

**Pyramid Lake Paiute Tribe Long Range Transportation Plan**

**Existing Conditions**

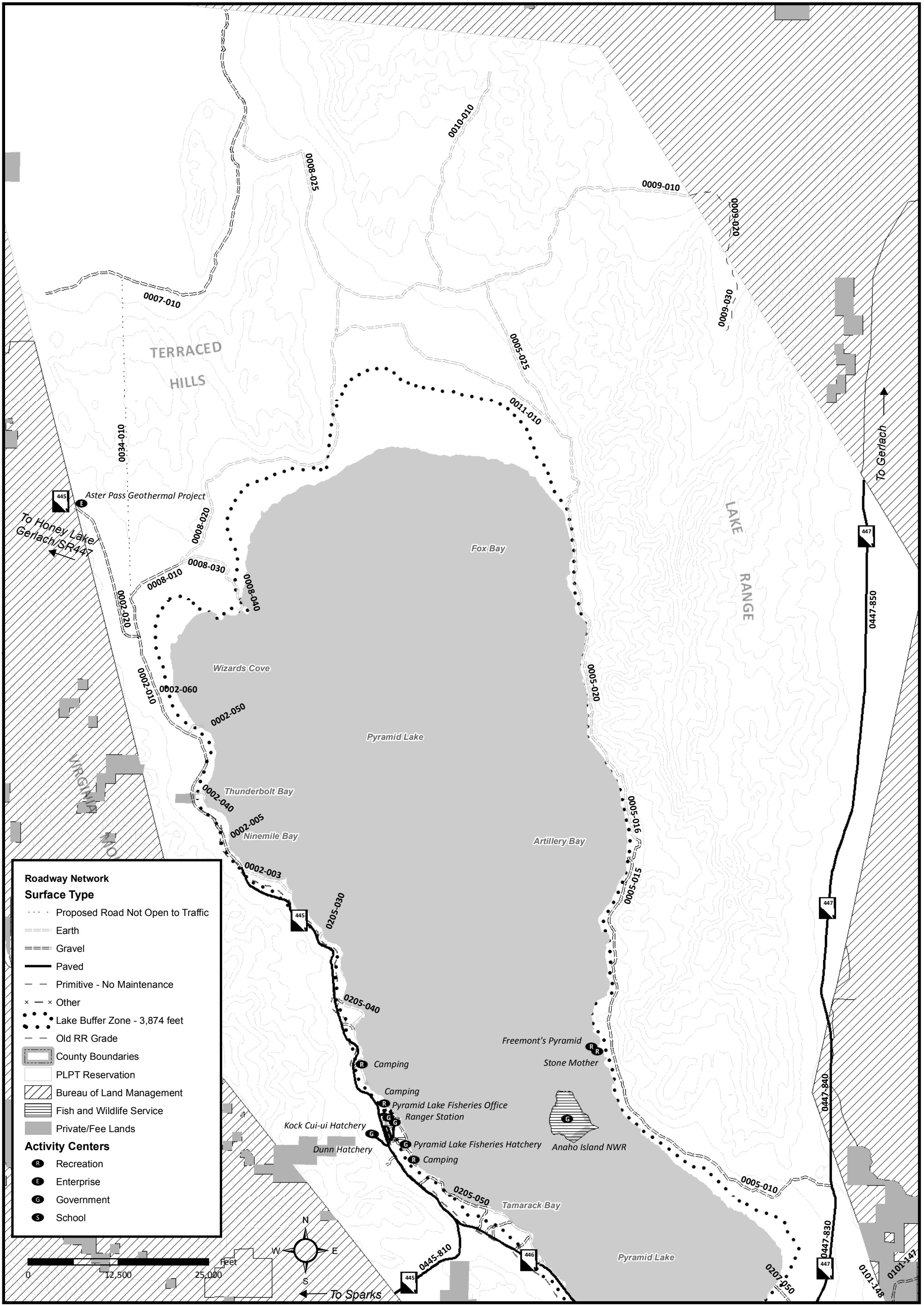
DATE: 03-07-2011  
 DRAWN BY: KCS  
 DESIGNED BY:  
 CHECKED BY: AM  
 JOB NO.: 7653

9222 Prototype Dr.  
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Routes:		
0002	0034	0207
0005	0101	0212
0007	0103	0445
0008	0201	0446
0009	0202	0447
0010	0205	P103
0011	0206	P201

## Map 3 - Northern Region

### Pyramid Lake Paiute Tribe Long Range Transportation Plan

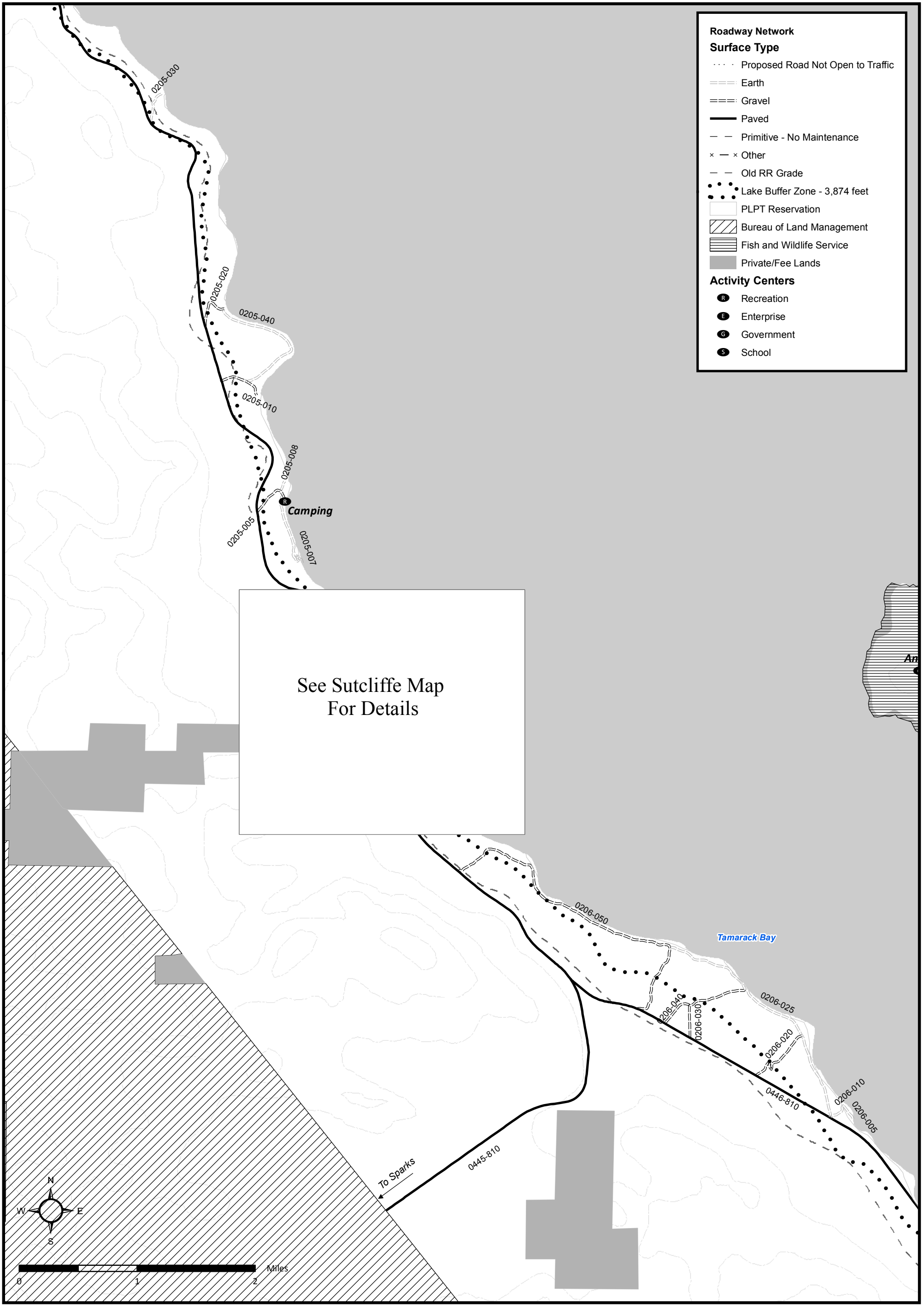
#### Existing Conditions

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See Sutcliffe Map  
For Details

DATE: 03-07-2011  
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JOB NO.: 7653

Routes:  
0205  
0206  
0445  
0446

**Map 4 - Sutcliffe Region Lake Access**

**Pyramid Lake Paiute Tribe Long Range Transportation Plan**

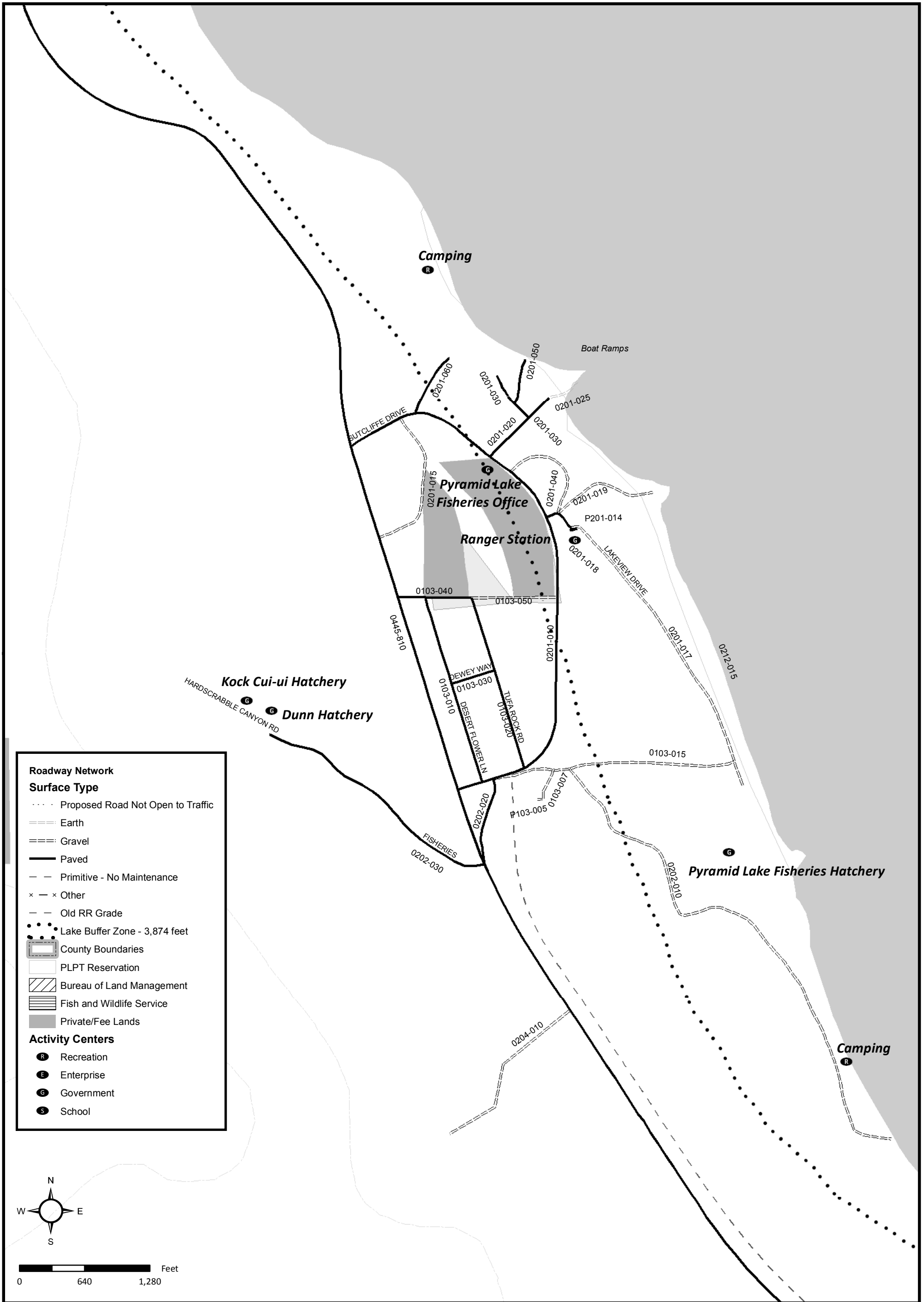
**Existing Conditions**

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DATE: 03-07-2011  
 DRAWN BY: KCS  
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 JOB NO.: 7653

Routes:  
 0103  
 0201  
 0202  
 0205  
 0212  
 0445  
 P103  
 P201

**Map 5 - Sutcliffe**

---

**Pyramid Lake Paiute Tribe Long Range Transportation Plan**

---

**Existing Conditions**

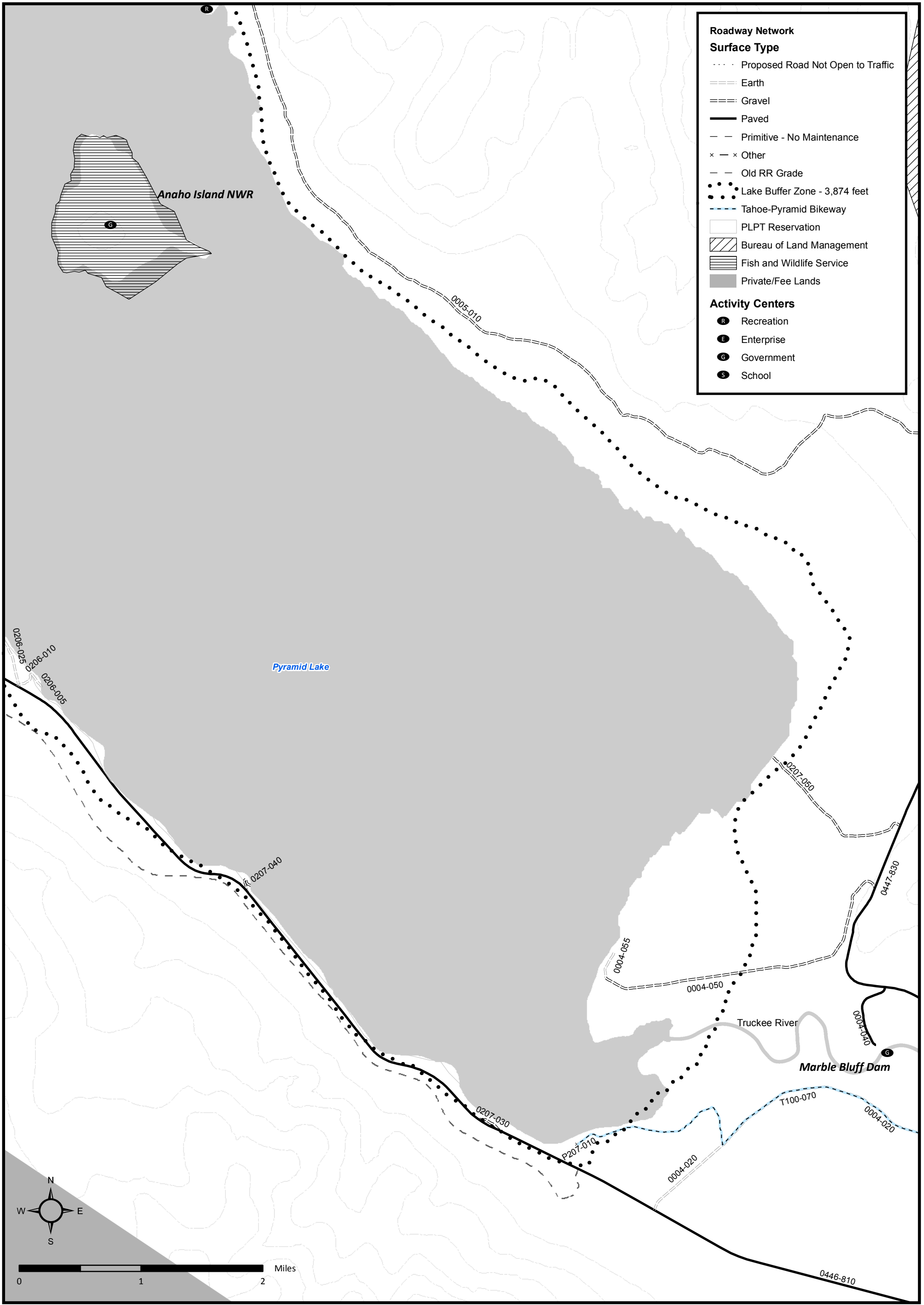
---

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**Roadway Network**

**Surface Type**

- ..... Proposed Road Not Open to Traffic
- ==== Earth
- ==== Gravel
- Paved
- - - Primitive - No Maintenance
- x - x Other
- - - Old RR Grade
- ● ● Lake Buffer Zone - 3,874 feet
- Tahoe-Pyramid Bikeway

**Activity Centers**

- Ⓡ Recreation
- ⓔ Enterprise
- ⓖ Government
- Ⓢ School

**Land Ownership**

- PLPT Reservation
- ▨ Bureau of Land Management
- ▨ Fish and Wildlife Service
- Private/Fee Lands

### Map 6 - Southern Lake Region

#### Pyramid Lake Paiute Tribe Long Range Transportation Plan

#### Existing Conditions

Routes:  
 0004  
 0005  
 0206  
 0207  
 0446  
 0447  
 P207

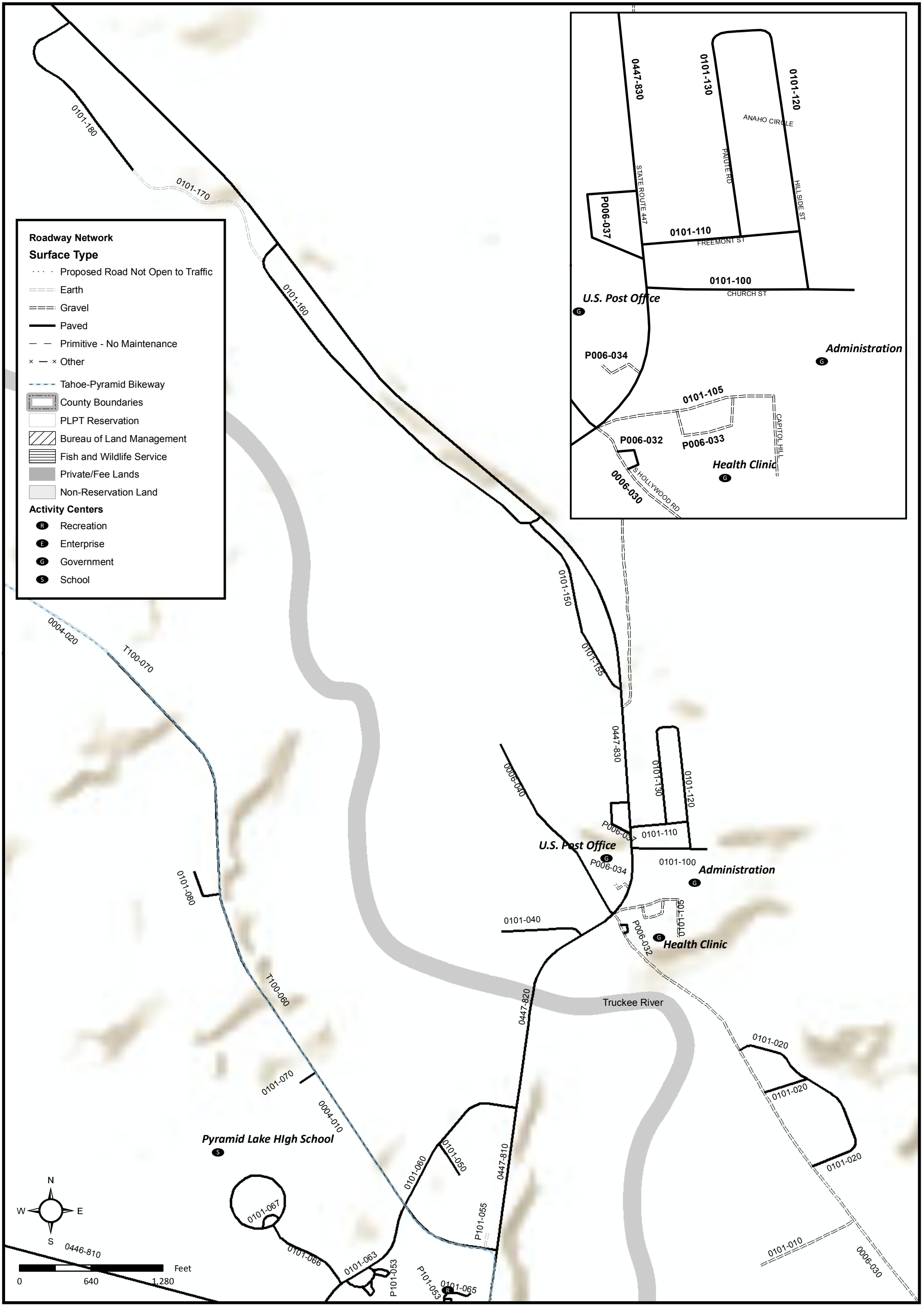
DATE: 03-07-2011  
 DRAWN BY: KCS  
 DESIGNED BY:  
 CHECKED BY: AM  
 JOB NO.: 7653

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### Map 7 - North Nixon Region

## Pyramid Lake Paiute Tribe Long Range Transportation Plan Existing Conditions

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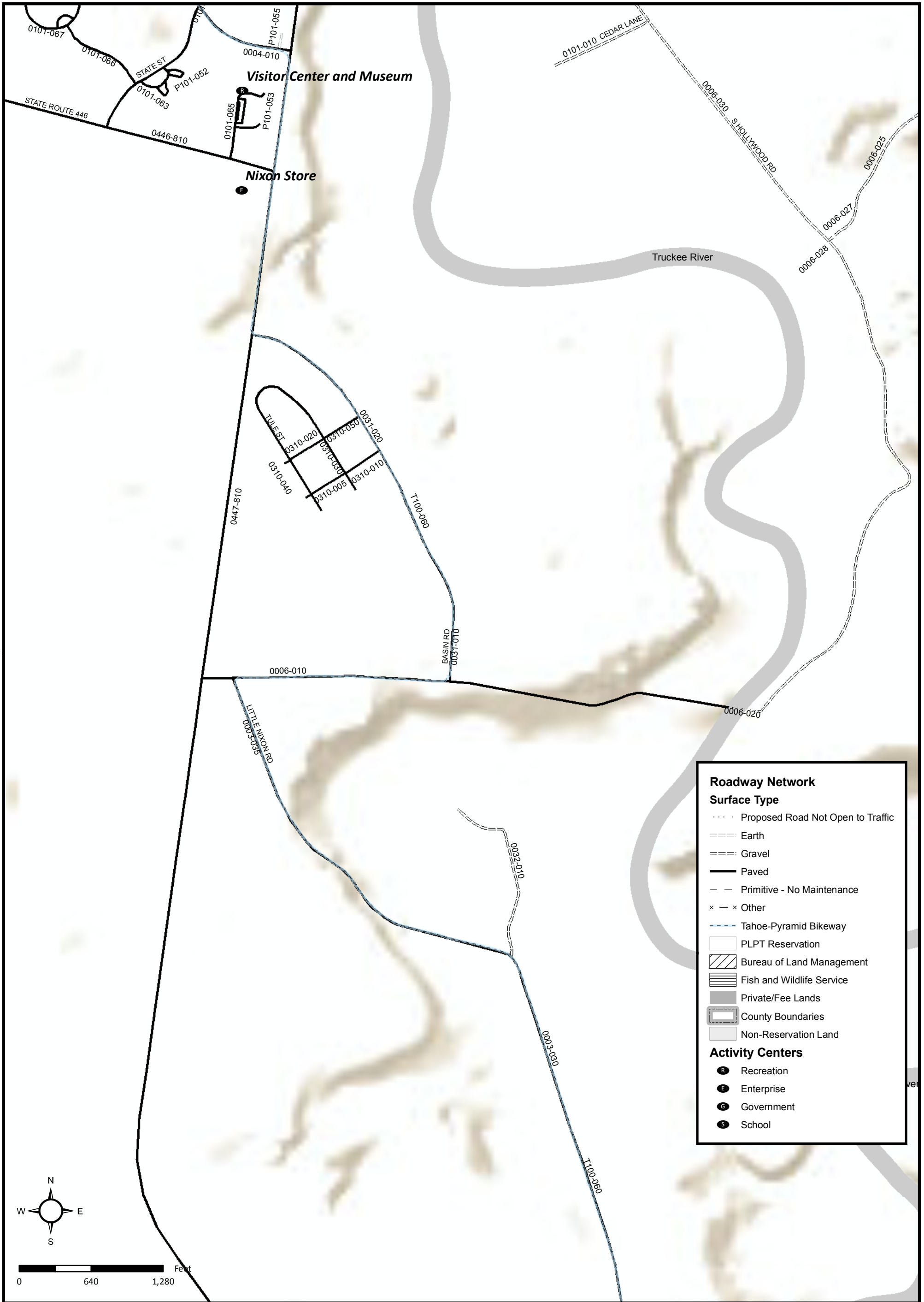


Landscape Architecture  
Construction Services  
Materials Testing  
GIS

Routes:  
0004 T100  
0006  
0101  
0446  
0447  
P006  
P101

DATE: 01-26-2011  
DRAWN BY: KCS  
DESIGNED BY:  
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### Map 8 - South Nixon Region

#### Pyramid Lake Paiute Tribe Long Range Transportation Plan

#### Existing Conditions

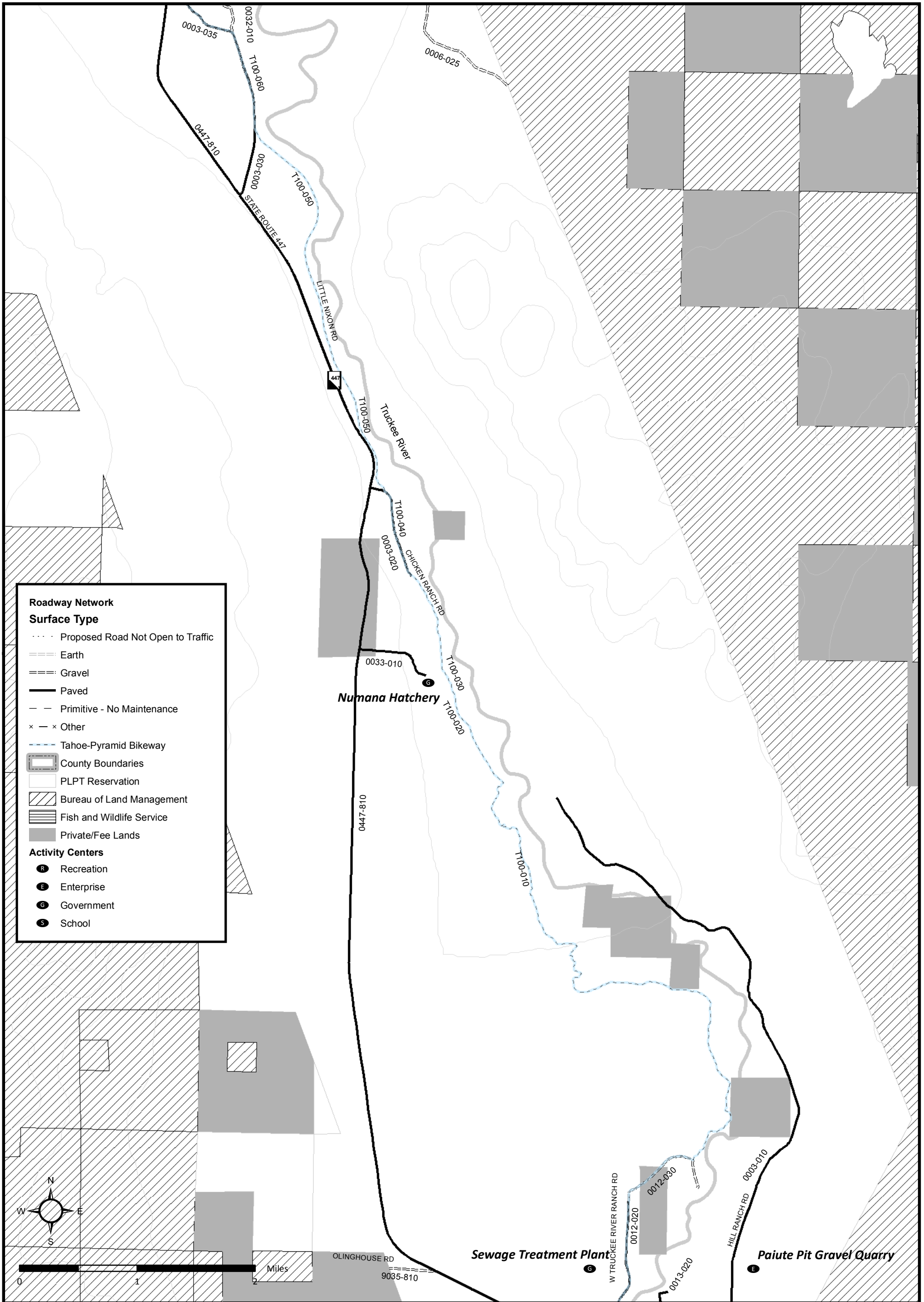
Routes:  
 0003 P101  
 0004 T100  
 0006  
 0031  
 0032  
 0101  
 0310  
 0446  
 0447  
 DATE: 03-07-2011  
 DRAWN BY: KCS  
 DESIGNED BY:  
 CHECKED BY: AM  
 JOB NO.: 7653

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Routes:  
 0003 0447  
 0006 9035  
 0012 T100  
 0013  
 0032  
 0033

**Map 9 - Between Nixon and Wadsworth**

---

**Pyramid Lake Paiute Tribe Long Range Transportation Plan**

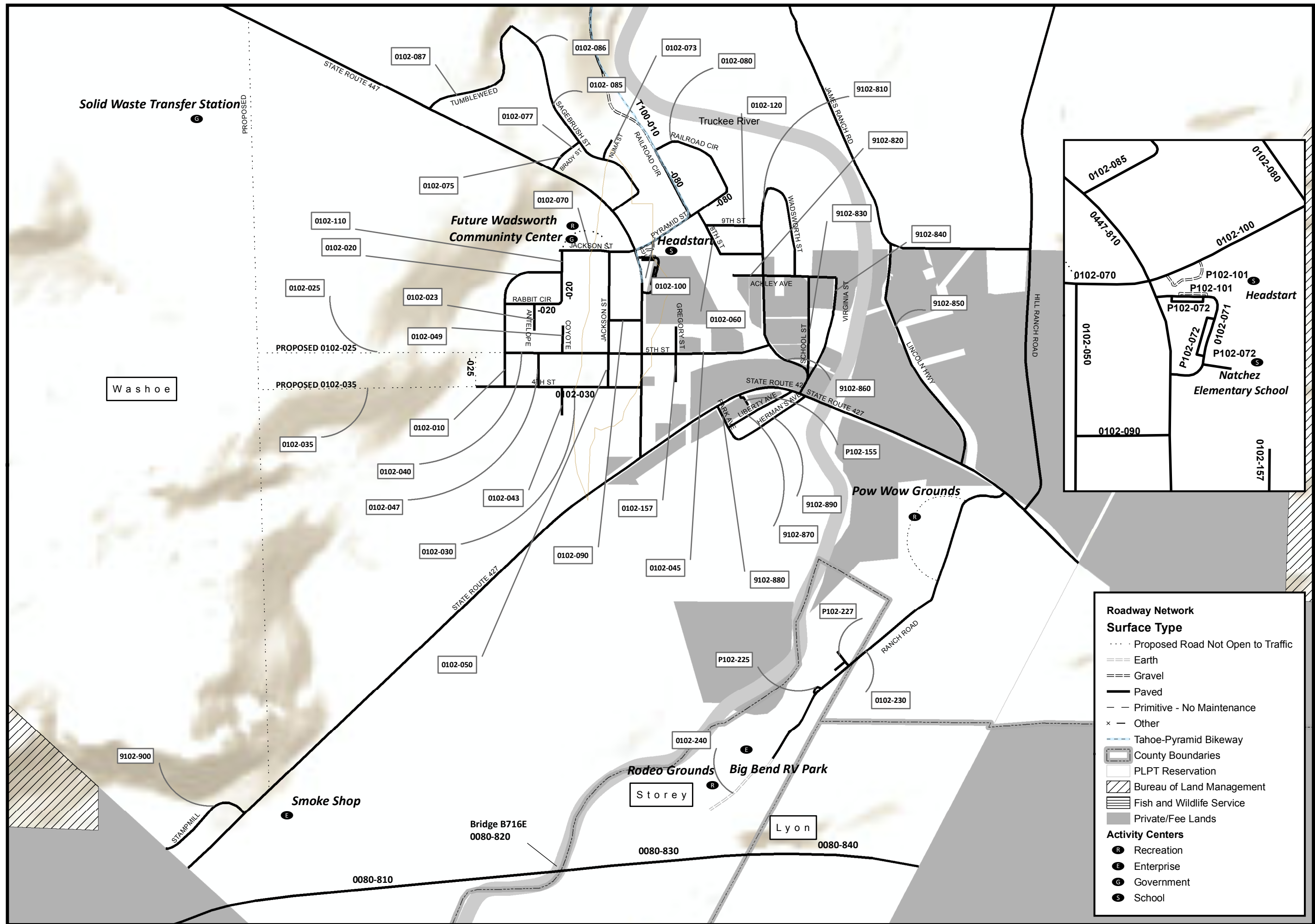
---

**Existing Conditions**

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**Roadway Network**

**Surface Type**

- Proposed Road Not Open to Traffic
- === Earth
- === Gravel
- Paved
- - Primitive - No Maintenance
- x - Other
- Tahoe-Pyramid Bikeway

**Activity Centers**

- Recreation
- Enterprise
- Government
- School

**Other Features**

- ▭ County Boundaries
- ▭ PLPT Reservation
- ▨ Bureau of Land Management
- ▨ Fish and Wildlife Service
- ▨ Private/Fee Lands

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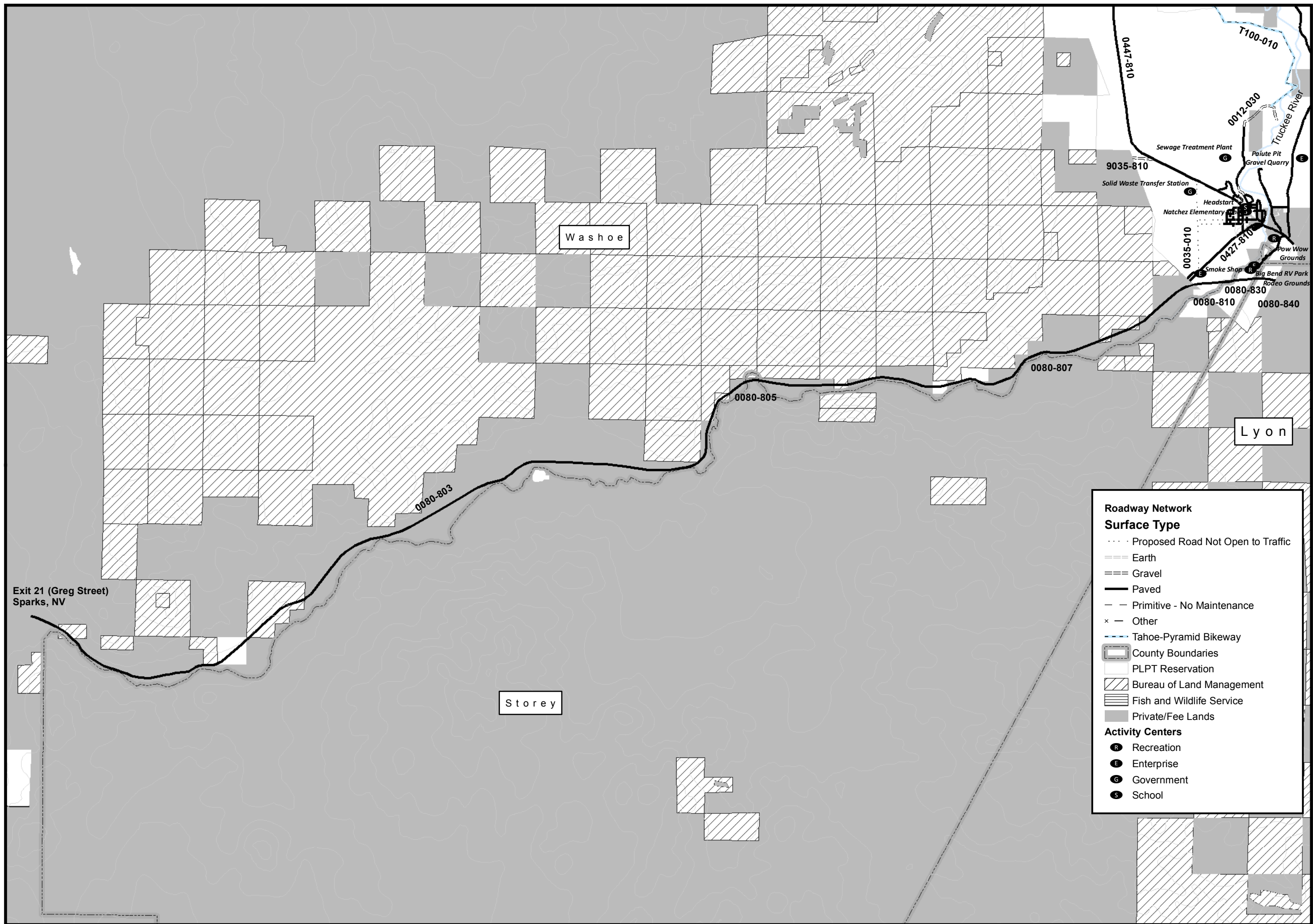
**Map 10 - Wadsworth Area**

**Pyramid Lake Paiute Tribe Long Range Transportation Plan**

**Existing Conditions**

**Routes:** 9102, 0003, P102, 0012, P100, 0013, T100, 0035, 0080, 0102, 0427

DATE: 03-07-2011  
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CHECKED BY: AM  
JOB NO.: 7653



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**Map 11 - Interstate 80 to Sparks**  
**Pyramid Lake Paiute Tribe Long Range Transportation Plan**  
**Existing Conditions**

Routes: 9102  
 0003 9102  
 0012 9035  
 0013 P102  
 0035 T100  
 0080  
 0102  
 0427  
 0447

DATE: 03-07-2011  
 DRAWN BY: KCS  
 DESIGNED BY:  
 CHECKED BY: AM  
 JOB NO.: 7653

**Appendix A**  
**Long Range Transportation Plan for the Pyramid Lake Reservation**  
**Information Sources and References**

1. American Traffic Safety Services Association, *Low Cost Local Road Safety Solutions*
2. Ayala and Associates, *Pyramid Lake Paiute Tribe Transportation Plan 2004*
3. Carey, Scott H., Pyramid Lake Tribal Planner, *Volume #1: Pyramid Lake Strategic Economic Development Plan* (Third draft) June, 2010
4. Federal Highway Administration, *PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System* <http://www.walkinginfo.org/pedsafe/index.cfm>
5. Fernley Chamber of Commerce <http://www.fernleychamber.org/> accessed 3/17/10
6. Garcia, Johnnie, Pyramid Lake Tribal Transportation Planner, interviews, email, and correspondence, September 2009 - March 2011
7. Knack, Martha C. and Omer C. Stewart, *As Long as the River Shall Run: An Ethnohistory of Pyramid Lake Indian Reservation*, University of Nevada Press, 1999
8. Nevada Department of Employment, Training and Rehabilitation, Nevada Workforce Informer, *Local Area Unemployment Statistics*. <http://www.nevadaworkforce.com> accessed 3/17/10
9. Nevada Department of Transportation, Crash Data, State Highways 427, 445, 446, 447, 2005-2009
10. Nevada Department of Transportation, *Washoe County Annual Work Program (AWP) for 2010, 2011, 2012, 2013, and Long Range Element (beyond 2013)* [http://www.nevadadot.com/traveler/construction\\_projects/awp/](http://www.nevadadot.com/traveler/construction_projects/awp/)
11. Nevada Regional Economic Analysis Project, *NV-REAP: Shift-Share Analysis of Lyon County Employment Growth* <http://www.pnreap.org/PNREAP.Report> accessed 3/17/10
12. Nevada State Demographer, *Population estimates of Nevada's Counties Cities and Unincorporated Towns from July 1986 to July 2009* [http://www.nsbdc.org/what/data\\_statistics/demographer/pubs/](http://www.nsbdc.org/what/data_statistics/demographer/pubs/) accessed 3/17/10
13. Pyramid Lake Paiute Tribe, USDA Natural Resources Conservation Service, *Pyramid Lake Indian Reservation Comprehensive Resource Management Plan*, September, 2005
14. Safe Routes to School National Partnership, *Implementing Safe Routes to School in Low-Income Schools and Communities: A Resource Guide for Volunteers and Professionals*, June, 2010
15. U.S. Census Bureau, Quick Tables, DP-1 *Profile of General Demographic Characteristics: 2000, Pyramid Lake Reservation, NV* <http://factfinder.census.gov> accessed 3/17/10
16. U.S. Census Bureau, Quick Tables, QT-P23 *Journey to Work: 2000* <http://factfinder.census.gov> accessed 3/22/10
17. U.S. Department of Transportation, *Rural Safety Initiative*, February, 2008
18. U.S. Department of Transportation, Federal Highway Administration, *Federal and Tribal Lands Road Safety Audits: Case Studies*, December, 2009

19. Washoe County, Nevada GIS Department, Online Map Warehouse, maps showing land use, land ownership, and other features adjacent to the Pyramid Lake reservation [http://wcgisweb.washoecounty.us/website/Map\\_Warehouse/viewer.htm](http://wcgisweb.washoecounty.us/website/Map_Warehouse/viewer.htm)
20. Washoe County, "2008/2009 Washoe County Maintained Paved Streets, Wadsworth," (list) "Washoe County Maintained Unpaved Streets, 2008/2009," (list) "Washoe County Roads NW Reservation" (map) (emailed by Johnnie Garcia, Pyramid Lake Tribal Transportation Planner)

## PYRAMID LAKE PAIUTE TRIBE INVENTORY UPDATE COMPARISON LIST

Denotes Tribal Sections within BIA System Routes (See Tribal Route list for Mileages)

2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	
Route	Section	Route	Section	Class		Length		Surface Type		Const. Need		Section Name
0002	010	0002	010	4	4	7.3	7.3	1	3	1	1	
0002	020	0002	010	4	4	4.1	4.1	1	3	1	1	
<b>Subtotal</b>						<b>11.4</b>	<b>11.4</b>					
0003	010	0003	010	5	5	6.6	6.7	5	5	1	1	Hill Ranch Road
0003	020	0003	020	5	5	0.9	1.4	5	5	1	1	
0003	030	0003	030	5	5	1.4	0.7	5	5	1	1	Little Nixon Road
0003	035	0003	030	5	5	0.8	0.8	5	5	1	1	Little Nixon Road
<b>Subtotal</b>						<b>9.7</b>	<b>9.6</b>					
0004	010	0004	010	5	5	1.3	1.3	5	5	1	1	W. Pyramid Lake Road
		0004	020		5		3.5		3		1	DELETE
<b>Subtotal</b>						<b>1.3</b>	<b>4.8</b>					
0005	010	0005	010	5	5	8.1	9.0	1	1	1	1	Unnamed
0005	015	0005	020	5	5	6.1	6.1	1	1	1	1	Unnamed
0005	016	0005	020	5	5	1.7	1.7	1	1	1	1	Unnamed
0005	020	0005	020	5	5	10.1	9.1	1	1	1	1	Unnamed
0005	025	0005	020	5	5	4.7	4.6	1	1	1	1	Unnamed
<b>Subtotal</b>						<b>30.7</b>	<b>30.5</b>					
0006	010	0006	010	5	5	0.9	0.9	4	1		1	Valley Road
0006	020	0006	020	5	5					4	4	Bridge 334H
0006	030	0006	030	5	5	2.1	2.1	5	5	1	1	Hollywood Road
0006	040	0006	040	5	5	0.4	0.4	4	5	1	1	Eagle St.
<b>Subtotal</b>						<b>3.4</b>	<b>3.4</b>					
0007	010	0007	010	5	5	12.5	13.9	3	3	1	1	Unnamed
<b>Subtotal</b>						<b>12.5</b>	<b>13.9</b>					
0008	010	0008	010	5	5	2.7	2.7	3	1	1	1	Unnamed
0008	020	0008	020	5	5	10.5	10.5	1	1	1	1	Unnamed
0008	025	0008	020	5	5	6.6	6.6	1	1	1	1	Unnamed
0008	030			5				1		2		Unnamed
0008	040			5				1		2		Unnamed
<b>Subtotal</b>						<b>19.8</b>	<b>19.8</b>					
0009	010	0009	010	5	5	11.3	11.3	1	1	1	1	Sheep Pass Road
0009	020	0009	020	5	5	2.6	2.6	9	9	1	1	Sheep Pass Road
0009	030	0009	030	5	5	2.2	2.2	9	1	1	1	Sheep Pass Road
<b>Subtotal</b>						<b>16.1</b>	<b>16.1</b>					
0010	010	0010	010	5	5	6.4	4.2	1	9	1	1	Fox Springs Road
<b>Subtotal</b>						<b>6.4</b>	<b>4.2</b>					
0011	010	0011	010	5	5	6.8	6.8	1	1	1	1	Sweet Water Road
<b>Subtotal</b>						<b>6.8</b>	<b>6.8</b>					
0012	010	0012	010	5	5	0.2	0.2	3	5	1	1	Railroad Ave.
0012	020	0012	010	5	5	1.1	1.2	5	1	1	1	Railroad Ave.
0012	030	0012	020	5	5	1.0	1.0	5	1	1	1	W. Pyramid Lake Road
<b>Subtotal</b>						<b>2.3</b>	<b>2.4</b>					

### PYRAMID LAKE PAIUTE TRIBE INVENTORY UPDATE COMPARISON LIST

Denotes Tribal Sections within BIA System Routes (See Tribal Route list for Mileages)

2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	
Route	Section	Route	Section	Class		Length		Surface Type		Const. Need		Section Name
0013	010	0013	010	5	5	0.8	0.8	5	5	1	1	Border Street
0013	020	0013	020	5	5	0.3	0.3	5	1	1	1	James Ranch Road
<b>Subtotal</b>						<b>1.1</b>	<b>1.1</b>					
0031	010	0031	010	5	5	0.4	0.3	5	5	1	1	Basin Road
0031	020	0031	020	5	5	0.4	0.4	5	5	1	1	Basin Road
<b>Subtotal</b>						<b>0.8</b>	<b>0.7</b>					
0032	010	0032	010	5	5	0.3	0.3	3	3	1	1	Cottonwood
<b>Subtotal</b>						<b>0.3</b>	<b>0.3</b>					
0033	010	0033	010	5	5	0.7	0.7	5	5	1	1	Unnamed
<b>Subtotal</b>						<b>0.7</b>	<b>0.7</b>					
0034	010	0034	010	5	5	8.4	10.0	0	0	4	4	Proposed Road
<b>Subtotal</b>						<b>8.4</b>	<b>10.0</b>					
0035	010	0035	010	5	5	1.6	3.0	0	0	4	4	Wadsworth Bypass
<b>Subtotal</b>						<b>1.6</b>	<b>3.0</b>					
0101	010	0101	010	3	3	0.2	0.2	3	1	1	1	Cedar Lane
0101	020	0101	020	3	3	0.3	0.3	5	5	1	1	Moccasin Lane
0101	030	0101	030	3	3	0.2	0.2	5	5	1	1	Unnamed
0101	040	0101	040	3	3	0.1	0.1	5	5	1	1	Corral Road
0101	050	0101	050	3	3	0.1	0.1	5	5	1	1	Cactus Circle
0101	060	0101	060	3	3	0.3	0.3	5	5	1	1	State Circle
0101	063	101	060	3	3	0.3	0.2	5	5	1	1	State Street
0101	064			5				5		2		IHS Clinic Road
0101	065			5				1		2		IHS Clinic Road
0101	066			3				5		2		Unnamed road to High School
0101	067			3				5		2		Unnamed road to High School
0101	070	0101	070	5	3	0.1	0.1	5	5	1	1	Alkali
0101	080	0101	080	3	3	0.1	0.1	5	5	1	1	Sage Hen Court
0101	090	0101	090	3	3	0.1	0.1	5	5	1	1	Sage Hen Court
0101	100	0101	100	3	3	0.1	0.1	5	5	1	1	Church Street
0101	105			3				3		2		Capitol Hill Road
0101	110	0101	110	3	3	0.1	0.1	5	5	1	1	Freemont Church Street
0101	120	0101	120	3	3	0.2	0.3	5	5	1	1	Hillside Drive
0101	130	0101	130	3	3	0.2	0.2	5	5	1	1	Paiute Street
0101	140	0101	140	3	3	0.1	0.1	5	5	1	1	Anaho Circle
0101	150	0101	150	3	3	0.1	0.1	5	5	1	1	Wishbone Road
0101	155	0101	150	1	3	0.3	0.2	5	5	1	1	Wishbone Road.
0101	160	0101	160	3	3	0.7	0.7	4	5	1	1	Arrow Street
0101	170	0101	170	3	3	0.3	0.3	1	5	1	1	Winnemucca Street
0101	180	0101	180	3	3	0.4	0.3	4	5	1	1	Winnemucca Street
<b>Subtotal</b>						<b>4.3</b>	<b>4.1</b>					



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Denotes Tribal Sections within BIA System Routes (See Tribal Route list for Mileages)

2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	
Route	Section	Route	Section	Class	Length	Surface Type	Const. Need	Section Name				
0102	010	0102	010	3	3	0.2	0.2	5	5	1	1	Rabbit Drive
0102	020	0102	020	3	3	0.4	0.4	5	5	1	1	Rabbit Circle
0102	023			3				5		2		Antelope Circle
0102	025			3				0		4		Proposed Extension to 5th Street
0102	030	0102	030	3	3	0.4	0.3	5	5	1	1	4th Street
0102	035	0102	035	3	3	0.5	0.5			4	4	Proposed 4th Street extension
0102	040	0102	040	3	3	0.3	0.4	5	5	1	1	5th Street
0102	043			3				5		2		Owl Circle
0102	045			3				5		2		Fifth Street
0102	047			3				5		2		Short Street
0102	049			3				5		2		Coyote Street
0102	050	0102	050	3	3	0.3	0.4	5	5	1	1	Jackson Street
0102	060	0102	060	3	3	0.2	0.2	5	5	1	1	8th Street
0102	065			3				5		2		Unnamed road connecting Rabbit and Jackson/8th
0102	070	0102	070	3	3	0.2	0.1	5	5	1	1	8th Street
0102	073			3				5		2		Numa
0102	075			3				5		2		Brady Street
0102	077			3				5		2		Brady Street
0102	080	0102	080	3	3	0.5	0.5	5	5	1	1	Railroad Circle
0102	085			5				5		2		Sagebrush Street
0102	086			3				5		2		Sagebrush Street
0102	087			5				5		2		Tumbleweed St.
0102	090	0102	090	3	3	0.1	0.1	5	5	1	1	6th Street
0102	100	0102	100	3	3	0.1	0.1	5	5	1	1	Pyramid Street
0102	110	0102	110	3	3	0.1	0.1	5	5	1	1	8th Street West
0102	120	0102	120	3	3	0.1	0.1	5	5	1	1	9th Street
0102	125			3				5		2		Gregory Street
		0102	130		3		0.7		5		1	Railroad Circle (County Rd)
		0102	140		3		0.2		5		1	Ackley Ave. (County Rd)
		0102	150		3		0.2		5		1	School Street (County Rd)
		0102	160		3		0.3		5		1	Virginia Street (County Rd)
		0102	170		3		0.2		5		1	Railroad Ave (County Rd)
<b>Subtotal</b>						<b>3.4</b>	<b>5.0</b>					
0103	010	0103	010	3	3	0.4	0.3	4	5	1	1	Desert Flower Way
0103	015			5				3		2		Unnamed Road
0103	020	0103	020	3	3	0.3	0.3	4	5	1	1	Tufa Rock Road
0103	030	0103	030	3	3	0.1	0.1	4	5	1	1	Dewey Way
0103	040	0103	040	3	3	0.1	0.1	4	5	1	1	Jigger Bob Way
0103	050	0103	050	3	3	0.2	0.1	3	5	1	1	Jigger Bob Way
<b>Subtotal</b>						<b>1.1</b>	<b>0.9</b>					
0201	010	0201	010	5	5	1.1	1.2	5	5	1	1	Sutcliffe Drive
0201	015			3				3		2		Kennedy Dr.
0201	017			3				3		2		Unnamed

### PYRAMID LAKE PAIUTE TRIBE INVENTORY UPDATE COMPARISON LIST

Denotes Tribal Sections within BIA System Routes (See Tribal Route list for Mileages)

2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	
Route	Section	Route	Section	Class		Length		Surface Type		Const. Need		Section Name
0201	018			5				5		2		Unnamed
0201	019			5				3		1		Unnamed
0201	020	0201	020	5	5	0.2	0.2	5	5	1	1	Marina Road
0201	025			5				1		2		Boat Ramp from Marina Rd.
0201	030			5				5		2		Lakeview Dr.
0201	032			5				5		2		Unnamed
0201	034			5				3		2		Unnamed
0201	040			5				3		2		Sutcliffe Loop Road
0201	050			5				3		2		Unnamed
<b>Subtotal</b>						<b>1.3</b>	<b>1.4</b>					
		0202	010		5		0.5		1		1	Delete
0202	010			5				3		1		South Nets Rd.
0202	020	0202	020	5	5	0.2	0.4	5	5	1	1	Hardscrapple Rd.
0202	030	0202	030	5	5	0.5	0.1	4	4	1	1	Unnamed (Road to Dave Koch Cuiitti Hatchery)
<b>Subtotal</b>						<b>0.7</b>	<b>1.0</b>					
0204	010	0204	010	5	5	0.3	0.3		1		1	Albert's Road
<b>Subtotal</b>						<b>0.3</b>	<b>0.3</b>					
0205	010	0205	010	5	5	0.4	0.3	3	1	1	1	Pelican Point
0205	020			5				3		2		Windless Bay
0205	030			5				1		2		Shotdog Beach Road
<b>Subtotal</b>						<b>0.4</b>	<b>0.3</b>					
0310	005			3				4		1		Palomino Road
0310	010	0310	010	3	3	0.1	0.1	4	5	1	1	Palomino Road
0310	020	0310	020	3	3	0.1	0.1	5	5	1	1	Buckskin Road
0310	030	0310	030	3	3	0.1	0.1	5	5	1	1	Tule Street
0310	040			3				5		1		Tule St.
0310	050			3				5		1		Buckskin
<b>Subtotal</b>						<b>0.3</b>	<b>0.3</b>					
<b>Total BIA System</b>						<b>145.1</b>	<b>152.0</b>					
<b>Subtotal</b>						<b>0.0</b>						
<b>To Be Added to BIA System</b>						<b>0.0</b>						
		0004	020		5		3.5		3		1	DELETE
		0102	130		3		0.7		5		1	Reservation Road
		0102	140		3		0.2		5		1	Ackley Ave.
		0102	150		3		0.2		5		1	School Street
		0102	160		3		0.3		5		1	Virginia Street
		0102	170		3		0.2		5		1	Railroad Ave.
		0202	010		5		0.5		1		1	Delete
<b>Subtotal</b>							<b>5.6</b>					

### PYRAMID LAKE PAIUTE TRIBE INVENTORY UPDATE COMPARISON LIST

Denotes Tribal Sections within BIA System Routes (See Tribal Route list for Mileages)

2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	
Route	Section	Route	Section	Class	Length	Surface Type	Const. Need	Section Name				
<b>To Be Deleted from BIA System</b>						<b>5.6</b>						
0003	010	0003	010	5	5	-0.1	5	5	1	1		Hill Ranch Road
0003	020	0003	020	5	5	-0.5	5	5	1	1		
0003	030	0003	030	5	5	0.7	5	5	1	1		Little Nixon Road
0005	010	0005	010	5	5	-0.9	1	1	1	1		Unnamed
0005	020	0005	020	5	5	1.0	1	1	1	1		Unnamed
0005	025	0005	020	5	5	0.1	1	1	1	1		Unnamed
0007	010	0007	010	5	5	-1.4	3	3	1	1		Unnamed
0010	010	0010	010	5	5	2.2	1	9	1	1		Fox Springs Road
0012	020	0012	020	5	5	-0.1	5	1	1	1		Railroad Ave.
0031	010	0031	010	5	5	0.1	5	5	1	1		Basin Road
0034	010	0034	010	5	5	-1.6	0	0	4	4		Proposed Road
0035	010	0035	010	5	5	-1.4	0	0	4	4		Wadsworth Bypass
0101	063	0101	060	3	3	0.1	5	5	1	1		State Street
0101	120	0101	120	3	3	-0.1	5	5	1	1		Hillside Drive
0101	155	0101	150	1	3	0.1	5	5	1	1		Wishbone Road.
0101	180	0101	180	3	3	0.1	4	5	1	1		Winnemucca Street
0102	030	0102	030	3	3	0.1	5	5	1	1		4th Street
0102	040	0102	040	3	3	-0.1	5	5	1	1		5th Street
0102	050	0102	050	3	3	-0.1	5	5	1	1		Jackson Street
0102	070	0102	070	3	3	0.1	5	5	1	1		8th Street
0103	010	0103	010	3	3	0.1	4	5	1	1		Desert Flower Way
0103	050	0103	050	3	3	0.1	3	5	1	1		Jigger Bob Way
0201	010	0201	010	5	5	-0.1	5	5	1	1		Sutcliffe Drive
0202	020	0202	020	5	5	-0.2	5	5	1	1		Hardscapple Rd.
0202	030	0202	030	5	5	0.4	4	4	1	1		Unnamed (Road to Dave Koch Cuitti Hatchery)
0205	010	0205	010	5	5	0.1	3	1	1	1		Pelican Point
<b>Subtotal</b>						<b>-1.3</b>						
<b>BIA System Mileage Corrections</b>						<b>-1.3</b>						
0021	010			5		1.5						Warrior Point Rd.
<b>Subtotal</b>						<b>1.5</b>	<b>0.0</b>					
0022	010			5		0.1		1		2		Nine-mile Bay Beach Rd
<b>Subtotal</b>						<b>0.1</b>	<b>0.0</b>					
0023	010			5		0.8		1		2		The Willows Beach Rd
<b>Subtotal</b>						<b>0.8</b>	<b>0.0</b>					
0024	010			5		0.6		1		2		Wizard Cove Beach Rd.
<b>Subtotal</b>						<b>0.6</b>	<b>0.0</b>					
0025	010			5		0.1		1		2		Washington Rock ScenicTurnout
<b>Subtotal</b>						<b>0.1</b>	<b>0.0</b>					
0008	030			5		1.4		1		2		Unnamed
0008	040			5		1.3		1		2		Unnamed
<b>Subtotal</b>						<b>2.7</b>						

### PYRAMID LAKE PAIUTE TRIBE INVENTORY UPDATE COMPARISON LIST

Denotes Tribal Sections within BIA System Routes (See Tribal Route list for Mileages)

2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.		
Route	Section	Route	Section	Class	Length	Surface Type	Const. Need	Section Name					
0014	010			5	0.8		4	2	Ranch Road				
0014	020			5	0.2		1	2	Ranch Road				
<b>Subtotal</b>					<b>1.0</b>								
0040	010			5	0.6		3	2	Marble Bluff Dam Rd.				
<b>Subtotal</b>					<b>0.6</b>								
0041	010			5	2.7		3	2	Howard Bay Rd.				
0041	020			5	0.2		8	2	Howard Bay Rd.				
<b>Subtotal</b>					<b>2.9</b>								
0060	010			5	3.2		1	2					
0060	020			5	0.3		1	2					
<b>Subtotal</b>					<b>3.5</b>								
0061	010			5	5.0		1	2					
0061	020			8	0.5		1	2					
<b>Subtotal</b>					<b>5.5</b>								
0101	064			5	0.1		5	2	IHS Clinic Road				
0101	065			5	0.1		1	2	IHS Clinic Road				
0101	066			3	0.3		5	2	Unnamed road to High School				
0101	067			3	0.3		5	2	Unnamed road to High School				
0101	105			3	0.2		3	2	Capitol Hill Road				
<b>Subtotal</b>					<b>1.0</b>								
0102	023			3	0.1		5	2	Antelope Circle				
0102	025			3	0.6			4	Proposed Extension to 5th Street				
0102	043			3	0.1		5	2	Owl Circle				
0102	045			3	0.3		5	2	Fifth Street				
0102	047			3	0.1		5	2	Short Street				
0102	049			3	0.1		5	2	Coyote Street				
0102	065			3	0.1		5	2	Unnamed road connecting Rabbit and Jackson/8th				
0102	073			3	0.1		5	2	Nuna				
0102	075			3	0.1		5	2	Brady Street				
0102	077			3	0.1		5	2	Brady Street				
0102	085			5	0.4		5	2	Sagebrush Street				
0102	086			3	0.1		5	2	Sagebrush Street				
0102	087			5	0.3		5	2	Tumbleweed St.				
0102	125			3	0.1		5	2	Gregory Street				
<b>Subtotal</b>					<b>2.6</b>								
0103	015			5	0.5		3	2	Unnamed Road				
<b>Subtotal</b>					<b>0.5</b>								
0200	010			5	0.4		3	2	Separator Beach				
0200	020			5	0.8		1	2	Road along Separator Beach				
0200	030			5	0.1		1	2	Road along Separator Beach				
<b>Subtotal</b>					<b>1.3</b>								

## PYRAMID LAKE PAIUTE TRIBE INVENTORY UPDATE COMPARISON LIST

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2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.		
Route	Section	Route	Section	Class	Length	Surface Type	Const. Need	Section Name					
0201	015			3	0.3	3	2	Kennedy Dr.					
0201	017			3	0.7	3	2	Unnamed					
0201	018			5	0.1	5	2	Unnamed					
0201	019			5	0.2	3	1	Unnamed					
0201	025			5	0.1	1	2	Boat Ramp from Marina Rd.					
0201	030			5	0.2	5	2	Lakeview Dr.					
0201	032			5	0.1	5	1	Lakeview Dr.					
0201	034			5	0.1	3	2	Unnamed					
0201	040			5	0.2	3	2	Sutcliffe Loop Road					
0201	050			5	0.1	3	2	Unnamed					
<b>Subtotal</b>					<b>2.1</b>								
0202	010			5	1.0	3	1	South Nets Rd.					
<b>Subtotal</b>					<b>1.0</b>								
0205	020			5	1.2	1	2	Beachfront Rd. connects Pelican to Windless Bay					
0205	030			5	0.4	3	2	Windless Bay					
<b>Subtotal</b>					<b>1.6</b>								
0206	005			5	0.1	1	2	Access Road off of Wino Beach					
0206	010			5	0.2	1	2	Wino Beach					
0206	020			5	0.6	3	2	Indian Head Beach					
0206	025			5	2.1	1	2	Wino Beach/Indian Head Beach Connector					
0206	030			5	0.8	3	2	Tamaracks Beach					
0206	040			5	0.3	3	2	Tamaracks Beach					
0206	050			5	2.9	3	2	Washout Beach					
<b>Subtotal</b>					<b>7.0</b>								
0210	010			5	0.3	1	2	Shotdog Beach Road					
<b>Subtotal</b>					<b>0.3</b>								
0300	010			5	0.2	3	2	Access Rd. To TPB Staging Area					
<b>Subtotal</b>					<b>0.2</b>								
0301	010			5	0.3	3	2	Popcorn Rock Beach Rd.					
<b>Subtotal</b>					<b>0.3</b>								
0302	010			5	0.2	3	2	Access Rd. To Blockhouse Fishing Area					
<b>Subtotal</b>					<b>0.2</b>								
0310	005			3	0.1	4	1	Palomino					
0310	040			3	0.4	5	1	Tule St.					
0310	050			3	0.1	5	1	Buckskin					
<b>Subtotal</b>					<b>0.6</b>								
0400	010			5	1.4	3	2	Access Rd. to Dago Beach					
<b>Subtotal</b>					<b>1.4</b>								
P014	010			9	0.1	5	2	Victim Services Program Parking					
P014	020			9	0.1	5	2	Skies Youth Wellness Center Parking					
<b>Subtotal</b>					<b>0.2</b>								
P101	010			9	0.1	5	2	Clinic Parking Area					
P101	020			9	0.1	1	2	Day Care Facility Parking Area					
P101	030			1	0.1	1	2	Visitor Center Parking					

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Route	Section	Route	Section	Class	Length	Surface Type	Const. Need						
P101	040			9	0.1	4	2	Police Station Parking Lot (Nixon)					
P101	050			9	0.1	3	2	Parking lot for Admin. Bldg.					
P101	060			9	0.1	3	2	Parking lot for Courthouse					
P101	070			9	0.1	3	2	Parking lot for Community center					
<b>Subtotal</b>					<b>0.7</b>								
P102	010			9	0.2	5	2	Parking lot for Natchez Elem. School					
P102	020			9	0.1	3	2	Parking lot for Day Care (Wadsworth)					
P102	030			9	0.1	6	2	Post Office Parking Lot					
<b>Subtotal</b>					<b>0.4</b>								
P103	010			9	0.1	3	2	Parking lot for Sutcliff Community Center					
<b>Subtotal</b>					<b>0.1</b>								
P300	010			9	0.1	3	2	Parking for TPB bicyclists					
<b>Subtotal</b>					<b>0.1</b>								

**Tribal Roads to be Added      40.8**

T100	010			8	5.5	3	2	Tahoe Pyramid Bikeway (TPB)					
T100	020			8	0.5	1	2	Tahoe Pyramid Bikeway (TPB)					
T100	030			8	0.2	1	2	Tahoe Pyramid Bikeway (TPB)					
T100	040			8	1.6	1	2	Tahoe Pyramid Bikeway (TPB)					
T100	050			8	3.4	1	2	Tahoe Pyramid Bikeway (TPB)					
T100	060			8	4.4	3	2	Tahoe Pyramid Bikeway (TPB)					
T100	070			8	2.8	1	2	Tahoe Pyramid Bikeway (TPB)					
T100	080			8	1.6	5	2	Tahoe Pyramid Bikeway (TPB)					
<b>Subtotal</b>					<b>14.5</b>								

**Tribal Paths to be Added      14.5**

0080	803			1	15.6	5	2	Interstate 80					
0080	805			1	0.2	5	2	Interstate 80					
0080	807			1	8.5	5	2	Interstate 80					
0080	810	0080	810	1	1	0.7	0.7	5	5	2	2	Interstate 80	
0080	820	0080	820	1	1					2	2	Bridge B716	
0080	830	0080	830	1	1	0.4	0.4	5	5	2	2	Interstate 80	
0080	840	0080	840	1	1	0.4	0.3	5	5	2	2	Interstate 80	
0080	850			1		1.1		5		2		Interstate 80	
<b>Subtotal</b>					<b>26.9</b>	<b>1.4</b>							
0427	805			2		0.3		5		2		State Hwy 427 - Pyramid Highway	
0427	810	0427	810	2	2	0.3	0.3	5	5	2	2	State Hwy 427 - Pyramid Highway	
0427	820	0427	820	2	2	1.4	1.4	5	5	2	2	State Hwy 427 - Pyramid Highway	
0427	830	0427	830	2	2			6		2	2	Bridge B16	
0427	840	0427	840	2	2	0.6	0.6	5	2		2	State Hwy 427 - Main Street/Pyramid Highway	
0427	850			2		1.0		5		2		State Hwy 427 - Pyramid Highway	
<b>Subtotal</b>					<b>3.6</b>	<b>2.3</b>							

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Route	Section	Route	Section	Class		Length		Surface Type		Const. Need		Section Name
0445	805			2		19.4		5		2		State Hwy 445
0445	810	0445	810	2	2	14.7	14.5	5	5	2	2	State Hwy 445
<b>Subtotal</b>						<b>34.1</b>	<b>14.5</b>					
0446	810	0446	810	2	2	13.1	12.8	5	5	2	2	State Hwy 446
<b>Subtotal</b>						<b>13.1</b>	<b>12.8</b>					
0447	810	0447	810	2	2	15.5	15.2	5	5	2	2	State Hwy 447
0447	820	0447	820	2	2			5		2	2	Bridge B1351
0447	830	0447	830	2	2	9.2	9.0	5	5	2	2	State Hwy 447
0447	840	0447	840	2	2	3.3	3.2	5	5	2	2	State Hwy 447
0447	850	0447	850	2	2	14.3	14.1	5	5	2	2	State Hwy 447
<b>Subtotal</b>						<b>42.3</b>	<b>41.5</b>					
9102	810			3		0.6		5		2		Reservation Road
9102	820			3		0.2		5		2		Ackley Ave.
9102	830			3		0.2		5		2		School Street
9102	840			3		0.3		5		2		Virginia Street
9102	850			5		0.5		5		2		Lincoln Highway
9102	860			3		0.1		5		2		Railroad Ave.
9102	870			3		0.2		5		2		Liberty Rd.
9102	880			3		0.1		5		2		Park Ave.
9102	890			3		0.2		5		2		Herman's Ave.
9102	900			5		0.2		5		2		Stampmill Dr.
<b>Subtotal</b>						<b>2.6</b>						

**Total (Non-BIA) IRR System      122.6      72.5**

0080	803			1		15.6		5		2		Interstate 80
0080	805			1		0.2		5		2		Interstate 80
0080	807			1		8.5		5		2		Interstate 80
0080	850			1		1.1		5		2		Interstate 80
0427	805			2		0.3		5		2		State Hwy 427 - Pyramid Highway
0427	850			2		1.0		5		2		State Hwy 427 - Pyramid Highway
0445	805			2		19.4		5		2		State Hwy 445
9102	810			3		0.6		5		2		Reservation Road
9102	820			3		0.2		5		2		Ackley Ave.
9102	830			3		0.2		5		2		School Street
9102	840			3		0.3		5		2		Virginia Street
9102	850			5		0.5		5		2		Lincoln Highway
9102	860			3		0.1		5		2		Railroad Ave.
9102	870			3		0.2		5		2		Liberty Rd.
9102	880			3		0.1		5		2		Park Ave.
9102	890			3		0.2		5		2		Herman's Ave.
9102	900			5		0.2		5		2		Stampmill Dr.
<b>Subtotal</b>						<b>48.7</b>						

**To be Added to (Non-BIA) IRR System      48.7**

### PYRAMID LAKE PAIUTE TRIBE INVENTORY UPDATE COMPARISON LIST

Denotes Tribal Sections within BIA System Routes (See Tribal Route list for Mileages)

2011 Inventory Update		Existing D.O.T. Inventory		Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	Inventory Update	Existing D.O.T.	
Route	Section	Route	Section	Class	Length	Surface Type	Const. Need	Section Name				
<b>Subtotal</b>												

To be Deleted from (Non-BIA) IRR System 0.0

0080	840	0080	840	1	1		0.1	5	5	2	2	Interstate 80
0445	810	0445	810	2	2		0.2	5	5	2	2	State Hwy 445
0446	810	0446	810	2	2		0.3	5	5	2	2	State Hwy 446
0447	810	0447	810	2	2		0.3	5	5	2	2	State Hwy 447
0447	830	0447	830	2	2		0.2	5	5	2	2	State Hwy 447
0447	840	0447	840	2	2		0.1	5	5	2	2	State Hwy 447
0447	850	0447	850	2	2		0.2	5	5	2	2	State Hwy 447
<b>Subtotal</b>							<b>1.4</b>					

(Non-BIA) IRR System Mileage Corrections 1.4

#### SUMMARY OF PROPOSED BIA ROAD SYSTEM MILEAGE REVISIONS

	Miles
Existing BIA DOT Inventory	152.0
Roads to be Added to BIA System	0.0
Roads to be Deleted from BIA System	(5.6)
Other Route Mileage Corrections (Net Deletion)	(1.3)
<b>Proposed BIA Road System</b>	<b>145.1</b>

#### SUMMARY OF PROPOSED TRIBAL (IRR) SYSTEM MILEAGE REVISIONS

	Miles
Existing BIA DOT Inventory	0.0
Roads to be Added to Tribal System	40.8
Roads to be Deleted from Tribal System	0
Tribal Trails to be Added - Tahoe Pyramid Bikeway (TPB)	14.5
Other Tribal Route Mileage Corrections (Net Deletion)	0.0
<b>Proposed Non-BIA (IRR) System</b>	<b>55.3</b>

#### SUMMARY OF PROPOSED NON BIA (IRR) SYSTEM MILEAGE REVISIONS

	Miles
Existing Non-BIA Inventory	72.5
Roads to be Added to non-BIA IRR System	48.7
Roads to be Deleted from non-BIA IRR System	0.0
Other Route Mileage Corrections (Net Deletion)	1.4
<b>Proposed Non-BIA (IRR) System</b>	<b>122.6</b>

**TOTAL IRR SYSTEM 323.0**



Appendix C  
 Long Range Transportation Plan for the Pyramid Lake Reservation

<b>Average Paved Street Maintenance Cost - Per Mile*(2008 dollars)</b>				
<b>Pyramid Lake Reservation</b>				
<b>Year</b>	<b>Operation</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Total Cost</b>
1	None	0	\$0.00	\$0.00
2	None	0	\$0.00	\$0.00
3	None	0	\$0.00	\$0.00
4	None	0	\$0.00	\$0.00
5	Crack Seal	5,600	\$1.20	\$6,720.00
6	None	0.00	0.00	0.00
7	None	0	\$0.00	\$0.00
8	None	0	\$0.00	\$0.00
9	None	0	\$0.00	\$0.00
10	Patch (3%)	4,120	\$8.00	\$32,960.00
10	Crack Seal	5,800	\$1.20	\$6,960.00
11	None	0.00	0.00	0.00
12	None	0.00	0.00	0.00
13	None	0.00	0.00	0.00
14	None	0.00	0.00	0.00
15	Patch (3%)	4,120	\$8.00	\$32,960.00
15	Crack Seal	5,805	\$1.20	\$6,966.00
16	None	0.00	0.00	0.00
17	None	0.00	0.00	0.00
18	None	0.00	0.00	0.00
19	None	0.00	0.00	0.00
20	Patch (3%)	4,120	\$8.00	\$32,960.00
20	Crack Seal	5,805	\$1.20	\$6,966.00
			Total:	<b>\$126,492.00</b>
			Average Per Year:	<b>\$6,324.60</b>

Prices\*\*

Crack Seal (LF)	\$1.20
Patching (SF)	\$8.00

\*According to Bob Maxwell, BIA roads, BIA maintenance funds pay for crack sealing and patching. Fog seal, slurry seal, and overlay are paid for with construction funds. Crack sealing is usually performed on a 5 to 7 year cycle. Patching is done approximately three times in a 20-year period. Assumptions laying out the linear or square feet to be sealed or patched are listed below.

\*\*Unit costs are estimated based on actual bids in Washoe County, Nevada, in October, 2008, obtained by Bob Schrickler, Lumos and Associates Construction Services Manager

Assumptions:

- 1) Assumed typical road unit length of 1 mile long by 26' wide.
- 2) Road is new at year 0.
- 3) Crack Sealing for year 5 is estimated at 1 crack at the seam near CL and one transverse crack every 500'.
- 4) Crack Sealing for year 10,15, 20 is estimated at 1 crack at the seam near CL and one transverse crack every 300'.
- 5) Patch quantity is assumed to be 3% of the total area of a portion of roadway 1 mile long by 26' wide.

**Long Range Transportation for the Pyramid Lake Reservation  
Appendix D**

PART 170--INDIAN RESERVATION ROADS PROGRAM

Title 25--Indians

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CHAPTER I--BUREAU OF INDIAN AFFAIRS, DEPARTMENT OF THE  
INTERIOR

For access to this section please go to

[http://www.access.gpo.gov/nara/cfr/waisidx\\_07/25cfr170\\_07.html](http://www.access.gpo.gov/nara/cfr/waisidx_07/25cfr170_07.html)

## **Appendix E**

### **Functional Classification of Roadways**

Roads are classified as to the functions they perform with regard to the movement of traffic and access to property. Within the IRR system there are two types of road classifications: State Highway Classifications and BIA Road Classifications. Both the state and the BIA utilize functional classifications as the basis for classifying their roads. However, the criteria used to determine specific classifications differ between the state and the BIA.

#### **A. Generalized Functional Classification Definitions**

Functional classification is the grouping of roads, streets, and highways into integrated systems, each ranked by its relative importance and the function it is intended to serve, relative to mobility and land access. Functional classification also identifies the role each street or highway should play in channelizing the flow of traffic through a rural and/or urban environment in a logical and efficient manner. The three general functional classification categories are *Arterials*, *Collectors*, and *Local Roads*. At one extreme, an arterial's function is to move through-traffic at high speed over long distances with limited land access. Local roads or streets, by contrast, move traffic at relatively low speeds and provide access to adjacent property; through-traffic is discouraged. Definitions of these general functional classifications, along with desirable characteristics, are given below.

**Arterials** carry relatively large volumes of traffic through the state and to major trip destinations such as employment or commercial centers. Arterials fall into two categories: principal and minor. Principal (major) arterials include United State and interstate highways, and state highways that serve all urban areas with a population greater than 50,000 and a large majority of those areas with a population of 25,000 or more. Minor arterials are routes that provide interstate and inter-county service to cities and towns with populations of less than 25,000 and other traffic generators capable of attracting travel over long distances. Principal arterials usually have four traffic lanes (two lanes in each direction), provide storage for left turns at most intersections, and are separated by a median or continuous left-turn lane. Minor arterials may only have two traffic lanes and should include a storage lane for left turns at major intersections. A minimum right-of-way width of 100 to 150 feet is desirable for an arterial, with wider rights-of-way being needed for roads with more than four lanes.

**Collectors** generally serve travel of primarily intra-county and regional importance, rather than statewide importance, and have shorter travel distances than arterials. They also provide a balance between mobility and land access by customarily permitting access to all abutting properties. There are two

categories of collectors; major and minor. Major collectors provide service to any county seat or community not served by an arterial road, and serve other traffic generators of intra-county importance: regional parks, consolidated schools, agricultural areas, shipping points, etc. Minor collectors are spaced at intervals consistent with population density, collect traffic from local roads, and provide access to all developed areas within a reasonable distance of a major collector or higher classified road. A minimum right-of-way width of 80 to 100 feet is desirable for a collector.

**Local Roads** comprise the balance of the road network and carry low volume, low-speed traffic. The primary function of a local road is to provide access to individual parcels of property. Local roads usually serve residential areas and may also serve scattered business and industry sites that generate modest traffic. A minimum right-of-way of 60 to 80 feet is desirable for a local road.

**B. State Highway Classifications**

The Nevada Department of Transportation’s Roadway Functional Classification Map for Washoe County shows the following functional classifications for state routes on the Pyramid Lake Reservation.

Functional Classification of State Routes on the Pyramid Lake Reservation		
Route Name or Number	Location	Classification
SR 445	Reservation Boundary to Sutcliffe	Minor Arterial
SR 446	Junction 447 to Junction 445	Minor Arterial
SR 447	Wadsworth to Nixon	Minor Arterial
SR 447/Gerlach Road	Nixon to Gerlach	Rural Major Collector
Surprise Valley Road	north of Sutcliffe north to Reservation Boundary	Rural Minor Collector

SOURCE: NDOT Functional Classification Maps, Washoe County

## C. BIA Road Classifications

As a part of the BIA's IRR Inventory system management, all IRR transportation facilities included on or added to the IRR inventory must be classified according to the following functional classifications:

**Class 1:** Major arterial roads providing an integrated network having the characteristics for serving traffic between large population centers, generally without stub connections and having average daily traffic volumes of 10,000 vehicles per day or more with more than two lanes of traffic.

**Class 2.** Rural minor arterial roads providing an integrated network having the characteristics of serving traffic between large population centers, generally without stub connections. May also link smaller towns and communities to major resort areas that attract travel over long distances and generally provide for relatively high overall speeds with minimum interference to through traffic movement. Generally provide for at least inter-county or interstate service and are spaced at intervals consistent with population density. This class of road will have less than 10,000 vehicles per day.

**Class 3.** Streets that are located within communities serving residential and other urban settings.

**Class 4:** A rural major collector road that is a collector to rural local roads.

**Class 5:** Rural local road that is either a section line and/or stub-type roads that collect traffic for arterial-type roads and make connections within the grid of the IRR system. This class of road may serve areas around villages, into farming areas, to schools, tourist attractions or various small enterprises. Also included are roads and vehicular trails for administration of forest, grazing, mining, oil, recreation, or other use purposes.

**Class 6.** These are city minor arterial streets that are located within communities and serve as access to major arterials.

**Class 7:** These are city collector streets that are located within communities and serve as collectors to city local streets

**Class 8:** This classification encompasses all non-road projects such as paths, trails, walkways or other designated types of routes for public use by foot traffic, bicycles, trail bikes, snowmobiles, all-terrain vehicles or other uses to provide for the general access of non-vehicular traffic.

**Class 9:** This classification encompasses other transportation facilities such as public parking facilities adjacent to IRR routes and scenic byways, rest areas, and other scenic pullouts, ferry boat terminals, and transit terminals

**Class 10:** This classification encompasses airstrips that are within the boundaries of the IRR System grid and are open to the public. These airstrips are included for maintenance and inventory purposes only.

**Class 11:** This classification indicates an overlapping of a previously inventoried section or sections of a route and is used to indicate that it is not to be used for accumulating needs data. This class is used for reporting and identification purposes only.

Traffic accidents investigated by Pyramid Lake Police: 2005-2010 Approx. 200

Nevada Highway Patrol investigations/Burning Man: 2005-2010 Approx. 90

Nevada Highway Patrol Investigations/Non Burning Man: 2005-2010 Approx. 20

Fatal Accidents: 2005/2010 3

Frequent Accident Sites: SR 447 mm8 to mm10  
SR 447 at Marble Bluff  
SR 447 mm21 - mm 36  
SR 445 mm31 - mm 33  
SR 445 mm45 - Sand Pass

SR447 mm8-mm10: Narrow roadway restricted field of vision.

SR447 at Marble Bluff: Narrow roadway, restricted field of vision. Hazardous south bound shoulder.

SR447 mm21- mm 36 Soft shoulder north & south bound

SR445 mm31- mm 33 Speed too fast for conditions, curves, restricted field of vision.

SR445 mm45-Sand Pass Narrow gravel roadway, washboard roadway, curves, restricted field of vision. Driving too fast for road conditions.

Source: Pyramid Lake case data bank.  
Pyramid Lake Traffic Section.

Sgt. S. Miller



Traffic accidents investigated by Pyramid Lake Police: 2005-2010 Approx. 200

Nevada Highway Patrol investigations/Burning Man: 2005-2010 Approx. 90

Nevada Highway Patrol Investigations/Non Burning Man: 2005-2010 Approx. 20

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SR445 mm45-Sand Pass Narrow gravel roadway, washboard roadway, curves, restricted field of vision. Driving too fast for road conditions.

Source: Pyramid Lake case data bank.  
Pyramid Lake Traffic Section.

Sgt. S. Miller





**PYRAMID LAKE PAIUTE TRIBE**

**TRAVEL DEMAND STUDY**

**TECHNICAL MEMO**

**SEPTEMBER 2010**

**PREPARED BY:**



5401 Longley Lane, Suite 5  
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## Purpose and Scope

The purpose of this study is to identify and evaluate current and future travel demand for the Pyramid Lake Paiute Tribe Reservation. The characteristics of past and current travel will be projected to future conditions through a simple historical trends analysis. Growth rates in population and average annual daily traffic (AADT) will be examined for consistency with the standards set forth by the Bureau of Indian Affairs (BIA). A discussion of available accident data is included to assist in identifying any potential problem areas and causes of crashes and to develop corrective actions to these issues. Finally, the influence of the transportation network and data on mobility in the region will be discussed.

## Methodology

The Federal Highway Administration's publication *Developing a Long Range Transportation Plan – Information Tools for Tribal Governments* was reviewed for guidelines, recommendations and scope. Data sources were identified and reviewed for their ability to function as indicators of travel demand. Due to the rural nature of the PLPT Reservation and the availability of data, a simplified historical trend analysis was selected.

Population and Annual Average Daily Traffic (AADT) information sources were identified and found to have enough historical data to support a trend analysis. Population data was supported by three sources; the U.S. Census, PLPT, BIA Labor Force Reports. The numbers for tribal enrollment were utilized instead of numbers for total eligible for services due to the consistency of the tribal enrollment numbers as the total eligible for services varied greatly from year to year. Datasets for the following years were obtained based on availability: 1990, 1993, 2000, 2001, 2003, 2004 and 2005. Population for years where datasets were not available was derived by establishing trends and applying the growth factors accordingly.

## Population

Table 1 - Population Growth Rate Averages is provided below to show the results of the average growth rate, average growth rate with outliers removed and the growth rate as defined by BIA.

Average 1990 - 2005	Average 1990 - 2005 (high and low removed)	Growth Rate as defined by BIA
3.1%	2.1%	2.0%

**Table 1 - Population Growth Rate Averages**

As one can deduce the BIA's predetermined growth rate of 2% is very close calculated growth rates, especially with the outliers removed. Using the BIA's growth rate of 2.0% the following population is estimated:

Year	2010	2020	2030
Estimated Population	2499	3046	3713

**Table 2 - Population Estimates**

## Annual Average Daily Traffic

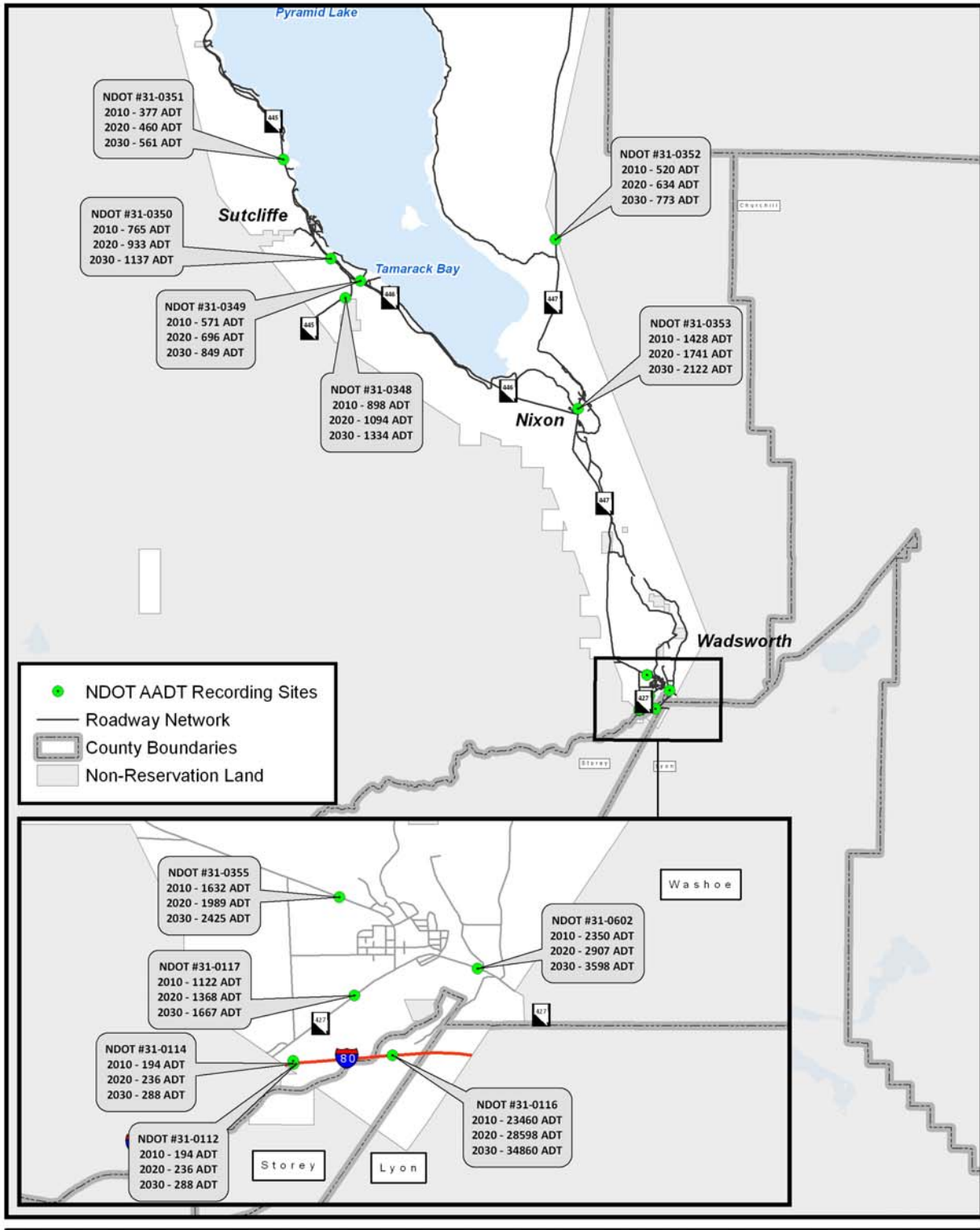
Annual Average Daily Traffic was obtained from the Nevada Department of Transportation's *Traffic Information Access* application. A total of 12 NDOT data recording locations were identified as existing within the boundaries of the PLPT Reservation. The complete set of NDOT AADT data ranging from year 1990 to 2009 can be found in Attachment A. The average yearly percent change from 1990 to 2009 at individual stations ranged from -0.3% to 6.7% with an average of 2.2% for all stations combined. Again the average growth rate of AADT at NDOT data locations is similar to the 2.1% population growth identified by the population data trend and the 2.0% population growth rate identified by the BIA.

A 2.0% growth rate was applied to the most recent AADT data from NDOT to predict 2010 AADT conditions and project out to 2020 and 2030.

NDOT Station ID	Location	Projected AADT		
		2010 AADT	2020 AADT	2030 AADT
31-0112	IR80E E/B on-ramp of the W Wadsworth Intch 'Exit 43'	194	236	288
31-0114	IR80E W/B ooff-ramp of the W Wadsworth Intch 'Exit 43'	194	236	288
31-0116	IR80E .9 mi E of the W Wadsworth Intch 'Exit 43'	23460	28598	34860
31-0117	SR427 .3 mi W of SR-447.	1122	1368	1667
31-0348	SR445 1.2 mi S of SR-446 to Nixon & .1 mi N of mp-31.	898	1094	1334
31-0349	SR446 .4 mi E of SR-445 (Pyramid Rd).	571	696	849
31-0350	SR445 1.1 mi N of SR-446 to Nixon.	765	933	1137
31-0351	SR445 .2 mi N of mp 36.	377	460	561
31-0352	SR447 8.7 mi N of Fremont St in Nixon & .4 mi S of mp 25.	520	634	773
31-0353	SR447 .2 mi N of SR-446 to Sutcliffe.	1428	1741	2122
31-0355	SR447 1.1 mi N of SR-427 in Wadsworth.	1632	1989	2425
31-0602	SR427 .2 mi E of the Truckee River.	2350	2907	3598

**Table 3 - AADT Projections 2010, 2020, 2030**

Refer to Figure 1- AADT Projections for locations of NDOT data sites and projected AADT data.



DATE: 08-14-2010  
 DRAWN BY: KCS  
 DESIGNED BY:  
 CHECKED BY: AM  
 JOB NO.: 7653

Projections for:  
 2010  
 2020  
 2030

**NDOT AADT PROJECTIONS**  
**Pyramid Lake Paiute Tribe**  
**Road Inventory Update**

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**Figure 1- AADT Projections**

## Traffic Accident Information

NDOT publishes the report called *Nevada Traffic Crashes*, typically on a yearly basis. The most recent publication was in 2006. The report generally classifies accidents information for every county in the state but not on a road by road basis. The PLPT Reservation is within a rural area of Washoe County and contains Interstate 80, several state highways and local roads that are monitored by NDOT. After examining the data available for Washoe County it became apparent that the urban population centers of Reno and Sparks heavily determine both the quantity and cause of accidents that are recorded. The report states that urban areas accounted for 88.4% of all collisions and rural areas 11.6%.

The top seven causes of accidents in Washoe County for the year 2006 area as follows:

- Driving too fast for conditions
- Failed to yield right of way
- Followed too closely
- Hit and Run
- Failure to keep in proper lane
- Disregarded traffic signs, signals, road markings
- Unsafe lane changes.

For comparison, Pershing County, to the east of Washoe is predominately rural in nature. The cause of accidents in Pershing County is assumed to more closely resemble the causes of accidents on the Pyramid Lake Reservation. Pershing County had the following causes of accidents for the year 2006:

- Failure to keep in proper lane
- Driving too fast for conditions
- Object avoidance
- Over correcting / Over steering
- Disregarded traffic signs, signals and road markings
- Mechanical Defects
- Ran off road

The top ten rural crash types (2003) in Nevada are:

- Ran off roadway and overturned
- Rear end collision
- Ran off roadway struck fixed object
- Animal
- Angle collision
- Sideswipe collision same direction
- Ran off roadway and other combinations
- Ran off roadway
- Parked vehicle
- Out of control vehicle

Accidents reported by the Pyramid Lake Police Department are as follows:

Year	Property Damage Only	Injury Crashes	Fatal Crashes	Total Crashes
1998	0	0	0	0
1999	0	0	0	0
2000	4	3	0	7
2001	0	0	0	0
2002	0	0	0	0
2003	0	0	0	0
2006	n/a	n/a	n/a	n/a

**Table 4 - Accidents as recorded by NDOT by PLPT Police**

Fatal accidents reported to NDOT are as follows:

Year	Location	Route
1998	n/a	n/a
1999	n/a	n/a
2000	n/a	n/a
2001	n/a	n/a
2002	North of Sutcliffe	445
2003	Between Sutcliffe and Nixon	447
2006	South of Wadsworth	I-80

**Table 5 – Fatal Accidents as recorded by NDOT**

Primarily causes or crash types for fatal accidents were not indicated in the Traffic Accident Reports for specific locations.

## Holiday and Recreational Traffic

While the PLPT Reservation can be considered rural and has relatively low AADT numbers, especially on the northern region roadways, holiday and recreational based traffic creates considerable increases in the traffic of the region. Pyramid Lake is a very popular destination for fishing and other lake focused recreational activities and the data in Table 6 shows the dramatic increase in daily traffic during the weekends.

Date	Day of Week	Daily Traffic
5/29/2010	Saturday	1482
5/30/2010	Sunday	1895
5/31/2010	Monday (memorial day)	1197
6/1/2010	Tuesday	281
6/2/2010	Wednesday	242
6/3/2010	Thursday	243
6/4/2010	Friday	321
6/5/2010	Saturday	871
6/6/2010	Sunday	903
6/7/2010	Monday	285
6/8/2010	Tuesday	283
6/9/2010	Wednesday	281

**Table 6 - Memorial Weekend Daily Traffic**

## Mobility Challenges and Opportunities on the PLPT Reservation

There are several challenges and opportunities regarding transportation and the needs of the residents of the PLPT reservation. The rural setting and comparatively minimal services available in the population centers of Sutcliffe, Nixon and Wadsworth necessitate the use of automobiles and transit.

There are generally three paradigms in transportation planning; capacity, mobility and accessibility. Due to the relatively low AADT values that are present on the roadways capacity is not considered a major issue for roadway users. There appears to be substantial capacity on the roadways to accommodate additional traffic and congestion is low. Accessibility is a challenge to the residents due to the rural environment and minimal services present on the reservation. Improving accessibility requires a change in land use and development patterns to minimize travel distances and a transportation system that provides people access to what they need.

The intentions of mobility based policies are to encourage people to use mass transit, to bicycle and increase occupancy of vehicles. The rural setting, disjunct population centers, low population and lack of development demand a mobility based transportation planning paradigm.

Mobility can be enhanced on the reservation and destinations to surrounding areas by developing regional and local bicycle paths and pedestrian facilities. The rural setting, low population and minimal commerce do not lend itself to an environment that could sustain a transit system. Ride sharing and Transportation Demand Management (TDM) could be implemented if a system and technology to support it were present and available.

Without a drastic change in economics, land use and development mobility and accessibility will continue to be a challenge for residents of the PLPT Reservation.

## Summary and Recommendations

This technical memo reviewed the recent trends in population and traffic to establish a growth rate which was then applied to current information to project population and traffic in the future, to the years 2020 and 2030. The recent population and traffic growth was consistent with the BIA's annual growth rate of 2.0%.

Accident occurrences and history were evaluated to assess the location, type and cause of accidents. Failure to keep in proper lane, driving too fast for conditions, object avoidance are some of the more common causes of accidents in rural areas in and near the reservation. These causes of accidents typically result in the following types of accidents; ran off roadway and overturned, rear end collision, ran off roadway struck fixed object.

Corrective measures to reduce accidents on the reservation may be beneficial to motorists and the population in general. While traffic accidents and their causes may be due to operator error, an evaluation of existing conditions per the 2010 NDOT Road Design Guide is recommended if not already completed.

The PLPT reservation experiences increased traffic on weekends and holidays from recreation users traveling to and from Pyramid Lake. Increase education, patrol and enforcement may be beneficial to reducing accidents and enhancing visitor experiences.

In an effort to enhance mobility for the residents and visitors to the PLPT Reservation a ride share program or mobility center may be a beneficial and relatively cost effective means of providing additional opportunities for residents to get to their destinations. Bicycling and pedestrian facilities should be enhanced and incorporated into new development and roadway reconstruction efforts, particularly around schools and between housing and commercial land uses.



## Appendix A

Station	1990	% Change 1990-1991	1991	% Change 1991-1992	1992	% Change 1992-1993	1993	% Change 1993-1994	1994	% Change 1994-1995	1995	% Change 1995-1996	1996	% Change 1996-1997	1997	% Change 1997-1998	1998	% Change 1998-1999	1999	% Change 1999-2000	2000
31-0112	230	-9%	210	7%	225	49%	335	13%	380	-12%	335	-34%	220	11%	245	24%	305	5%	320	-6%	300
31-0114	225	13%	255	8%	275	24%	340	21%	410	-17%	340	-25%	255	-2%	250	24%	310	6%	330	-9%	300
31-0116	13355	-1%	13165	6%	13920	4%	14460	11%	16105	7%	17240	-6%	16150	6%	17045	14%	19480	-1%	19360	1%	19480
31-0117	1525	7%	1630	10%	1800	8%	1940	1%	1960	2%	1990	-5%	1900	-5%	1800	7%	1920	-1%	1900	-11%	1700
31-0348	900	-6%	850	1%	855	12%	960	4%	1000	12%	1120	12%	1250	-16%	1050	10%	1150	-9%	1050	0%	1050
31-0349	530	-16%	445	4%	465	8%	500	-2%	490	7%	525	7%	560	-14%	480	0%	480	-4%	460	13%	520
31-0350	1015	-19%	825	9%	900	4%	940	4%	980	19%	1165	12%	1300	-15%	1100	-15%	930	-8%	860	30%	1120
31-0351	485	-26%	360	-17%	300	83%	550	19%	655	-1%	650	-1%	645	-1%	640	-16%	540	4%	560	-34%	370
31-0352	465	-10%	420	-10%	380	7%	405	38%	560	-13%	485	11%	540	9%	590	8%	640	5%	670	-22%	520
31-0353	1075	-10%	970	18%	1145	-5%	1085	10%	1195	-3%	1155	13%	1300	0%	1300	8%	1400	-7%	1300	-4%	1250
31-0355	770	19%	915	15%	1050	-15%	895	2%	910	-5%	865	33%	1150	1%	1160	3%	1200	-8%	1100	27%	1400
31-0602	1775	1%	1795	5%	1885	10%	2070	4%	2155	17%	2525	-5%	2400	-6%	2250	13%	2550	-10%	2300	-7%	2150
Averages		-4.6%		4.7%		15.7%		10.5%		1.0%		0.9%		-2.7%		6.7%		-2.3%		-1.8%	

Station	2000	% Change 2000-2001	2001	% Change 2001-2002	2002	% Change 2002-2003	2003	% Change 2003-2004	2004	% Change 2004-2005	2005	% Change 2005-2006	2006	% Change 2006-2007	2007	% Change 2007-2008	2008	% Change 2008-2009	2009	Average Yearly Change 1990 - 2009	Average Yearly Change 2000 - 2009
31-0112	300	-17%	250	4%	260	4%	270	-11%	240	-21%	190	16%	220	0%	220	0%	220	-14%	190	-4.3%	0.6%
31-0114	300	-7%	280	-4%	270	7%	290	-10%	260	-23%	200	5%	210	0%	210	10%	230	-17%	190	-4.3%	-0.3%
31-0116	19480	0%	19560	7%	20880	4%	21700	6%	23000	-1%	22700	19%	27100	-4%	26000	-12%	23000	0%	23000	2.2%	4.0%
31-0117	1700	0%	1700	6%	1800	-17%	1500	0%	1500	7%	1600	16%	1850	-24%	1400	-21%	1100	0%	1100	-3.8%	0.0%
31-0348	1050	0%	1050	-11%	930	0%	930	40%	1300	-12%	1150	-23%	890	12%	1000	-10%	900	-2%	880	-0.6%	1.3%
31-0349	520	4%	540	19%	640	0%	640	27%	810	-9%	740	-19%	600	3%	620	-21%	490	14%	560	2.0%	2.3%
31-0350	1120	-2%	1100	-9%	1000	0%	1000	10%	1100	-12%	970	-35%	630	41%	890	-13%	770	-3%	750	-2.5%	0.7%
31-0351	370	24%	460	-15%	390	0%	390	44%	560	-4%	540	-26%	400	25%	500	-18%	410	-10%	370	2.3%	2.8%
31-0352	520	2%	530	30%	690	0%	690	1%	700	9%	760	-13%	660	-5%	630	-17%	520	-2%	510	0.6%	2.6%
31-0353	1250	0%	1250	24%	1550	3%	1600	3%	1650	0%	1650	-9%	1500	-13%	1300	-15%	1100	27%	1400	2.2%	3.0%
31-0355	1400	-14%	1200	33%	1600	3%	1650	9%	1800	-6%	1700	-15%	1450	24%	1800	-22%	1400	14%	1600	3.0%	6.7%
31-0602	2150	0%	2150	0%	2150	12%	2400	-2%	2350	2%	2400	-2%	2350	2%	2400	-8%	2200	5%	2300	0.9%	2.2%
Averages		-0.7%		6.9%		1.4%		9.7%		-5.7%		-7.1%		5.2%		-12.4%		1.1%		-0.2%	2.2%

# What is Tribal Transportation Planning?

- Tribal Staff
  - Consultants
  - BIA and FHWA staff
- Work together to prepare -

## Road Inventory Update

- An inventory of all the roads and transportation facilities used by the Tribe
- Includes both BIA/tribal roads and state and local roads (if they are determined to be important to the functioning of tribal communities)
- Adopted by Tribal Council and submitted to BIA/FHWA
- Important because it determines the amount of federal IRR transportation funding assigned to the Tribe by the BIA/FHWA

## Long Range Transportation Plan

- Purpose is to identify and evaluate the present and future transportation needs of the Tribe over the next twenty years
- Important because any transportation project, in order to be eligible for funding, has to have been identified in a plan and TIP (see below) adopted by the Tribal Council and reviewed and approved by the BIA/FHWA

Public input – this transportation workshop

## Transportation Improvement Program (TIP) Or Transportation Project Priority List

- This is a list of the transportation projects that will be completed in the next five years.
- The TIP is *fiscally constrained*, in other words, projects can't be on the TIP unless funding has been identified and committed

All these are reviewed and adopted by the Tribal Council



Transportation Improvement Projects  
Identified in the plan and TIP are carried out

## Appendix H

### Materials from Workshop On Transportation Planning

### Pyramid Lake Paiute Tribe

May 15, 2010 Tribal Headquarters, Nixon, Pyramid Lake Reservation

Board Number 1

# Safety

## What are the major transportation safety issues on (or leading to) the Reservation?

(Put a sticker next to all that apply)

Condition of roadway (snow, ice, bad pavement surface, etc – what and where?)	<ul style="list-style-type: none"> <li>● ●</li> <li>Rabbit Circle – cracks need sealing</li> <li>Shoulders on highways need to be fixed</li> <li>Hwy 447-Dead Ox – rocks on shoulder – too narrow roadway</li> <li>Highway 447 – Dead Ox</li> </ul>
Speeding/reckless driving	Need crosswalk by Nixon store – also speed limit signs need to be replaced as you leave Nixon towards Wadsworth
Animals or other obstructions on roadway (what and where?)	Wandering dogs – Nixon
Lack of signs and other traffic control markings and devices	Sign – no engine breaks entering residential areas (Nixon, Wadsworth, Sutcliffe)
Too much traffic (where and when?)	During Burning Man – Wadsworth to Nixon
Lack of streetlights	<ul style="list-style-type: none"> <li>● Need streetlight in Wadsworth at intersection of old highway 40 and 447</li> <li>Need streetlight in front of Natchez School by bus stop</li> </ul>
Lack of sidewalks and/or bike lanes	<ul style="list-style-type: none"> <li>● Nixon</li> </ul>
Other (describe)	<ul style="list-style-type: none"> <li>Sand blowing off trucks coming from quarries</li> <li>Cattle guards on state highways need to be brought up level when road is resurfaced</li> <li>Remove the 2 cattleguards by Natchez School</li> </ul>

### Appendix H

### Materials from Workshop On Transportation Planning

### Pyramid Lake Paiute Tribe

May 15, 2010 Tribal Headquarters, Nixon, Pyramid Lake Reservation

Board Number 2

# How do you get to where you need to go?

(Put a sticker next to each of the three travel modes you use the most)

Drive alone	● ● ●
Ride with friends or family	●
Bus/Van (Public Transportation)	
Walk	●
Bicycle	●
Other (describe)	

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## Appendix H

### Materials from Workshop On Transportation Planning

#### Pyramid Lake Paiute Tribe

May 15, 2010 Tribal Headquarters, Nixon, Pyramid Lake Reservation

Board Number 3

# Are there any barriers to getting where you need to go?

(Put a sticker next to all that apply)

Safety	
Cost	
Road doesn't go there	
No bus, no car, no ride	Need a transportation system to take people to work in Reno and Fernley
Other (describe)	

**Can you think of any places on (or leading to) the Reservation where speed limit signs, stop signs, or other traffic control markings or signs are needed? Where?**  
(write in here, or mark on map)

By Nixon store – crosswalk
By Post Office – crosswalk



# Transit

There is currently no public transportation system (buses or vans) on the Reservation. Some other tribes do have public transportation systems and there is some funding available for the federal government.

**If the Tribe were to start a public transportation system:  
How often do you think you would use it?**

(put a sticker next to your choice)

<b>Never</b>	
<b>1-10 times a year</b>	
<b>Once a month</b>	
<b>Once a week</b>	● ●
<b>More than once a week</b>	● ● ●
<b>Every day</b>	●

Depends on where and when it is offered



# **If the Tribe were to start a public transportation system: Where do you think it should go?**

**Write potential destinations in the spaces below.  
(EXAMPLES: Sparks transit station, Tribal headquarters,  
Fernley WalMart, Pyramid Lake High School, etc)**

Reno, Fernley, Sparks and Fallon; tribal headquarters
Fernley, Sutcliffe, Wadsworth, Nixon
Pyramid Lake High School to TMCC and UNR



**If the Tribe were to start a public transportation system:  
Where should passengers be picked up?**

**Write potential bus stop locations in the spaces below.  
(EXAMPLES: Tribal headquarters, Pyramid Lake High School, Wadsworth, etc)**

Tribal headquarters, Wadsworth, Nixon Store
Nixon store, Natchez school, PLF
Pyramid Lake High School



**If the Tribe were to start a public transportation system:  
If fares were charged, how much would you be willing to pay per one-way ride?**

(Put a sticker next to your choice)

Nothing – I would not ride	
\$1 or less	
\$1-3	<p style="text-align: center;">● ● ● ● or a bus pass w/ discount</p>
\$3-5	
More than \$5	

# Bicycle and Pedestrian Transportation

Walking and bicycling are important transportation modes especially for those who can't or don't drive. On the Reservation, bicycle and pedestrian transportation mostly take place to and from school, and in neighborhoods.

Walking and bicycling are also used for exercise and recreation. The mountain bike path between Wadsworth and Pyramid Lake is an example.

State and federal funding is available for bike and pedestrian improvements, including the Safe Routes to School program and Recreational Trails grants.

Listed below are some potential types of walking and bicycling facilities that could be developed on the Reservation. Please write your thoughts about why (or why not) they might be needed or desired and where you think they should be.

## **Biking/walking/hiking trails**

Extend bikeway north along railroad grade?

Extend Tahoe Pyramid bike path away from Nixon housing area and replace with a path along highway to the Nixon store. 1.2 miles

## **Sidewalks**

## **Bike lanes on existing roads**

From tribal office to Nixon Store – PL High school or out to Popcorn

### **Appendix H**

#### **Materials from Workshop On Transportation Planning**

#### **Pyramid Lake Paiute Tribe**

**May 15, 2010 Tribal Headquarters, Nixon, Pyramid Lake Reservation**

Board Number 10

# Other Transportation Improvements

Other types of projects could take place on the Reservation including those listed below. Please write your thoughts about where and why (or why not) you think they might be needed or desired.

<b>Scenic byways/interpretive center</b>
<b>Boat docks</b> Replace boat dock at marina and Pelican Point Need another boat dock and road to it. Road needs to be either paved or well maintained gravel
<b>Public parking areas</b> Pave tribal office area Pave boat dock areas around lake Pave around Nixon store
<b>Other</b> Visitor Center

## The following projects to improve transportation on the Reservation have been identified.

- This list may change as future projects are identified through the planning process
- These projects will not be done all at once, and are subject to available funding

<b>Project</b>	<b>Length</b>	<b>Location</b>
1. Wadsworth By-pass	3 miles	Wadsworth
2. Pelican Point Road	1 mile	Sutcliffe
3. Big Bend Road	0.05 miles	Wadsworth
4. Capital Hill	0.05 miles	Nixon
5. Lakeview Drive	0.15 miles	Sutcliffe
6. Warrior Point	1.00 miles	Sutcliffe
7. Pyramid Lake Road	12.0 miles	Nixon
8. West Pyramid Lake	5.00 miles	Nixon
9. Route 2 Pyramid Lake	11.0 miles	Sutcliffe
10. Route 204 Albert Road	0.25 miles	Sutcliffe

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### Appendix H

#### Materials from Workshop On Transportation Planning

#### Pyramid Lake Paiute Tribe

May 15, 2010 Tribal Headquarters, Nixon, Pyramid Lake Reservation

Board Number 12

# COMMENTS:

**Can you think of other transportation improvements that are needed?**

**Did we forget anything you'd like us to know about transportation on the Reservation?**

- Chip seal all paved Reservation roads
- New road south along the lake from Sutcliffe (Lakeview Drive – already on existing priority list)
- Have Adopt-a-Highway program and have tribal programs, organizations and groups adopt an area to keep clean
- Have a “pack it in; pack it out” system for trash similar to the Grand Canyon – offer trash bags with daily pass
- Off-road vehicle tracks and trash are a problem – can roads be signed, designed, and controlled to minimize this?
- Need to maintain Tahoe Pyramid bike path for people to use or it will deteriorate
- Feasibility study for new boat dock:
  - Location
  - Potential funding
  - Potential users and level of use

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## Appendix H

**Materials from Workshop On Transportation Planning**

**Pyramid Lake Paiute Tribe**

**May 15, 2010 Tribal Headquarters, Nixon, Pyramid Lake Reservation**

Board Number 13

**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**Wadsworth By-Pass**  
**Includes 30' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 322,972.27	\$ 322,972.27
2	Earthwork	159,573	CY	\$ 8.00	\$ 1,276,586.67
3	Subgrade Preparation	538,560	SF	\$ 0.20	\$ 107,712.00
4	Place 9" Type II Aggregate Base	475,200	SF	\$ 1.00	\$ 475,200.00
5	Place 3" AC20P	475,200	SF	\$ 2.50	\$ 1,188,000.00
6	Shouldering	63,360	SF	\$ 0.50	\$ 31,680.00
7	Place 24" Pipe	1,000	LF	\$ 100.00	\$ 100,000.00
8	Place 24" Flared End Section	40	EA	\$ 500.00	\$ 20,000.00
9	Provide Traffic Control	1	LS	\$ 25,000.00	\$ 25,000.00
10	Place 4" Solid with 4" Dashed Yellow Pavement Markings	15,840	LF	\$ 0.35	\$ 5,544.00

Sub Total	\$ 3,552,695
Contingency (20%)	\$ 710,539
Engineering/CM/Testing (15%)	\$ 532,904
<b>Total Estimate</b>	<b>\$ 4,796,000</b>

**Pelican Point**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 62,836.89	\$ 62,836.89
2	Earthwork	10,951	CY	\$ 8.00	\$ 87,608.89
3	Subgrade Preparation	147,840	SF	\$ 0.20	\$ 29,568.00
4	Place 9" Type II Aggregate Base	126,720	SF	\$ 1.00	\$ 126,720.00
5	Place 3" AC20P	126,720	SF	\$ 2.50	\$ 316,800.00
6	Shouldering	21,120	SF	\$ 0.50	\$ 10,560.00
7	Place 24" Pipe	250	LF	\$ 100.00	\$ 25,000.00
8	Place 24" Flared End Section	10	EA	\$ 500.00	\$ 5,000.00
9	Provide Traffic Control	1	LS	\$ 25,000.00	\$ 25,000.00
10	Place 4" Solid Double Yellow Pavement Markings	5,280	LF	\$ 0.40	\$ 2,112.00

Sub Total	\$ 691,206
Contingency (20%)	\$ 138,241
Engineering/CM/Testing (15%)	\$ 103,681
<b>Total Estimate</b>	<b>\$ 933,000</b>



**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**Big Bend Road (Reconstruct 14 foot roadway)**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 94,000.51	\$ 94,000.51
2	Earthwork		CY	\$ 8.00	\$ -
3	Subgrade Preparation	124,186	SF	\$ 0.20	\$ 24,837.12
4	Place 9" Type II Aggregate Base	124,186	SF	\$ 1.00	\$ 124,185.60
5	Place 3" AC20P	106,445	SF	\$ 2.50	\$ 266,112.00
6	Shouldering	17,741	SF	\$ 0.50	\$ 8,870.40
7	Place 24" Pipe	50	LF	\$ 100.00	\$ 5,000.00
8	Place 24" Flared End Section	2	EA	\$ 500.00	\$ 1,000.00
9	Provide Traffic Control	1	LS	\$ 10,000.00	\$ 10,000.00
10	50 space paved parking lot	50	EA	\$ 10,000.00	\$ 500,000.00
11	Place 4" Solid Double Yellow Pavement Markings		LF	\$ 0.40	\$ -

Sub Total	\$ 1,034,006
Contingency (20%)	\$ 206,801
Engineering/CM/Testing (15%)	\$ 155,101
<b>Total Estimate</b>	<b>\$ 1,396,000</b>

**Pyramid Lake Road (grading)**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 139,448.00	\$ 139,448.00
2	Grade Existing Roadway	1	LS	\$ 20,000.00	\$ 20,000.00
3	Place 6" Type II Aggregate Base	1,900,800	SF	\$ 0.60	\$ 1,140,480.00
4	Place 24" Pipe	1,200	LF	\$ 100.00	\$ 120,000.00
5	Place 24" Flared End Section	48	EA	\$ 500.00	\$ 24,000.00
6	Provide Traffic Control	1	LS	\$ 10,000.00	\$ 10,000.00
7	Maintain Roadway by grading (4 times per yr for 1 yr)	4	EA	\$ 20,000.00	\$ 80,000.00

Sub Total	\$ 1,533,928
Contingency (20%)	\$ 306,786
Engineering/CM/Testing (15%)	\$ 230,089
<b>Total Estimate</b>	<b>\$ 2,071,000</b>

**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**Lakeview Drive**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 33,511.79	\$ 33,511.79
2	Earthwork	821	CY	\$ 8.00	\$ 6,570.67
3	Subgrade Preparation	22,176	SF	\$ 0.20	\$ 4,435.20
4	Place 9" Type II Aggregate Base	19,008	SF	\$ 1.00	\$ 19,008.00
5	Place 3" AC20P	19,008	SF	\$ 2.50	\$ 47,520.00
6	Shouldering	3,168	SF	\$ 0.50	\$ 1,584.00
7	Place 24" Pipe	50	LF	\$ 100.00	\$ 5,000.00
8	Place 24" Flared End Section	2	EA	\$ 500.00	\$ 1,000.00
9	Provide Traffic Control	1	LS	\$ 10,000.00	\$ 10,000.00
10	24 space paved parking lot	24	EA	\$ 10,000.00	\$ 240,000.00
11	Place 4" Solid Double Yellow Pavement Markings		LF	\$ 0.40	\$ -

Sub Total	\$	368,630
Contingency (20%)	\$	73,726
Engineering/CM/Testing (15%)	\$	55,294
<b>Total Estimate</b>	<b>\$</b>	<b>498,000</b>

**Tahoe Pyramid Bikeway**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Study	1	LS	\$ 50,000.00	\$ 50,000.00

Sub Total	\$	50,000
Contingency (20%)	\$	10,000
<b>Total Estimate</b>	<b>\$</b>	<b>60,000</b>

**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**Warrior Point**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 79,750.72	\$ 79,750.72
2	Earthwork		CY	\$ 8.00	-
3	Subgrade Preparation	206,976	SF	\$ 0.20	\$ 41,395.20
4	Place 9" Type II Aggregate Base	177,408	SF	\$ 1.00	\$ 177,408.00
5	Place 3" AC20P	177,408	SF	\$ 2.50	\$ 443,520.00
6	Shouldering	29,568	SF	\$ 0.50	\$ 14,784.00
7	Place 24" Pipe	500	LF	\$ 100.00	\$ 50,000.00
8	Place 24" Flared End Section	20	EA	\$ 500.00	\$ 10,000.00
9	Provide Traffic Control	1	LS	\$ 10,000.00	\$ 10,000.00
10	Place 4" Solid Double Yellow Pavement Markings		LF	\$ 0.40	-
11	24 space paved parking lot	24	EA	\$ 2,100.00	\$ 50,400.00

Sub Total	\$	877,258
Contingency (20%)	\$	175,452
Engineering/CM/Testing (15%)	\$	131,589
<b>Total Estimate</b>	<b>\$</b>	<b>1,184,000</b>

**Wadsworth Community Center**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 17,289.05	\$ 17,289.05
2	Earthwork	1,095	CY	\$ 8.00	\$ 8,760.89
3	Subgrade Preparation	29,568	SF	\$ 0.20	\$ 5,913.60
4	Place 9" Type II Aggregate Base	25,344	SF	\$ 1.00	\$ 25,344.00
5	Place 3" AC20P	25,344	SF	\$ 2.50	\$ 63,360.00
6	Shouldering	4,224	SF	\$ 0.50	\$ 2,112.00
7	Place 24" Pipe	100	LF	\$ 100.00	\$ 10,000.00
8	Place 24" Flared End Section	4	EA	\$ 500.00	\$ 2,000.00
9	Provide Traffic Control	1	LS	\$ 5,000.00	\$ 5,000.00
10	Place 4" Solid Double Yellow Pavement Markings		LF	\$ 0.40	-
11	24 space paved parking lot	24	EA	\$ 2,100.00	\$ 50,400.00

Sub Total	\$	190,180
Contingency (20%)	\$	38,036
Engineering/CM/Testing (15%)	\$	28,527
<b>Total Estimate</b>	<b>\$</b>	<b>257,000</b>

**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**Capital Hill Road**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 8,177.26	\$ 8,177.26
2	Earthwork	274	CY	\$ 8.00	\$ 2,190.22
3	Subgrade Preparation	7,392	SF	\$ 0.20	\$ 1,478.40
4	Place 9" Type II Aggregate Base	6,336	SF	\$ 1.00	\$ 6,336.00
5	Place 3" AC20P	6,336	SF	\$ 2.50	\$ 15,840.00
6	Shouldering	1,056	SF	\$ 0.50	\$ 528.00
7	Place 24" Pipe		LF	\$ 100.00	\$ -
8	Place 24" Flared End Section		EA	\$ 500.00	\$ -
9	Provide Traffic Control	1	LS	\$ 5,000.00	\$ 5,000.00
10	Place 4" Solid Double Yellow Pavement Markings		LF	\$ 0.40	\$ -
11	24 space paved parking lot	24	EA	\$ 2,100.00	\$ 50,400.00

Sub Total \$ 89,950  
Contingency (20%) \$ 17,990  
Engineering/CM/Testing (15%) \$ 13,492  
**Total Estimate \$ 121,000**

**Pyramid Lake (Grading/Maintenance Alternative)**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Maintain Roadway by grading (4 times per yr for 1 yr)	4	EA	\$ 20,000.00	\$ 80,000.00

Sub Total \$ 80,000  
Contingency (20%) \$ 16,000  
Engineering/CM/Testing (15%) \$ 12,000  
**Total Estimate \$ 108,000**

**Pyramid Lake (Paving Alternative)**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 599,232.80	\$ 599,232.80
2	Earthwork	60,000	CY	\$ 8.00	\$ 480,000.00
#REF!	Subgrade Preparation	1,626,240	SF	\$ 0.20	\$ 325,248.00
#REF!	Place 9" Type II Aggregate Base	1,393,920	SF	\$ 1.00	\$ 1,393,920.00
#REF!	Place 3" AC20P	1,393,920	SF	\$ 2.50	\$ 3,484,800.00
#REF!	Shouldering	232,320	SF	\$ 0.50	\$ 116,160.00
#REF!	Place 24" Pipe	1,200	LF	\$ 100.00	\$ 120,000.00
#REF!	Place 24" Flared End Section	48	EA	\$ 500.00	\$ 24,000.00
#REF!	Provide Traffic Control	1	LS	\$ 25,000.00	\$ 25,000.00
#REF!	Place 4" Solid Double Yellow Pavement Markings	58,000	LF	\$ 0.40	\$ 23,200.00

Sub Total \$ 6,591,561  
Contingency (20%) \$ 1,318,312  
Engineering/CM/Testing (15%) \$ 988,734  
**Total Estimate \$ 8,899,000**

**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**West Pyramid Lake Road**  
**Includes 24' AC with 4' AB shoulders**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 88,547.26	\$ 88,547.26
2	Earthwork	6,954	CY	\$ 8.00	\$ 55,631.64
3	Remove Existing Composite Materials to 9" Depth	160,934	SF	\$ 0.75	\$ 120,700.80
4	Subgrade Preparation		SF	\$ 0.20	\$ -
5	Place 9" Type II Aggregate Base		SF	\$ 1.00	\$ -
6	Place 3" AC20P	160,934	SF	\$ 2.50	\$ 402,336.00
7	Shouldering	26,822	SF	\$ 0.50	\$ 13,411.20
8	Place 24" Pipe		LF	\$ 100.00	\$ -
9	Place 24" Flared End Section		EA	\$ 500.00	\$ -
10	Place 6" Type II Agg. Base Surface	447,322	SF	\$ 0.60	\$ 268,392.96
11	Provide Traffic Control	1	LS	\$ 25,000.00	\$ 25,000.00
12	Place 4" Solid Double Yellow Pavement Markings		LF	\$ 0.40	\$ -

Sub Total	\$	974,020
Contingency (20%)	\$	194,804
Engineering/CM/Testing (15%)	\$	146,103
<b>Total Estimate</b>	<b>\$</b>	<b>1,315,000</b>

**Hardscrabble Road**  
**Resurface**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 17,149.44	\$ 17,149.44
2	Patching (10%)	5,069	SF	\$ 8.00	\$ 40,550.40
3	Place 3" AC20P	50,688	SF	\$ 2.50	\$ 126,720.00
4	Shouldering	8,448		\$ 0.50	\$ 4,224.00

Sub Total	\$	188,644
Contingency (20%)	\$	37,729
Engineering/CM/Testing (15%)	\$	28,297
<b>Total Estimate</b>	<b>\$</b>	<b>255,000</b>

**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**Pyramid Lake Scenic Byway Improvements**  
**SR 445, 446, 447**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 13,000.00	\$ 13,000.00
2	Scenic Byway Signs	2	EA	\$ 5,000.00	\$ 10,000.00
3	Roadside Turnouts with Parking for 5 Cars	3	EA	\$ 20,000.00	\$ 60,000.00
4	Signs	1	LS	\$ 10,000.00	\$ 10,000.00
5	Information Kiosk	1	EA	\$ 50,000.00	\$ 50,000.00

Sub Total \$ 143,000  
Contingency (20%) \$ 28,600  
Engineering/CM/Testing (15%) \$ 21,450  
**Total Estimate \$ 193,000**

**Safety Signage**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 1,500.00	\$ 1,500.00
2	Study	1	LS	\$ 10,000.00	\$ 20,000.00
3	Roadside Warning Signs	30	EA	\$ 500.00	\$ 15,000.00

Sub Total \$ 36,500  
Contingency (20%) \$ 7,300  
Engineering/CM/Testing (15%) \$ 5,475  
**Total Estimate \$ 49,000**

**Street Lights**  
**SR427 & Old Highway 40**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 3,200.00	\$ 3,200.00
2	Street Lights	4	EA	\$ 8,000.00	\$ 32,000.00

Sub Total \$ 35,200  
Contingency (20%) \$ 7,040  
Engineering/CM/Testing (15%) \$ 5,280  
**Total Estimate \$ 48,000**

**Pyramid Lake Paiute Tribe**  
**Proposed Transportation Improvements**  
**Engineer's Estimate**



**Valley Road Bridge Replacement**  
**Truckee River Bridge**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 239,300.00	\$ 239,300.00
2	Earthwork	10,000	CY	\$ 15.00	\$ 150,000.00
3	Reinforcing Steel	220,000	LBS	\$ 1.00	\$ 220,000.00
4	Reinforcing Steel (Epoxy Coated)	475,000	LBS	\$ 1.20	\$ 570,000.00
5	Concrete (Type AA)	1,800	CY	\$ 300.00	\$ 540,000.00
6	Concrete (Type EA)	1,200	CY	\$ 600.00	\$ 720,000.00
7	Bridge Deck Preparation and Concrete Placement	1,600	SY	\$ 50.00	\$ 80,000.00
8	Pedestrian Rail	600	LF	\$ 130.00	\$ 78,000.00
9	Place 9" Type II Aggregate Base	10,000	SF	\$ 1.00	\$ 10,000.00
10	Place 3" AC20P	10,000	SF	\$ 2.50	\$ 25,000.00
11	Protect River	1	LS	\$ 358,950.00	\$ 358,950.00

Sub Total	\$ 2,991,250
Contingency (20%)	\$ 598,250
Engineering/CM/Testing (15%)	\$ 448,688
<b>Total Estimate</b>	<b>\$ 4,038,000</b>

**Nixon Airport**  
**Single Runway with Parallel Taxiway, Building, and Parking without Lighting)**

Item	Description	Quantity	Unit	Unit Price	Amount
1	Mobilization	1	LS	\$ 391,861.78	\$ 391,861.78
2	Earthwork	33,342	CY	\$ 8.00	\$ 266,737.78
3	Place 9" Type II Aggregate Base	900,240	SF	\$ 1.00	\$ 900,240.00
4	Place 3" AC20P	815,760	SF	\$ 2.50	\$ 2,039,400.00
5	Shouldering	84,480	SF	\$ 0.50	\$ 42,240.00
6	Place 24" Pipe	1,000	LF	\$ 100.00	\$ 100,000.00
7	Place 24" Flared End Section	10	EA	\$ 500.00	\$ 5,000.00
8	Pavement Marking	1	LS	\$ 25,000.00	\$ 25,000.00
9	FBO Building (Office etc.)	1,200	SF	\$ 150.00	\$ 180,000.00
10	FBO Hanger	3,600	SF	\$ 100.00	\$ 360,000.00

Sub Total	\$ 4,310,480
Contingency (20%)	\$ 862,096
Engineering/CM/Testing (15%)	\$ 646,572
<b>Total Estimate</b>	<b>\$ 5,819,000</b>