Merit Criteria

The BIA Route 1/Kilgore Road to US-20 Regional Improvement Project (the Project) aims to meet all of the USDOT merit criteria of safety, state of good repair, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness, partnerships and collaborations, and innovation. Additionally, due to the Rosebud Sioux Tribe's Opportunity Zone qualification and providing match funding beyond the minimum required, the Project aims to be considered by the Secretary a "priority" project. The project focuses on planning activities for 17 miles of severely deteriorated roadway, affected by heavy truck traffic and extreme weather. Completion of the planning activities will produce "shovel-ready" plans for reconstructing the roadway, ensuring safer access to schools, employment, and essential services for regional residents. It will also improve the movement of freight and agriculture and enhance opportunities for community connectivity, environmental sustainability, and economic growth. A preliminary analysis comparing projected benefits to total estimated construction costs indicates a benefit–cost ratio greater than 2.0. The most significant impact of the project is the anticipated reduction in crashes and the avoidance of a 50-mile truck detour that could become necessary if the Rosebud Sioux Tribe is forced to revert BIA Route 1 back to a gravel surface.

Safety

The Project will address regional transportation deficiencies to have the greatest impact tackling the safety concerns for all road users in this underserved community. The Project directly aligns with the Tribe's draft 2026 Long Range Transportation Plan (LRTP), 2021 Tribal Transportation Safety Plan (TTSP), and 2020 Road Safety Audit (RSA). The TTSP and RSA recommended the following safety improvements that will be incorporated into the Project:

- Add Shoulders and Flatten Side Slopes
- Install Shoulder Rumble Strips
- Improve Signage and Add Delineators
- Improve and Lengthen Culverts
- Improve Roadway Surface
- Improve Intersection Sight Distance
- Install Retroreflective Pavement Marking
- Remove/Relocate Fixed Objects outside Clear Zone or Install Guardrails
- Install Sidewalks and Separated Pedestrian Pathways

Crash data along BIA Route 1 from St. Francis to the state line, provided by the Indian Highway Safety Program 2022-2024, and along Kilgore Road in Cherry County, NE from the state line to US-20, obtained from the Nebraska Department of Transportation 2015-2024, totaled 43 crashes resulting in 2 fatal, 22 injury and 19 property damage only type of crashes.

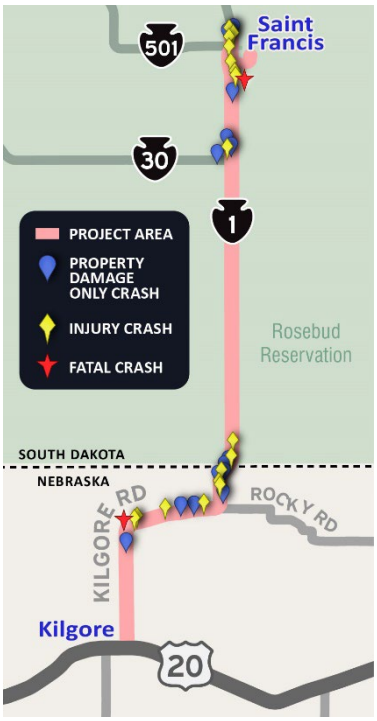
The crashes on BIA Route 1 reported in 2023 per 100 million VMT equals 836.73, compared to South Dakota's 2023 rate of 181.71[1]. Analysis of 2019 crash data of Kilgore Road resulted in 631.27 per 100



Cross at fatal crash site on BIA Route 1 near St. Francis

[1] https://www.safesd.gov/downloads/crash-summary/2023-South-Dakota-Motor-Vehicle-Traffic-Crash-Summary-Facts-Book.pdf

million VMT, compared to Nebraska's 2019 rate of 172.6[2]. These rates for BIA Route 1 and Kilgore Road are 5.3 and 3.7 times the respective state levels, which exemplify the disparity in highway safety within this project corridor.



Crash data can be found here: https://inputcentral.com/RSTBUILD

The significant number of crashes that have occurred on BIA Route 1 and Kilgore Rd are a direct result of the road conditions including low visibility pavement markings, no roadside delineation, deteriorated pavement which leads to loss of vehicle control, objects within the clear zone, lack of rumble strips, no shoulders and little to no pedestrian infrastructure.

There have been several crashes at the T-intersection of BIA Routes 1 and 30 approximately 2.3 miles south of St. Francis, SD. A southbound right-turn lane on BIA Route 1 exists but traffic entering BIA Route 1 from BIA Route 30 does not have adequate sight distance due to the hill north of the intersection as well as right-turn traffic. Preliminary design at this intersection calls to lower the hill on BIA Route 1 and move the right-turn lane to not obstruct the view of traffic entering BIA Route 1.

The current road conditions, amplified by sharp horizontal curves, have led to numerous vehicular crashes of which several resulted in fatalities. The existing narrow road top, steep hills, dangerous intersections, sharp curves, and limited sight distances pose significant risks to travelers. Despite the danger of the corridor, users continue to travel the route because alternative routes are inefficient. Upgrading this route to meet current highway safety standards would create a safer, more reliable connection between St. Francis, Todd County, SD and Kilgore, Cherry County, NE. This enhanced connectivity is crucial for residents accessing employment, education, commerce, and daily necessities.



South Dakota woman killed in northwest Nebraska crash

Posted Wednesday, August 4, 2021 10:38 am

Associated Press

KILGORE, Neb. (AP) – A South Dakota woman died in a crash near the village of Kilgore over the weekend, authorities in northwestern Nebraska said.

The crash happened Saturday, when the woman's vehicle left a county road, rolled and landed in a ditch, the Omaha World-Herald reported.

The driver, 48-year-old Jacqueline Frances Kills In Sight, of the Rosebud Indian Reservation in South Dakota, was thrown from the vehicle and died from her injuries, according to the Cherry County Attorney's Office.

Kilgore is about 21 miles south of Rosebud and about the same distance west of Valentine, Nebraska.

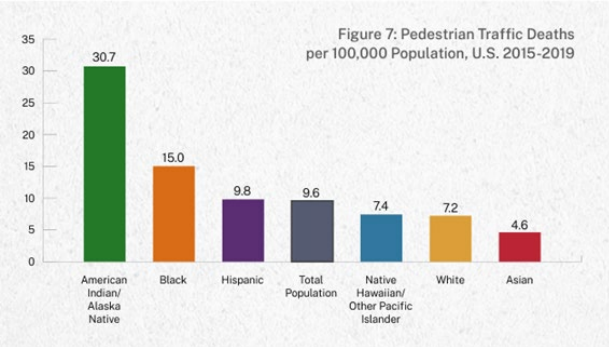
The Project will include the installation of shoulder rumble strips as a safety mechanism. By creating noise and vibration inside the vehicle when driven over, the driver is alerted and can quickly respond. When coupled with an adequate shoulder, the driver can make a corrective steering action and avoid a run-off-road crash.



Dangerous Kilgore Rd curve

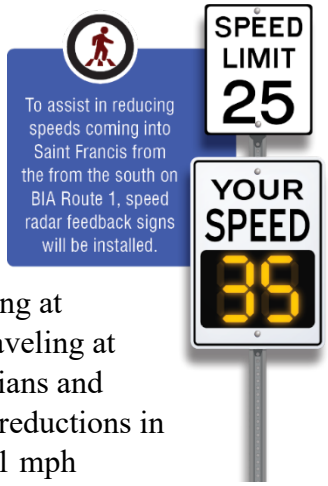
[2] https://dot.nebraska.gov/media/lroll4ka/facts2019.pdf, https://dot.nebraska.gov/media/xy0pumnl/annualvehiclemiles.pdf

The rumble strips and delineators also mark the lane limits during inclement weather when striping is difficult to see. Per NCHRP 641, shoulder rumble strips on rural two-lane roads have reduced single vehicle run-off-road fatal and injury crashes by 29 percent. The Project will also incorporate of an asphalt safety edge, which is a newer innovative safety measure that has almost negligible cost and allows for vehicles leaving the roadway surface to safely correct and return to the roadway without tire scrubbing. With a 30-degree or greater edge vehicle recovery increases and the asphalt pavement edge becomes more durable.



The existing corridor along BIA Route 1 in St. Francis to 1 mile south of St. Francis and Warrior Rd is where most students and families are walking and the roads do not have adequate pedestrian access which creates a barrier for residents, particularly economically disadvantaged, to employment and educational opportunities without the use of a vehicle. People are currently walking in the ditches or on the road in the driving lanes, putting themselves and drivers at risk of a vehicle/pedestrian crash. A report completed by the Governors Highway Safety Association: An Analysis of Traffic Fatalities by Race and Ethnicity, published June 2021, states that American Indian/Alaskan Native populations had the highest per-capita rate of pedestrian traffic deaths of all races and ethnicities. A major contributor to this high pedestrian fatality rate is the result of arterial roads not being designed to accommodate pedestrians of which Tribes generally have a significant volume.

Preliminary design of BIA Route 1 has identified the locations of sidewalks and separated pathways that will be further designed with the Project. The Project will include curb-side sidewalks and separated pedestrian pathway that will connect to existing sidewalks which will provide safe access for children and families in the St. Francis community.



Speed is often the main factor in traffic deaths. It has been shown that as speed limits and speeds increase, so do fatalities. A person hit by a car traveling at 35 miles per hour is five times more likely to die than a person hit by a car traveling at 20 miles per hour. The risk of death at every speed is higher for older pedestrians and pedestrians hit by trucks and other large vehicles. Evidence shows that small reductions in speed result in large safety gains. The Highway Safety Manual reports that a 1 mph reduction in operating speeds can result in a 17 percent decrease in fatal crashes. Radar speed signs are a proven traffic calming solution to raise the speed awareness of oncoming drivers and will be used in the Project. Studies repeatedly show that when alerted by a radar sign, speeders will slow down up to 80 percent of the time. Typical average speed reductions are 10–20 percent, and overall compliance with the posted speed limit will increase by 30–60 percent[3].

[3] https://www.radarsign.com/how-effective-are-radar-speed-signs/

During the planning process other safety countermeasures will also be assessed including school and transit bus and mailbox turnout locations to move stopped traffic outside the normal driving lane, curve safety enhancements such as guardrails, and ditch and back slope grading to achieve adequate snow storage which will prevent and reduce snow drifting on the roadway surface.

Environmental Sustainability

The existing road and culverts are vulnerable to severe winter and summer storms, flooding, and other extreme weather events. The goal of the planning effort will be to ensure construction improves infrastructure longevity which will reduce maintenance costs. Project planning is anticipated to include recycling of all existing road materials for reuse in the new roadway subbase structure, asphalt, or for granular surfacing. This will reduce the quantity of aggregate materials needed and related transportation costs/impacts. The Project will directly improve the resiliency of at-risk infrastructure to withstand severe weather events and natural disasters by:

- Increasing the size and number of culverts in flood sensitive areas to withstand the large flood events that are currently happening every 3–4 years
- Incorporating geotextiles in the pavement structure for a more resilient road surface
- Increasing ditch capacity to accommodate snow storage and drainage
- Replacing metal pipe culverts with precast concrete pipe culverts to increase lifespan to 100 years
- Replacing Kilgore Rd's Minnechaduza Creek crossing of four corroded metal pipes with a triple span precast concrete box culvert to increase the drainage crossing's lifespan to 100 years and improve resilience to storm events with greater strength and road stability
- Armoring the Minnechaduza Creek with riprap and gabions at the crossing to prevent erosion at Kilgore Rd and protect the new drainage structure

In 2023, RST participated in a project with FHWA to assist seven Tribes across the US in assessing the vulnerability of their transportation networks. These vulnerability assessments applied FHWA's Vulnerability Assessment and Adaptation Framework to complete each assessment. The report stated the challenges currently faced by the Tribe relate to the vulnerability of transportation infrastructure to riverine flooding, tornadoes, ice storms, extreme temperatures, drought, soil erosion, and wildfires resulting in temporary road closures and increased maintenance needs. Additionally, severe freeze-thaw and flooding directly affect the structural integrity of the road. BIA Route 1's asphalt pavement deterioration is proof that the freeze-thaw cycle erodes infrastructure. Similarly, Kilgore Rd is affected by the flooding of Minnnechaduza Creek due to the undersized existing culverts that cause water to overtop the road and damage it. Some of the recommendations of the report include:

- Design of infrastructure improvements with capacity for current recurrent flooding problems.
- Include pavement resilience, culvert, bridge, and scour prevention in future Transportation Plans (e.g., Long Range Transportation Plans).
- Support pedestrian infrastructure that improves public health, such as shade structures and sidewalks.

The Report and Technical Memo for all recommendations can be found here: https://inputcentral.com/RSTBUILD

Extreme weather has always posed a risk to the highway system and local roads. Risk to users increases in the form of safety aspects and travel time reliability. Detours around highway and structure closures from inundation and repairs can be significant. The damage to the Tribal roadways from severe storms can affect the system in two ways. Flooding can cause immediate damage and closures on the system, while increases in severe winter weather can cause a sharp increase in the deterioration rates of pavements and structures. This can have a significant impact on current conditions, projected conditions, and the sustainability of safe, reliable means of transportation.

The Project will directly improve the resilience to current and future weather risks by replacing undersized culverts with precast concrete pipe culverts, armoring culvert ends with gabions and riprap to prevent scour leading to road failure, increasing ditch depth and width to accommodate snow storage and drainage, and incorporating geotextiles in the pavement structure for a more resilient and longer lasting road surface.



Minnechaduza Creek Crossing on Kilgore Rd is Listed in the National Bridge Inventory

Geotextile separation fabric will be used on the project to extend the pavement 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. Use of geotextile under the pavement structure can reduce the required asphalt pavement thickness by as much as one inch. Combined with milling and recycling existing asphalt into aggregate for the new asphalt will result in a total reduction of 12,000 tons of asphalt aggregate. This savings of asphalt aggregate reduces impact to the environment through less mining and reducing miles hauling the aggregate to the project site, a distance of 320 miles round trip.

Upon completion, the Project will extend the useful life of the roadway/pathways, reduce risk from heavy rainfall, severe storms, flooding, and provide a safe and reliable multimodal transportation system by reconstructing and improving the resilience of the roadway and allowing for continued access and operation during severe weather events and other natural disasters. The Tribe hopes to incorporate these efforts into a comprehensive approach to safety, resilience, and accessibility planning for transportation and for emergency response. Based on previous transportation planning efforts, and initial discussion, the Tribe believes these solutions will be particularly applicable in addressing flood risk and adding or enhancing recreational/non-motorized transportation infrastructure and spaces that will limit or alleviate disruptions to the transportation network and minimalize or alleviate infrastructure vulnerabilities to severe weather and related flooding.

Quality of Life

The St. Francis Community is the third largest community on the Rosebud Indian Reservation and the community's primary source of employment, education, and community assistance is the St. Francis Indian School, which was established in 1886 as a Mission school. Warrior Road connects the school to BIA Route 1 and the community of St. Francis. Safe roadways and pedestrian connectivity especially connecting to the school is a necessity.

Reservation roads have historically been underfunded and as a result are considered some of the worst roads in the Nation. Comparing historical disbursements of federal funds to states versus tribes, Rosebud Sioux Tribe receives a quarter of federal funding per lane-mile compared to the national average of federal funding disbursed to state departments of transportation. Road conditions directly impact the ability for Tribal members to access goods and services, medical care, education, and employment.

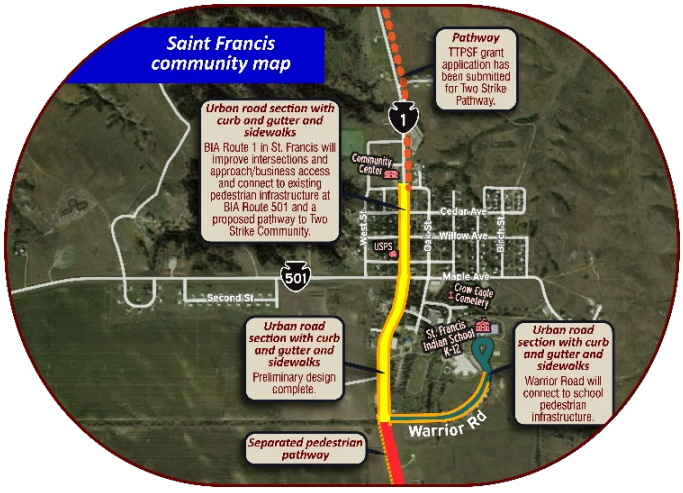


According to 2023 American Community Survey, 50.5 percent of Rosebud Indian Reservation residents live in poverty, with the community's median household income approximately 50 percent lower than that of the United States[4]. Currently, residents who rely on biking and walking must navigate deteriorated and ADA non-compliant facilities and crossings. More safe, secure, and intuitive walking and biking pathways will most significantly benefit disadvantaged residents by providing better access to education, jobs, and daily living essentials. Providing increased pedestrian infrastructure by constructing new curb-side sidewalk and a separated pathway in the community of St. Francis and connecting housing areas to businesses, Tribal services, and the St. Francis Indian School will reduce the burden of transportation costs for residents within the community. Residents will have the ability to safely walk or bike from their homes to employment opportunities without being vehicle dependent. This will reduce the financial burden to residents who must provide their own transportation in a historically disadvantaged community and area of persistent poverty.

The Project seeks to offer increased active transportation and future transit choices to citizens and those coming to St. Francis from other areas of the Reservation. The pedestrian infrastructure upgrades will improve access and remove barriers to employment centers, neighborhoods, and institutions including the K-12 St. Francis Indian School, essential community services, commerce, and recreational centers. The improvements will also promote a more active community, encouraging non-motorized travel. Promoting the use of non-motorized travel can improve public health and welfare and reduce carbon emissions by giving an alternate transportation option.

[4] Rosebud Indian Reservation and Off-Reservation Trust Land - Profile data - Census Reporter

Improvements to Kilgore Road will provide meaningful benefits to residents of the Village of Kilgore and the broader Cherry County community. The project will enhance roadway drainage to reduce flooding and surface deterioration, upgrade intersections to improve visibility and traffic flow, and strengthen overall roadway safety for motorists and agricultural and commercial vehicles. The improvements will also include resurfacing the road to create a smoother, more reliable travel corridor and an evaluation of pedestrian needs to ensure safe access for walkers, schoolchildren, and other non-motorized users.



Transportation improvements will enrich the quality of life for the residents on the Reservation by increasing efficiency of multimodal travel 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 will provide multimodal transportation access to employment, educational institutions, essential services, health care facilities, job training centers and community social services, contributing to opportunities for equity for the Tribal members and Reservation residents, creating transportation connectivity among cities and counties across the Reservation and into Nebraska. The community and region support this project as evidenced by the Project being No. 1 on the Rosebud Sioux Tribe's Project Priority List and public meetings that have occurred for the draft 2026 LRTP, 2021 TTSP, and 2020 RSA.

Mobility and Community Connectivity

The Project addresses mobility and connectivity through:

- Safer and more reliable transportation network
- Increased pedestrian safety and opportunity for non-motorized travelers via access to new shoulders and ADA accessible sidewalks and pathways
- Improved connectivity to nearby major roadways and destinations including communities that provide essential goods and services to rural residents
- BIA Route 1 is at risk of reverting back to a gravel road and trucks rerouted. The Project would preserve and improve the essential route to St. Francis.

The Rosebud Indian Reservation, located in south central SD, is a predominantly rural area. Lack of system-wide connectivity and transportation access is a significant challenge and often inhibits the affordability and feasibility of securing and maintaining jobs and having access to essential services on the Reservation. Residents of the St. Francis community often travel to/from US Highway 20 in Nebraska as it is the most direct route to employment. Many of the administration and staff for the St. Francis Indian School live in Nebraska and travel along BIA Route 1, Kilgore Rd, and Warrior Rd. The school and community need freight deliveries, and this is the most direct route from US Highway 20 in Nebraska. Further north of St. Francis is

Rosebud, SD which is Tribal Headquarters and largest community. BIA Route 1 and Kilgore Rd are the most direct route for freight coming from the southwest of the Reservation.



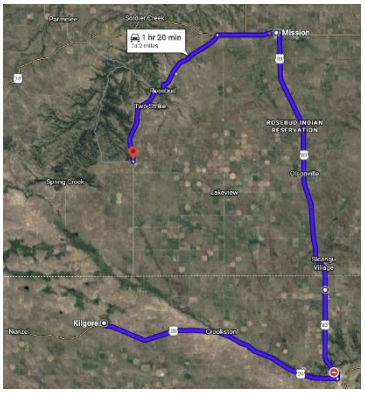
The proposed pedestrian infrastructure improvements will provide increased travel options and reduce vehicle miles traveled in the community by providing direct, affordable travel options. The Project focuses to improve multimodal assets for pedestrians and bicyclists by constructing sidewalks and separated pathways. Additionally, the RST Transportation Program will work with the RST Transit Program to identify locations for bus stops and incorporate those stops in the design by adding shelters or benches along the transit route. As residents are provided with safe bicycle facilities and pedestrian friendly design elements, vehicle trips along the BIA Route 1 and Warrior Rd corridor will be diverted to walking or bicycling, reducing transportation-related air pollution. Amenities along the pedestrian infrastructure will include lighting, park benches, and landscaping with a Native American design influence.

The project will enhance walking and biking infrastructure within the St. Francis community allowing users more affordable, efficient, sustainable, and ADA accessible transportation options. The project will improve the region's infrastructure and contribute to economic sustainability through reliable and safe access for local people, businesses, and institutions. The project will increase the productivity and effectiveness of surrounding farming operations through the efficient and cost-effective movement of goods and materials, create jobs for local residents, and enable the area to capture economic development resulting from the trucking industry and tourism to the Fort Niobrara National Wildlife Refuge, Smith Falls State Park and Valentine National Wildlife Refuge. In the long term, this project will increase property values, both residential, commercial, and agricultural, also making the community more equitable and resilient.

Due to the severe condition of BIA Route 1's pavement, the RST Tribal Council is considering milling the road to a gravel surface and rerouting truck traffic. Delivery of goods and services to St. Francis from Nebraska's US-20 is currently 16 miles and would increase to 74 miles if the road is milled and trucks rerouted adding one hour each direction to the delivery route.



Current Truck Route



Future Truck Route to St. Francis if BIA Route 1 is Not Reconstructed

This Project is listed in the draft 2026 LRTP and aligns with the 2021 TTSP and 2020 RSA. Public engagement meetings were conducted during the development of the 2020 RSA, 2021 TTSP, and most recently for the draft 2026 LRTP. The groups identified a number of transportation safety issues, and this project is number one on the Tribe's Priority List. Initial meetings with St. Francis community leaders and school staff have identified the need for safe pedestrian spaces. Preliminary engineering of BIA Route 1 has determined best locations for sidewalks and a separated pedestrian pathway.

Economic Competitiveness and Opportunity

Infrastructure is the foundation for economic growth and prosperity, and on the Reservation, the need for infrastructure investment is evident. The lack of economic competitiveness across the Reservation is tied to lack of infrastructure including roads and bridges, telecommunications, water, and housing. The Rosebud Indian Reservation experiences economic barriers due to their extremely rural nature and lack of economic diversity, which are ultimately obstacles to the untapped workforce of the Rosebud Sioux Tribe. The project presents various ways to enhance the economic competitiveness of the area. Without federal funding to complete the project, the Tribe will be forced to mill the existing BIA Route 1 pavement to a granular surface because the roadway has deteriorated so badly that it is beyond maintenance.

In a region primarily reliant on agriculture, infrastructure improvements contributing to the movement of goods and services will have a far reaching, long-term benefit that positively impacts many users. Providing improved access to US-20 in Nebraska will enhance the long-term efficiency of the movement of goods and services as the project roadways are designed to manage daily truck traffic efficiently and safely.

The project will also allow the region to capture economic development resulting from tourism to Wolakota Buffalo Range, Rosebud Casino, Powwow and Rodeo grounds, and the many historical sites. Improvements to BIA Route 1 in St. Francis would encourage small business development and existing businesses in the community of Kilgore, NE located along US-20 and Kilgore Rd would benefit from improvements to Kilgore Rd.

According to a 2021 US Chamber of Commerce Report, How Infrastructure Impacts Economic Competitiveness and Business. "Improved infrastructure helps grow the economy, generates revenue for businesses, and creates jobs for people." Development of safe and robust transportation facilities will connect travelers to living wage employment, services, basic goods, and amenities that continue to support business sustainability and regional growth.

With a high unemployment rate and location in a rural area of persistent poverty, job creation in the future grading and paving construction phases of the project will have significant short-term and potentially long-term economic impact. In accordance with RST TECRO, a contractor is required to give preference to qualified Tribal members in hiring, promotions, and on-the-job training for all work performed on the project. The TECRO Office maintains an index of Tribal members and affiliated Tribal members seeking employment and their qualifications. Three primary opportunities for job creation exist with the project including road construction, housing

construction, and agriculture jobs. The project is estimated to create 416[5] construction Job Years. The wages for this project will meet the current Davis-Bacon or TECRO minimum wages, whichever is higher.

The project outcomes support economic drivers for the region which will generate diverse jobs, provide job training opportunities, stimulate the development of safe and affordable housing, and most importantly, connect people with jobs and essential services. The transportation improvements will diversify the modes of transportation to include safe walking and bicycling in addition vehicular transportation.

State of Good Repair



The St. Francis Community is the third largest community on the Rosebud Indian Reservation and the largest incorporated community in South Dakota without a state highway for access. Instead of a state highway the BIA Route 1 highway provides access but due to historic underfunding of BIA and Tribal roads, BIA Route 1 is in dire need of reconstruction. The Project strongly addresses state of good repair. Roads in the Project area were originally constructed 90 years ago and no longer meet FHWA standards and are in a state of disrepair. They are generally unsafe, and in some areas, unstable. They are becoming increasingly difficult to maintain effectively or efficiently. Due to the Tribe's lack of available construction funds, there has been continuous maintenance and patch fixes instead of a much-needed investment into a long-term solution to bring the roadway to a state of good repair. In addition, there are portions of the roadway without pedestrian infrastructure or without sidewalks that meet ADA accessibility guidelines.

Roadways within and between the communities are severely deteriorated, narrow, lack shoulders, have non-recoverable slide slopes, sharp curves and limited sight distance in areas, increasing the chances for head-on or run-off-road crashes. The existing Minnechaduza Creek drainage structure of four metal pipe culverts has deteriorated and corroded, is undersized, and is vulnerable to failure with high creek flows. Costs for maintenance exceed the normal cost to maintain a rural highway. RST Road Maintenance Program reports BIA Route 1 is a BIA Level 5 (worst condition) roadway. A 2024 Pavement Preservation Plan determined current asphalt pavement conditions across the Reservation with Pavement Surface Evaluation and Rating (PASER) technique. BIA Route 1 was found to have PASER scores of 2-4 with 1 being the worst and 9 being the best. Recommendations for these scores are pavement replacement and reconstruction. The Road Maintenance Plan for BIA Route 1 and 2024 Pavement Preservation Plan can be found at: https://inputcentral.com/RSTBUILD.

The proposed planning activities for the Project area will enable the Tribe and County to fully understand the current infrastructure conditions and address the transportation system's

[5] https://www.fhwa.dot.gov/policy/otps/pubs/impacts/

vulnerabilities. They will assess the best practices, materials, and innovative approaches to address identified concerns, and obtain accurate cost estimates to mitigate safety, connectivity, and accessibility issues. Through proper planning and design, these efforts will ultimately reduce construction and maintenance burdens for long term sustainability and provide new infrastructure in this rural community.

Proposed planning work includes survey, geotechnical investigation, preliminary and final engineering and design, environmental assessment, stakeholder engagement and coordination, identification of utility impacts and drafting of agreements/plans for utility relocation, creation of right-of-way plats and temporary construction easement exhibits, and appraisals for acquisition. The result of the Project will be "shovel ready" plans for construction that will recommend implementation of the following:

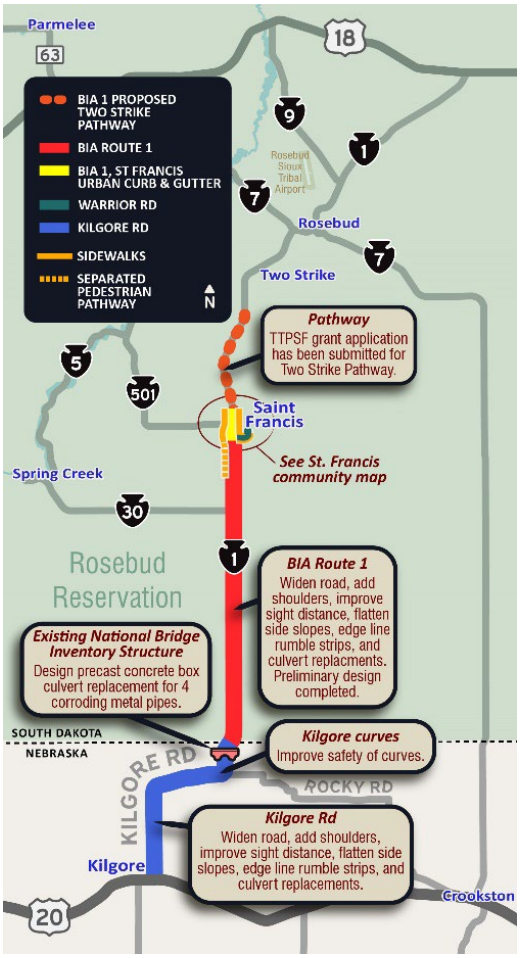
BIA Route 1

- Reconstruction and grading to lower hills and raise valleys to create a safer road profile with better sight distance
- Improve intersection sight distance
- Installation of rumble strips, wider shoulders, flattened in-slopes, and remove obstructions within the clear zone so if vehicles leave the road, they will have a chance to recover back to the road top
- Widen ditches and flatten back slopes to increase snow storage and drainage capacity
- Replacement of the road pavement structure with use of geotextiles to lengthen pavement lifespan and increase resilience to high truck loads and freeze/thaw conditions
- Construction of ADA-compliant sidewalks and a separated pedestrian pathway to provide connectivity to the St. Francis community and school
- Replace undersized and corroded metal pipe culverts with precast concrete drainage structures that have a 100-year life span
- Installation of curb and gutter and storm sewer to calm and slow traffic, limit vehicular access approaches, and separate pedestrians from vehicles
- Add roadway and pathway lighting, pavement markings, pedestrian crossing safety features, and improved signage including automated speed feed-back signs

Warrior Road

- Replacement of asphalt surfacing
- Repair/replace existing curb and gutter
- Install storm sewer to alleviant drainage issues
- Install new curb-side sidewalk that connects BIA Route 1 to existing sidewalks at the St. Francis Indian School
- Add roadway lighting, pavement markings, and pedestrian crossing safety features

Kilgore Rd



- Reconstruction and grading to lower hills and raise valleys to create a safer road profile with better sight distance
- Improve intersection sight distance
- Installation of rumble strips, wider shoulders, flattened in-slopes, and remove obstructions within the clear zone so if vehicles leave the road, they will have a chance to recover back to the road top
- Widen ditches and flatten back slopes to increase snow storage and drainage capacity
- Replacement of the road pavement structure with use of geotextiles to lengthen pavement lifespan and increase resilience to high truck loads and freeze/thaw conditions
- Replace undersized and corroded metal pipe culverts with precast concrete drainage structures that have a 100-year life span
- Replace the Minnechaduza Creek corroded metal pipes with a stronger, more resilient precast concrete triple-cell box culvert and armor the creek channel at the ends of the box
- Add roadway pavement markings, pedestrian crossing safety features in Kilgore, and improved signage including automated speed feed-back signs
- Design curve safety enhancements such as wider shoulders, center and edge line rumble strips, guardrail, chevrons, and speed feed-back signs

Maintenance Plan

State of good repair is a critical piece of the RST's Tribal Transportation Improvement Program (TTIP) as 25 percent of TTP funds are given to RST Road Maintenance to supplement the BIA 638 Road Maintenance funds. Cherry County Highway Department and RST Road Maintenance will crack and chip seals their respective roads every seven years following construction. Concrete box culverts wider than 20 feet will be listed in the National Bridge Inventory and are required to be inspected every year. Smaller culverts will be regularly inspected by maintenance staff.

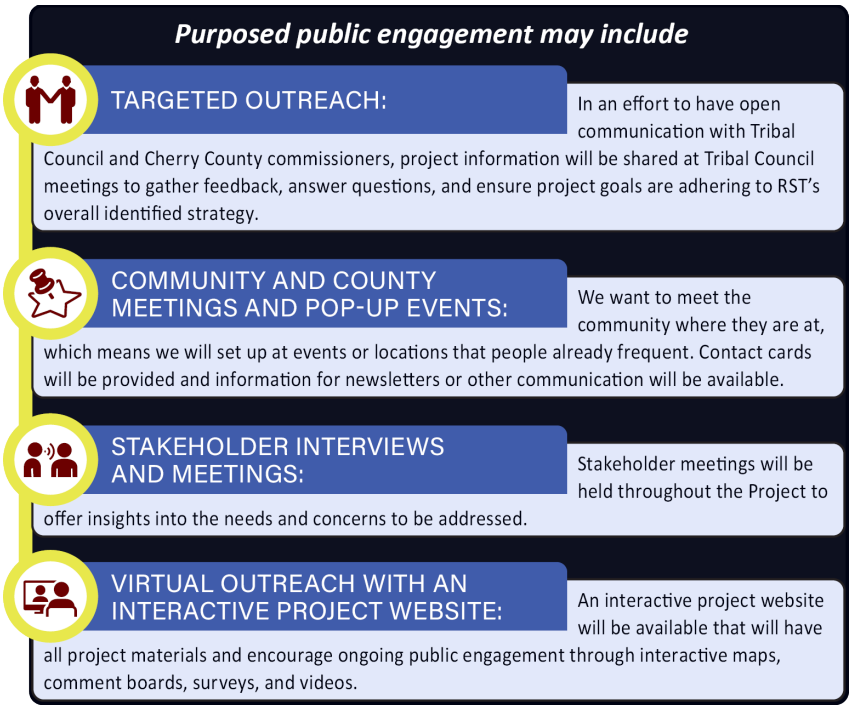
The average nationwide federal disbursement per state-controlled mile is $22,978. The Tribe receives only $5,559 per lane-mile in federal disbursements for administration, planning, construction, and maintenance activities. The transportation system supports regional travel including emergency vehicles, school buses, agricultural, and freight truck traffic. High maintenance costs due to infrastructure exposure to severe weather conditions provides an increased challenge for Tribal and County officials. While this phase of the Project is focused

solely on planning activities, it is anticipated that once the roads are fully reconstructed, annual maintenance costs will be reduced, in turn reducing strain on the current Tribal and County Road maintenance budgets. Dollars could then be utilized to address preserving road quality rather than struggling to continually repair major deficiencies. Cost savings could then be redistributed to additional Tribal and County roads in need of maintenance, repair, and/or reconstruction.

Due to the high reconstruction costs and limited tribal funding without grant assistance, BIA Route 1 is being considered for reversion to a gravel surface. Without reconstruction, the corridor's efficiency will be compromised, restricting the mobility of goods and people and stifling economic growth. Additionally, as road conditions continue to worsen, the risk to road users will escalate.

Partnership and Collaboration

Public engagement meetings were conducted during the development of the 2020 RSA, 2021 TTSP, and most recently for the draft 2026 LRTP. The groups identified a number of transportation safety issues and needs based projects. This project has been listed in all plans and is number one on the Tribe's Priority List.



RST tribal member, Cherry County resident, stakeholder, and landowner input and support of this project will ensure long-term project success. Since the project is in the planning phase, a formal public engagement plan has not been developed. As the project moves along, RST with the assistance of Cherry County Commissioners will utilize tactics and community involvement to implement effective methods to share information, explore needs and concerns, establish and strengthen relationships, maintain dialogue with the affected communities, and to assess and mitigate impacts throughout all stages of the transportation decision-making process. A formal public/stakeholder engagement plan will be developed during the planning process.

The RST Transportation Program started preliminary engineering design of 10-miles of the BIA Route 1 from BIA Route 501 at the south end of the St. Francis community to the South Dakota/Nebraska state line. Recently they have further partnered with the community of St. Francis, St. Francis Indian School, Kilgore community, and Cherry County Commissioners to incorporate 7 additional miles of deteriorated and dangerous roadways into this project to deliver benefits to the region by providing safer roadways, multi-modal transportation options, better

connectivity, and improved quality of life through the design of resilient infrastructure using innovating techniques and materials.

The RST Transportation Program will administer the Project and is collaborating with Cherry County, NE, the communities of St. Francis, SD and Kilgore, NE, and the St. Francis Indian School. Cherry County, NE has jurisdiction and performs maintenance on Kilgore Rd but does not have sufficient funding to reconstruct the Kilgore Rd and the Minnechaduza Creek bridge to a safe, efficient transportation corridor. The community of St. Francis and St. Francis Indian School is extremely poor and cannot financially support the project but will provide input and assist with community outreach and public engagement especially for the urban section and pedestrian infrastructure improvements of BIA Route 1 through St. Francis and Warrior Rd connection to St. Francis Indian School. BIA Route 1 and Warrior Rd (BIA 15) are under the jurisdiction of the RST Transportation Program through a direct-funding agreement with the Federal Highway Administration. The Tribe is collaborating with Cherry County, NE because the Kilgore Rd serves Tribal members and St. Francis Indian School administration and staff. Reconstructing BIA Route 1 without the connecting Kilgore Rd will not solve safety, connectivity, freight movement, and livability for Tribal members. Cherry County Commissioners also recognize the benefits to the county's stakeholders and residents and are in full support of the Project. Due to the RST Transportation Program's experience in administering federal projects of this size and scope, they are the champion and lead agency to complete the Project.

The RST Transportation Program will also coordinate with other utility owners within the Project corridor during the planning process. The RST Broadband is currently deploying a large broadband project, which will include installation of a tower near the Project, but not within the Project area. At this time there are no additional infrastructure projects within the Project area but if any develop, the RST Transportation Program and their engineering consultant will coordinate those activities during the Project planning.

RST regularly works in partnership with local, state, and federal agencies as part of project development. Partnerships and consultations specific to this Project include the communities St. Francis and Kilgore, Cherry County, Todd County, St. Francis Indian School, Rosebud Sioux Rural Water, Indian Health Services (IHS) for existing water and sewer utilities, South Dakota Department of Transportation (SDDOT), Nebraska Department of Transportation (NDOT), BIA, local law enforcement, and emergency services. These partnerships serve as an integral part of the project as they see the improvements to safety, mobility, quality of life, accessibility, and connectivity vital to the communities of St. Francis and Kilgore, Cherry County, and the entire Rosebud Indian Reservation. The Project has received tremendous support from local and community agencies as well as state representative support. All support letters for the Project can be found at: https://inputcentral.com/RSTBUILD.

Innovation

Innovative Technologies

The project includes Innovative Technology to lengthen the road life and provide additional safety to users. Innovative Technology, in the form of geotextile separator fabric, will be incorporated into the pavement structure design between the subgrade and the base course. The use of the fabric in the road design prolongs the life of the road, prevents siltation of the subgrade into the base course, and combats the effects to the pavement system caused by compaction loss of the existing inferior subgrade soil. The design has been used successfully in the region and there has been a noticeable improvement in road durability and resiliency where it has been installed. Additionally, by using the geotextile separator fabric, the aggregate base course is 90 to 100 percent salvageable at the end of the road's design life, making the reconstruction of the road after 50 or more years far less expensive. The project will incorporate recycled existing asphalt pavement top (3-inches) for use in the new asphalt pavement structure to reduce the amount of new aggregate needed and hauling costs. The remaining asphalt and base course will be salvaged for use in the new base course or as granular surfacing of connecting intersections and approaches. Precast concrete pipes and structures will be specified in the plans in lieu of cast-in-place to reduce construction timeline and traffic detour costs, epoxy paint will be used for longevity of striping, and LED lighting will be specified for installation to conserve energy and provide reduced utility costs.

The installation of shoulder rumble strips and centerline rumble strips is a newer innovative safety mechanism. By creating noise and vibration inside the vehicle when driven over, the driver is alerted and can quickly respond. When coupled with an adequate shoulder, the driver can make a corrective steering action and avoid a run-off-road crash. The rumble strips and centerline rumble strips also mark the lane limits during inclement weather when striping is difficult to see. Per NCHRP 641, shoulder rumble strips on rural two-lane roads have reduced single vehicle run-off-road fatal and injury crashes by 29 percent. Centerline rumble strips on rural two-lane roads have reduced targeted fatal and injury crashes by 44 percent.

Incorporation of an asphalt safety edge, which is also a newer innovative safety measure that has almost negligible cost, allows for vehicles leaving the roadway surface to safely correct and return to the roadway without tire scrubbing. With a 30-degree or greater edge vehicle recovery increases and the asphalt pavement edge becomes more durable.

Innovative Project Delivery

Through the planning and design process, RST will evaluate methods for innovative project delivery to incorporate during the construction process, such as project bundling, employment of Tribal members through the Tribal Rights and Contracting Office, and environmental consultations.