



2022 Cheyenne River Sioux Tribe Long Range Transportation Plan *Executive Summary*



November 2022

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ENGINEERING, REIMAGINED



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DEFINITION OF ACRONYMS

- AADT - Average Annual Daily Traffic
- ADA - Americans with Disabilities Act
- ADT - Average Daily Traffic
- AIP - Airport Improvement Program
- BIA - Bureau of Indian Affairs
- BIG - Bridge Improvement Grant
- BUILD - Better Utilizing Investments to Leverage Development
- CFR - Code of Federal Regulations
- CRST - Cheyenne River Sioux Tribe
- DEMD - Division of Energy and Mineral Development
- ERFO - Emergency Relief for Federally-owner Roads
- FAA - Federal Aviation Administration
- FAST Act - Fixing America’s Surface Transportation Act
- FEMA - Federal Emergency Management Agency
- FHWA - Federal Highway Administration
- GIS - Geographic Information System
- IHS - Indian Health Services
- IRR - Indian Reservation Roads
- LED - Light-Emitting Diode





L RTP - Long Range Transportation Plan
MAP-21 - Moving Ahead for Progress in the 21st Century Act
MnDOT - Minnesota Department of Transportation
MUTCD - Manual on Uniform Traffic Control Devices
NPIAS - National Plan of Integrated Airport Systems
NTTFI - National Tribal Transportation Facility Inventory
PASER - Pavement Surface Evaluation and Rating
PM - Particulate Matter
PMP - Pavement Management Program
RCPT - River Cities Public Transit
RIFDS - Road Inventory Field Data System
RSA - Road Safety Audit
SDDENR - South Dakota Department of Environment and Natural Resources
SDDOT - South Dakota Department of Transportation
SDLTAP - South Dakota Local Transportation Assistance Program
SDDPS - South Dakota Department of Public Safety
SDSASP - South Dakota State Aviation System Plan
TA - Transportation Alternatives
TraCS - Traffic and Criminal Software
TTIP - Tribal Transportation Improvement Program
TTP - Tribal Transportation Program
TTSP - Tribal Transportation Safety Plan
USDOT - United States Department of Transportation



TRIBAL RESOLUTION NO. 241-2022-CR

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TRIBAL MEMORANDUM

DATE : 1/12/23

TO : SUPERINTENDENT, Cheyenne River Agency

FROM : Ev Ann White Feather, Tribal Secretary

SUBJECT: Resolution No. 241-2022-CR: That the Cheyenne River Sioux Tribal Council hereby approves and submits the Long-Range Transportation Plan to the Bureau of Indian Affairs to incorporate into their Road Maintenance Program and also to guide the Bureau in working alongside the Tribe as we manage our transportation system moving forward into the future and contains the provision.

Transmitted herewith are an original and two (2) copies of Resolution No. 241-2022-CR which was duly adopted by the Cheyenne River Sioux Tribal Council during its Regular Session held on December 7, 2022.

Cc: Chairman
Treasurer
Administrative Officer
Tribal Comptroller
Central Record
Roads Committee Chairman
Transportation Department
Committee Secretary
District Officers (6)
File/2

The blue represents the thunderclouds above the world where live the thunder birds who control the four winds. The rainbow is for the Cheyenne River Sioux people who are keepers of the Most Sacred Calf Pipe, a gift from the White Buffalo Calf Maiden. The eagle feathers at the edges of the rim of the world represent the spotted eagle who is the protector of all Lakota. The two pipes fused together are for unity. One pipe is for the Lakota, the other for all the other Indian Nations. The yellow hoops represent the Sacred Hoop, which shall not be broken. The Sacred Calf Pipe Bundle in red represents Wakan Tanka – The Great Mystery. All the colors of the Lakota are visible. The red, yellow, black and white represent the four major races. The blue is for heaven and the green for Mother Earth.





EXECUTIVE SUMMARY

Cheyenne River Sioux Tribe (CRST) officials needed a strategic approach to respond to existing and anticipated future transportation issues. Therefore, the Tribe has undertaken this effort to develop a master plan for transportation infrastructure. The purposes of this plan are:

- To collect and examine information on current and future transportation improvement needs.
- To consider the needs of all modes of travel (vehicular, pedestrian, bicycle, and transit) and develop strategies and recommend projects to accommodate them. This Plan examines the existing system of roads, sidewalks, bridges, and transit facilities and considers opportunities for future improvements.
- To review the current transportation system maintenance strategy and consider opportunities for improvement.
- To provide a basis for future transportation improvement programming that is sustainable. The ability of the Tribe to sustain the transportation system is strongly tied to project costs and available funding. This Plan needed to consider existing and potential funding sources, the costs of maintenance, rehabilitation and new construction, and provide guidance on effective use of limited funding.

The short-range element of this Plan applies through the year 2027. The long-range element for this plan applies through the year 2045. The Federal Register suggests this plan be updated every 5 years.

STUDY AREA

The Cheyenne River Indian Reservation, located in north central South Dakota, is bordered on the north by the Standing Rock Indian Reservation, on the east by the Missouri River, on the south by the Cheyenne River, and on the west by Meade and Perkins counties. The Reservation covers almost 4,270 square miles, making it the fourth largest Reservation by land area in the United States. The study area is shown in Figure EX-1.

CRST communities that were studied during the LRTP process include North Eagle Butte, Eagle Butte, Dupree and Timber Lake, which are the largest communities on the Reservation. Tribal headquarters and the BIA Cheyenne River Agency are both located in Eagle Butte. Timber Lake hosts the Dewey county seat, while the county seat for Ziebach county is in Dupree. Other studied communities on the Reservation are Bear Creek, Blackfoot, Bridger, Cherry Creek, Green Grass, Iron Lightning, Isabel, La Plant, Promise, Red Scaffold, Swiftbird, Tankini, Thunder Butte, and Whitehorse.





ROAD INVENTORY AND OWNERSHIP

Roads on the Cheyenne River Indian Reservation fall under the ownership of the CRST, BIA, SDDOT, and Dewey and Ziebach Counties.

Road inventory and classification was obtained from the Road Inventory Field Data System (RIFDS). Functional classification establishes a hierarchy for roads. It provides a systematic approach to designing and prioritizing roads that have different purposes.

Road classifications, ownership, and surface types from the Indian Reservation Roads Inventory found in RIFDS are shown in Figures EX-2 through EX-4.

FIGURE EX-2 - Functional Classifications and Surface Types

Class	Road Miles by Classification and Surface Type								New Roads by Future Surface Type				Total Miles
	Proposed	Earth	Gravel	Asphalt < 2 inch	Asphalt > 2 inch	Concrete	Trail	None	Earth	Gravel	Paved	None	
		(1)	(3)	(4)	(5)	(6)	(9)	(null)	(E)	(G)	(P)	(null)	
1 - Major Arterial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 - Rural Minor	0.0	0.0	15.3	0.0	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2
3 - City Local	0.0	1.4	1.5	1.8	13.9	1.2	0.0	0.0	0.0	0.0	0.0	0.0	19.8
4 - Rural Major	0.0	79.7	915.3	29.6	9.5	0.0	0.0	0.0	0.0	14.7	0.0	0.0	1048.8
5 - Rural Local	0.7	53.4	28.8	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.8
6 - City Minor	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 - City Collector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 - Trails	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 - Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 - Airstrips	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
null - No Class	0.0	0.0	0.0	8.0	87.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.7
Total:	0.7	134.5	960.9	39.5	124.8	1.2	0.0	0.0	0.0	14.7	0.0	0.0	1276.3





FIGURE EX-3 - Roadway Ownership and Functional Classification

Road Miles by Ownership and Classification											
Owner	Major Arterial (1)	Rural Minor Arterial (2)	City Local (3)	Rural Major Collector (4)	Rural Local (5)	City Minor Arterial (6)	City Collector (7)	Trail (8)	Other Trans Facility (9)	Airstrip (10)	Total
1 - BIA	0.0	28.2	19.8	259.0	0.0	0.0	0.0	0.0	0.0	0.0	307.0
2 - Tribe	0.0	0.0	0.0	1.2	51.1	0.0	0.0	0.0	0.0	0.0	52.3
3 - State	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.7
4 - Urban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 - County	0.0	0.0	0.0	788.6	32.7	0.0	0.0	0.0	0.0	0.0	821.3
6 - Other BIA Offices	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 - Other Federal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 - Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	0.0	28.2	19.8	1,048.8	83.8	0.0	0.0	0.0	0.0	0.0	1,276.3

FIGURE EX-4 - Roadway Ownership and Surface Types

Owner	Road Miles by Ownership and Surface Type								Future Surface Type				Total
	Proposed	Earth (1)	Gravel (3)	< 2 inch (4)	> 2 inch (5)	Concrete (6)	Trail (9)	None (null)	Earth (E)	Gravel (G)	Paved (P)	None (null)	
1 - BIA	0.0	1.4	232.9	21.7	35.1	1.2	0.0	0.0	0.0	14.7	0.0	0.0	307.0
2 - Tribe	0.7	48.0	2.7	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.3
3 - State	0.0	0.0	0.0	8.0	87.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.7
4 - Urban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 - County	0.0	85.1	725.3	9.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	821.3
6 - Other BIA Offices	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 - Other Federal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 - Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.7	134.5	960.9	39.5	124.8	1.2	0.0	0.0	0.0	14.7	0.0	0.0	1276.3





CRASH AND SAFETY DATA

An extensive analysis of available crash data was performed for the purpose of identifying safety issues on the road system and to aid in the development of improvements. The analysis found that the following safety issues are the top causes for crashes on the Reservation:

- Animal crashes
- Lack of seatbelt use
- Impaired driving
- Overturning/rollover crashes
- Crashes with fixed objects
- Departure from roadway
- Lack of or inconsistent crash data collection and sharing
- Young drivers
- Need for improved lighting at night

Recommendations from the LRTP include those prioritized around the 4Es of safety:

- Education
- Enforcement
- Engineering
- Emergency response

EDUCATION STRATEGIES

Continue and Expand the Reservation Wide Transportation Education Program

The Cheyenne River Sioux Tribe have begun efforts through the Department of Transportation and law enforcement to provide safety education to schools and other interested parties on the reservation. These efforts are intended to provide education on transportation safety, particularly to younger drivers including addressing behavioral issues such as seat belt use, texting and driving, impaired driving, and child restraint.

Education strategies would use and build on national safety campaign themes on impaired driving, seat belt use, texting and driving and other transportation safety issues, by using local leaders, or other easily recognizable individuals from the Tribal Community to promote these safety themes. Many safety campaigns across the country have shown a greater rate of success when they are made culturally relevant to the tribal audience and utilize local talent to deliver the safety message. Additional funding would allow for the development and deployment of larger items such as billboards using local artistry, banners, videos, tribal safety posters and other safety education materials. These would be used in programs targeting the school system, during Pow Wows, fairs and at other community events.

Strategy Champion: CRST Department of Transportation.

Funding Opportunity: TTP Safety Funding, BIA IHSP Funding.





ENFORCEMENT STRATEGIES

Implementation of Electronic Crash Record System and Data Sharing Among Agencies

Currently the Dewey County, Ziebach County and the Cheyenne River Sioux Tribe all collect crash data differently. Ziebach County and the Tribe both collect crash data using paper copies, while Dewey County uses the Traffic and Criminal Software (TraCS) electronic crash records system. Placing all three agencies on the same system would allow for better information sharing and developing of complete crash data for the reservation. Funding should be pursued to provide Toughbook hardware, software, and officer training at the CRST Law Enforcement and Ziebach County to implement the TraCS program. Better and more complete data could assist in developing and funding of safety programs and projects.

Strategy Champion: CRST Law Enforcement, SDDOT, South Dakota Department of Public Safety, Ziebach County and CRST Department of Transportation.

Funding Opportunity: TTP Safety Funding, BIA IHSP Funding and SDDPS Funding.

Initiate Discussions on Possible use of Limited Cross Jurisdictional Agreements for Law Enforcement

With staffing challenges faced by all enforcement agencies, many Tribes, states and local jurisdictions have entered into a cross jurisdictional agreements. Tribes such as the Crow Creek in South Dakota have entered into cross jurisdictional agreements with the SDDPS to expand their enforcement abilities. This has allowed for increased traffic enforcement during key times such as pow wow events. Currently there is no such agreement in place on the Cheyenne River Sioux Reservation. The increased traffic enforcement benefits and effects on Tribal Sovereignty of such an agreement should be presented to the Tribal Council. This may be best done by tribal council and/or tribal law enforcement from other reservations such as Crow Creek, where cross jurisdictional agreements are in place, and staff is able to discuss the benefits and some the challenges they have experienced.

Strategy Champion: CRST Law Enforcement.

Funding Opportunity: None required.

Update Tribal Traffic Code

The Cheyenne River Sioux Tribe currently has a Traffic Code for enforcement on the Reservation. While it includes many of the items from the state code, it has not been updated in several years. To ensure that the code covers all areas that could improve transportation safety and has an adequate fine structure, the Traffic Code should be reviewed and revised accordingly. Title 32 of the South Dakota Codified Laws includes a comprehensive section on





motor vehicles that could be used for reference to determine what changes and updates would be beneficial and proposed to the Cheyenne River Sioux Tribal Council.

Strategy Champion: CRST Law Enforcement, CRST Tribal Council and CRST Department of Transportation.

Funding Opportunity: None Required.

Incorporate the use of Speed Radar Trailers as a Deterrent and for Speed Information

Other Tribal Law Enforcement agencies have been using Speed Trailers that use radar to provide feedback on vehicle speeds to help reduce speeds in tribal communities and around schools. These trailers can also collect and store the speed data for use in determining areas for targeted enforcement due to high speeds. With speeding noted as a major cause of crashes on the Cheyenne River Sioux Reservation and concerns expressed about speeds and safety around schools, the Tribe should purchase multiple sets of speed trailers. These could be used by law enforcement in various tribal communities as part of a targeted education and enforcement campaign to help reduce speeds.

Strategy Champion: Cheyenne River Sioux Tribal Police Department

Funding Opportunity: TTP, TTPSF or BIA IHSP

Provide a Tribal Highway Safety Officer

Currently the Tribe has two officers dedicated to highway safety enforcement and drug and safety training. With the limited staffing and the demands on time that criminal activities require, highway safety enforcement and education by necessity becomes a lower priority. To elevate the level of highway safety enforcement, Tribal Law Enforcement should pursue obtaining funding for additional safety enforcement officers.

Strategy Champion: CRST Law Enforcement.

Funding Opportunity: BIA IHSP Funding.

Participate in Efforts to Pass a Primary Seat Belt Law

Seat belt use rates in South Dakota continue to lag behind national rates, with this being especially true for fatal crashes in South Dakota. Many states currently have a primary seat belt law where drivers can be stopped solely for not being buckled. In South Dakota it is a secondary offence which requires a traffic stop for an unrelated infraction before any citation for the lack of seat belt use can be issued. To improve transportation safety, CRST should work with State Representatives and the SD Legislature to implement a Primary Seat Belt Law where drivers could be pulled over for this infraction alone. If a primary seat belt law is not passed through the State Legislature, the Tribal Council should adopt a reservation wide primary seat belt





ordinance. If implemented, transportation and enforcement programs could provide education and outreach within the tribal community on the change in law.

Strategy Champion: Cheyenne River Sioux Tribal Council and CRST Law Enforcement.

Funding Opportunity: None required.

Child Seat Ordinance

In addition to seat belt use, proper restraint of children and infants was identified as an issue. While the crash data did not show a large number of injuries with unrestrained children, local participants have seen a large number of vehicles with no car seats being used. As part of a thorough reservation-wide primary seat belt ordinance, strong language on enforcement of car seats should be included. Currently the tribe has a fine of \$25 for improper use of child restraints which is not a significant disincentive to use them. This effort should be combined with education and outreach within the tribal community including providing of car seats, the need for them, proper installation, and larger fines to create an incentive to use them properly. The South Dakota Department of Social Services currently offers child safety seats at no cost to families that meet income eligibility requirements to ensure that children are in the best child seat for their age and height. The tribe could partner with this program to provide child seats on the reservation. More information for the South Dakota Department of Social Services program can be found on their website at <https://dss.sd.gov/childcare/childsafetyseat/>.

Strategy Champion: Cheyenne River Sioux Tribal Council, CRST Department of Transportation and CRST Law Enforcement

Funding Opportunity: TTP Safety Funding and BIA IHS Program

ENGINEERING STRATEGIES

Perform Road Safety Audits on BIA, Tribal and County Roadways

Road Safety Audits (RSA's) have been an important tool for many Tribes and one that CRST Department of Transportation Program could utilize. RSAs provide an opportunity to bring traffic and safety expertise in assessing the safety concerns of routes where there are high numbers or crashes or where there are specific concerns. The goal of RSA's is to identify safety issues and then develop transportation safety improvements that may include signing, lighting, striping, pathways, intersection improvement and other activities to address them.

To continue to build on safety improvements and the use of RSA's the tribe will pursue funding to accomplish similar efforts on the BIA, Tribal, and County roadways within the Cheyenne River Sioux Reservation.

Strategy Champion: CRST Department of Transportation.

Funding Opportunity: TTP Safety Funding.





Installation of Mileage Reference Markers and Delineation Along Routes

Currently within the reservation there are no mileage reference markers (MRM), or delineators present on paved routes. MRMs assist motorists in letting drivers know how far they have traveled on a particular route, distance to their destination, and most importantly in the event of an accident or roadside emergency, a more precise location to first responders.

Delineators along the roadway are used for motorist guidance at night and during adverse weather. Delineators are also beneficial at locations where roadway alignment changes and are considered as guidance devices rather than warning devices. They come in various sizes and designs to address varying applications. Delineators are typically used on rural roadways with no street lighting and marked approaches.

It is recommended that MRMs and delineators are installed on paved BIA routes within the reservation.

Strategy Champion: CRST Department of Transportation

Funding Opportunity: TTP Safety Funding, TTP Funding.

Develop a Reservation-Wide Pavement Marking Project

There are many roadways on the Cheyenne River Sioux Reservation that do not currently have adequate pavement markings installed or on which existing markings are showing signs of deterioration with low visibility. The absence or deteriorated nature of these pavement markings can significantly impact transportation safety. With the predominance of injury or fatal crashes including single vehicles running off the road and overturning, the addition of improved pavement marking could help. The installation of pavement markings has long been identified by the FHWA as a proven low-cost safety improvement. A project should be developed to design and install new pavement markings on paved routes in compliance with the Manual of Uniform Traffic Control Devices (MUTCD).

Strategy Champion: CRST Department of Transportation

Funding Opportunity: TTP Safety Funding, TTP Funding.

Identify and Replace Failing Roadway Culverts

Most of the roadways on the Cheyenne River Reservation were constructed over fifty years ago and much of the infrastructure is in poor condition. The CRST Transportation Program completed a culvert inventory that identified current culvert locations and conditions. This inventory identified over 400 culverts on main BIA routes, and of these 90 were in a failed or failing condition. The culverts vary in size from 24 to 130 inches and about half of the sites will require major rehabilitation, with road work and culvert replacement. The remaining sites require moderate to heavy maintenance including inlet and outlet repair, slope and shoulder repair, or channel stabilization. These culverts present a safety issue to the travelling public





when they fail and collapse. While not a significant statistical crash type on the reservation, they are generally a high severity crash when they occur. The Cheyenne River Sioux Tribe previously applied for grant funding and the estimated cost for repairing all these failing culvers was \$10,700,000.00

Strategy Champion: CRST Department of Transportation

Funding Opportunity: TTP Safety Funding.

Develop Multi-Use Pathways and Pathway Lighting Projects

There are locations within the Cheyenne River Sioux Reservation where there is pedestrian/bike traffic, and the Tribe has identified specific need for pathways. Pathways should be considered to separate pedestrians from vehicle traffic. The need for these pathways has been present for some time and has increased as there is a need for access to Tribal communities and schools.

- **Emergency Management Systems**
 - Improve 911 addressing system: Currently the Tribe does not have an enhanced 911 system, which means that when a call is received by a 911 operator, formal location information is unavailable. This requires the operator to get more detailed location information, increasing the time it takes to dispatch an emergency vehicle.
 - Many roads may not be signed or may be known by a local nickname that is not easily identifiable by either the dispatcher or responder. It is recommended that the Reservation system be upgraded to include location information for quicker response times. The Tribe has received funding to assist in installation of intersection signage specifically to assist in emergency response.

EMERGENCY SERVICES STRATEGIES

Enhanced 911 System

Currently the Tribe does not have an enhanced 911 system, meaning when a call is received by a 911 operator, location information is unavailable within the systems. This requires the operator to get more detailed location information prior to being able to dispatch an emergency vehicle. This is further complicated in that many roads may not be signed or may be known by a local nickname that is not easily identifiable by either the dispatcher or responder. To remedy this situation, the system within the reservation should be upgraded to include location information for quicker response times. The BIA Inventory includes strip maps that may be able to be utilized as part of this effort. The Tribe has received funding to assist in the installation of intersection signing specifically to assist in emergency response.





Strategy Champion: CRST Law Enforcement, CRST Department of Transportation and EMS Agencies.

Funding Opportunity: TTP Safety Funding or BIA IHSP Funding.

Develop A Life Flight Program

Life Flights play a crucial role in allowing faster transportation of patients needing critical care to other hospitals in the area with more advanced care than what can be provided by the Indian Health Service Hospital in Eagle Butte. In addition, this service could assist in providing faster response times in life-threatening medical situations in remote areas throughout the reservation. EMS has expressed a need to provide this service to the Cheyenne Sioux Reservation to assist in saving lives. A helipad will need to be developed at the hospital to provide this service and staff will need to be trained.

Strategy Champion: EMS Agencies

Funding Opportunity: BIA IHSP Funding.

SAFETY PLANNING AND OTHER STRATEGIES

Improve Roadway Maintenance

Like many Tribes, the Cheyenne River Sioux struggle with basic roadway maintenance. The funding provided through the Department of Interior is insufficient for the extensive road miles over which the Tribe has jurisdiction. The Tribe does currently transfer a portion of their TTP funding to the maintenance program, but this forces them to reduce or eliminate needed roadway improvement projects. With many of these routes in poor condition it has caused safety concerns for the travelling public, school buses, and emergency access to rural locations, particularly in bad weather. While assessing the impact on actual crashes is difficult to determine, the overall poor condition and lack of funding to maintain BIA and tribal roadways has caused safety concerns. Additional funding should be sought through federal programs and/or an increase in the available funding provided by DOI.

Strategy Champion: CRST Department of Transportation.

Funding Opportunity: TTP Funding.





EXISTING CONDITIONS & RECOMMENDATIONS

A detailed investigation was made to identify existing transportation facilities conditions and needs. The investigation determined that there are significant transportation needs throughout the Reservation. These needs, along with recommendations are summarized as follows:

PAVED ROADS

Perhaps the most important component of analyzing current paved road conditions on the Reservation was a Pavement Surface Evaluation and Rating (PASER) study that was conducted on all paved roads within the study area in 2019.

The PASER method outputs a simple 1 through 10 rating for each section of roadway studied. This provides an understandable way for an agency to communicate pavement condition to elected officials and the public, and it also allows more time to be put towards scheduling and budgeting. A simplistic explanation of PASER ratings is:

- Rating 1-2: Road has failed with reconstruction or conversion to gravel road required.
- Rating 3-4: Road is in poor condition typically needing a structural overlay.
- Rating 5-6: Road is in fair condition and can be improved with preservation treatments like a non-structural overlay.
- Rating 7-8: Road is in good condition and can be maintained with crack sealing and minor patching.
- Rating 9-10: Road is in excellent condition and no maintenance is required.

Ratings were used to determine required improvements and create a pavement preservation plan. Projects were then prioritized according to preservation needs and included in the LRTP. Figure EX-5 lists pavement preservation projects which are in the long-range element but should be prioritized to short range if additional funding becomes available. Other long range pavement projects are shown in Figure EX-6.





Figure EX-5 - Long Range Pavement Preservation Projects

CRST Long Range Pavement Preservation Projects				
Project #	Project Title	Project Location	Project Description	Estimated Cost
21	Pavement Preservation - Crack Seal	Community streets in Eagle Butte, Cheyenne River IHS Center, Habitat for Humanity housing, Thunder Butte	2.3 miles crack sealing	\$55,170.00
22	Pavement Preservation - Crack and Chip Seal	Community streets in Bear Creek, Cherry Creek, Eagle Butte, Dupree, Fox Ridge Housing, Habitat for Humanity housing, Iron lightning, No Heart housing, Timber Lake	15.6 miles crack and chip sealing	\$338,550.00
23	Pavement Preservation - Nonstructural Overlay - West	Community streets in Bear Creek, Bridger, Cherry Creek, Dupree, Takini	1.9 miles nonstructural overlay	\$567,150.00
24	Pavement Preservation - Nonstructural Overlay - East	Community streets in Eagle Butte, Green Grass, Habitat for Humanity housing, LaPlant, No Heart housing, Timber Lake, Whitehorse, one mile of BIA 14	5.2 miles nonstructural overlay	\$1,564,320.00
25	Pavement Preservation - Structural Overlay - West	Community streets in Bear Creek, Bridger, Cherry Creek	1.8 miles structural overlay	\$921,500.00
26	Pavement Preservation - Structural Overlay - East	Community streets in Eagle Butte, Green Grass, Habitat for Humanity housing, LaPlant, No Heart housing, Timber Lake, Whitehorse, one mile of BIA 14	2.7 miles structural overlay	\$1,366,380.00
27	Pavement Preservation - Structural Overlay w/Digouts	Community streets in Cherry Creek, Swiftbird, one mile of BIA 14	2.7 miles structural overlay w/digouts	\$1,512,130.00
27.1	Pavement Preservation - Full Reconstruction	Community streets in Eagle Butte	10.9 miles full reconstruction and improvements / construction of ped facilities / ADA / lighting, transit stops, drainage.	\$32,700,000.00
27.2	Pavement Preservation - Full Reconstruction	Community streets in Whitehorse	1.23 miles full reconstruction and improvements / construction of ped facilities / ADA / lighting, transit stops, drainage.	\$3,690,000.00





CRST Long Range Pavement Preservation Projects				
Project #	Project Title	Project Location	Project Description	Estimated Cost
28	Pavement Preservation - Partial Reconstruction	Community streets in Cherry Creek, Eagle Butte, Swiftbird, Takini, and Whitehorse	1.1 miles partial reconstruction	\$1,711,650.00
29	Pavement Preservation - Full Reconstruction	Community streets in Swiftbird; BIA 7 north of the Moreau River bridge	1.8 miles full reconstruction	\$3,514,070.00

Slowly and over time, roads that already require expensive reconstruction should be rebuilt as funding allows. The goal is that eventually no roads require expensive reconstruction and more of the Tribes' money will be available to address other needs like new housing street construction and additional pedestrian facilities. This goal will most likely not be realized in the short range unless additional funding sources become available.

Figure EX-6 - Long Range Paving Projects

CRST Long Range Paving Projects				
Project #	Project Title	Project Location	Project Description	Estimated Cost
17	BIA 3 Pavement Preservation*	US212 to Moreau River, Dewey Co	Full and partial reconstruction	\$13,170,000.00
38	County Rd 10 Reconstruction	North of BIA 3/BIA 7 junction, Dewey Co	Asphalt reconstruction, BUILD/TIGER grant application, funding coordination	\$13,650,000.00
43	Eagle Butte Tribal Daycare New Road and Parking Lot	Eagle Butte, Dewey Co	New road and parking lot	\$275,000.00
44	Touch the Clouds Subdivision New Community Streets	Eagle Butte, Dewey Co	Paved construction, 2 mi	\$3,500,000.00

*Included with other long range paving rather than preservation projects due to scope and cost.

NON-PAVED ROADS

Most road miles on the Reservation are unpaved. There are 285 miles of earth and gravel roads on the Reservation that fall under the jurisdiction of the Tribe or BIA. County-owned roads account for approximately 800 more miles of earth and gravel roads throughout the Reservation; maintenance for these roads is the responsibility of the applicable jurisdiction.





Issues with non-paved roadways include narrowness, limited or no surface aggregate, poor cross section, lack of proper ditches and drainage, rutting, and dust. Failing or near-failing culverts have also caused road damage. These conditions were worsened on gravel roads throughout the Reservation after flooding in Spring 2019.

It is recommended that the Tribe identify and develop a new aggregate source to replace the one that is shutting down. It is further recommended that gravel rehabilitation be considered for gravel roadways with poor drainage and cross sections, as adding gravel to roads with these conditions will do little to improve the roadways.

Conversion of primitive roads to gravel roads is desirable wherever practical and as funding allows. Top priority should be given to roads with higher usage, followed by roads leading to cultural sites. Funding can also be set aside annually to upgrade equipment to bolster the gravel maintenance program. Short-range projects programmed in the Tribe’s five-year TTIP to be completed or started by the year 2025 are listed in Figure EX-7. Long-range gravel projects are shown in Figure EX-8. Long-range *Gravel Maintenance Projects* are shown in Figure EX-9.

Figure EX-7 - Short Range Gravel Projects

CRST - SHORT RANGE GRAVEL PROJECTS IN TTIP - FY 2021-2025						
Project #	Project Name	FY2021	FY2022	FY2023	FY2024	FY2025
5	BIA 3 Resurfacing					
6	BIA 8 Resurfacing - US 212 to Willow Creek	\$942,000	\$258,000			
7	BIA 12 - Resurfacing and Safety Upgrades		\$2,455,398	\$677,000	\$1,600,000	\$1,600,000
8	BIA 7 Resurfacing (section 100 - 0.9 miles of gravel surface / section 120 - 0.9 miles of gravel surface)					\$ TBD
9	Multi Route Gravel 3 & 7					\$ TBD

Figure EX-8 - Long Range Gravel Projects

CRST Long Range Gravel Projects				
Project #	Project Title	Project Location	Project Description	Estimated Cost
10	Tribal Route 8509 Gravel Construction	S from BIA 8, Dewey Co	Upgrade earth road to gravel	\$960,000.00





CRST Long Range Gravel Projects				
Project #	Project Title	Project Location	Project Description	Estimated Cost
13	BIA 17 Proposed Road	LaPlant to Promise, Dewey Co	New gravel road construction	\$1,176,000.00
31.1	New Tribal Housing Streets	Reservation wide	Gravel construction w/drainage, 1 mile	\$200,000.00

Figure EX-9 - Gravel Maintenance Projects

CRST Gravel Maintenance Projects				
11	BIA 11 Takini West Resurfacing	Takini School to SD34	Stabilize road base, chip seal, or blotter	\$2,100,000.00
12	BIA 11 Takini East Resurfacing	BIA 11, Takini School to Cherry Creek, Ziebach Co	Stabilize road base, chip seal, or blotter	\$5,610,000.00
19	BIA 2 Resurfacing	BIA 2, Dewey County	Stabilize road base, chip seal, or blotter	\$5,520,000.00
34	BIA 6 Resurfacing	BIA 6, Ziebach County	Stabilize road base, chip seal, or blotter	\$9,600,000.00
35	BIA 13 Resurfacing	BIA 13, Ziebach County	Stabilize road base, chip seal, or blotter	\$2,610,000.00
36	BIA 14 Resurfacing	BIA 14, Ziebach County	Stabilize road base, chip seal, or blotter	\$1,410,000.00
37	County Rd 9015 Resurfacing	Between BIA 2 and Whitehorse, Dewey Co	Stabilize road base, chip seal, or blotter	\$510,000.00
39	BIA 19 Resurfacing	BIA 19, Dewey Co	Stabilize road base, chip seal, or blotter	\$1,560,000.00
40	BIA 8 Resurfacing	Between BIA 19 and Rte 8509, Dewey Co	Stabilize road base, chip seal, or blotter	\$4,950,000.00
41	BIA 803 Resurfacing	BIA 803, Dewey Co	Gravel Resurfacing and Gravel Construction	\$795,000.00
45	County Rd 55 Resurfacing	Eagle Butte, Ziebach Co	Stabilize road base, chip seal, or blotter	\$420,000.00
46	County Rd 224 1/2	Dupree, Ziebach Co	Correct drainage issues	\$10,000.00
47	County Rd 7810	West of Dupree, Ziebach Co	Stabilize road base, chip seal, or blotter	\$150,000.00
			Total	\$35,245,000.00





BRIDGES AND CULVERTS

There are 21 Tribally- or BIA-owned bridges on the Reservation, all having noted deficiencies or maintenance issues. It is recommended that the Tribe correct any deficiencies before they worsen and implement recommended maintenance practices. There are also three bridges that have been identified by the Tribe for replacement.

There are culverts located throughout the Reservation which need either repair or replacement and have been incorporated into the short- and long-range portions of this Plan. Some culverts have been repaired on an emergent basis following flooding in 2019. Culvert cleaning and replacement in the different housing clusters is recommended as needed to provide good drainage in these residential areas.

Short-and Long-Range bridge and culvert replacement projects are shown in Figure EX-10.

Figure EX-10 - CRST TTIP Short- and Long-Range Bridge and Culvert Projects

CRST - BRIDGE AND CULVERT PROJECTS IN TTIP				
Project #	Project Name	FY2024	FY2025	FY2026
Short Range Projects (Applying for Federal Grants)				
1	Bridge A002 BIA Route 2 - Red Water Creek	\$1,205,669.00		
14	Bridge A007 BIA Route 7 - No Mouth Creek	\$1,235,976.00		
15	Bridge A111 BIA Route 7 - Virgin Creek	\$2,848,590.00		
16	Bridge A143 BIA Route 7 - Moreau River		\$5,290,535.00	
2	Bridge A003 BIA Route 2 - Little Moreau Creek		\$1,263,268.00	
Long Range Projects				
3	Bridge A017 BIA Route 2 - Red Scaffold Creek			\$1,319,294.00
4	Bridge A005 BIA Route 3 - Hand Boy Creek			\$1,882,294.00
5	Bridge A006 BIA Route 7 - Beaver Creek			\$854,916.00
6	Bridge A011 BIA Route 7 - Abear Creek			\$904,545.00
7	Bridge A012			\$1,346,319.00





CRST - BRIDGE AND CULVERT PROJECTS IN TTIP				
	BIA Route 12 - Big Cottonwood Creek			
8	Culvert Replacement BIA Route 809 - Unnamed Creek			\$792,929.00

MULTIMODAL RECOMMENDATIONS

FREIGHT

There are roadways on the Reservation that have sustained damage due to trucking. This damage increases exponentially with heavy loads, exacerbating rutting and accelerating fatigue cracking, which leads to potholes. This impact can be minimized if load limits are established and enforced. Mobile scales can be used to monitor travel by trucks exceeding load limits. It would be beneficial for the CRST to consider development of ordinances, policies, and procedures designed to reduce heavy trucking on Reservation Roads. Ideally, contractors and major businesses would be held responsible for damage to any haul roads on the Reservation.

PEDESTRIANS AND BICYCLES

Everyday activities on the Reservation include walking and biking for many of CRST’s members. Augmenting these modes of transportation requires not just infrastructure but also a method of linking design, streetscapes, and land use in ways that fortify walking and biking. Safety is also crucial, not only when developing a pedestrian and bicycle network, but also in identifying safety concerns along roads and existing sidewalks and shared use paths. According to Bureau of Transportation statistics, around seven percent of traffic fatalities on the Reservation are pedestrian fatalities. This high percentage warrants special focus on addressing safety concerns.

For this study, new maps of towns on the Reservation have been made that show existing sidewalks and shared use paths, as well as locations that develop a high level of pedestrian and bicycle activity. Examples of high pedestrian and bicycle activity generators include schools, stores, residential developments, health care facilities, and other land uses. These maps also show sidewalk and shared use path project recommendations to fill gaps in the sidewalk and pathway system that should be addressed over time. It is anticipated that these maps will be a valuable resource in future grant applications. The Tribe has several projects in the long range that will provide new or improved pedestrian facilities; see Figure EX-11.





Figure EX-11 - Long Range Pedestrian and Bicycle Projects

(*Note "Project Locations" figures refer to the LRTP.

Project #	Project Title	Project Location	Project Description	Estimated Cost
48	Community Sidewalks, Bear Creek	Dewey Co, see Figure 5-36	New sidewalks, 0.9 mi	\$180,000.00
49	Community Sidewalks, Blackfoot	Dewey Co, see Figure 5-37	New sidewalks, 0.8 mi	\$160,000.00
50	Community Sidewalks, Bridger	Ziebach Co, see Figure 5-38	New sidewalks, 1.0 mi	\$200,000.00
51	Community Sidewalks, Cherry Creek	Ziebach co, see Figure 5-39	New sidewalks, 0.8 mi	\$160,000.00
52	Community Sidewalks, Dupree	Ziebach Co, see Figure 5-40	New sidewalks, 4.5 mi	\$900,000.00
52.a	Shared Use Path, Dupree	Ziebach Co, see Figure 5-41	Shared use path w/lighting, 0.26 mi	\$472,286.00
53	Community Sidewalks, Eagle Butte	Dewey Co, Ziebach Co, see Figure 5-42	New sidewalks, 7.0 mi	\$1,400,000.00
53.a	Willow Street Sidewalk, Eagle Butte	Dewey Co, Ziebach Co, see Figure 5-43	New Sidewalks, 0.45 mi	\$337,000.00
54	Shared Use Path, Eagle Butte	Dewey Co, Ziebach Co, see Figure 5-44	Shared use path w/lighting, 1.4 mi	\$910,000.00
55	Community Sidewalks, North Eagle Butte	Dewey Co, see Figure 5-44	New sidewalks, 8.0 mi	\$1,600,000.00
56.a	Badger Development Pathway	Dewey Co, see Figure 5-45	Shared use path w/lighting, 0.40 mi	\$1,650,000.00
56.b	Pow Wow Grounds Pathway, North Eagle Butte	Dewey Co, see Figure 5-46	Shared use path w/lighting, 0.40 mi	\$660,000.00
56.c	Shared Use Path, Eagle Butte East Housing	Dewey Co, see Figure 5-47	Shared use path w/lighting, 0.95 mi	\$617,500.00
57	Community Sidewalks, Green Grass	Dewey Co, see Figure 5-48	New sidewalks, 0.3 mi	\$60,000.00
58	Community Sidewalks, Iron Lightning	Ziebach Co, see Figure 5-49	New sidewalks, 1.0 mi	\$200,000.00
59	Community Sidewalks, LaPlant	Dewey Co, see Figure 5-50	New sidewalks, 1.0 mi	\$200,000.00
60	Shared Use Path, LaPlant	Dewey Co, see Figure 5-51	Shared use path w/lighting, 1.0 mi	\$650,000.00
61	Community Sidewalks, Promise	Dewey Co, see Figure 5-52	New sidewalks, 0.3 mi	\$60,000.00
62	Community Sidewalks, Red Scaffold	Ziebach Co, see Figure 5-53	New sidewalks, 0.7 mi	\$140,000.00
63	Shared Use Path, Red Scaffold	Ziebach Co, see Figure 5-53	Shared use path w/lighting, 0.5 mi	\$325,000.00
64	Community Sidewalks, Swiftbird	Dewey Co, see Figure 5-54	New sidewalks, 0.8 mi	\$160,000.00
65	Community Sidewalks, Takini	Ziebach Co, see Figure 5-55	New sidewalks, 1.1 mi	\$220,000.00
66	Community Sidewalks, Thunder Butte	Ziebach Co, see Figure 5-56	New sidewalks, 0.4 mi	\$80,000.00





Project #	Project Title	Project Location	Project Description	Estimated Cost
67	Community Sidewalks, Timber Lake	Dewey Co, see Figure 5-57	New sidewalks, 7.7 mi	\$1,540,000.00
68	Community Sidewalks, Whitehorse	Dewey Co, see Figure 5-58	New sidewalks, 0.6 mi	\$120,000.00

AIRPORTS

There are three active airports on the Reservation: Isabel and Timber Lake Municipal Airports, owned by the Cities of Isabel and Timber Lake, and the Cheyenne Eagle Butte Airport, jointly owned by the CRST and the City of Eagle Butte. The Isabel and Timber Lake Municipal Airports are not registered with the National Plan of Integrated Airport Systems (NPIAS) and will not be included in the 2020 South Dakota State Aviation System Plan (SDSASP).

The Cheyenne Eagle Butte Airport is registered with the NPIAS and therefore eligible for funding through the Airport Improvement Plan (AIP) which is administered by the Federal Aviation Administration (FAA); six AIP grants have been received for the years 2010-2018. It is recommended that airport and Tribal officials continue to apply for these funds, which cover a number of eligible project types. In addition, recommendations for the Cheyenne Eagle Butte Airport include the following:

- Upgrade from a visual to a GPS approach type system to increase landing options of incoming aircraft.
- Construct a terminal building. The minimal SDSASP target for a small general aviation airport is a waiting area and restroom.
- Implement a flight training program.
- Construct additional hangar space for based and transient aircraft as needed.
- Purchase snow removal equipment. Snow removal is currently provided by the CRST maintenance department using their roadway equipment. Purchasing bigger plows and blowers will allow snow removal at the airport to be more efficient and allow for roadway equipment to be available for road maintenance.
- Increase airport security by controlling airfield access.

TRANSIT SYSTEM

Transit services on the Reservation are provided by River Cities Public Transit (RCPT) based in Pierre, South Dakota. It contracted with CRST in 2010 to manage and operate their transit system.





Transit services offered on the Reservation are based 100% on rider demand. Therefore, rides must be requested prior to when they are needed, and there are no bus stops or shelters located in Reservation communities.

According to Ron Baumgart, Executive Director at RCPT, the services provided on the Reservation have two limiting factors: budget and bad roads. Road improvements are recommended throughout this Plan, and after completion may enable RCPT to access potential transit users who are currently unreachable.

There are several transit grant opportunities offered by the Federal Transit Administration (FTA) that have the potential to increase the budget allocated to RCPT. It is recommended that the Tribe and RCPT continue to apply for the grants from which they currently receive funding and investigate other funding programs to determine eligibility.

UTILITIES

During this LRTP process, efforts were made to gather information on the types, locations, and conditions of utilities within the Reservation. Much of this information is either unknown or has never been documented and mapped.

It is recommended that the CRST conduct a utilities study and map the locations, particularly underground utility mains. This information is imperative when planning transportation improvements in communities where utilities are more likely to be impacted. This will also allow for planning utility repairs and upgrades to be performed concurrently with road projects.





POLICY RECOMMENDATIONS

HOUSING

Cheyenne River Housing Authority (CRHA) currently manages new housing and development on the Cheyenne River Indian Reservation. Future decisions regarding Tribal growth and locations

It is therefore recommended that current Tribal practices for location of new housing, housing rehabilitation, and other economic development be reviewed. Optimal locations for future housing and economic development should be identified, mapped, and promoted in locations adjacent to well-maintained transportation and utility corridors. Ideally, any new routes or pavements completed as part of new housing should leave maintenance responsibility with the development or agency undertaking the project.

SYSTEM MANAGEMENT PRIORITIES

Given that funding is limited, some project needs should be delayed until higher priority needs are addressed. This section of the report suggests priorities for system management.

This transportation plan recommends that a strategic approach to Tribal priorities be established based on the following hierarchy of roadway needs:

- Priority #1 - Complete emergency repairs and conduct normal maintenance and needed upgrades and/or repairs on existing bridges, culverts, and guardrails
- Priority #2 - Address safety issues on arterial routes, followed by safety issues on other routes
- Priority #3 - Correct gravel road surface and cross section/drainage deficiencies on primary routes
- Priority #4 - Complete overlays or reconstruction on paved BIA highways
- Priority #5 - Complete overlays and reconstruction on paved city and subdivision streets
- Priority #6 - Correct road surface and cross section/drainage deficiencies on secondary and primitive roads

It is recommended that maintenance and needed upgrades of existing bridges, culverts, and guardrails, be given top priority over the rest of the transportation system. This will correct damages that were incurred after flooding in Spring 2019.

Paved roadways that are in fair to good condition should be set up on a rotational program of crack sealing, seal coats and/or non-structural overlays. According to FHWA TechBrief, Sealing





and Filling Cracks in Asphalt Pavements, long-term crack sealing should be undertaken every 5-8 years on paved roads. Seal coats should be done every 7-10 years and non-structural overlays should be completed when needed, roughly every 15-20 or more years.

Because the preponderance of BIA and Tribal roads on the Reservation are gravel surface, maintenance of the gravel road system is important to the mobility, economic viability, safety, and quality of life of many of the CRST's residents. Maintenance of primary gravel roads has been ongoing and most of the rest of the earth, dirt, primitive, and gravel roads system only receives attention in cases of emergency. A study is recommended to identify secondary routes that should receive maintenance and to improve proactiveness, resulting in fewer emergency events.

Given that the CRST is years away from providing desired conditions of the current roadway system, it is inadvisable for them to use their funds for construction of new routes or for paving existing gravel roads. Use of funds for these projects would result in a further decline in surface conditions elsewhere within the Reservation.





PROJECT FUNDING

United States and State highways on the Reservation are currently funded and maintained by the South Dakota Departments of Transportation. There are multiple funding sources available for roads, bridges, sidewalks, shared use paths, airports, and transit that are not on the state highway systems.

This Plan provides information on the various funding programs that are available, as well as guidance on the limitations attached to each type of funding. It is recommended that the CRST continue to submit applications to these alternative, supplemental funding sources.

Below is a comprehensive list of potential funding sources. Full funding source details are provided in Chapter 7 of the 2022 LRTP.

- TRIBAL TRANSPORTATION PROGRAM FUNDS
- TRIBAL TRANSPORTATION PROGRAM SAFETY FUNDS
- TRIBAL BRIDGE PROGRAM FUNDS
- NATIONALLY SIGNIFICANT FEDERAL LANDS AND TRIBAL PROJECTS (NSFLTP)
- CRST TRIBAL EQUITABLE COMPENSATION ACT (TECA) FUND
- TRIBAL TRANSIT PROGRAM FUNDS
- SDDOT TRANSPORTATION ALTERNATIVES
- RAISE GRANTS
- SOUTH DAKOTA TRANSPORTATION ECONOMIC DEVELOPMENT PROGRAMS
- NEW ARPA & IIJA PROGRAMS/OPPORTUNITIES
 - ARPA
 - IILJ
- FEDERAL TRANSIT ADMINISTRATION (FTA) TRIBAL TRANSIT GRANTS
- FEDERAL AVIATION ADMINISTRATION AIRPORT IMPROVEMENT PROGRAM
- LOCAL FEES AND TAXES

RECOMMENDED FUNDING STRATEGY

Until an inventory of pavement conditions and a pavement management plan is prepared, it is difficult to know the extent of transportation improvement needs, both now and heading into the future. It is reasonable to anticipate that the needs will be greater than funding that is available. The federal register requires analysis of funding alternatives.

Keeping this in mind, it is more important than ever that the CRST wisely spend the limited funds that are received and make necessary efforts to leverage additional funds from competitive funding programs.





PROJECT PRIORITIZATION PLAN

Short range projects are those anticipated to be started by the end of the year 2024. The short-range projects listed in the Tribe’s TTIP must be financially constrained to fit within the amount of TTP funds allocated to the Tribe each fiscal year. It is expected that the Tribe will receive about \$2,400,000 annually from which a general Tribal maintenance fund receives 25%, or \$600,000.00, leaving about \$1,800,000.00 for construction.

To maintain the Tribe’s economic sustainability, funding must be carefully distributed to the most critical locations. Proposed short range projects are listed in Figure EX-12. These figures do not include any additional funding that the Tribe may receive such as additional emergency funding through ERFO or FEMA, or Tribal Transportation Plan Safety Funds (TTPSF) and Transportation Alternatives (TA) grants. When additional funding is received the Tribe will be able to prioritize a long-range project to move into the short-range element of the LRTP.

FIGURE EX-12 - Short Range Projects and Funding

Project Description	Est. Project Cost	Year Constructed	FY2021	FY2022	FY2023	FY2024	FY2025
Pavement Marking/Striping	\$25,000.00		\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00
General Tribal Maintenance 25% of TTP			\$575,000.00	\$575,000.00	\$575,000.00	\$575,000.00	\$575,000.00
ERFO (not TTP money)(planning)	\$650,000.00						
ERFO (not TTP money)(Construction)	\$5,085,000.00	2021-2022	\$100,000.00				
FEMA 4440 Construction	\$750,000.00	2021	\$441,000.00				
FEMA 4463 Construction	\$1,559,000.00	2021	\$0.00				
FEMA 4467 Construction	\$2,345,000.00	2021	\$8,000.00				
Long Range Transportation Plan & Inventory Update			\$92,000.00				
BIA Rt 6 Cherry Creek Slide Area (Match)(NRCS Design)		2022	\$500,000.00				
BIA 3 Moreau River Road Encroachment (Match)(NRCS Desig	\$750,000.00	2022		\$750,000.00			
BIA Rt 8 Resurfacing US 212 to Willow Creek 13.6 mi	\$1,200,000.00	2022	\$942,000.00	\$258,000.00			
BIA Rt 12 Rehabilitation	\$6,500,000.00	2026		\$2,455,398.70	\$677,000.00	\$1,600,000.00	\$1,600,000.00
Badger Park Pedestrian Pathway (TA Program Match)	\$973,000.00	2023			\$573,000.00		
LaPlante Pedestrian Pathway (TA Program Match)	\$750,000.00	2023			\$350,000.00		
BIA Rt 3 Resurfacing (construction)	\$3,501,000.00						
Multi Route Gravel 3 & 7	\$1,427,000.00						
White Horse Community Streets	\$450,000.00						
BIA Rt 11 (Takini West) Design	\$190,000.00						
BIA Rt 11 (Takini West)	\$2,100,000.00						
Willow St., Eagle Butte							
Takini Housing							
Total Budgeted			\$2,683,000.00	\$4,063,398.70	\$2,200,000.00	\$2,200,000.00	\$2,200,000.00

Long range projects are those anticipated to be started after the year 2024. While many of these projects are desired sooner, funding limitations indicate that it may not be possible to complete them during the short-range element of the plan. Some of these projects may become short range projects if the Tribe is able to pull from alternative funding sources described earlier. Long range projects are shown in Figures EX-13 through EX-15.





Figure EX-13 Long Range Projects and Costs - Part 1

Project #	Project Title	Project Location	Project Description	Estimated Cost
1	Bridge A002 BIA Route 2	5.1 mi E of Hwy 63 (Red Water Creek)	Needs upgraded bridge rail system and addition of approach guardrail	\$1,205,669.00
2	Bridge A003 BIA Route 2	1.9 mi W of White Horse	Signage, structure maintenance, approach guardrail installation (bridge rail must meet compliance w/ AASHTO standards)	\$1,263,268.00
3	Bridge A017 BIA Route 2	BIA Route 2 - Red Scaffold Creek	Signage, routine maintenance, repair abutment slopes, approach guardrail, deck seal	\$1,319,294.00
4	Bridge A005 BIA Route 3	1.9 mi W of Rte 7 Jct	Signage, rail and guardrail repairs, new terminal needed at NW corner of approach guardrail	\$1,882,294.00
5	Bridge A006 BIA Route 7	4.5 mi E of Promise (Beaver Creek)	Repair scoured areas, install approach guardrail, repair/seal deck	\$854,916.00
6	Bridge A011 BIA Route 7	6.2 mi E of Hwy 63 Jct	Signage, approach guardrail system, rail height to AASHTO standards, repair spalls and leaks between deck units	\$904,545.00
7	Bridge A012 BIA Route 12	8.4 mi NE of Cherry Creek	Install new transition/approach rails w/ end treatments, riprap at abutment slopes and channel banks, assessment of faulty concrete in piers.	\$1,346,319.00
8	Culvert Replacement BIA Route 809	BIA Route 809 - Unnamed Creek	Culvert replacement	\$792,929.00
9	BIA 6 Cherry Creek Slide	0.5 mi N of Cherry Creek, Ziebach Co	Scour protection and bank stabilization	\$2,000,000.00
10	Tribal Route 8509 Gravel Construction	S from BIA 8, Dewey Co	Upgrade earth road to gravel	\$960,000.00
11	BIA 11 Takini West Resurfacing	Takini School to SD34	Stabilized road base with double chip seal and blotter coat	\$2,100,000.00





Project #	Project Title	Project Location	Project Description	Estimated Cost
12	BIA 11 Takini East Resurfacing	BIA 11, Takini School to Cherry Creek, Ziebach Co	Stabilized road base with double chip seal and blotter coat	\$5,610,000.00
13	BIA 17 Proposed Road	LaPlant to Promise, Dewey Co	New gravel road construction	\$1,176,000.00
14	Bridge A007 BIA 7 No Mouth Creek Bridge Replacement	BIA 7, S of Blackfoot, Dewey Co	Bridge Replacement	\$1,235,976.00
15	Bridge A111 BIA 7 Virgin Creek Bridge Replacement	BIA 7, E of Promise, Dewey Co	Bridge Replacement	\$2,848,590.00
16	Bridge A143 BIA 7 Moreau River Bridge Replacement	BIA 7, north of Promise, Dewey Co	Bridge Replacement	\$5,290,535.00
17	BIA 3 Pavement Preservation	US212 to Moreau River, Dewey Co	Full and partial reconstruction	\$13,170,000.00
18	BIA 2 Culvert Assessment and Scour Protection	3 locations between SD63 and Whitehorse Rd, Dewey Co	Culvert replacement and scour protection	\$1,607,390.00
19	BIA 2 Resurfacing	BIA 2, Dewey County	Stabilized road base with double chip seal and blotter coat	\$5,520,000.00
20	BIA 2 Moreau River Encroachment	4 mi E of SD63, Dewey Co	Scour protection and bank stabilization	\$371,000.00
21	Pavement Preservation - Crack Seal	Community streets in Eagle Butte, Cheyenne River IHS Center, Habitat for Humanity housing, Thunder Butte	2.3 miles crack sealing	\$55,170.00





Project #	Project Title	Project Location	Project Description	Estimated Cost
22	Pavement Preservation - Crack and Chip Seal	Community streets in Bear Creek, Cherry Creek, Eagle Butte, Dupree, Fox Ridge Housing, Habitat for Humanity housing, Iron lightning, No Heart housing, Timber Lake	15.6 miles crack and chip sealing	\$338,550.00
23	Pavement Preservation - Nonstructural Overlay - West	Community streets in Bear Creek, Bridger, Cherry Creek, Dupree, Takini	1.9 miles nonstructural overlay	\$567,150.00
24	Pavement Preservation - Nonstructural Overlay - East	Community streets in Eagle Butte, Green Grass, Habitat for Humanity housing, LaPlant, No Heart housing, Timber Lake, Whitehorse, one mile of BIA 14	5.2 miles nonstructural overlay	\$1,564,320.00
25	Pavement Preservation - Structural Overlay - West	Community streets in Bear Creek, Bridger, Cherry Creek	1.8 miles structural overlay	\$921,500.00
26	Pavement Preservation - Structural Overlay - East	Community streets in Eagle Butte, Green Grass, Habitat for Humanity housing, LaPlant, No Heart housing, Timber Lake, Whitehorse,	2.7 miles structural overlay	\$1,366,380.00





Project #	Project Title	Project Location	Project Description	Estimated Cost
		one mile of BIA 14		
27	Pavement Preservation - Structural Overlay w/Digouts	Community streets in Cherry Creek, Eagle Butte, Swiftbird, Whitehorse, one mile of BIA 14	2.7 miles structural overlay w/digouts	\$1,512,130.00
28	Pavement Preservation - Partial Reconstruction	Community streets in Cherry Creek, Eagle Butte, Swiftbird, Takini, and Whitehorse	1.1 miles partial reconstruction	\$1,711,650.00
29	Pavement Preservation - Full Reconstruction	Community streets in Swiftbird; BIA 7 north of the Moreau River bridge	1.8 miles full reconstruction	\$3,514,070.00
30	Sidewalks Condition Survey	Reservation wide	Assessment, GIS mapping	\$12,500.00
31	New Tribal Housing Streets	Reservation wide	Paved construction, 1 mile	\$1,750,000.00
31.1	New Tribal Housing Streets	Reservation wide	Gravel construction w/drainage, 1 mile	\$200,000.00
32	Inventory Updates	Reservation wide	Surveying, GIS, administrative	\$35,000.00
33	NTTFI Route 7061	Eagle Butte S of 2nd Airport Rd, Ziebach Co	Curve flattening and safety updates	\$1,172,500.00





Project #	Project Title	Project Location	Project Description	Estimated Cost
33.1	Reservation Wide Safety Improvements : Striping, Signing, and Guardrail updates	Reservation Wide	Striping, Signing, and Guardrail updates	\$100,000.00
34	BIA 6 Resurfacing	BIA 6, Ziebach County	Stabilized road base with double chip seal and blotter coat	\$9,600,000.00
35	BIA 13 Resurfacing	BIA 13, Ziebach County	Stabilized road base with double chip seal and blotter coat	\$2,610,000.00
36	BIA 14 Resurfacing	BIA 15, Ziebach County	Stabilized road base with double chip seal and blotter coat	\$1,410,000.00
37	County Rd 9015 Resurfacing	Between BIA 2 and Whitehorse, Dewey Co	Stabilized road base with double chip seal and blotter coat	\$510,000.00
38	County Rd 10 Reconstruction	North of BIA 3/BIA 7 junction, Dewey Co	Asphalt reconstruction, BUILD/TIGER grant application, funding coordination	\$13,650,000.00
39	BIA 19 Resurfacing	BIA 19, Dewey Co	Stabilized road base with double chip seal and blotter coat	\$1,560,000.00
40	BIA 8 Resurfacing	Between BIA 19 and Rte 8509, Dewey Co	Stabilized road base with double chip seal and blotter coat	\$6,360,000.00
41	BIA 803	BIA 803, Dewey Co	Gravel Resurfacing and Gravel Construction	\$795,000.00
42	New Tribal Transportation Facility	Eagle Butte, Co undetermined	New facility construction, parking lot access	\$3,500,000.00
43	Eagle Butte Tribal Daycare New Road and Parking Lot	Eagle Butte, Dewey Co	New road and parking lot	\$275,000.00
44	Touch the Clouds Subdivision New Street	Eagle Butte, Dewey Co	Paved construction, 2 mi	\$3,500,000.00





Project #	Project Title	Project Location	Project Description	Estimated Cost
45	County Rd 55 Resurfacing	Eagle Butte, Ziebach Co	Stabilized road base with double chip seal and blotter coat	\$420,000.00
46	County Rd 224 1/2	Dupree, Ziebach Co	Correct drainage issues	\$10,000.00
47	County Rd 7810	West of Dupree, Ziebach Co	Stabilized road base with double chip seal and blotter coat	\$150,000.00
			Subtotal	\$110,629,645.00

FIGURE EX-14 - Long Range Projects and Costs - Part 2

Project #	Project Title	Project Location	Project Description	Estimated Cost
48	Community Sidewalks, Bear Creek	Dewey Co, see Figure 5-36	New sidewalks, 0.9 mi	\$180,000.00
49	Community Sidewalks, Blackfoot	Dewey Co, see Figure 5-37	New sidewalks, 0.8 mi	\$160,000.00
50	Community Sidewalks, Bridger	Ziebach Co, see Figure 5-38	New sidewalks, 1.0 mi	\$200,000.00
51	Community Sidewalks, Cherry Creek	Ziebach co, see Figure 5-39	New sidewalks, 0.8 mi	\$160,000.00
52	Community Sidewalks, Dupree	Ziebach Co, see Figure 5-40	New sidewalks, 4.5 mi	\$900,000.00
52.a	Shared Use Path, Dupree	Ziebach Co, see Figure 5-41	Shared use path w/lighting, 0.26 mi	\$472,286.00
53	Community Sidewalks, Eagle Butte	Dewey Co, Ziebach Co, see Figure 5-42	New sidewalks, 7.0 mi	\$1,400,000.00
53.a	Willow Street Sidewalk, Eagle Butte	Dewey Co, Ziebach Co, see Figure 5-43	New Sidewalks, 0.45 mi	\$337,000.00
54	Shared Use Path, Eagle Butte	Dewey Co, Ziebach Co, see Figure 5-44	Shared use path w/lighting, 1.4 mi	\$910,000.00
55	Community Sidewalks,	Dewey Co, see Figure 5-44	New sidewalks, 8.0 mi	\$1,600,000.00





	North Eagle Butte			
56.a	Badger Development Pathway	Dewey Co, see Figure 5-45	Shared use path w/lighting, 0.40 mi	\$1,650,000.00
56.b	Pow Wow Grounds Pathway, North Eagle Butte	Dewey Co, see Figure 5-46	Shared use path w/lighting, 0.40 mi	\$660,000.00
56.c	Shared Use Path, Eagle Butte East Housing	Dewey Co, see Figure 5-47	Shared use path w/lighting, 0.95 mi	\$617,500.00
57	Community Sidewalks, Green Grass	Dewey Co, see Figure 5-48	New sidewalks, 0.3 mi	\$60,000.00
58	Community Sidewalks, Iron Lightning	Ziebach Co, see Figure 5-49	New sidewalks, 1.0 mi	\$200,000.00
59	Community Sidewalks, LaPlant	Dewey Co, see Figure 5-50	New sidewalks, 1.0 mi	\$200,000.00
60	Shared Use Path, LaPlant	Dewey Co, see Figure 5-51	Shared use path w/lighting, 1.0 mi	\$650,000.00
61	Community Sidewalks, Promise	Dewey Co, see Figure 5-52	New sidewalks, 0.3 mi	\$60,000.00
62	Community Sidewalks, Red Scaffold	Ziebach Co, see Figure 5-53	New sidewalks, 0.7 mi	\$140,000.00
63	Shared Use Path, Red Scaffold	Ziebach Co, see Figure 5-53	Shared use path w/lighting, 0.5 mi	\$325,000.00
64	Community Sidewalks, Swiftbird	Dewey Co, see Figure 5-54	New sidewalks, 0.8 mi	\$160,000.00
65	Community Sidewalks, Takini	Ziebach Co, see Figure 5-55	New sidewalks, 1.1 mi	\$220,000.00
66	Community Sidewalks, Thunder Butte	Ziebach Co, see Figure 5-56	New sidewalks, 0.4 mi	\$80,000.00
67	Community Sidewalks, Timber Lake	Dewey Co, see Figure 5-57	New sidewalks, 7.7 mi	\$1,540,000.00





68	Community Sidewalks, Whitehorse	Dewey Co, see Figure 5-58	New sidewalks, 0.6 mi	\$120,000.00
			Subtotal	\$13,001,786.00
			Grand total - All long-range projects	\$123,631,431.00

RECOMMENDED STUDIES

Some transportation issues were identified that were beyond the scope of this LRTP. Additional analysis is needed to explore potential improvements. A list of recommended transportation studies follows:

- Sidewalk Conditions and Needs Survey - There were several areas observed in CRST communities where sidewalks are old and deteriorating or missing altogether. Sidewalk replacement and repair can be costly. CRST has limited resources and cannot reasonably repair or replace sidewalks in the same year that the needs are identified. A comprehensive survey would provide current conditions of existing sidewalks, which the Tribe can then utilize to establish a schedule for maintenance, repairs and replacement, and new construction. There is a project in the long-range element of the LRTP for this scope of work (Project #21).
- Signing Inventory and Consistency Study - Existing traffic control signs within the Reservation should be inventoried. This will allow further analysis to determine whether they have been appropriately and consistently applied. This measure would provide verification that appropriate traffic control signing (stop and yield signs) are in place and within MUTCD specifications, increasing safety for the traveling public. The SDDOT conducted a paved roads sign inventory in each county beginning late 2018.
- Non-paved roadway conditions survey - a set of standards and procedures needs to be established for categorizing non-paved roadway conditions, as well as for establishing future priorities for varying levels of effort to be applied to improve these roads.
- Complete study of street lighting conditions and needs for CRST towns and subdivisions.
- Complete Reservation wide road safety audits (RSAs).
- Complete a culvert inventory. Analyzed data can then be used to update the Tribe’s FEMA database, and input into GIS to provide spatial relationships.
- Reservation wide crash data analysis to be used for data collection, sharing, and analysis. This would include entering BIA crash records into TraCS system.





- Conduct Reservation wide seat belt utilization study.
- Conduct a geological study to identify and develop a new aggregate source in the southwest part of the Reservation.
- Conduct a utilities study to identify underground mains and record locations with GIS mapping.

