



BIA 2 Rural Safety and Regional Access Project

RAISE PLANNING GRANT APPLICATION



Oglala Sioux Tribe
RAISE Planning Grant Request:
\$1,800,000



Application at a Glance

Lead Applicant Name Oglala Sioux Tribe

Applicant Program Administering Project Oglala Sioux Tribe Department of Transportation

Applicant Type Tribal

Project Title BIA 2 Rural Safety and Regional Access Project

Project Location The Project is located within the boundaries of the Pine Ridge Indian Reservation in South Dakota. The Project corridor is located from Kyle, SD, which is in Oglala Lakota County, to SD Highway 44 in Jackson County.

Beginning = Lat: 43.422191° Long: -102.190003°
End = Lat: 43.548801° Long: -101.900038°

State, County, and District South Dakota, Oglala Lakota and Jackson County, At-Large Congressional District

Demographics

	Oglala Lakota County	Jackson County	Bennett County	Kyle Community	Wanblee Community
Population	14,177	3,344	3,365	966	940
Median Household Income	\$31,997	\$33,295	\$47,500	\$27,396	\$21,250
Persons Below Poverty Level	40.1%	29.9%	31.6%	42%	69%

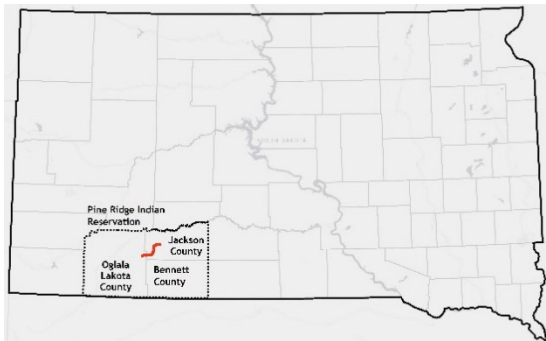
Total Project Planning Cost \$1,800,000

Total RAISE Planning Request \$1,800,000

Project Classification Rural

Supporting Documentation Link www.oglalasioux.raisegrant.net

Special Considerations



In an effort to spur economic growth and job creation, Oglala Lakota County was designated an Opportunity Zone in 2018. The Pine Ridge Indian Reservation was designated a Promise Zone in 2015. The Project is located in Oglala Lakota County (Census Tract #9405, #9408 and #9409) and Jackson County (Census Tract #9412 and #9611) and is near Bennett County (Census Tract #9410 and #9412); all areas of persistent poverty as defined by the RAISE Persistent Poverty Project Status Tool.



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Definition of Acronyms

ADT – Average Daily Traffic

ADA – Americans with Disabilities Act

BIA – Bureau of Indian Affairs

ERFO – Emergency Relief for Federally Owned Roads

FHWA – Federal Highway Administration

GIS – Geographic Information System

GPS – Global Positioning System

GWT – Golden West Telecommunications Cooperative, Inc.

LED – Light-Emitting Diode

Lidar – Light Detection and Ranging

LRTP – Long Range Transportation Plan

MUTCD – Manual on Uniform Traffic Control Devices

NTTFI – National Tribal Transportation Facility Inventory

OST – Oglala Sioux Tribe

OSTDOT – Oglala Sioux Tribe Department of Transportation

OSTDPS - Oglala Sioux Tribe Department of Public Safety

OSTDEM - Oglala Sioux Tribe Department of Emergency Management

OSTC&FP – Oglala Sioux Tribe Credit & Finance Program

PASER – Pavement Surface Evaluation and Rating

RMD – Road Maintenance Department

RSA – Road Safety Audit

RWMS – Remote Weather Monitoring Stations

SD – South Dakota

SDDOT – South Dakota Department of Transportation

STIP – State Transportation Improvement Program

TA – Transportation Alternatives

TraCS – Traffic and Criminal Software

TTIP – Tribal Transportation Improvement Program

TTP – Tribal Transportation Program

TTPSF – Tribal Transportation Program Safety Funds

TTSP – Tribal Transportation Safety Plan

USACE – United States Army Corps of Engineers

USDA – United States Department of Agriculture

USDOT – United States Department of Transportation

VMT – Vehicle Miles Traveled



I. Project Description

The Oglala Sioux Tribe’s RAISE Planning Grant request of \$1,800,000 for the BIA 2 Rural Safety and Regional Access Project (the Project) will be utilized to complete the planning and preconstruction activities to reconstruct 20.7 miles of the arterial transportation corridor from the west side of the community of Kyle, SD to SD Highway 44 on the Pine Ridge Indian Reservation. The corridor connects the northeastern region of the Pine Ridge Indian Reservation to Tribal service centers in the communities of Pine Ridge and Kyle, providing access to goods and services, health care, education centers, employment, childcare, recreation, and other essential Tribal services. The corridor also connects the western region of the Pine Ridge Indian Reservation to SD Highway 44, a regionally significant corridor. The BIA 2 Rural Safety and Regional Access Project will complete the necessary planning to move forward with construction of the Project which will increase safety, spur economic development, and enhance the quality of life for residents and travelers of the Pine Ridge Indian Reservation.



Pine Ridge Indian Reservation is one of the poorest Reservations in the nation. It is a designated area of persistent poverty as outlined in the RAISE criteria and corresponding Persistent Poverty Project Status Tool. (Oglala Lakota County Census Tracts #9405, #9408 and #9409, Jackson County Census Tracts #9412 and #9611, and Bennett County Census Tracts #9410 and #9412.)

The Tribe is requesting RAISE grant funds to complete the planning activities necessary to improve primary roadways to meet safety standards experienced by other communities in the nation. Transportation projects also provide much-needed employment opportunities for Tribal members in an area in which more than 50 percent of the population is living below the poverty line.

FY2021 RAISE funding is not just required but is critical for the Project to reach the goal of reconstructing BIA 2 from the community of Kyle to SD 44. Comparatively, many previously awarded RAISE, BUILD or TIGER projects were already planned and secured for funding through state and local taxes as evidenced by projects being shovel ready. That is not the case for Tribes with extremely tight budgets and especially for this Project which requires significant planning funds to become “Shovel-Ready”; funds that the Tribe does not have and will not be able to acquire without RAISE support. RAISE funds will guarantee completion of all planning and preconstruction activities, thereby securing the future and final goal to reconstruct BIA 2 from Kyle to SD 44.

- 
Improve Safety for:
 - Pedestrians
 - Residents
 - Tourists
 - Emergency Services
 - Transit Riders
 - School Children
- 
Environmental Sustainability:
 - Recycle Materials
 - Wetland Preservation
 - Reduce Hauling Distance
- 
Increased Quality of Life for:
 - Impoverished Communities
 - Pedestrians
 - Tourists
- 
Economic Growth for:
 - Tourism
 - Mineral Mining
 - Agriculture
 - Small Business
- 
State of Good Repair:
 - Increased Life Cycle
 - Reduced Maintenance
- 
Partnership/Support:
 - Reduced Project Risk
 - Multi-Jurisdiction Benefits
- 
Project Innovations:
 - Weather Monitoring Technology



A. Transportation Challenges

Transportation Challenge 1 – Limited Visibility and Hazardous Road Profile

In the last 10 years, 22 crashes have occurred on this route, claiming two lives. The most recent fatality was June 2020 due to inadequate site distance. The number of fatal crashes per 100 million VMT equals 11.34 compared to South Dakota and the nation’s average fatality rate of 1.03 and 1.1¹, respectively; more than 10 times the state and national levels. The crash fatality rates exemplify the disparity in highway safety within this corridor.

The current condition of this segment of BIA 2 is extremely dangerous, primarily due to poor sight distance and the roadway being too narrow without shoulders. Fifty percent of reported crashes along this segment have been on horizontal or vertical curves.

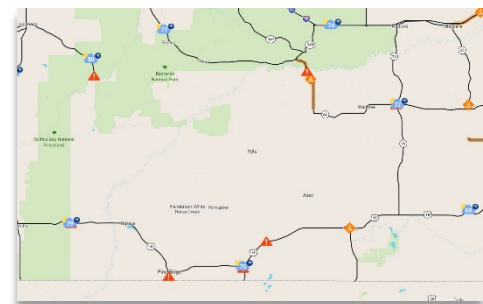
This stretch of BIA 2 is a paved rural arterial route with vertical and horizontal curves that are not large enough for the existing posted speed limit of 55 mph. By comparison, most rural arterials and collectors in South Dakota and the Reservation have speed limits of 60 to 65 mph, resulting in this route already being under-designed for an arterial route of this region. Many of the intersecting roads have limited sight distance which increases the potential for a serious crash to occur. Furthermore, the side slopes of the existing road are steep, and if a vehicle leaves the roadway it has little chance of recovering, especially at higher speeds.

During winter months, the road ditches do not accommodate snow storage resulting in excessive snow drifting across the roadway surface. The land topography and regional weather patterns often make existing roads dangerous, but the issues with this route are compounded by the road’s poor geometry and cross-section making it extremely hazardous for users. Despite the danger of utilizing the route, some users are forced to travel the route because alternative routes are not available or are too time consuming. South Dakota travelers have access to SD511² for current road conditions. Unfortunately, on the Pine Ridge Indian Reservation where the information is especially needed, it is not provided.

BIA 2’s truck traffic is nearly 17 percent and is anticipated to increase. Public service providers, such as mail carriers, bus drivers, road maintenance crews, and emergency response personnel, make frequent stops. Without access to safe roadway shoulders, they must stop partially in the driving lane which blocks vehicles and truck traffic moving at high speeds.



For a full version of the existing conditions map, visit www.oglalasioux.raisegrant.net.



SD511.org website does not currently provide real-time road condition information for BIA roads in Pine Ridge Indian Reservation as shown by the image with missing BIA roads within the Reservation

¹ <https://dps.sd.gov/application/files/4115/9224/2775/2019-South-Dakota-Motor-Vehicle-Traffic-Crash-Summary-Facts-Book.pdf>
² www.sd511.org



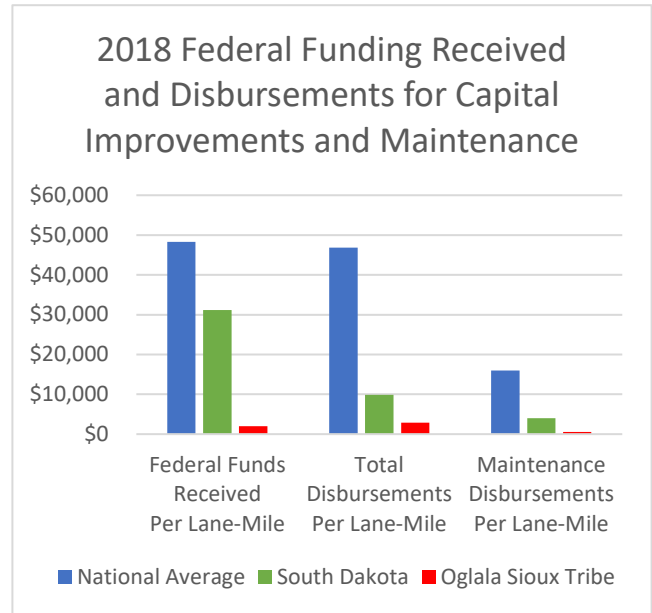
Transportation Challenge 2 – Aging Roadway

It is estimated the original road geometry was constructed by the Bureau of Indian Affairs (BIA) more than 75 years ago as a gravel road and, with a subsequent project, topped with asphalt approximately 40 years ago. The asphalt surface is significantly deteriorated, and the volume of potholes and cracks is too numerous to seal. If reconstruction of this segment of BIA 2 is not completed, the asphalt pavement will need to be milled and overlaid to preserve the existing road structure. Unfortunately, a mill and overlay would cost several million dollars and cause the road top to become narrower. Shoulder widening and pavement resurfacing are very expensive and would not solve the road’s vertical profile problems. In addition to the road condition, a 75-80-year-old bridge is functionally obsolete and requires replacement. The existing drainage culverts, estimated to be 50-75 years old, are inadequate in length and do not have armored ends. These structures must be replaced and lengthened to move the ends away from the roadway.



Transportation Challenge 3 – Lack of Funding

Replacing and repairing segments of the roadway and structures is not fiscally responsible nor does it address the more critical safety concerns related to the need for road geometry safety improvements. The Tribe receives inadequate funding to keep up with the transportation needs across the Reservation, so innovative and efficient financial management is critical. The Oglala Sioux Tribe is responsible for nearly 1,700 miles of BIA and Tribal roads within the Reservation and receives approximately \$3,500 per roadway mile (\$1,750 per lane-mile) in federal disbursements for administration, planning, construction, and maintenance activities. By comparison, \$48,000 per lane-mile of federal funds are disbursed to State Departments of Transportation³. Given the Tribe’s extremely limited financial resources, Reservation roads are in poor condition, especially as compared to state-owned roads.



The 25th Annual Highway Report estimates the average maintenance disbursement per state-controlled mile is \$15,952 per lane-mile. The Tribe receives approximately \$562,000 total for maintenance over 518 miles of BIA roadway equating to \$542 per lane-mile. The Tribe’s Long Range Transportation Plan (LRTP) identified 80 percent of Tribal Transportation Program (TTP) funding is needed to maintain the existing BIA and Tribal roadways. A copy of the LRTP is available at www.oglalasioux.raisegrant.net.

³ <https://reason.org/wp-content/uploads/25th-annual-highway-report.pdf> and <https://www.fhwa.dot.gov/fastact/fy2019comp.pdf>



The BIA 2 Rural Safety and Regional Access Project is a large engineering design and construction project for which the Oglala Sioux Tribe does not have the funding resources to complete. As identified in the LRTP, reconstruction projects of this scale need to be supplemented with significant grant funding to come to fruition.

In addition to issues of poverty and limited resources that are consistently prevalent, the COVID-19 pandemic has decimated the Tribe’s already strained financial system. In the past two years the TTP allocation was reduced by over \$2 million due to census data reductions negatively affecting the TTP formula. And over \$2 million of TPP funds were needed for emergency repairs after the storms of 2019. While the storm damage was widespread and resulted from the storms, many of the sites were not approved for funding by the FHWA’s Emergency Relief for Federally Owned Roads (ERFO). The repairs were still required so TTP funding was used to supplement, resulting in a loss of overall budget for planned road projects for the next several years. There is no way to recover this loss of resources as they related to the pandemic, recent storms, and overall loss of TTP funding.

Transportation Challenge 4 – Residents and Tribal Agencies Avoid Using BIA 2

BIA 2 is an east/west arterial route in disrepair serving an area of approximately 1,800 square miles with the closest east/west arterial routes approximately 25 miles to the south or 20 miles to the north. Due to the narrow roadway top and history of crashes and fatalities, many avoid the route, traveling further on alternate routes. Tribal residents report avoiding this segment of BIA 2 from Kyle to SD 44, especially at night due to the sharp curves and narrow roadway. Tribal agency personnel, including OST Department of Emergency Management (OSTDEM), Road Maintenance Department (RMD), and OST Department of Public Safety (OSTDPS) have also reported avoiding this segment of BIA 2 as often as possible. Each of these departments report a history of incidences on the route.

The RMD crews often get stuck while plowing snow on the side of a vertical curve, leaving the snowplow driver and traveling public at risk of a crash. Other incidences have occurred during regular road maintenance, such as pothole filling and mowing grass along the side of the road and in the ditches. Without a road shoulder, no safe area exists for RMD trucks to temporarily park, and traffic control is challenging because of the narrow roadway and hilly terrain. In addition to the frequent incidents, the steep side slopes cause damage to equipment used for mowing.

The OSTDEM also reported all emergency services from the community of Pine Ridge (the primary Tribal service center on the Reservation) traveling to Wanblee (a Tribal community in the northeastern region) avoid this segment of BIA 2 and travel on other longer routes then backtracking to arrive in Wanblee. When this segment of BIA 2 is reconstructed, it will become a preferred emergency service route.

The Chief of Police for the OSTDPS has indicated this segment of BIA 2 is hazardous. Since the police must travel at higher speeds when responding to an incident in Wanblee or the northeast region of the Reservation, they avoid this segment of BIA 2 to avoid greater potential danger and possible delay.



Transportation Challenge 5 – Existing Roadway Geometry Restricts Economic Growth

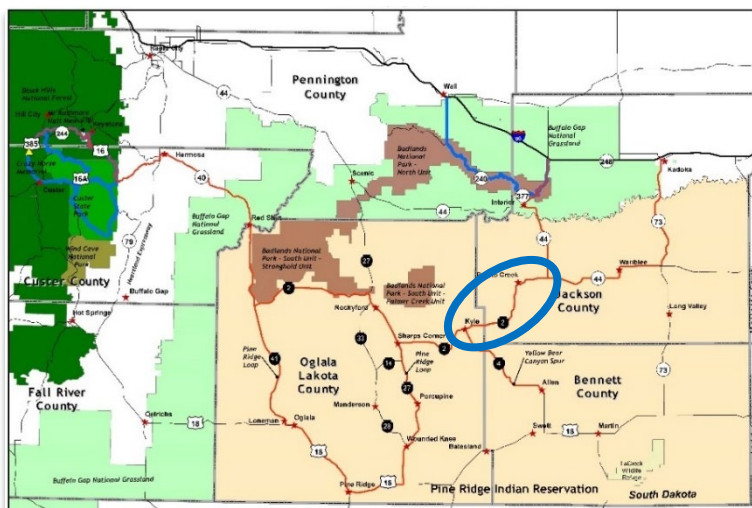
Users rely on BIA 2 to access goods and services, residential areas, agricultural land, K-12 schools, college centers, medical facilities, Tribal services, financial institutions, daycare centers, and job training centers. The rural section of BIA 2 east of Kyle has a current average of 700 vehicles per day, which has stagnated since traffic counts taken in 2006. According to the SDDOT, the 20-year forecast is 120-130 percent increase in traffic flows of rural highways for the typical area in SD (“20-Year Traffic Forecasting Factors SD1999-04”).

The current roadway conditions do not support an increase in traffic volume or truck traffic and is restricting the opportunity for economic growth. Existing businesses along BIA 2 between Kyle and SD 44 are primarily mineral mining and agriculture, both requiring trucking to support operations. The narrow roadway, dangerous intersections, and aging asphalt pavement restrict the use of trucking by these businesses thereby stifling growth.

In order to provide access to emergency services for all Tribal members, gravel resources are needed to maintain and improve the nearly 1,300 miles of unpaved roads as well as the driveways for Oglala Lakota Housing Program homes. Most unpaved roads on the Reservation have little or no gravel surfacing, lack proper drainage, are too narrow with poor cross-sections, and are severely rutted. Gravel roads and adequate access to and from residences are necessary for transportation users to have access to goods and services, jobs, education, health care, and emergency services. The LRTP estimates the backlog of work to bring these essential unpaved routes to minimum standards is \$815 million.

To accommodate the need for gravel, the OSTDOT has explored the area for gravel resources. Multiple sites along the Project corridor have been identified as containing a significant quantity of gravel resources, however, BIA 2 is too narrow and dangerous and will not support the increases in truck traffic needed to support the Tribe’s gravel or additional mining business.

In addition to restricting economic growth associated with gravel resource development, the current condition of BIA 2 restricts economic activity from tourism which is anticipated to result from the newly Tribally designated Crazy Horse Scenic Byway, proposed state designation, and its connection to many sites on the Reservation. With the Scenic Byway designation, it is critical the Tribe address this segment of BIA 2, reconstructing it to current federal safety standards, and incorporating tourism pull-offs and overlooks to the Badlands which will entice travelers to visit the Pine Ridge Indian Reservation, the Badlands National Park, Wounded Knee Memorial, Crazy Horse Memorial, and many more cultural and historic sites dependent on safe, accessible transportation infrastructure.



The BIA 2 Rural Safety and Regional Access Project, circled on the map above, is part of the Crazy Horse Scenic Byway which connects the Badlands National Park’s North and South Units. Crazy Horse Scenic Byway Maps can be found at www.oglalasioux.raisegrant.net.

**Transportation Challenge 6 – Lack of Safe Infrastructure for Pedestrians and Bicyclists**

According to National Equity Atlas, 13 percent of Native American households are without a vehicle and according to the US American Communities Survey, 15 percent (12.6 percent national average) are disabled. As is common on many Reservations across the nation, a significant volume of the population depends on transportation alternatives such as transit and pedestrian infrastructure to access education, jobs, and daily living essentials.

An area of significant need for pedestrian transportation improvements is the community of Kyle, a growing community home to the Oglala Lakota College Center, Kyle Hospital, and K-12 Little Wound School. Housing developments are located on both sides of BIA 2 and residents cross BIA 2 to access the schools, Head Start, transit bus stop, bank, gas station, grocery store, movie theater, hospital, restaurants, and other housing areas. While a Kyle Pathway is currently being constructed along the south side of BIA 2, additional pedestrian transportation infrastructure is needed including sidewalks along the north side of BIA 2, roadway and pathway lighting, and safe crosswalks with pedestrian safety features.

It is estimated based on ADT's entering and leaving Kyle that traffic counts in Kyle are greater than 2,000 per day. Additionally, based on information from US Census Bureau, Little Wound School, Oglala Lakota College, and Head Start, pedestrian counts are estimated at 830 trips per day which is nearly half the vehicle trips per day and supports the need for safe spaces for pedestrians walking, biking, and accessing Tribal Public Transit.

The Oglala Sioux Tribal Transportation Safety Plan (TTSP) states, "lighting should be considered along urban or other pathways as appropriate to increase pedestrian visibility, provide for traffic calming and potentially increase security." Currently, some lighting exists along Kyle Pathway, but the lighting is outdated, inefficient and inadequate. As noted in the Tribal Transportation Strategic Safety Plan, "the overwhelming majority of pedestrian fatalities do not occur at an intersection, are most frequent in the evening after 5:00 pm, and occur in dark conditions where no lighting exists. Three out of every four pedestrian fatalities in Tribal areas occurs during dark conditions."⁴ Light readings taken in December 2018 show an average of 2.3 Lux along the route of the Kyle Pathway. It is particularly concerning that there is no readable light value at the Kyle Hospital entrance where a fatal crash occurred in 2010. The 2010 MnDOT Roadway Lighting Design Manual suggests that pedestrian and bike paths constructed with an R1 (concrete) pavement should have an average Lux of 15. Most current light readings in Kyle fall far below the suggested design level, with several not registering any light at all. Complete replacement and upgrade of lights to efficient LED lights is needed.

In addition to the community of Kyle, pedestrians often walk or bike on BIA 2's rural section east of Kyle. Without shoulders, many must walk within the driving lane, especially during inclement weather. There are approximately 45 residences along BIA 2 and 20 in the community of Potato Creek. If 38.5 percent walk or bike, there is an estimated 100 pedestrians walking frequently along BIA 2. Providing a safe means of travel for both motorized and non-motorized traffic for transportation users in the community of Kyle and along BIA 2 is critical in an area serving individuals and families.

⁴ <https://highways.dot.gov/sites/fhwa.dot.gov/files/docs/federal-lands/programs-tribal/safety/30421/tribal-transportation-safety-plan.pdf>



B. Transportation Solution

RAISE funding will enable the Oglala Sioux Tribe to proceed with planning and preconstruction activities for the reconstruction of BIA 2. Reconstruction of this segment of BIA 2 will solve the outlined transportation challenges of this dangerous corridor by improving transportation safety for vehicular travel, replacing aging pavement and drainage structures, re-establishing BIA 2 as the arterial route it is intended to be, opening the corridor to economic growth opportunity, and establishing safe spaces for pedestrians and bicyclists. The Project will seek to implement innovative technologies and equitable planning methods to provide cost savings, inclusion of the communities most deeply impacted, and environmental sustainability.

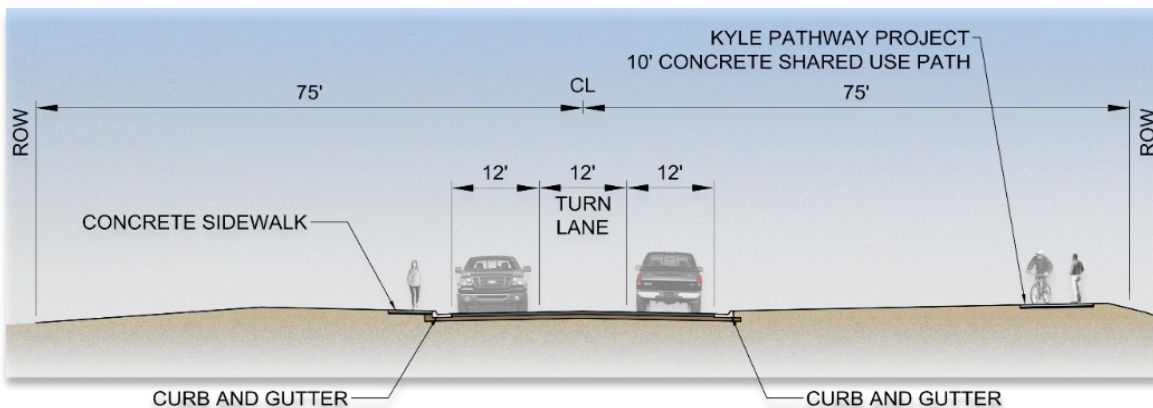
To expedite this Project, the OSTDOT has obtained permissions to survey which permits entrance to properties for the purpose of locating section corners and lines, topographic surveying, and environmental resource surveys. With the permissions to survey and a RAISE grant contract, planning and preconstruction activities can begin immediately.

1. Project Detailed Scope of Work

Planning and preconstruction activities for the reconstruction of BIA 2 from the west edge of Kyle to SD 44 will consist of topographic and cadastral surveys; environmental investigations, consultation with agencies, impacts, mitigation design, application to FHWA for environmental clearance, and permit applications; geotechnical investigations and engineering analysis for pavement and grading design; hydrology and hydraulic analysis of culverts and engineering design for all elements of the Project. A separate TTP funded project will provide for the right-of-way acquisition needed prior to construction activities.

Engineering design will include minor horizontal and major vertical realignment of 20.7 miles from the west edge of Kyle to SD 44. The Project will include a one-mile segment of urban curb and gutter roadway in Kyle and 19.7 miles of rural roadway from the east edge of Kyle to SD 44.

Project Improvements in Kyle: The one-mile urban roadway segment in the rapidly growing community of Kyle will include a center turn lane to accommodate the large traffic volumes, curb and gutter, and storm sewer to manage stormwater runoff, sidewalk with ADA compliant ramps, connection to the Kyle Pathway Project, pathway and intersection lighting, and pedestrian flashing beacons at crosswalks. BIA 2 is an east/west arterial dividing the community of Kyle into northern and southern halves. Most of the community’s housing is in the southern half and all children attending and living within a mile of Little Wound School must walk to school, with most children crossing BIA 2.



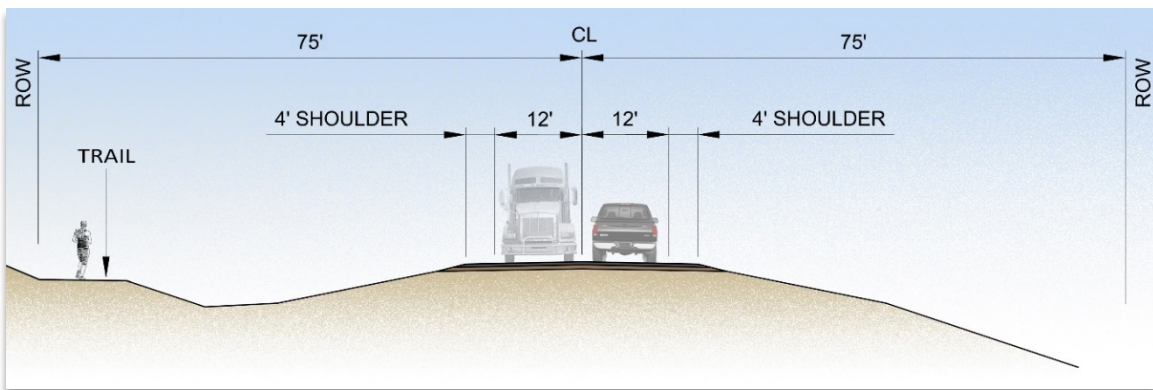


The 0.9-mile Kyle Pathway Project, currently under construction, will be an ADA compliant 10-foot wide shared-use path along the south edge of BIA 2 right-of-way, separated from vehicular traffic. Incorporated into the BIA 2 Rural Safety and Regional Access Project design will be a sidewalk connecting the campuses of the Oglala Lakota College and Little Wound School (K-12) along the north side of BIA 2 opposite of and connecting to the Kyle Pathway Project via crosswalks at stop-controlled intersections or with pedestrian flashing beacons.

The existing stormwater runoff sits stagnant in roadway ditches along BIA 2 in Kyle and is a breeding ground for mosquitoes which spread West Nile virus. Installing curb and gutter and storm sewer along BIA 2 to efficiently remove stormwater from the roadway surface and adjacent right-of-way will improve livability for the residents of Kyle which include many children and senior citizens who are at higher risk of developing life-threatening symptoms of the West Nile virus.

Rural Project Improvements: The 19.7-mile rural segment of the Project from the east edge of Kyle to SD 44 will consist of planning activities to achieve 12-foot lanes, 4-foot shoulders, recoverable side slopes, and roadside ditches large enough to carry stormwater and hold snow. Major safety design improvements will include enlarging existing sharp horizontal curves; flattening and filling the approximately 75 hills and valleys to achieve a safe roadway vertical alignment and reducing the overall length of no-passing zones; grading and realignment at intersections to achieve sufficient sight distance; widening the roadway asphalt surface to include shoulders for emergency parking; providing a 30-foot wide clear zone with recoverable side slopes; and installing large culverts longer than their replacements to move the dangerous end section away from the roadway and outside of the clear zone.

Further safety enhancements will include design of a graded trail for pedestrians walking or equestrian use, school and transit bus and mailbox turnout locations to move stopped traffic outside the normal driving lane, rumble strips to warn a vehicle leaving the driving lane, pavement safety edge to allow a vehicle to easily recover to the roadway top, ditch and back slope grading to achieve adequate snow storage which will prevent and reduce snow drifting on the roadway surface, and permanent signage and striping.



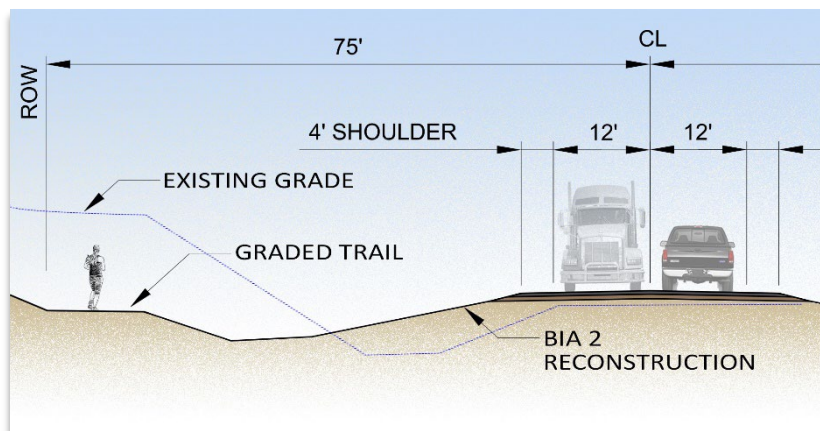


Most of the new road horizontal alignment will be centered along the existing road. The roadway pavement structure will be innovatively analyzed using geotextile separation fabric under the base course and triaxial geogrid between layers of base course. The existing asphalt will be milled, recycled, and up to 20 percent reused in the new asphalt concrete. The geotechnical engineer will investigate if the existing base course has been contaminated by underlying silt and if it has the needed gradation to be salvaged and recycled for the new road base. Any remaining asphalt and base course will be mixed and applied as surfacing to intersecting approaches or used for temporary surfacing to maintain traffic during construction. The existing subgrade will be scarified and recompact to 95 percent maximum dry density. New concrete precast culverts, which have a longer lifespan, will replace existing metal culverts.

Existing utilities along the Project include a Tribally owned water transmission line, power transmission line owned by a local electric cooperative, and copper cable owned and operated by a local telecommunications company. The BIA 2 grading corridor will avoid to the greatest extent possible the water and power transmission lines; however, the copper cable is outdated, and the telecommunications provider has plans for replacement with fiber optic which will be coordinated with the Project.

Proposed planning activities are necessary to move toward completion of improvements to this rural segment of BIA 2, resulting in a reduction of crashes and an increase in overall transportation safety. Providing a safe arterial route wide enough to handle truck traffic will also encourage regional access and economic growth opportunities including creating a viable, safe, efficient connection along the Crazy Horse Scenic Byway providing accessibility to the Pine Ridge Indian Reservation to economic tourism hubs in the Badlands National Park and the Black Hills, boosting the tourism industry on the Reservation.

The graded trail area will be covered in topsoil, seeded, fertilized, and mulched. After construction, the trail can be used by pedestrians as a safe space to walk, run, ride bikes or for equestrian use. In the future the OSTDOT can top the area with a hard surface or crushed granular surface as funds become available.

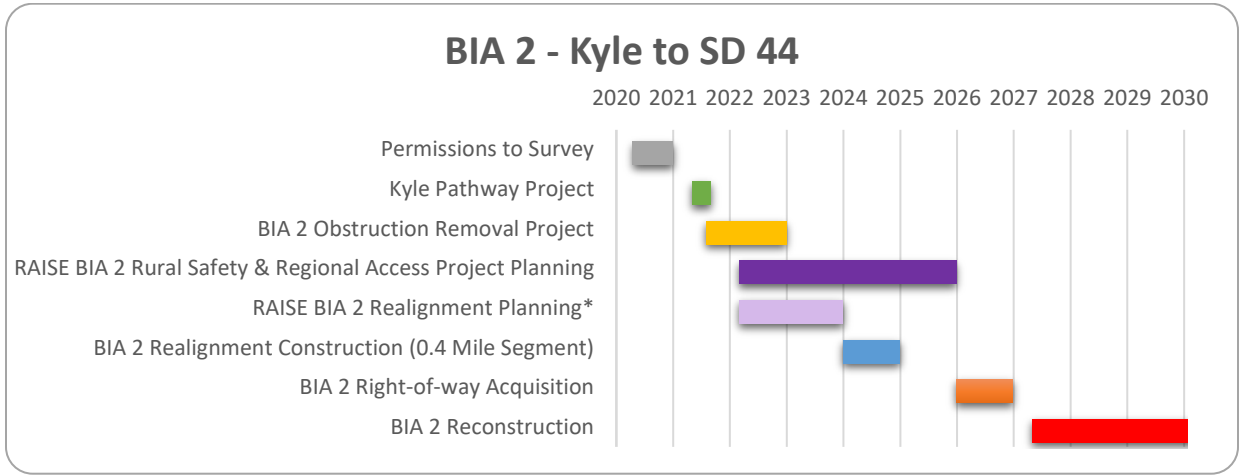


2. Related Projects

Planning of this Project is the highest priority as it will provide the necessary preconstruction activities to begin the reconstruction of BIA 2 from Kyle to SD 44. Permissions to survey the Project corridor are complete so environmental and cadastral surveys can begin. An obstruction removal project to remove all trees within the right-of-way will take place in the fall of 2021, making way for the Lidar survey of the Project corridor.



The planning for reconstruction of BIA 2 is dependent upon RAISE funding. Without federal grant assistance, the Tribe will be unable to move forward with planning and preconstruction activities. To accommodate the significant expense, TTP funds would need to be redirected from storm damage repairs and essential repairs and maintenance to housing roads which currently provide Tribal members access to goods and services. If awarded RAISE funds, the following is a planned timeline of this Project and related projects to complete this large endeavor.



* If awarded RAISE planning grant, BIA 2 Realignment Project will be designed within the BIA 2 Rural Safety and Regional Access Project and given priority to complete the smaller PS&E package by December 2024, ready for construction.

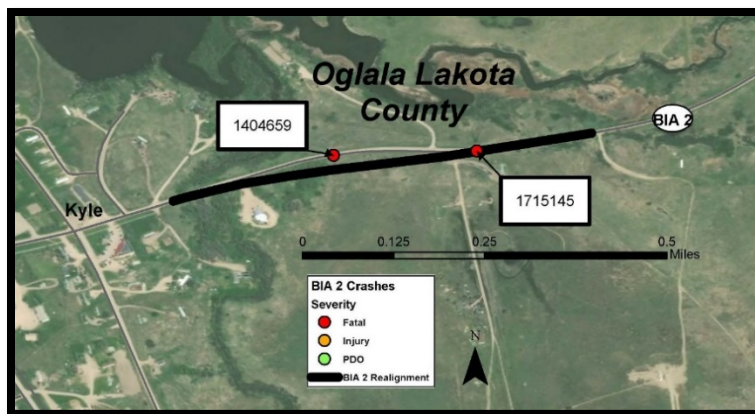
BIA 2 Obstruction Removal Project: In January 2020, the Oglala Sioux Tribe was awarded a TTPSF grant for planning and construction to remove obstructions within the right-of-way of BIA 2 from Kyle to SD 44. The BIA 2 Obstruction Removal Project will remove all trees and obstructions within the right-of-way in 2021. Trees will be stockpiled outside the right-of-way and in 2022, cut for Tribal members to use for firewood, saving in heating costs.

Kyle Pathway Project: The Tribe was awarded a TA grant in 2019 by SDDOT for construction of the Kyle Pathway Project, providing a 0.90-mile continuous, separated 10-foot shared-use pathway with ADA compliant ramps at streets and approaches along the south side of BIA 2 within the Kyle community. The construction of Kyle Pathway in 2021 will separate non-motorized travelers from vehicular traffic and connect housing areas with the hospital, Oglala Lakota College, transit bus stop, post office, Little Wound School, Lakota Bank, and Kyle Grocery. The BIA 2 Rural Safety and Regional Access Project will complement and connect to the Kyle Pathway Project.





BIA 2 Realignment Project: In January 2021, the Oglala Sioux Tribe was awarded a TTPSF grant for construction to realign a 0.4-mile section of BIA 2 east of Kyle which has a high rate of crashes. The BIA 2 Realignment Project will flatten a vertical curve and straighten two reverse horizontal curves. Since the realignment project is within the BIA 2 Rural Safety and Regional Access Project and did not receive planning funds, RAISE funds will be used for planning and preconstruction activities to ready this section of BIA 2 for construction. The planning for the BIA 2 Realignment section will be completed in 2024, earlier than the entire 20.7-mile Project so that awarded TTPSF construction funds can be expended. Right-of-way acquisition for this segment of BIA 2 will be procured through the BIA 2 Realignment Project and not with RAISE planning funds or the BIA 2 Rural Safety and Regional Access Project.

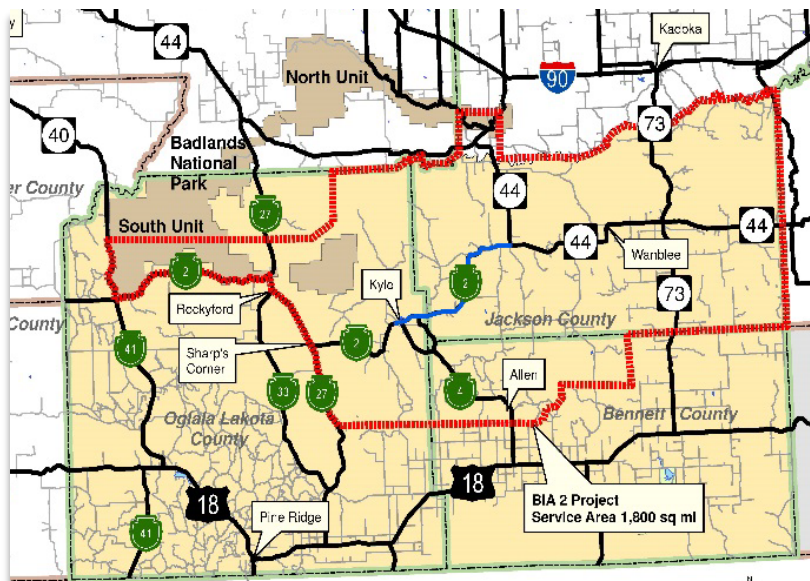


The construction of BIA 2 Realignment Project east of Kyle, SD is funded by a grant from TTPSF. Award does not include planning funds.

C. History and Importance of BIA 2

Importance of BIA 2: Providing Essential Connectivity

The Pine Ridge Indian Reservation transportation network consists of two east/west arterials and three north/south arterials. BIA 2 is the northern east/west arterial route from its western terminus at the Reservation boundary, stretching 62 miles and connecting north/south arterials, BIA 41 and BIA 27, and ending at its eastern terminus at SD 44. SD 44 continues east, connecting to the north/south arterial SD Highway 73 and then to the eastern Reservation boundary. BIA 2 and SD 44 provide safe transportation access to the Badlands National Park South Unit, and connect several communities, including Rockyford, Sharps Corner, Kyle, Potato Creek, and Wanblee.



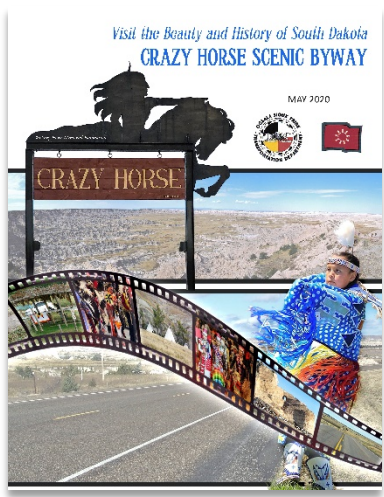
See www.oglalasioux.raisegrant.net for a full version of the Arterial Transportation Network

History of BIA 2: Previous Investments and Future Plans

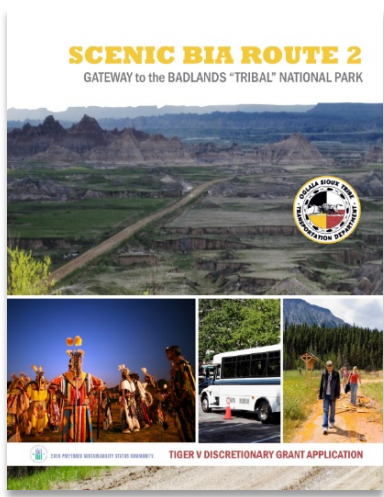
The OSTDOT has worked relentlessly to upgrade the arterial transportation system within the Reservation. Through various funding sources, much of BIA 2 has been upgraded to provide safe connectivity. This Project represents the segment of BIA 2 east of Kyle which has not been reconstructed in over 40 years and some sections more than 75 years.



Crazy Horse Scenic Byway: In December 2019, the Oglala Sioux Tribal Council formally designated the Crazy Horse Scenic Byway, of which BIA 2 is a large part, as a Tribally designated scenic byway. In 2020, the OSTDOT applied to the SDDOT requesting state designation of this beautiful and culturally significant Byway. With state designation, the SD Department of Tourism will promote the Byway’s diverse landscapes, breathtaking views, unique wildlife, vast geologic characteristics, iconic monuments, national parks, and Tribal history and culture showcased throughout the Crazy Horse Scenic Byway. The Reservation already receives visitors from all over the world and the Oglala Sioux Tribe recognizes with a collaborative effort between the Tribe and State of South Dakota to promote this Byway, the Byway will attract additional visitors causing a positive impact to the local and regional economy. The full application to the SDDOT can be viewed at www.crazyhorsescenicbyway.com



TIGER V Award: In 2013, the US Department of Transportation (USDOT) TIGER funding was awarded to enhance a critical segment of BIA 2 in the northwestern region of the Reservation. This essential investment of TIGER funds in the Scenic BIA Route 2 – Gateway to the Badlands “Tribal” National Park upgraded 17.6 miles of loose gravel road to a paved surface and was successfully completed in 2016, providing essential connectivity to the region and boosting tourism numbers to the Badlands National Park, South Unit. Now, five years after completing the paving of BIA 2, the Badlands National Park is investing in conceptual designs for a new visitor center and campground adjacent to the successful TIGER V project. The OSTDOT worked diligently on reporting and collaborating with USDOT and is prepared to work cohesively again, if given the opportunity, on the BIA 2 Rural Safety and Regional Access Project. The previous investment has delivered on the benefits expected and the Tribe is eager to invest in this next phase of transforming BIA 2 from Kyle to SD 44 and the region surrounding it.



Road Safety Audit: To further understand the transportation challenges of this corridor, the OSTDOT invested in the completion of a Road Safety Audit (RSA) in 2018. The RSA reported that 50 percent of crashes were occurring at horizontal or vertical curves. Recommendations of the RSA are listed below, and the full report can be viewed at www.oglalasioux.raisegrant.net.

Urban – Kyle Community

- Install pedestrian facilities, including separated pathway, sidewalks, crosswalks, and rapid flashing beacons
- Install two-way left-turn lane
- Install four-way stop at BIA 2 and BIA 4 intersection
- Realign skewed intersecting roads

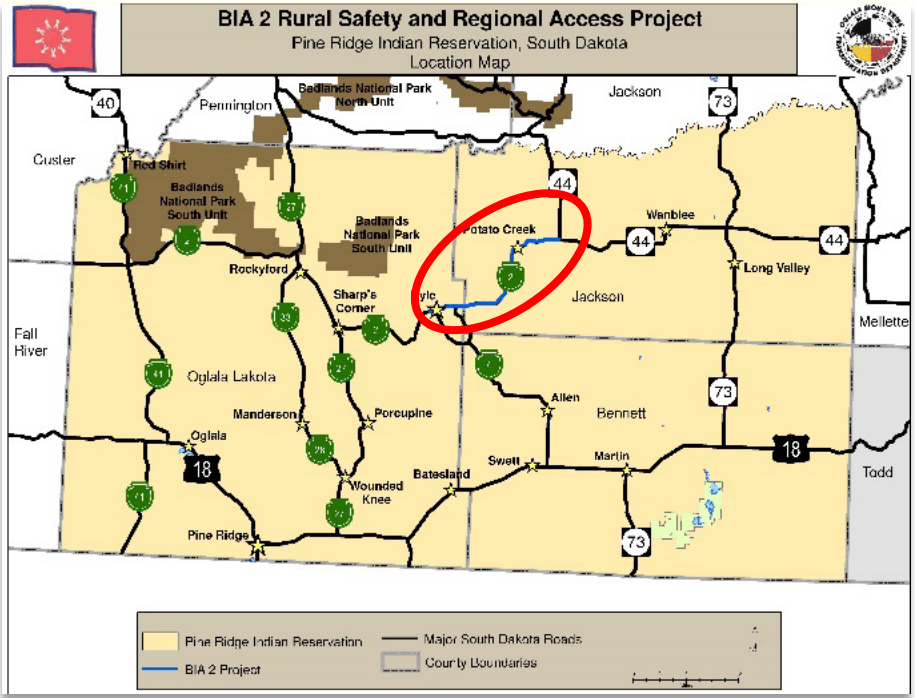
Rural – BIA 2 East of Kyle

- Add shoulders with rumble strips, correct horizontal and vertical alignment deficiencies, and flatten slopes
- Install new signs and striping
- Remove trees from right-of-way
- Install pull-off areas for mail delivery



II. Project Location

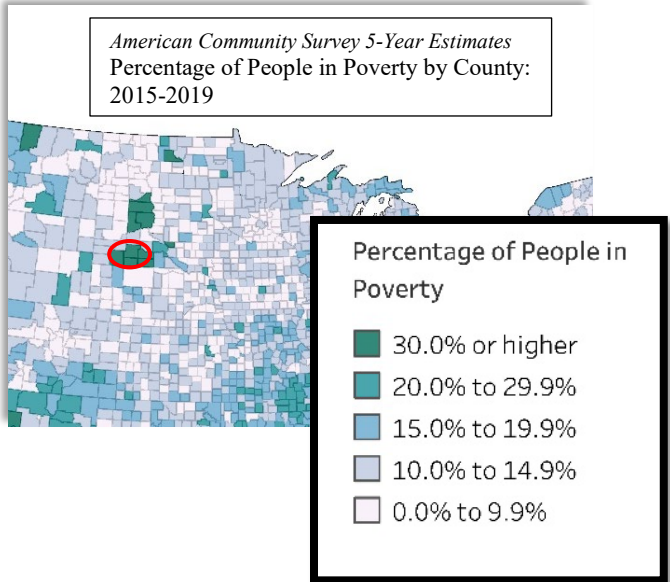
The Pine Ridge Indian Reservation is in the southwest corner of South Dakota and is comprised of approximately 2.7 million acres, a landmass larger than Delaware and Rhode Island combined. Home to the Oglala Sioux Tribe, the Reservation’s major communities include the Tribe’s administrative center, Pine Ridge Village, as well as Kyle, Wanblee, Allen, Porcupine, Oglala, Red Shirt, and Wounded Knee. The BIA 2 Rural Safety and Regional Access Project starts in Oglala Lakota County at the west edge of the community of Kyle, travels through the middle of Kyle, and concludes in Jackson County at SD 44. The housing development of Potato Creek and the Lakota Freedom Veterans Cemetery are located along the Project. Several Tribal communities in neighboring Bennett County rely on this route for regional access.



For a full version of the project location map, visit www.oglasious.raisegrant.net.

Regional Demographics

The BIA 2 Rural Safety and Regional Access Project, located in an area of persistent poverty, will positively impact transportation users in an area of great need. The Reservation is home to many individuals and families in financially sensitive situations, and access to reliable, safe multimodal transportation is critical to living sustainably in this impoverished rural area. With 40.1 percent, 29.9 percent, and 31.6 percent⁵ of its population in poverty, respectively, Oglala Lakota County, Jackson County, and Bennett County of the Pine Ridge Indian Reservation are among the most impoverished counties in the nation.



⁵ www.census.gov/quickfacts/fact/table/bennettcountysouthdakota,jacksoncountysouthdakota,oglalalakotacountysouthdakota,SD/INC910219



According to the US Census 2019 data, Oglala Lakota County, is the poorest county per capita income in the state of South Dakota with Jackson County within the top 5 and Bennett County in the top 10. Jackson County’s southern half is located within the Reservation boundary and experiences higher poverty rates than the northern half. For instance, the community of Wanblee located in southern Jackson County has an estimated 69 percent poverty rate⁶ versus Kadoka, located in the northern half, has an estimated 30 percent poverty rate⁷. The community of Kyle, where the Project begins has 42 percent⁸ of the population living in poverty. The officially reported poverty rate for American Indians living on Pine Ridge is 53.75 percent. By comparison, the United States average is 10.6 percent. According to National Equity Atlas, 13 percent of Native American households are without a vehicle.⁹ The average lifespan for male and female Tribal members is 47 and 55¹⁰, respectively, compared to the national average of 76.3 for men and 81.2¹¹ for women. This infrastructure investment will directly impact an underserved population by providing a safe transportation corridor for transit riders as well as pathways and shoulders for pedestrians to walk or bike, which will improve quality of life, provide access to essential services, connect Tribal members and communities to additional economic opportunities, and continue Tribal efforts to ensure transportation equity.

III. Grant Funds, Sources, and Uses of all Project Funding

A. Project Costs

Engineering analysis indicates the cost to provide complete Plans, Specifications, and Estimates (PS&E) documents ready for the construction of the BIA 2 Rural Safety and Regional Access Project is \$1,800,000. In addition, a local investment of \$750,000 of TTP funding has been committed by the Oglala Sioux Tribe Department of Transportation (OSTDOT) to complete right-of-way acquisition via a separate project. The Oglala Sioux Tribe respectfully requests \$1,800,000 from the RAISE grant to complete design engineering and preconstruction activities to prepare the Project for construction.

B. Source and Amount of Funds

If awarded RAISE planning funds, the Project will be solely funded by the RAISE planning grant. Other related projects as listed in Section I.B.2. are funded through TTP, TTPSF, and TA.

C. Documentation of Funding Commitments

OSTDOT has extremely limited funding and is unable to provide a match for planning and preconstruction activities with TTP funds for this Project. But because BIA 2 from Kyle to SD 44 is a dangerous route, the OSTDOT has been pursuing grant funds for related projects as well as a commitment of \$750,000 in TTP funding from fiscal year 2024 for the BIA 2 Right-of-way Acquisition Project. A copy of the current TTIP, OSTDOT Assurance letter, and Federal wage rate certification and can be found in Appendix D and at www.oglalasioux.raisegrant.net.

⁶ <https://censusreporter.org/profiles/16000US4668580-wanblee-sd/>

⁷ <https://censusreporter.org/profiles/16000US4633180-kadoka-sd/>

⁸ <https://censusreporter.org/profiles/16000US4634460-kyle-sd/>

⁹ https://nationalequityatlas.org/indicators/Car_access#/?breakdown=2

¹⁰ <https://www.re-member.org/pine-ridge-reservation.aspx>

¹¹ www.cdc.gov/nchs/about/factsheets/factsheet_nvss.htm#:~:text=In%202019%2C%20life%20expectancy2019



D. Budget

Project Budget Breakdown	
Construction	Amount
Estimated Construction Cost (Kyle 1-mile @ \$3 million + 19.7 rural miles @ \$2.3 million/mile)	\$45,587,000
Construction Observation 2%	\$919,900
65 Power Poles Relocated @ \$3,740/Pole	\$243,100
Rural Water Adjustments	\$200,000
Telecommunications Relocation	\$500,000
Total Estimated Construction Cost	\$47,450,000
Planning & Preconstruction	Amount
RAISE Planning Funds 4% of Estimated Construction Cost (See Detailed Planning Project Budget in Appendix A)	\$1,800,000
Right-of-way	Amount
BIA 2 Right-of-way Acquisition Project (TTP Funded)	\$750,000
Total Estimated Project Cost	\$50,000,000

IV. Selection Criteria

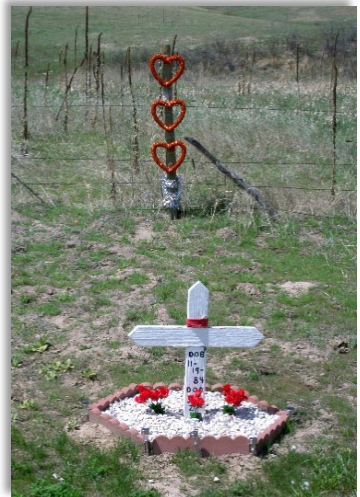
A. Primary Selection Criteria

1. Safety

To best understand the safety needs of this corridor, the OSTDOT invested in the completion of an RSA which identified the dangerous deficiencies and indicated the urgent need for safety improvements. The OSTDPS reported a total of 22 motor vehicle collisions occurred along the Project corridor in the last 10 years; six were fatality type crashes. The map below shows the occurrence of crashes along the corridor in the last 10 years. Fifty percent of the crashes occur on horizontal or vertical curves which strongly indicates a need to reconstruct the road’s geometry. Although drug and alcohol consumption and wildlife encounters can often be contributing factors, the condition of the road and poor sight distance are strong contributors to the crash and fatality rates on this roadway. A primary focus of the BIA 2 Rural Safety and Regional Access Project is to upgrade the 20.7-mile segment of this arterial route to protect the safety and lives of all transportation users.



June 2020, a local resident was killed in a crash within the Project area due to poor sight distance

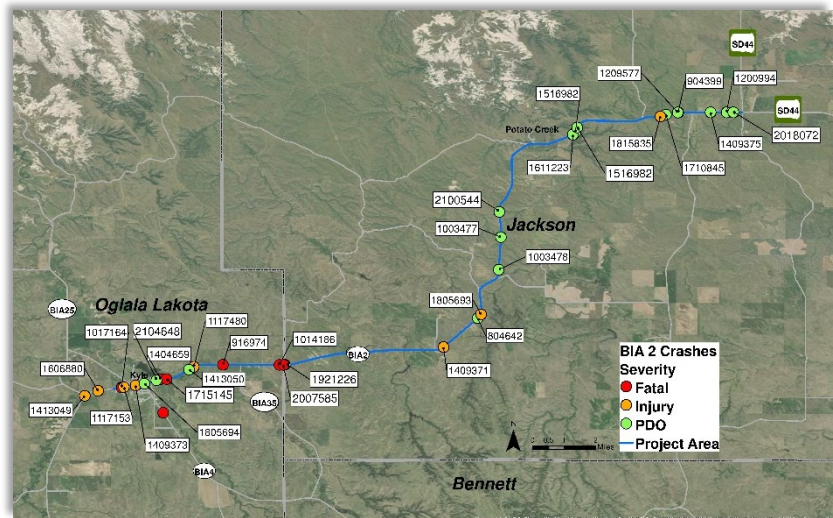


Memorial markers along BIA 2 indicate fatal crashes claiming lives



The RSA outlines necessary improvements, including roadway reconstruction, installation of signage, breakaway mailbox posts, pedestrian flashing beacons, pathway lighting, and crosswalks. These improvements will ensure the arterial route meets current highway safety standards to prevent future property damage, injury, and loss of life in decades to come.

Despite the danger of utilizing the route, users continue to travel on BIA 2 from Kyle to SD 44 because alternative routes are too far away or unreliable. Users rely on the existing route to access residential areas, agricultural land, schools, medical facilities, daycare centers, and job training centers. This segment of BIA 2 carries approximately 700 vehicles per day, including 27 trucks with seasonal increases due to tourism. The route is extremely narrow, so accommodating trucks, school buses, transit buses, and agricultural equipment is especially dangerous.

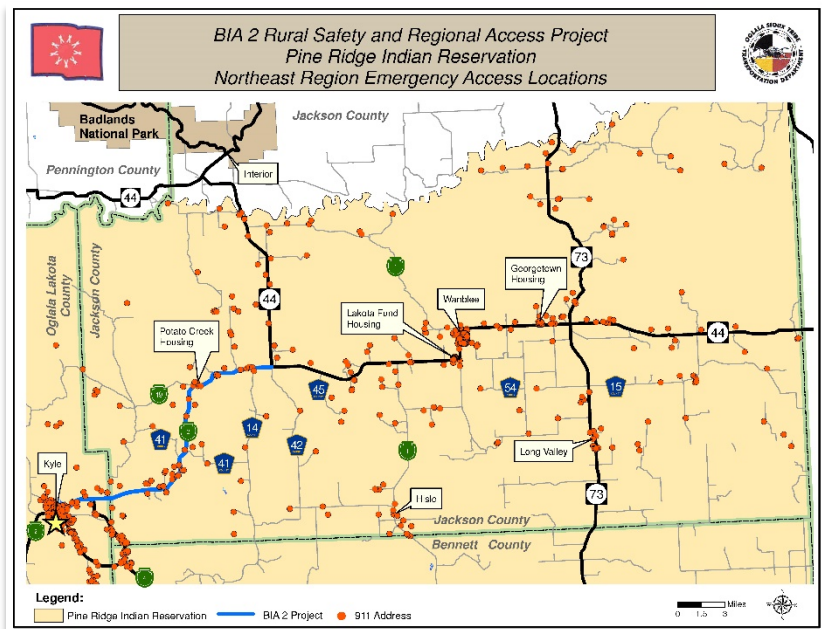


For a full version of the 2010-Present Crashes, visit www.oglalasioux.raisegrant.net.

Emergency Services and Road Maintenance on the Route

The current road condition creates a barrier for emergency response as there is no ability for emergency responders to travel at high rate of speed safely or to transport a patient smoothly. Planned improvements to the Project corridor will create a safe, efficient, smooth emergency response corridor for the many emergency access locations shown in the map.

The planned improvements will enable road maintenance crews to plow snow and mow ditches without causing risk of injury to personnel or the traveling public. Additionally, the Tribe’s equipment such as mowers, garbage trucks, and snowplows will require less costly maintenance.



For a full version of the Northeast Region Emergency Access Locations, visit www.oglalasioux.raisegrant.net.



Designated School Bus and Tribal Public Transit Route

BIA 2 is a designated school bus route and currently utilized by students, parents, faculty, staff members and school buses accessing schools throughout the area including American Horse, Red Cloud, Wounded Knee, Oglala Lakota County, Crazy Horse, and Kyle. Bus stops and warning signs are located throughout the Project area, but due to poor sight distances, are often missed. Much like the other schools transporting students from the area, Crazy Horse School in Wanblee makes two trips per day with school-age children along this dangerous route.



Tribal Public Transit has a set route along BIA Route 2 and transporting passengers on the narrow roadway top is dangerous. RAISE planning and preconstruction funds will be used to identify locations of frequent stops by school busses, transit busses, mail carriers, and garbage trucks. Engineering safety measures will be used to incorporate pull-off locations, widened shoulders, and safety signage.



To prevent further injury and loss of life, improvements need to be planned and completed. Resulting safety benefits can be found in Appendix C, Table C-1.

2. Environmental Sustainability

Residents, commercial users, and Tribal agencies, such as OSTDEM, RMD, and the OSTDPS, avoid this segment of BIA 2 and travel on safer but longer alternate routes. Reconstructing this segment of BIA 2 to the safe, efficient arterial route that it is meant to be will protect the environment by reducing VMT. These improvements will also minimize cost, consumption, and unnecessary waste.

As part of the engineering design process, innovative solutions to reduce costs also provide environmental sustainability mechanisms. Planned solutions include recycling the existing asphalt and base course to be reused in as much of the new pavement structure as possible and the remaining to be used as aggregate surfacing for intersecting approaches and temporary surfacing to maintain traffic during construction in lieu of needing new gravel. Additionally, triaxial geogrid will be evaluated for installation between layers of base course, strengthening the pavement structure, thus requiring less aggregate and asphalt pavement. Geogrid and geotextile separation fabric will extend the road resiliency. Since asphalt and base course are solely created from natural resources, using less of those products on such a large-scale project will reduce the need for more natural resources to be mined. A reduction of one inch of asphalt will reduce aggregate needed by over 21,000 tons. Added to that amount is the reduction of approximately 10,000 tons of asphalt aggregate due to recycling old asphalt.



With the mineral development within a half mile of this Project, aggregates meeting specifications from these pits will be used, drastically reducing delivery costs and the corresponding use of fossil fuels. The current pits used for transportation projects in Pine Ridge Indian Reservation are over 90 miles from the Project area. With at least a third of the aggregates needed for the Project coming from the Tribe’s mineral mines as opposed to an aggregate mine 90 miles from the Project, fossil fuel consumption will be reduced.

Streetlights in Kyle are outdated and inefficient and do not provide adequate lighting along BIA 2. This Project will replace the existing lights with efficient LED lighting meeting current standards for roadway and pathway lighting. LED lights use 60-70 percent less electricity and last longer, reducing energy use and replacement costs.

Adjacent to the existing Project area are wetlands sites. Even though these wetlands exist, they are not currently protected by easements and US Army Corps of Engineers (USACE) agreements. These sites will be considered for wetland preservation areas which can be used as mitigation for this Project and banks for mitigation in future road reconstruction projects.

The Project is in a rural region driven primarily by mineral development and agriculture. The reconstruction of BIA 2 into a wider, safer arterial highway will support the agricultural and mineral industries throughout the area and the surrounding region. The Project intends to generate environmental benefits by reducing fuel consumption, and to add to the social value. South Dakota is one of the nation’s top 10 corn producers. The abundant production of corn is used to fuel South Dakota’s ethanol production as the state ranks among the six largest ethanol producers in the United States.

Appendix C, Table C-2 contains a listing of improvements with environmentally sustainable benefits.

3. Quality of Life

Transportation improvements will enrich the quality of life for the residents on the Pine Ridge Indian Reservation by increasing the efficiency of multimodal travel, access to Tribal Transit services, and connectivity to living-wage employment while decreasing the number of traffic incidents, delay time for



emergency services, and burdensome deterioration of vehicles. The Project area has some of the highest historic poverty rates of all the counties in the United States. Oglala Lakota County Census Tracts #9405, #9408 and #9409, Jackson County Census Tracts #9412 and #9611, and Bennett County Census Tracts #9410 and #9412 are areas of persistent poverty as defined by the RAISE Persistent Poverty Project Status Tool. The Project will provide multimodal transportation access to employment, educational institutions, daily living essentials, health care facilities, job training centers and community social services, contributing to opportunities for equity for the Tribal members and Reservation residents.



Project improvements in Kyle will accommodate the community's high rate of growth by including a center turn lane for improved traffic flow, curb and gutter to calm traffic, storm sewer to manage stormwater runoff, intersection improvements, and the enhancement of safe pedestrian spaces.

Transportation access is as critical as food and shelter to impoverished rural areas like that surrounding the BIA 2 Rural Safety and Regional Access Project. This Project will connect to the Food Distribution Program on Indian Reservations program which is administered in the communities of Pine Ridge Village and Wanblee.

With installation of RWMS, residents will be able to make informed decisions about driving in inclement weather due to access to real-time images of BIA 2 road conditions. Appendix C, Table C-3 lists Project features which will benefit residents' quality of life.

4. Economic Competitiveness

The BIA 2 Rural Safety and Regional Access Project will enhance three major economic industries: tourism, agriculture, and mining. The Project will improve safety and add tourism sites for the Crazy Horse Scenic Byway, remove transportation width restrictions for gravel pit and agricultural truck traffic, and increase delivery truck efficiency by providing a route with higher posted speed limit. RAISE funding would be invested in a rural area historically designated through historical federal initiatives including a Promise Zone, Empowerment Zone, and Sustainable Communities Planning as well as an Opportunity Zone and an area of persistent poverty.

This Project will reconstruct a dangerous segment of an arterial route thereby improving the living conditions for residents. Not only would safety be improved, but residents would see positive impacts to travel efficiency, reduced fuel consumption and vehicle maintenance, access to more job opportunities, and designated pedestrian and bicyclist spaces. A detailed list of improvements and resulting economic benefits can be found in Appendix C, Table C-4.

Economic Opportunity: Federal Designations

The Pine Ridge Indian Reservation is one of 13 designated Promise Zones in the country, and one of only two Tribal communities that have received a Promise Zone designation. Through this designation, the Oglala Sioux Tribe can work directly with federal, state, and local agencies to give local leaders proven tools to improve the quality of life for Tribal residents. Further information on this designation can be found at www.hud.gov/PROMISEZONE11SD.PDF and www.hud.gov/program_offices/field_policy.

Before this designation, the Reservation was designated as an "Empowerment Zone" during President Clinton's administration, and in 2011, was one of 45 Sustainable Communities Planning Sites. The Regional Plan for Sustainable Development, titled Oyate Omniciyè Oglala Lakota Regional Plan, can be found at www.oglalasioux.raisegrant.net.



BIA 2 Rural Safety and Regional Access Project Impact on Tourism

This Project will allow the Tribe to capitalize on tourism throughout the area as the Project is proposed within a region that hosts the nation’s beautiful Badlands landscape. Recently, the Crazy Horse Scenic Byway was Tribally designated and has been submitted to the SDDOT for state designation. State designation would enable the SD Department of Tourism to promote and feature the Byway and sites within the Reservation. This portion of BIA 2 is also named Big Foot Trail as it is the approximate route Chief Big Foot and his band traveled to Wounded Knee in 1890, only days before the Wounded Knee Massacre occurred in which as many as 350 men, women, and children were killed.



The photo above shows the Badlands National Park South Unit, an untapped tourism asset near the project.

Because this route is the major connection between the Byway’s eastern terminus and the Reservation, it connects several cultural and historic sites including, but not limited to, the Lakota Freedom Veterans Cemetery, Oglala Lakota College Historical Center, Pine Ridge Area Visitor Center, Oglala Lakota Artspace, 1890 Wounded Knee Massacre and Cemetery Site, White River Visitor Center at Badlands National Park South Unit, the Heritage Center at Red Cloud Indian School, as well as nearly 30 Pow Wows. Details of these and other sites can be found starting on page 70 of Visit the Beauty and History of SD, Crazy Horse Scenic Byway found at www.crazyhorsescenicbyway.com.

Previous USDOT TIGER investment to the Scenic BIA Route 2 – Gateway to the Badlands “Tribal” National Park (approximately 40 miles west of this Project) has yielded better connectivity for Tribal members, safer east-west access in the northwest region of the Reservation, stimulated growth of tourism to the South Unit, advanced the development of the Tribally designated Crazy Horse Scenic Byway, and most recently encouraged the Badland National Park to invest in the conceptual design of a new visitor center and campground along BIA 2.

Improvements to BIA 2 between Kyle and SD 44 are necessary to support increases in traffic volumes from the vibrant, thriving tourism region surrounding the Project. In the heart of the tourism activity is the centrally located community of Kyle, which is a growing community and an economic hub. Improvements to BIA 2 in Kyle, including converting the current two-lane roadway and ditch section to an urban street section with curb and gutter, three lanes, and sidewalks, will welcome visitors and encourage economic growth.

With the right transportation infrastructure in place, this Project will position the Oglala Sioux Tribe to continue to grow economically through the tourism industry. The tourism industry in western South Dakota is thriving with millions of visitors every year to the Black Hills Area, which is only 60 miles northwest of the Project area. Additionally, Badlands National Park has recorded



an average of more than one million visitors annually. Of these visitors, only between 11,000-12,000 visitors travel to the South Unit. With a safe transportation network and Scenic Byway designation, the tourism industry will grow with Project completion. Not only will the improvement of BIA 2 positively influence the local and regional economies, it will also positively impact the nation’s economy through increases in demand of goods for the park and surrounding businesses. Visitors will impact areas en route to the park by way of hotel stays, restaurants, and fuel costs. As shown by the chart below, 2019 visitor spending totaled \$4,860,000 in Bennett County, \$24,680,000 in Jackson County, and \$21,520,000 in Oglala Lakota County.

In 2019, the South Dakota tourism industry saw an increase in visitation, visitor spending, and overall impact on the state’s economy. This marks ten continuous years of economic growth. Visitor spending reached \$4.1 billion in 2019, an increase of 2.8 percent from 2018, which contributed \$1.5 billion in GDP to South Dakota’s economy. These dollars flow through the South Dakota economy, supporting more than 55,000 jobs and generating more than \$308 million in state and local tax revenue. Visitation to South Dakota remained steady at 14.5 million visitors, an increase of 3.1 percent from the previous year.¹²

While the state of South Dakota has increased visitor spending, Bennett County saw 2.0 percent increase in visitor spending, Jackson County saw a 2.3 percent decrease, and Oglala Lakota County saw a 0.4 percent decrease.

Black Hills & Badlands Region								
County	Visitor Spending - 2019 (millions)						Growth Rate	State and Local Tax Revenue (millions)
	Lodging*	F&B	Recreation	Retail	Transport**	Total		
Bennett County	\$0.77	\$1.08	\$0.59	\$1.19	\$1.23	\$4.86	2.0%	\$0.35
Butte County	\$4.07	\$5.09	\$2.22	\$3.67	\$7.51	\$22.56	4.6%	\$1.69
Custer County	\$34.09	\$17.67	\$20.11	\$17.46	\$21.01	\$110.33	0.5%	\$8.55
Fall River County	\$7.96	\$8.20	\$5.10	\$6.14	\$7.94	\$35.34	0.1%	\$2.50
Haakon County	\$0.54	\$0.76	\$0.40	\$2.17	\$1.78	\$5.65	3.9%	\$0.43
Harding County	\$0.58	\$0.80	\$0.28	\$0.43	\$0.85	\$2.95	3.3%	\$0.24
Jackson County	\$6.15	\$3.20	\$3.83	\$5.00	\$6.50	\$24.68	-2.3%	\$1.73
Jones County	\$3.63	\$3.19	\$2.21	\$2.78	\$4.71	\$16.52	0.5%	\$1.12
Lawrence County	\$146.37	\$96.55	\$101.50	\$62.66	\$47.86	\$454.94	-0.8%	\$30.32
Meade County	\$9.13	\$12.75	\$4.77	\$7.72	\$13.19	\$47.56	-7.8%	\$5.58
Mellette County	\$0.36	\$0.44	\$0.22	\$0.34	\$0.97	\$2.33	0.1%	\$0.17
Oglala Lakota County	\$5.06	\$6.26	\$1.64	\$2.49	\$6.08	\$21.52	-0.4%	\$1.16
Pennington County	\$174.17	\$190.65	\$123.70	\$154.53	\$148.17	\$791.22	0.2%	\$60.50
Perkins County	\$1.81	\$2.59	\$1.35	\$3.28	\$2.36	\$11.40	-0.3%	\$0.75
Todd County	\$0.94	\$0.87	\$0.41	\$0.63	\$3.16	\$6.01	-6.5%	\$0.40
Region Total	\$395.63	\$350.11	\$268.35	\$270.48	\$273.29	\$1,557.87	1.8%	\$115.48
State Total	\$769.39	\$916.76	\$604.92	\$862.95	\$940.90	\$4,094.92	2.8%	\$307.65

¹² <https://sdvisit.com/research-reports>
The Economic Impact of Tourism in South Dakota, County Analysis 2019 (Rep.). (n.d.). South Dakota Department of Tourism. doi:
https://sdvisit.com/sites/default/files/2020-01/19Ecolmp_Tourism_Economics.pdf and https://sdvisit.com/sites/default/files/2020-05/19Ecolmp_Tourism_Economics_Counties.pdf



BIA 2 Rural Safety and Regional Access Project Impact on Mineral Development

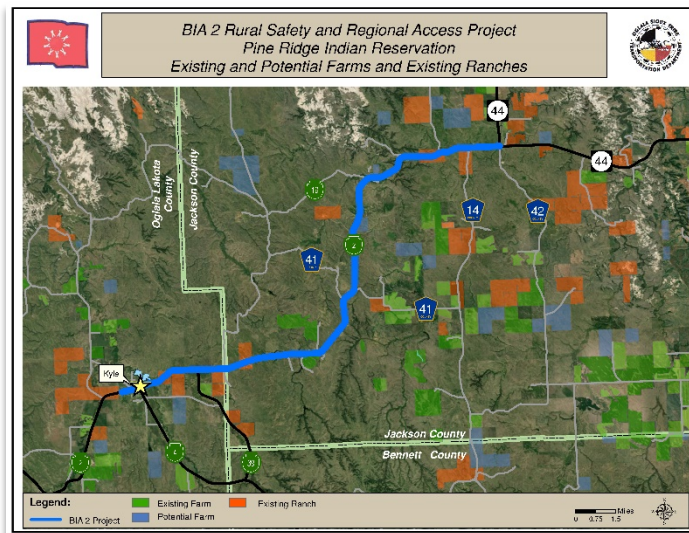
The Project will improve the transportation infrastructure to safely sustain anticipated growth in the mineral resources industry. The Potato Creek area has the largest quantity of resources within the Reservation. With the land being Tribal owned and the great need for gravel and aggregates, the Tribe intends to develop these sites. Unfortunately, the lack of safety and deteriorating road conditions of the existing transportation infrastructure has stagnated the growth of the Tribe’s mining industry. The Project will allow the Oglala Sioux Tribe to enhance their economic position through a reduction in trucking costs and miles traveled by trucks transporting product, increase in cost savings by providing gravel and other aggregate resources for Tribal transportation projects, providing value for future in-kind matching, supplementing the construction of gravel roadways and driveways for housing development, and generating revenue for the Tribe by selling the resources.

BIA 2 Rural Safety and Regional Access Project Impact on Agriculture

South Dakota’s agriculture industry has a \$32.5 billion economic impact each year with more than 19 million acres of cropland and 23 million acres of pastureland. South Dakota is currently ranked the top state in bison inventory and sunflower production and in the top five for proso millet, honey, oat, beef cow inventory, flaxseed, and spring wheat, exemplifying South Dakota’s ability to produce a diverse mix of various crops and livestock.¹³ These rankings demonstrate the importance of South Dakota to help feed, clothe, and fuel those beyond the state’s borders.

There are 190 farms in Oglala Lakota County, 314 farms in Jackson County, and 213 farms in Bennett County according to the 2017 US Census of Agriculture Data for South Dakota Counties.¹⁴ The BIA 2 Rural Safety and Regional Access Project is surrounded by 2,919,317 acres of farmland. For a map of existing and potential farms in the immediate area of the Project visit www.oglalasioux.raisegrant.net.

When the objectives of the Project are achieved, existing transportation assets of the region will be transformed. The Project will connect the western portion of the Pine Ridge Indian Reservation to the regionally significant corridor, SD 44. This connection will increase the transportation network efficiency locally and regionally, maximizing benefits from tourism, mineral, and agricultural activity and development. A listing of improvements transforming the regional economy can be seen in Appendix C, Table C-4.



For a full version of the farms and ranches in the region, visit www.oglalasioux.raisegrant.net.

¹³ https://sdda.sd.gov/office-of-the-secretary/Photos-Publications/2019_FinalSD_AECS.pdf

¹⁴ https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/South_Dakota/cp46102.pdf
https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/South_Dakota/cp46071.pdf
https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/South_Dakota/cp46007.pdf



5. State of Good Repair

The Oglala Sioux Tribe must maximize resources in order to maintain infrastructure with limited financial resources. For this high-priority project, the Tribe has planned far in advance for the planning and future construction of this Project to assure sensible asset management. This section of existing BIA 2 was constructed 75-80 years ago to outdated roadway standards as a gravel road. It was paved approximately 40 years ago, and the asphalt surfacing has reached the end of its service life. The metal culverts are between 50 and 75 years old and too short, leaving the roadway embankment with steep side slopes. The road is in dire need of reconstruction with existing sharp curves, narrow lanes, insufficient sight distance, no shoulders, and steep side-slopes. A complete road reconstruction is necessary to provide a safe road in accordance with current highway safety standards.

The narrow Potato Creek Bridge is approximately 75-80 years old and is rated functionally obsolete. The roadway surface just west of the bridge has started to exhibit an embankment slide and is being monitored. Planned improvements include installation of a concrete box culvert and raising the road profile to improve sight distance. Because the bridge is functionally obsolete it will be eligible for TTP Bridge construction funding after the PS&E is complete. The replacement of the bridge and corresponding roadway reconstruction could be completed in a stand-alone project or combined with the road reconstruction project.

In its current condition, this roadway is not fulfilling its purpose of being a safe, efficient, accessible, and convenient transportation arterial system and is an artifact of the BIA's previous inattention to Tribal infrastructure. The OSTDOT oversees maintenance of the Tribal transportation system, including all BIA roads, utilizing annual TTP funding directly from FHWA for administration, planning, construction, and maintenance activities. The Project is consistent with the TTIP to assure continual asset management and maintenance for the life of the roadway.



BIA 2 road geometry is 75-80 years old and pavement is 40 years old, for photos and descriptions of the aging structure's issues www.oglalasioux.raisegrant.net



Potato Creek Bridge is 75-80 years old, for photos and descriptions of the aging structure's issues www.oglalasioux.raisegrant.net



Roadway west of Potato Creek Bridge is exhibiting an embankment slide and being monitored



The TTIP identifies priority road maintenance and reconstruction priorities and allocates funding from the TTP for a five-year period. The TTSP, LRTP and PMP are used to prioritize projects for the TTIP. The Tribe’s TTSP and LRTP can be found at www.oglalasioux.raisegrant.net.

With ADT of 700 and aging roadway and structures, more than \$11 million would have to be spent just to preserve the existing arterial roadway, bridge, and culverts without receiving any benefits from safety improvements. Without grant assistance, improvements to the road will stagnate and much-needed improvement to the efficiency of the existing transportation network, mobility of goods or people, and high potential for economic growth to this area will be significantly delayed. A listing of capital improvements and the assets this Project would provide, operating at a full level of performance are in Appendix C, Table C-5.

B. Secondary Selection Criteria

1. Partnership

The applicant for the RAISE grant is OSTDOT, a program of the Oglala Sioux Tribe, and the primary recipient if awarded. When planning intersection safety improvements and impacts to Jackson County roads, the OSTDOT will work with the Jackson County Highway Superintendent to ensure the planning and preconstruction activities meet the County’s standards. The Project ends at the intersection of SD 44 which the South Dakota Department of Transportation has jurisdiction. The OSTDOT and SDDOT have collaborated on past projects and will work together to plan for BIA 2 and SD 44 intersection improvements that are safe for the traveling public. Even though there are not Oglala Lakota County roads intersecting the Project, the OSTDOT will involve the Oglala Lakota County Highway Superintendent in stakeholder meetings.

During preliminary design of the Project, stakeholders will be contacted by OSTDOT to determine impacts to other utilities, best locations for the Crazy Horse Scenic Byway pull-offs and overlook sites, tribal transit bus stop locations, and environmental impacts. OSTDOT will hold Tribal district, public, and landowner meetings. Plans for review and comment will be sent to the BIA and FHWA. At a minimum, the following local stakeholders will be contacted for input: OST Rural Water, local power and telecommunications companies, Pine Ridge Area Chamber of Commerce, OST Tourism Department, OST Transit, OST Tribal Historic Preservation Office (THPO), Oglala Sioux Parks and Recreation Authority (OSPRA), South Dakota Department of Transportation, Oglala Lakota County Road Department, Jackson County Road Department. Other federal and state agencies will be contacted during the NEPA process.

This Project is strongly supported throughout the Oglala Sioux Tribe, local and state representatives, and emergency service and road maintenance departments. The Project is also highly supported by the economic and business community who know the Crazy Horse Scenic Byway depends upon good road conditions for the traveling public. For a listing of this Project’s stakeholders and supporting agencies, visit www.oglalasioux.raisegrant.net.

BIA 2 Rural Safety and Regional Access Project		46 - South Dakota	
03/12/2020	075.5	2-FO-Functionally Obsolete	

Potato Creek Bridge is rated Functionally Obsolete by the BIA, the bridge inspection report, scour assessment, and SI&A report can be found at www.oglalasioux.raisegrant.net.



2. Innovation

a) Innovative Technologies

Innovative technologies will be utilized during this critical and necessary planning and design phase including the use of Lidar surveying for fast topographic results, GPS surveying techniques for cadastral and setting targets for control of Lidar survey, GPS cameras to record photograph locations, GPS/GIS mapping of environmentally sensitive locations, and the newest versions of highway design software which can develop corridor grading surfaces for use by construction equipment.

Innovative products will be specified for the reconstruction of BIA 2 including geotextile separation fabric and grid for use in the pavement structure and under box culverts to provide strength and longer pavement life, recycled asphalt pavement and base course for use in the new pavement structure to reduce new aggregate needed and cost, precast concrete structures to reduce construction timeline and traffic detour costs, epoxy paint for longevity of striping, LED lighting to conserve energy and provide reduced utility costs, and flashing beacons for pedestrian safety. Innovative construction methods including rumble strips and safety edges will be detailed in the BIA 2 plans.

Engineering design will include RWMS for real-time information to travelers and residents of the Reservation.

Innovative technologies planned for installation include RWMS located along BIA 2 in Kyle, near the Lakota Freedom Veterans Cemetery, and near the intersection of SD 44. As detailed in FHWA’s Road Weather Information System Environmental Sensor Station Siting Guidelines¹⁵, RWMS provide many capabilities and benefits including real-time road conditions and camera images, development of weather and road weather forecast models, long-term records and climatological analyses, risk assessment of future weather events, disaster assessment, and use of data by emergency response agencies to respond to emergencies and evaluate roadway crashes. SDDOT uses Safe Travel USA to provide real-time road conditions to travelers in SD, but the data is missing on BIA roads of the Pine Ridge Indian Reservation. Installation and deployment of RWMS on this Project will be the catalyst to providing this essential information to travelers in SD and on the Reservation.

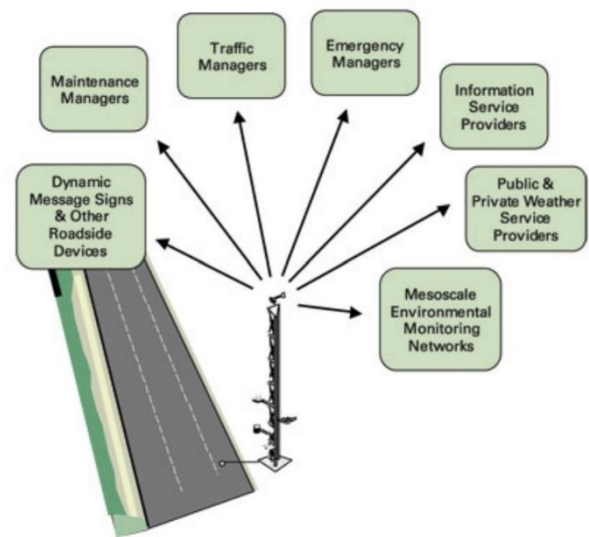


Image of Remote Weather Monitoring Station from Figure 4 of FHWA’s Road Weather Information System Environmental Sensor Station Siting Guidelines

b) Innovative Project Delivery

The Project will be innovatively designed into several segments, allowing future construction to be phased or combined into a single all-inclusive construction project. This will give the Tribe financial flexibility and small or large grants can be explored in the future.

¹⁵ <https://ops.fhwa.dot.gov/publications/ess05/index.htm>



c) **Innovative Financing**

The Oglala Sioux Tribe, on the Pine Ridge Indian Reservation, receives annual TTP funding directly from the FHWA for planning, construction, and maintenance activities. Given the Project is in an area of persistent poverty, that the Project is public transportation infrastructure, and that it is located on federal Tribal lands, private investment is not practical nor applicable. This is also an extremely rural area in which demand management strategies to address congestion are not appropriate. Appendix C, Table C-7 contains a listing of this Project’s innovative technologies, project delivery and financing, and the corresponding benefits.

V. Environmental Risk

A. Project Schedule

1. Schedule Milestones

Following is a list of planned milestones for the Project. A detailed project schedule for the Project can be found in Appendix B and at www.oglalasioux.raisegrant.net. As stated in Section V.B.2. below, the Project is already included in the TTIP and STIP.

Planned Project Milestones	
RAISE Grant Funds Obligated *	March 2022
Planning and Preconstruction Activities:	
Topographic, Cadastral, and LiDAR Survey	Mar 2022 – Dec 2022
Environmental Investigations	Jun 2022 – Dec 2022
Preliminary Engineering	Jul 2022 – Dec 2023
Initial Public and Stakeholder Meetings	Aug 2022 – Dec 2022
OSTDOT Review	Jan 2024 – Mar 2024
NEPA**	Jul 2024 – Dec 2024
Final Engineering Design	Apr 2024 – Dec 2025
OST, BIA, & FHWA Final Review	Jul 2025 – Sep 2025
PS&E Approval***	December 2025

* Schedule will be adjusted according to RAISE grant agreement date.

** Other permits required will be listed in the environmental document and completed prior to construction, such as Section 401 and 404 permits and EPA Construction General Permit.

*** Right-of-way Acquisition will not be part of the RAISE Planning grant project and will be done by a separate project prior to construction.

2. Obligation and Expenditure Deadline Assurance

If awarded RAISE funds, it is expected the Project would be able and ready to be obligated directly after award. Since the OSTDOT has already obtained permissions to survey, the topographic, cadastral, LIDAR, cultural resource, and aquatic resource surveys will commence as soon as weather allows in the spring 2022. The anticipated schedule completes the Project at the end of 2025, assurance that RAISE Discretionary Grant funds will be expended prior to the required September 30, 2029 deadline.

3. Right-of-Way

Right-of-way will be required prior to reconstruction of BIA 2 and will be fully funded by the Oglala Sioux Tribe at an estimated cost of \$750,000 by a separate TTP funded BIA 2 Right-of-way Acquisition Project. The BIA 2 Rural Safety and Regional Access Project will not include the right-of-way acquisition.



B. Required Approvals

1. Environmental Permits and Reviews

a) NEPA

The OSTDOT has obtained permissions to survey so that if funds are awarded , the OSTDOT will be able to begin environmental investigations as soon as an agreement is finalized between FHWA and the Tribe. OSTDOT has a strong working relationship with the FHWA, Office of Tribal Transportation Environmental Coordinator, THPO, and Oglala Sioux Tribe Natural Resources, and will be able to swiftly delineate environmentally sensitive areas, avoid where and if possible, and mitigate, as necessary. Scoping letters will be sent to Federal, State, and Tribal agencies and local stakeholders. NEPA approvals are anticipated by December 2024.

Permits and clearances that will be needed include THPO consultation and EPA construction general permit. THPO consultation will be completed by August 2024 and concurrence is anticipated as cultural and historically sensitive resources are not expected to be found due to previous road construction impacts. If any are found, they will be avoided to the greatest extent possible. Since EPA construction general permit lists the Contractor as a contact, it is anticipated the permit will not be needed until after bidding and a contract is awarded.

It is anticipated that because the BIA 2 Rural Safety and Regional Access Project is located inside the existing disturbed area, will result in project construction over \$5 million, and will require a right-of-way action (separate project) by the BIA; an Environmental Assessment will be acquired.

b) Reviews by Other Agencies

No legislative approvals are needed for the Project. The OSTDOT will provide engineering plan review documents to FHWA and the BIA. Final PS&E documents will be sent to FHWA and the BIA. Tribal agencies, such as Tribal Transit, Tribal Tourism, THPO, Tribal Biologist, and Natural Resources will be consulted during the planning process.

c) Environmental Studies

Environmental investigations will begin as soon as an agreement is finalized between FHWA and the Tribe for grant funds. Necessary environmental studies will be completed within the Project’s potential impact area. Specifically, environmental investigations will include but may not be limited to, surveys of wetlands and waters of the US, cultural and historical resources, threatened and endangered species, and farmland impact.

d) Department of Transportation Coordination

The OSTDOT coordinates all road reconstruction projects with the FHWA TTP Tribal Coordinator. This Project will follow a similar pattern. Since the OSTDOT successfully completed a TIGER project in 2016, they have pre-existing experience with TTP/TIGER agreements, communications, coordination, procurement, reimbursements, and required reporting.



e) Public Engagement

This Project, listed in the LRTP as BIA Route 2 – Kyle to SD 44, was discussed at a meeting with the Economic and Business Development Committee in June 2017 and 3 public meetings in July 2017. District meetings have discussed the dangerous route numerous times. Future Public engagement meetings will be held at the onset of Project and again during final engineering design.

2. State and Local Approvals

The OSTDOT will collaborate with the SDDOT and Jackson County Highway Department on engineering design for the intersecting roads which are under the relative jurisdictions. The local Tribal approval is in the form of the TTIP and Tribal Resolution to submit this grant application. For further information as to the ongoing partnership and approval process, please see letters from other highway jurisdictions in Letters of support at www.oglalasioux.raisegrant.net.

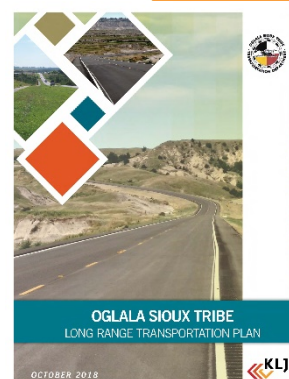
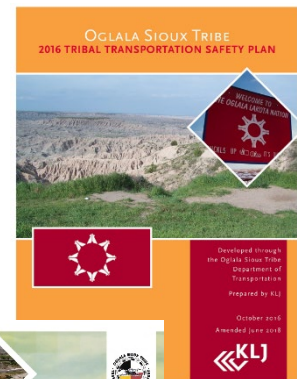
3. Federal Transportation Requirements Affecting State and Local Planning

The Oglala Sioux Tribe is a direct-funded FHWA agreement Tribe and adheres to all FHWA TTP requirements including required updates to the 5-year TTIP and LRTP. BIA 2 is included in the NTTFI for the Pine Ridge Agency and the Project has been included in the Tribe’s TTIP for the last 4 years as well as the TTSP, LRTP and PMP. The 2021-2025 TTIP was approved by Tribal Council and has been submitted to FHWA for review. The Project is listed as BIA 2 - Kyle to SD Hwy 44 in the latest TTIP can be accessed at www.oglalasioux.raisegrant.net.

A Market Study of the Crazy Horse Scenic Byway to Support Tourism Growth is planned to occur in 2022 by the OSTC&FP. Tourism pull-offs and scenic overlooks will be located as recommended in the Byway’s Market Study.

Tribal Transportation Safety Plan: The OSTDOT completed a TTSP in 2016 with its latest amendment in 2018. The plan’s main goal is to use a multi-disciplinary approach to identify safety strategies for implementation that can address the transportation safety issues on the Reservation. Several safety issues were identified with the Project area including high traffic and pedestrian volumes in the community of Kyle, lack of proper school zone signing, lack of safe spaces for pedestrians walking or biking, inadequate lighting, and the dangerous 19.7-mile stretch of BIA 2 east of Kyle. These references in the TTSP can be found on pages 2, 21-22, and 27-29. The Project will address all safety issues by implementing all mitigation measures including the RWMS on page 29. The TTSP can be viewed at www.oglalasioux.raisegrant.net.

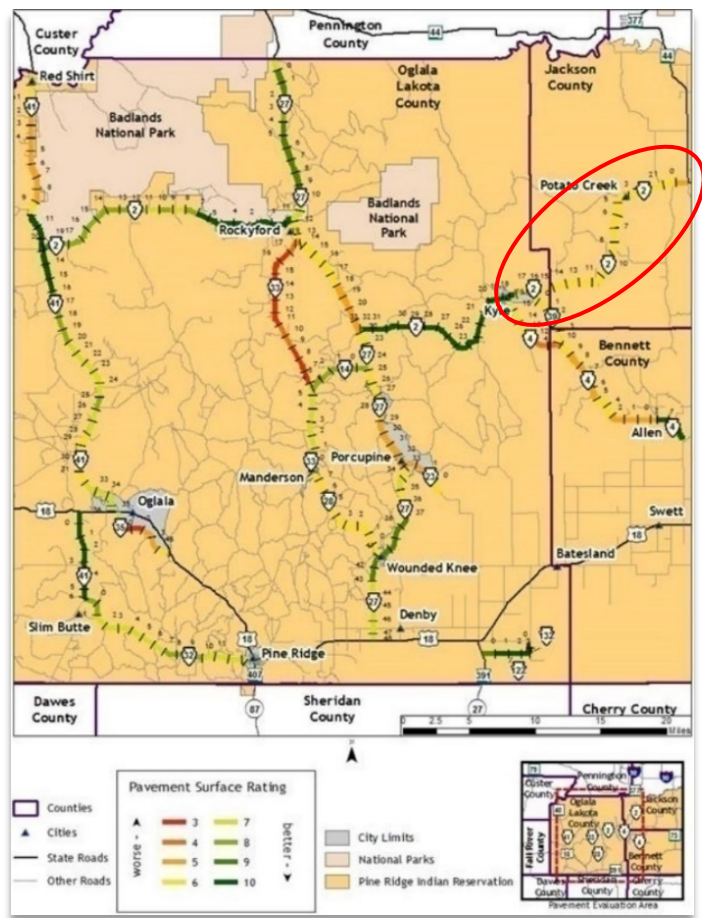
Long Range Transportation Plan: In 2018, the OSTDOT updated the LRTP detailing the long-range transportation needs and goals and outlining a strategy to fulfill these. The LRTP process included meetings with transportation programs and departments as well as the public. Those meetings were critical in identifying transportation needs on the Reservation which provided direction for the analyses and recommendations.





The Project, also known as BIA 2 – Kyle to SD 44 in the LRTP, is listed in the plan on pages 8, 13, 38, 47, 58, 71-72, 86-87, 97-98, 104, and 117 identifying transportation problems and strategies for improvements within the Project area. Recommendations include pedestrian infrastructure improvements in Kyle due to the high pedestrian counts, resurfacing BIA 2 between Kyle and SD 44 to increase tourism and establish a scenic byway, and reconstructing BIA 2 due to the number of crashes. The LRTP also determined reconstruction of BIA 2 is not feasible with the Tribe’s annual allocation of TTP funds and identified RAISE as a potential source of funding required to complete the Project. The full LRTP can be viewed at www.oglasious.raisegrant.net.

Pavement Management Program: In 2009 the OSTDOT completed a Pavement Management Program which included a history of pavement upgrades, field surveys of pavement surface conditions, a structural capacity survey, and a combined pavement condition rating for road segments. The PMP was updated with a PASER Study in 2018 with the LRTP. The pavement surface condition of the Project was rated 5-6, which represent non-structural overlays or seal coat. The PASER Study does not consider roadway safety or current highway design standards.



A Pavement Surface Evaluation and Rating (PASER) Study was performed with the LRTP. PASER is a visual method, based on engineering principles, for evaluating paved roads in a time efficient and consistent manner. The results of the PASER study are outlined in the LRTP which can be found at www.oglasious.raisegrant.net.

C. Assessment of Project Risks and Mitigation Strategies

Since the Oglala Sioux Tribe is requesting planning funds, project risks are minimal. With planning fund obligations in 2022 and all RAISE funds expended by 2029, there is ample time to complete the Project design. In fact, the design schedule will be accelerated to prepare for future notices of grant construction funding. The estimated planning completion date is December 2025. To mitigate risk, OSTDOT has obtained permissions to survey so that if awarded RAISE funds, surveys can begin immediately after the agreement is finalized.

The Project is technically feasible due to maintaining most of the road’s horizontal alignment and avoidance or mitigation of environmental and utility impacts. If an environmentally sensitive area is identified, it will be avoided or mitigated depending on the oversight agency's request. Due to the existing area being previously disturbed by the road and utilities, it is unlikely a major environmental issue will arise and if it does, the roadway design or mitigation will be revised.



Right-of-way, easement, and temporary construction easement acquisitions will be completed with a follow up project, BIA 2 Right-of-way Acquisition, removing the risk to the BIA 2 Rural Safety and Regional Access Project.

OSTDOT partners with a local engineering firm, on multi-year retainer contract. The engineering firm has worked with the OSTDOT since 2007 and is very familiar with the procedures and processes for Federal TTP projects as well as TIGER grant funded projects. The engineering firm has assisted the OSTDOT and another Tribe in TIGER grant agreements, schedules, budgets, construction contracts, and reporting.

VI. Benefit Cost Analysis

Although not a requirement for planning, the Tribe completed a preliminary BCA for the completed Project which yielded a BCA of 293:1. The probable benefits analyzed include travel time savings, crash reduction savings, economic growth, emergency response savings, emissions savings, and health benefits. Complete BCA analysis and details can be found at www.oglalasioux.raisegrant.net.

When fully implemented, the BIA 2 Rural Safety and Regional Access Project will:

- Improve safety by providing a shorter and safer route for emergency services
- Reduce vehicle hours traveled by safely increasing posted speed limits
- Improve efficiency for commercial users by removing width restrictions
- Increase tourism by providing a safe road with overlooks, pull-offs, and pedestrian trail
- Decrease potential for crashes due to road geometry updates
- Reduce fuel emissions
- Decrease health issues by increasing safe opportunities for exercise