

# RED LAKE BAND OF CHIPPEWA INDIANS



## LONG RANGE TRANSPORTATION PLAN (UPDATE 2019-2029)

# Long Range Transportation Plan

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## Welcome

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The Red Lake Nation Long Range Transportation Plan (LRTP) is a document that identifies and prioritizes tribal transportation projects on a community-wide level over the next 10 years that will address Red Lake community transportation needs and improve the quality of life for our citizens. The LRTP sets goals, identifies needs, and establishes steps to be taken according to a schedule determined by the Red Lake Nation. It reflects the Band's vision for the region's transportation systems and services, prepared through collaboration with stakeholders as well as through consensus from the Red Lake Nation itself. The LRTP identifies methods to achieve long-term transportation goals, establishes tribal ownership of the process, defines road control and jurisdiction, identifies the programs that will be implementing each project, and the resources necessary to pay for them. This acts as a guide of major projects for the next 10 years, and helps to organize and prioritize significant projects.

The LRTP is required by federal law as a prerequisite to accessing federal transportation funds for road construction, transit, and highway safety. The planning process also provides a mechanism for road users and the public to have input into the plans and priorities before they move into the construction phase.

Although the Red Lake Nation has had a current Long Range Transportation Plan, there have been no major updates since 2009. The proposed update for the LRTP will include a multi-modal assessment of existing infrastructure with a focus on performance, demands, future needs and projects, community input and involvement, and connectivity with off-reservation communities and services.

Darrell Seki Sr.

Tribal Chairman

## Overview

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The Red Lake Ojibwe are the people of the forests, lakes, rivers, and prairies...

The Red Lake Nation is part of the greater Ojibwe tribal group which comprises numerous communities in the United States in Michigan, Wisconsin, Minnesota, North Dakota, and Montana, and in Canada in Ontario, southern and central Manitoba, and Saskatchewan. While the term Anishinaabeg is the most proper name for our people, the word "Ojibwe" is most often used in popular terms.

Before European contact, the Ojibwe homeland was in what is now the eastern United States and Canada along the coast of the great ocean. Following a long migration, our people soon spread along the eastern and northern shores of Lake Huron, up the northeastern shore of Lake Superior, and into the Upper Peninsula of Michigan before moving even further west into what is now Minnesota, western Ontario, and Manitoba. During the fur trade, some of our people moved west onto the prairies and plains of North Dakota, Saskatchewan, and as far west as Alberta and Montana. The Ojibwe are perhaps one of the most widespread cultural groups in North America, extending from the eastern Great Lakes to the foothills of the Rocky Mountains.

The Red Lake people were able to consolidate ownership over a vast area in northern and northwestern Minnesota as our homeland during the late 17th and early 18th centuries. This area was acquired by the Red Lake people through conquest and attrition – leading to the term "Warrior Nation" being used to describe our people. Lewis and Clark, during their census of natives of the region around Red River in 1805 noted that the Red Lake band "...claim the entirety of the country about Red Lake and the Red Lake River, and extend themselves as far as the Red river and Lake Winnipeg at times." Lewis deemed the Red Lakers as "...the best hunters in the north-west country."

Throughout the centuries the Red Lake nation has upheld undisputed aboriginal tenure over its territories despite various treaties and agreements seeking to remove us – being one of the only tribes in the United States to have retained its homeland and not being assigned a reservation by treaty or executive order.

## Demographics

The estimated population of the Red Lake reservation is approximately 10,000 residents (full-time and part-time). Of that number, approximately 94.84% report themselves as American Indian on the census (Census 2010). Below are some statistical tables regarding the overall population in relation to national median averages and a short discussion of the data.

## Demographic Data

**TABLE 1: Median Age (All)**

	Female	Male	Total
Red Lake Reservation	22.6	21.8	22.1
United States	39.1	36.5	37.8

**TABLE 2: Educational Attainment**

	Female	Male	Total	US Total
Less than high school diploma	18.3%	35.7%	27.7%	10.0%
High school graduate, GED, or equivalent	29.9%	42.3%	36.6%	89.8%
Some college or associate's degree	42.0%	20.1%	30.2%	61.28%
Bachelor's degree or higher	9.7%	1.9%	5.5%	33.4%

**TABLE 3: Median Household Income**

	Total
Red Lake Reservation	\$34,717
United States	\$57,652

**TABLE 4: Per Capita Income**

	Total
Red Lake Reservation	\$10,236
United States	\$30,088

**TABLE 5: Poverty Level (185% guidelines)**

	Total
Red Lake Reservation	90.0%
United States	11.0%

In examining the above data it can be seen that the population of the Red Lake Nation are significantly younger (22.1 vs. 37.8 years), have a lower educational attainment level, and exist in significant economic disparity when compared to the rest of the United States – a 60% lower household income, over 60% lower per-capita income, and a poverty level that is almost 900% greater (on average).

All of these factors make the need for a reliable transportation system an imperative. Without adequate transportation, it is nearly impossible to improve infrastructure and create local jobs, and is difficult for citizens of the Red Lake Nation to travel to jobs in nearby communities.

## Description of the Land-Base

The Red Lake Nation (Miskwaagamiwi-zaaga'igan) encompasses over 800,00 acres of land and waters in parts of nine counties (Beltrami, Clearwater, Lake of the Woods, Koochiching, Roseau, Pennington, Marshall, Red Lake, and Polk) in northern and northwestern Minnesota.

The Red Lake Nation is widely regarded as having one of Minnesota's most distinct and rich environments, with majestic pine forests, awe-inspiring lake shores, and vast areas of wetlands that provide habitat to countless animal and plant species.

The land base itself covers over 1,258.62 sq. mi (3,259.81 km<sup>2</sup>) making it the largest Reservation in the BIA Midwest Region, containing more than 55 percent of Indian trust land in the region. Within this land base, the Red Lake Nation maintains an inventory of over 1,600 miles of highways, roads, recreational trails, bridges, and other facilities.

The largest concentration of Red Lake land is at a place called the "diminished reservation" which includes a vast segment of land concentrated around upper and lower Red Lakes in Beltrami and Clearwater Counties (figure 1). The diminished reservation is comprised of 407,730 total acres, of which approximately 229,300 acres are surface water.

The Red Lake tribal government has full sovereignty over the diminished reservation, subject only to federal legislation specifically intended for Red Lake, which makes it a "closed" reservation. The Tribe has the right to limit who can visit or live on the reservation. The land is slightly rolling and heavily wooded, with 337,000 acres of woodlands under management. There are numerous lakes, swamps, wetlands, peat bogs and prairies.

The second largest concentration of land is at the North West Angle (Figure 2), with the remainder of land scattered in various-sized contiguous and isolated blocks of land to the north of the diminished reservation within the original 1863 retained Red Lake Reservation's boundaries (Figure 3).

There are four communities on the Red Lake Reservation, all located near Lower Red Lake: Red Lake, Redby, Little Rock, and Ponemah (Figure 4). Red Lake, Redby and Little Rock are on the south shore. Ponemah is located on the south side of the peninsula between Upper and Lower Red Lake.

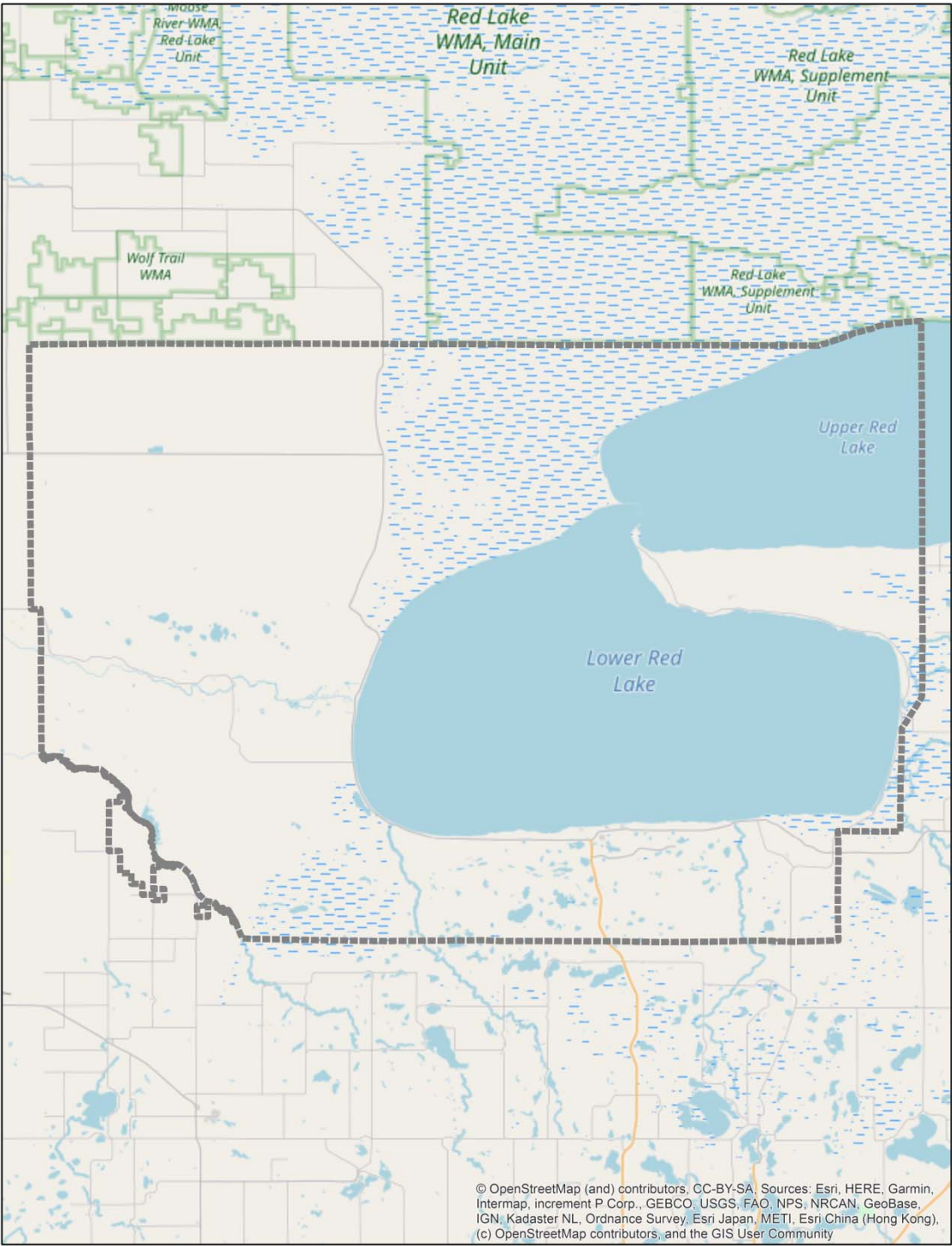


Figure 1. Red Lake Nation contiguous area (aka “Diminished Reservation”)

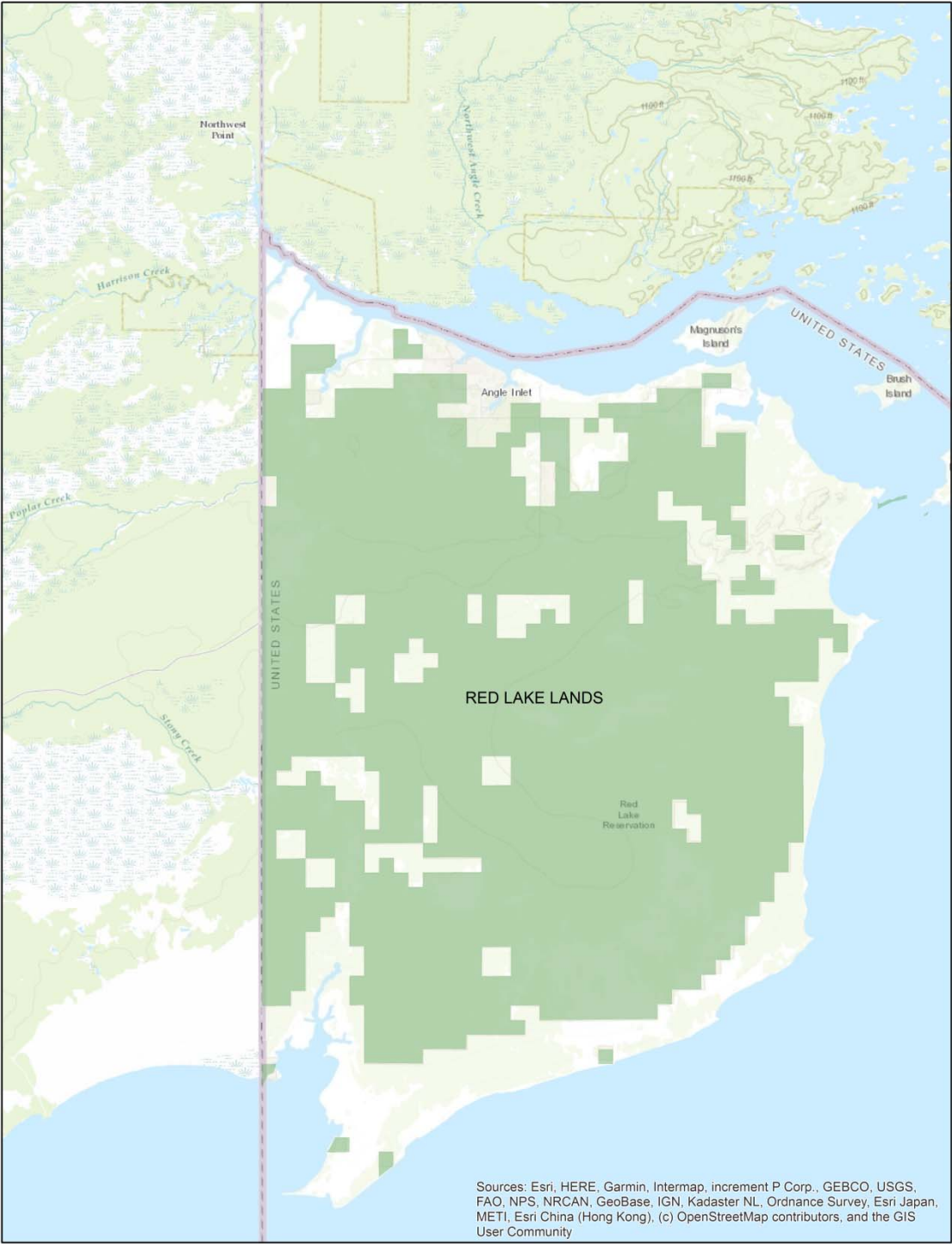


Figure 2. Red Lake Nation lands at North West Angle

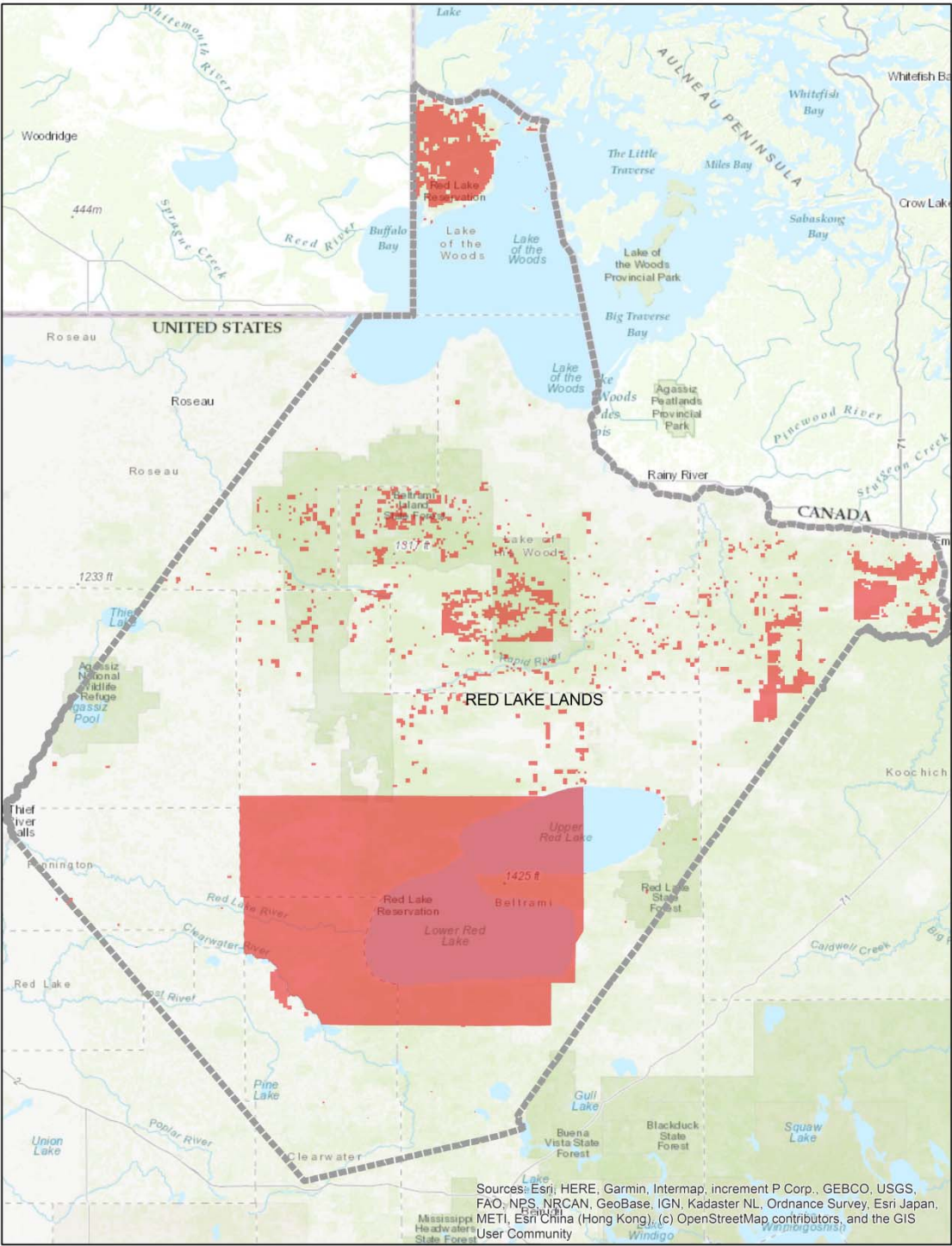


Figure 3. Red Lake Nation lands within 1863 Reservation boundaries

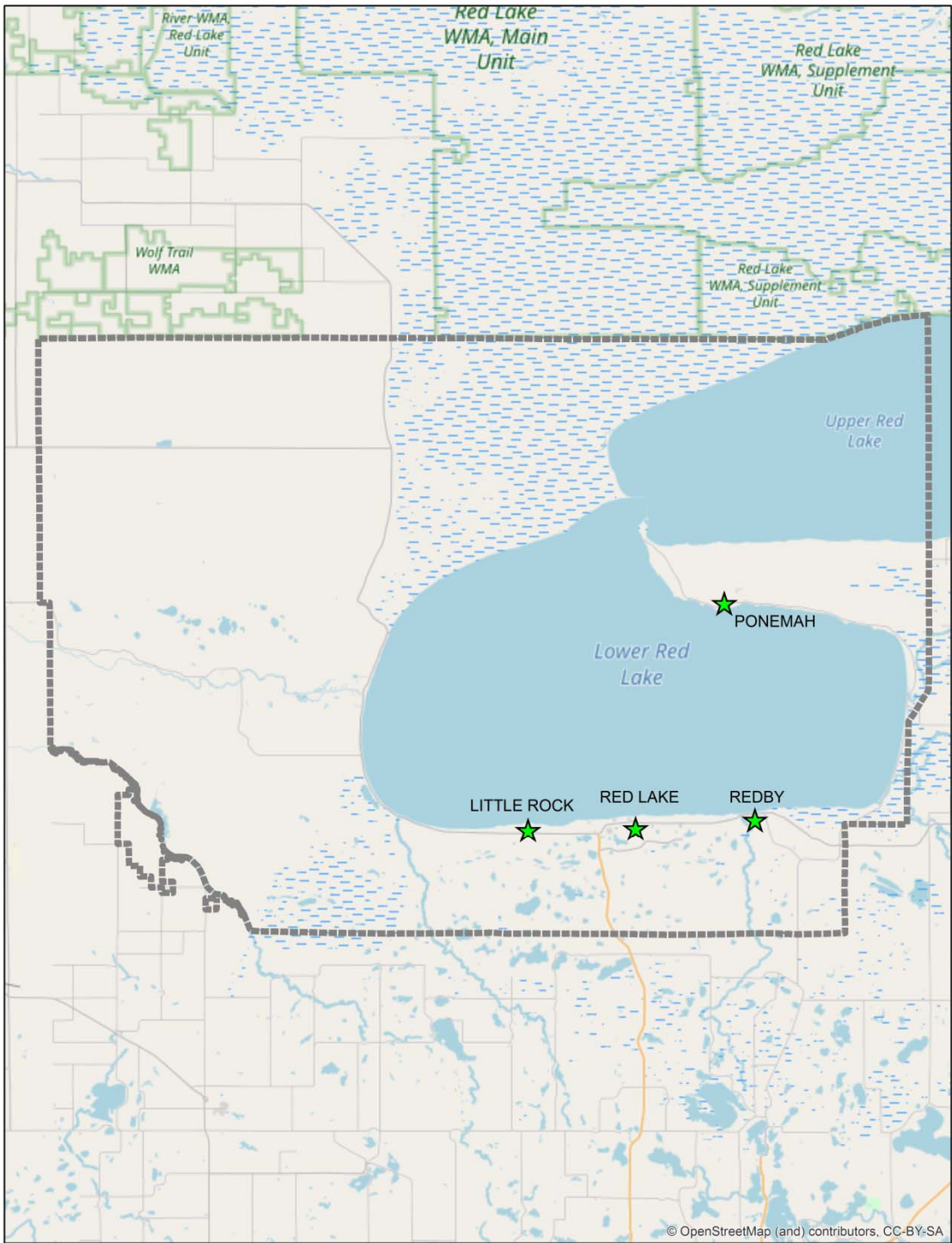


Figure 4. Red Lake Reservation communities

The main village of Red Lake is the location of the Tribal Government Center (tribal headquarters) and is the most populated community on the reservation with well over 1,800 citizens residing in the district. Red Lake has the highest concentration of homes and businesses, and is the location of the main reservation school, Indian Health Service hospital and clinic, and most other essential government services.

Redby boasts a population of over 1,500 citizens. The community was once platted and is the most “town-like” of all reservation communities, with streets arranged in blocks and most houses contained in lots. A few local businesses, a post office, and some governmental services are offered in Redby, including the tribal commodity warehouse and distribution center, the Red Lake propane company, and the Red Lake tribal fisheries.

Little Rock is a disperse community that contains mostly scattered homes, one business, and a few government services offered at the community center. It is estimated that approximately 1,000 people live in the district.

Ponemah, the most remote reservation community, has a population that is estimated to be near 1,000 persons. It has a few local businesses, a post office, and has some essential government services including a satellite IHS clinic, a fire department, and an elementary school to serve children in the community.

The nearest larger population centers to the Red Lake diminished reservation are Bemidji (35 miles south) and Thief River Falls (65 miles west). Smaller towns near the reservation and significant trust land areas include Warroad, Roseau, Baudette, Blackduck, Kelliher, Bagley and Angle Inlet (North West Angle).

The Diminished reservation is served by two Minnesota Trunk Highways (1 and 89), which are maintained by the State of Minnesota under cooperation with the Red Lake transportation department. Additionally, there are hundreds of miles of paved, gravel, and unimproved roads across the reservation. Most of the road networks are located south of Lower Red Lake and on the Ponemah Peninsula.

Access to the Red Lake scattered lands is gained from State Trunk Highway 72 in the east, Highway 89 and County Roads 9 and 54 in the west, and Highway 11 across the north. County highway departments maintain several graded roads throughout the area, and there are many unimproved, mostly winter-only, roads accessing some portions of Red Lake land in these areas. However, many areas remain inaccessible by vehicle due to the surrounding, boggy nature of the landscape.

The Red Lake lands in the North West Angle are accessible by one gravel all-weather road that starts in the Canadian province of Manitoba and extends across the bulk of Red Lake lands in the area, eventually connecting to Angle

Inlet, a small, year-round community on the north side of the North West Angle. Within the North West Angle there is a network of un-maintained winter-only roads that extend from the main road and connect throughout much of the Angle. Most of the area remains inaccessible by vehicle.

The need to connect people in the dispersed communities is imperative. In order to gain a full realization of the economic and social benefits of the Red Lake Nation, the connection of people to essential services, natural resources, and to each other is paramount. Without adequate transportation connecting the lands and people of the Nation, it is virtually impossible to make improvements that will have meaningful, long-term effects.

In updating its LRTP plan, the Red Lake Nation has worked to identify how to be more efficient and effective in managing the transportation system. Red Lake Nation is working hard to better control, and take full advantage, of the limited federal funds that are provided by the Bureau of Indian Affairs and Federal Highway Administration under the current, unfair funding formula created by the 2011 changes to the Tribal Transportation program.

## LRTP Goals

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This updated plan will enable Red Lake Nation to focus on planning, designing, obtaining needed environmental clearances and performing construction activities in a systematic manner.

Our TTIP outlines specific project activities and is updated every year with new projects being added as needed. Because of changing needs, we need to find ways in which we can maintain focus on those programmed projects, maximize limited funding, and seek new ways to accomplish our goals.

There are seven key goals of the LRTP, including:

### **1. Maintain the System**

The Red Lake Nation has invested a significant amount of money on the existing transportation system, and as such it is very important that it be maintained to a level that corresponds to the function and use of the roadways and bridges. This transportation system requires a significant amount of maintenance resources to maintain, repair and reconstruct the roads and bridges that are deficient.

These activities require very important environmental clearances and permits to do any work on the roadways, which takes time and coordination with many agencies.

The Nation's roadway system is made up of paved, gravel and dirt roads. Each has their purpose, and careful consideration should be made before any improvements are made.

Approximately 71% of the road system is unpaved (gravel or unimproved roads); 29% is paved. The vast majority are in poor or failing condition based on the current road condition inventory. This deficiency situation is the result of lack of funding resources provided by the Bureau of Indian Affairs which forces the Red Lake Nation to direct what limited funds we have towards maintenance and reconstruction activities, versus constructing new roads and upgrading roads to pavement.

Best practices show that properly maintaining roads is important, as the inability to maintain road quality reduces the need for major maintenance or reconstruction. Unfortunately, under the current funding formula this is impossible as there is not enough funding, equipment or staff available to maintain all of the roads that Red Lake Nation is responsible for. As such, priorities must be set to maintain roads in the best condition possible while improving what roads we can in the hopes of bringing them up to good condition.

Road maintenance priorities should be based on both quantitative data such as functional classification, average daily traffic (ADT), any available crash or safety data, and historic maintenance needs required to keep the roadway properly maintained.

Bridges are also a critical component to transportation and mobility. The approach by the Red Lake Nation is to focus on the bridges that are in greatest need first. To accomplish this, a Bureau of Indian Affairs dedicated funding pool specifically for bridges is recommended. It is hoped that this can be accomplished through changes to the federal funding formula.

To accomplish the goal of maintenance, the Red Lake Nation will continue to focus attention on collecting, maintaining and sharing the road inventory data among departments, community members, and with the Red Lake tribal government. It is hoped that this approach will lead to improved data-driven, performance-based discussions so that informed decision making is enhanced.

## **2. Enhance Existing Partnerships and Create New Partnerships**

The relationships between the Red Lake Nation and possible partners who could help the Nation in providing a safe and effective transportation system should continue to be enhanced, and new partnerships must be developed to explore opportunities that could further the goals of the Nation to promote economic development and provide jobs.

Potential partners include, but are not limited to:

- Minnesota Department of Transportation
- Beltrami County Highway Department
- University of Minnesota Humphrey School of Public Affairs
- Council of Large Land-based Tribes (COLT)
- Federal Highway Administration

### **3. Maximize Transportation Investment Effectiveness**

Transportation funding should be broadly discussed and vetted to direct funding to those needs that will have the greatest impact on achieving our goals. Every dollar that is invested by the Red Lake Nation in the transportation system is a long-term investment, regardless of if it's for maintenance, reconstruction, new construction, or planning.

It cannot be forgotten that federal funding provided by the Bureau of Indian Affairs is minimal, based on a flawed formula, and is not expected to increase in any meaningful way due to bureaucratic resistance. However, the needs of the Red Lake Nation will certainly increase. Because of this, every effort must be made to ensure that money being spent on roadways is meaningful, long lasting and the improvements will be maintained after they are constructed as best as possible given constraints. Transportation spending should be strategic in order to have the greatest positive impact towards achieving goals.

Best practices and need will guide the process of identifying priorities for improvement, and the types of improvements needed. Since there is not enough funding to address all of the Red Lake Nation's transportation needs, careful consideration will be given to each and every improvement, balanced with the available funding to determine if, how and to what extent an improvement project can address the needs.

### **4. Enhance Safety**

Transportation investments, maintenance activities, and improvements should improve the safety of all persons using the roadways of the Red Lake Nation to minimize the potential for all serious injuries and fatalities.

Transportation safety is at the forefront of the Red Lake Nation's transportation program. The Nation must have a safe transportation system for all roadway users and decrease the number of fatality and serious injury crashes. Fortunately, there has been a significant push at the federal level to invest in safety, and the Red Lake Nation has been able to obtain several grants to assist in helping with this important goal – allowing for the creation of a comprehensive safety plan and an audit of drop-off/pick-up procedures at Red Lake Nation schools. Nonetheless, few transportation dollars have been acquired for engineering improvements.

It is hoped that such funding can be secured in the upcoming funding cycles.

Additionally, there is a serious lack of data available on fatal and serious injury crashes on the Red Lake Reservation. Such data is necessary for planning and allows for adequate preparation of grant proposals for federal safety funding. A means needs to be found to coordinate the collection of this data and to have this data shared with the Red Lake Nation engineering department in a timely manner (e.g. annually).

## **5. Create Connections**

The Red Lake Nation transportation system should assist in providing seamless connectivity within and the communities within Red Lake reservation and the important public services and facilities important to the community. Additionally, the system must also provide connectivity to the population centers and transportation systems surrounding the Red Lake Nation. All local Red Lake communities need connectivity for school, government, work, shopping, groceries and commerce, and the outside connections are needed to enhance the quality of life and to access services not offered on the reservation itself.

Connections include having quality, maintained roads, useable and accessible non-motorized facilities, and having a functional and accessible transit system that can provide options and safe transportation to everyone who needs it. Additionally, from an economic development standpoint, creating connections can also improve economic activities such as tourism, and is important to economic development efforts.

The Red Lake Nation will continue to build upon its existing efforts and successes, and will work with partners to make additional connections whenever possible.

## **6. Provide Options**

The Red Lake transportation system should allow for safe travel for those who walk, bicycle, ride on public transportation, fly, and drive. Because approximately 90% of the Red Lake Nation's citizens have income levels below poverty, it is important to create a transportation system that provides options other than the automobile. Investments must provide safe options for those that cannot afford to drive their own car, and for those who choose alternative transportation for other reasons (e.g. environmental or health reasons).

Efforts are currently underway to ensure that all new roadway reconstructions include safety measures such as non-motorized trails, lighting, and other user-friendly facilities. These include:

- Sidewalks are planned to be constructed in coordination with the upcoming reconstruction of MN TH-1 (2020-2021), and for a connecting trail from TH-1 to the Red Lake elementary school to be constructed at the same time.
- Street lights to be placed at important intersections with TH-1 and TH-89 starting in 2020 in an effort to reduce accidents and provide additional pedestrian safety.
- New and existing bus shelters will be improved for users of the Red Lake transit system.

## **7. Promote Economic Development**

New transportation investments should correlate closely with economic and land-use needs, access to housing, community services, and employment needs with an eye towards the economic strength of the Red Lake Nation.

New development of housing, community service facilities, and businesses should try to locate where existing transportation systems provide the best access. Efforts should be taken to have early discussions between tribal programs sponsoring new projects and the Red Lake Engineering department when any sort of transportation investment is required. When new facilities such as schools, event centers, agency buildings, hospitals, shopping centers, industrial parks, airports, etc. are proposed for development, these developments typically require a supporting transportation system to provide meaningful and safe access. In many cases, improvements are necessary to facilitate the meaningful and safe access to the new development.

Ensuring that transportation needs are figured into the overall project costs is imperative, as the annual budget for tribal transportation is limited and is not forecast to grow in any appreciable way in the next decade. This planning should also include maintenance costs, as additional maintenance might detract from other needed maintenance efforts.

Many programs, such as HUD-funded projects, can include transportation and roads into their planning and project costs. Whenever possible, tribal programs must include transportation-related costs in their projects and planning in coordination with tribal engineers.

## Existing Transportation System

The Red Lake Nation’s roadway network consists of over 550 miles of highways, paved and unpaved roads, trails, bridges and air facilities on the official Tribal inventory (Figure 5).

### Functional Classification.

Functional class is *“the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide”*. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads.

It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a highway network.” (Source: Highway Functional Classification, FHWA, 1989)

The Red Lake Reservation road system is divided into seven major functional roadway classifications. According to the Bureau of Indian Affairs RIFDS system. The classes include:

<b>Class 1</b>	Major Arterial
<b>Class 2</b>	Rural Minor Arterial
<b>Class 3</b>	City Local
<b>Class 4</b>	Rural Major Collector
<b>Class 5</b>	Rural Local
<b>Class 6</b>	City Minor Arterial
<b>Class 7</b>	City Collector
<b>Other 0</b>	Logging roads, trails, etc.

The application of the classifications to the Red Lake Nation’s road system shows that the overwhelming majority of roads (40.98%) are ‘Rural Major Collector roads’, which serve as collectors to rural local roads and which serve more geographically isolated and/or remote destinations and/or venues not directly served by the higher order arterial system and may serve the more important intra-county and intra-tribal travel corridors.

Other classifications are lesser in terms of miles, with paved highways (Class 1), rural minor arterial (Class 2) making up approximately 31.48% collectively. Unclassified roads (such as logging roads and trails) make up nearly 20% of the system (19.74%). An outline is provided in the following table:

## Red Lake Transportation Facilities

<b>Table 6. Transportation Facilities</b>	<b>Total Miles</b>	<b>Percent</b>
Class 1	75.25	12.58%
Class 2	113.0	18.90%
Class 3	31.9	5.33%
Class 4	245.2	40.98%
Class 5	14.9	2.50%
Class 6	0.0	0%
Class 7	0.0	0%
Other (Class 0)	118.13	19.74%
Totals	598.38	-

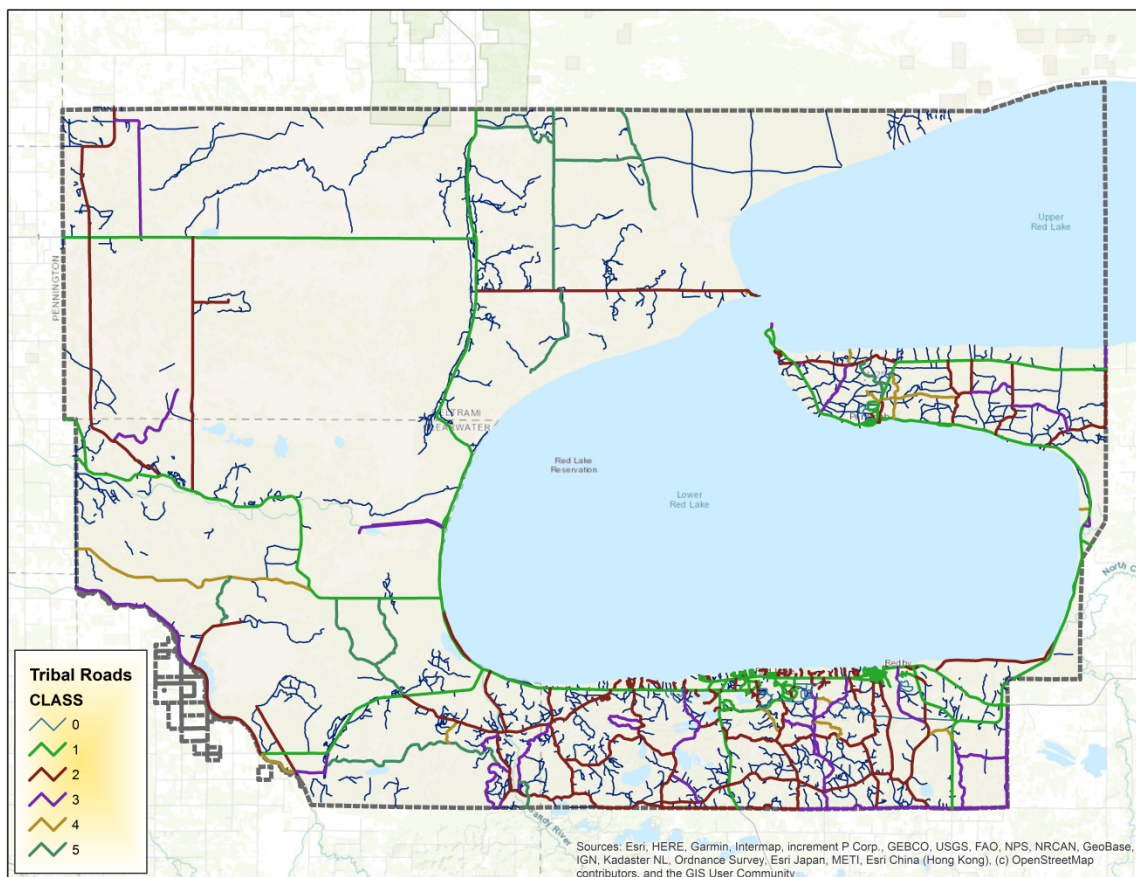


Figure 5. Red Lake Nation road classification System

## Community Engagement

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As part of the goal of updating and incorporating community engagement into the planning process, the Red Lake Nation worked collaboratively with the University of Minnesota's Humphrey School of Public Affairs to hold a community engagement session regarding transportation and transportation safety.

The engagement session was led by Dr. Kathryn S. Quick and Dr. Guillermo E. Narváez, with the goal of identifying community transportation concerns and to help drive the focus of the LRTP update.

Below are some of the issues identified:

- A. Traffic calming – Many of the participants mentioned concern about the need for calming measures for MN-1 and MN-89. The highways cut right through the middle of centers of activity on the reservation (e.g. post office, retail center, government center, schools, and health care facilities), and it was repeatedly raised that these highways have a high volume of high-speed traffic – including significant truck traffic – and that there are no traffic signals, or other traffic calming measures, that effectively slow traffic through areas used by community members and pedestrians.
- B. Walking Paths and Sidewalks – There are currently no existing pedestrian facilities on the Red Lake reservation. This puts pedestrians in danger as their options to walk/bike are either to use the (often) narrow shoulder, or else walk in the ditch. Nearly everyone stated that there was a need for safe walking paths along MN-1 – especially at the bridge crossing over Ogaakaananing-ziibing (Pike Creek), where there is a narrow shoulder and a well-worn footpath through the grass immediately next to the highway, and no other way to avoid walking near traffic due to the narrowness of the road and bridge.

There is currently a plan to include pedestrian facilities with the reconstruction of MN-1 through the Red Lake community. This effort will benefit safety significantly. However, both the community and the Red Lake Tribal government are eager for the state of Minnesota – which maintains design responsibility and over MN-1 – to invest in a trail or other pedestrian/bike safety improvements extending from Red Lake to the Redby community as well.

- C. Horizontal illumination – Another concern raised was the need for street lights and for flashing stop signs at significant T-intersections (e.g. at the junction of MN-1 and Reservation Highway 18) where accidents are known to frequently occur. The need for lighting was also seen as

important to pedestrian safety, as many residents walk along the margins of major roads and the dark conditions create potential for adverse incidents.

- D. Road Maintenance – Many participants in the community engagement session mentioned the poor condition and lack of road maintenance as a serious issue. People pointed to differences in road maintenance between the roads maintained by the tribe and roads off the reservation as an example of the issue. Several community leaders also expressed frustration about the important everyday implications of poor road maintenance, such as the impact on Red Lake school district busing, damage to private vehicles, and safety concerns.

Unfortunately, limited federal funding for maintenance is problematic; federal allocations for tribal roads and funding formulas have meant that funding has not increased, even as community needs have grown.

## Needs and Priorities

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The following sections outline strategies and performance-based measures so the Red Lake Nation can better understand how progress will be made relating to inventorying assets, identifying needs, and prioritizing those needs through a process that best uses the limited amount of funding that is available.



In carrying out work for the next decade, the Red Lake Nation has established a strategy based on need and priority to accomplish goals. As such, planning has become extremely important in order to measure how much impact we can make with the limited funding we receive under the current, flawed funding formula under the FAST Act. Therefore, it is imperative to

ensure that any investment of funding relates positively to the planning, inventory of, maintenance, upgrading, and construction of transportation assets (e.g. roads, bridges, airports, sidewalks, traffic signals, roundabouts, safety improvements).

While inventory and relative need has become immaterial to the Bureau of Indian Affairs in terms of funding, for the Red Lake Nation inventory of the system is a critical function for our own planning efforts and for our own understanding of the tribe's transportation system. As such, we will continue to collect, manage, and analyze inventory data so that we can provide important



input to the maintenance, project development, engineering and construction needs that arise on an annual basis.

Once per year, the Red Lake Engineering Department will submit an inventory-driven priorities list to the Red Lake Tribal Council for review and approval. Data will be managed to ensure it can be utilized for informed decision making and ensure that decisions are made so that the greatest needs are being addressed, and so that adjustments can be made (as needed) regarding how funding is spent.

The priorities for all improvements must be performance-driven based on data. At a minimum, the following criteria will be used when applicable, to determine eligibility for a future road project:

1. Surface condition;
2. Average Daily Traffic;
3. Safety issues;
4. Bus route;
5. Bridge condition (sufficiency rating and status);
6. Fatal and serious injury crashes (when available); and
7. Roadway Functional Classification.

The prioritization and programming process will identify specific data breakpoints for roadway project eligibility, using the above criteria as a guide. Annual planning will use the criteria to prioritize needs based on achieving the goals of this LRTP.

Due to limited funding availability, proposed projects that dramatically change existing alignments, have excessive environmental impacts and are high cost may have a lower priority over other projects needed for safety, maintenance, and immediacy.

## New Technology

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In 2018, the Red Lake Engineering Department initiated a new program for UAV (aka Drone) technology to be used in various planning and surveying areas. The UAV will help reduced costs associated with surveying, by allowing for faster data collection in certain cases, and will allow for cost-savings in terms of monitoring construction and road conditions using LiDar and high-detailed aerial photography.



## Staffing

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The current staffing for the Red Lake Engineering Department is as follows:

- Director (administrator)
- Lead Designer & Surveyor
- Archaeologist/NEPA Specialist
- Inventory Specialist
- GIS Specialist
- UAV/Drone Pilot
- Survey Technicians (4)

It is possible – as need arises – that the Department will assume more design and engineering tasks ‘in-house’, rather than as a contracted service, as a means of having greater control over design and engineering, and as a way to control costs under the limited budget. If this is the case, the following staff may be hired:

- Licensed Civil Engineer