

2021 Montana Federal Lands Access Program

Proposal ID #: **MT-FY21- 24**
(For WFL Use Only)

(To be completed jointly by Federal Land Manager and State/County/Local/Tribal Government)

***All changes from previous are highlighted below**

Project Name	Sun River Bridge Replacement		
Route Name/Number	Pishkun Canal Road/Route ID 0028-2980		
Federal Land(s) Accessed (Show on Map)	Reclamation, BLM, National Forest Service (see Attachment #1)		
Agency (ies) with Title to Road, Bridge, Trail or Transit System	U.S. Department of the Interior, Bureau of Reclamation		
Agency (ies) with Title to Enhancement Facility			
Agency (ies) with Maintenance Responsibility for Road, Bridge, Trail or Transit System	Greenfields Irrigation District (GID), Fairfield, MT per 1926 O&M Agreement		
Agency (ies) with Maintenance Responsibility for Enhancement Facility			
Type of Proposal	<input checked="" type="checkbox"/> Capital Improvements <input type="checkbox"/> Planning <input type="checkbox"/> Research <input type="checkbox"/> Enhancement <input type="checkbox"/> Preventive maintenance <input type="checkbox"/> Safety Only <input type="checkbox"/> Transit		
Key Items of Work (check all that apply)	<input type="checkbox"/> Paving <input checked="" type="checkbox"/> Earthwork <input checked="" type="checkbox"/> Major Concrete Structures <input checked="" type="checkbox"/> Bridges <input type="checkbox"/> Major Culverts <input checked="" type="checkbox"/> Road Base or Surface Course <input checked="" type="checkbox"/> Roadside Safety Structures <input type="checkbox"/> Planning Study <input checked="" type="checkbox"/> Bicycle/Pedestrian Facilities <input checked="" type="checkbox"/> Safety Enhancements <input type="checkbox"/> Transit Facilities or Operations <input checked="" type="checkbox"/> Ancillary Parking Areas, Pullouts/Interpretive Sites <input checked="" type="checkbox"/> Major Drainage Improvements <input checked="" type="checkbox"/> Other (specify) Interpretative Signing & Informational Kiosk		
Proposed Work Summary	<p>Replace a 105-year-old, 225-foot long, single lane, structurally deficient bridge to improve public safety while maintaining and expanding access to numerous public lands, both Federal & State. Project also includes improving approach access to the river crossing to allow use by semi-tractor-trailers, recreational vehicles and towed trailers that currently are excluded. Pedestrian/bicycle paths as well as interpretative signage and an information kiosk are also planned to highlight the historic bridge as well as other historical features of Reclamation's Sun River Project.</p>		
Primary Visitor Destinations (Show on Map)	<p>Federal Destinations include: Gibson Dam and Reservoir, Diversion Dam Overlook, Pishkun Reservoir, Willow Creek Reservoir, Lewis & Clark National Forest, Bob Marshall Wilderness Area, Tunnel Lake Fishing Access, Pishkun Canal Road. Non-Federal Destinations include: Sun River Elk Refuge, Sun Canyon Lodge, Sun River boating and fishing, numerous campgrounds, pull-outs, trailheads, and fishing site accesses. These are shown on Attachment #1.</p>		
High Use Federal Recreation Sites and/or Federal Economic Generators (Show on Map)	<p>Greenfields Irrigation District maintenance, Gibson Dam and Reservoir, Diversion Dam Overlook, Pishkun Reservoir, Willow Creek Reservoir, Lewis & Clark National Forest, Bob Marshall Wilderness Area, Tunnel Lake Fishing Access, Pishkun Canal Road, BLM leased land. These are shown on Attachment #1.</p>		
Project Termini (Location)	Mile Posts	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
	Begin	Not Posted	47.618463
	End	Not Posted	47.61.8610
	Nearest Town	Augusta, MT	Fed Congressional District
			-112.692909
			-112.691298
		Fed Congressional District	MT-1
Estimated Total Project Costs	\$11,000,000.00		

Funds Requested from Federal Lands Access Program	\$9,230,000.00		
Project Length (miles)	1.5 miles	County	Lewis & Clark and Teton
Required Local Match (13.42%)	1,238,666	Cash Amt:	\$0.00 Other Amt: \$1,770,000.00
Required Local Contribution to Project: Describe the type and source of funds to provide the required 13.42% local match. Describe in-kind match, or eligible Federal funds that will be used to satisfy the match requirement. Include any limitations on the timing/availability of proposed match funds. Any proposed in-kind match must be concurred upon by FHWA in coordination with the PDC (or appropriate entity) before programming the project. In kind contributions are defined as donated funds, right-of-way, labor, services, materials or equipment that are donated for use in the project by the LPA or a third party.			
Eligible Federal Funds - The Montana Area Office of Reclamation has been selected to receive FLTP funds in FY2024 for this project in the amount of \$1,770,000. Reclamation has indicated that it has some flexibility on the actual FY in which funds can be applied. A Preliminary Engineering Report (PER) completed by TD&H Engineering evaluated 11 different Sun River Bridge replacement alternatives and river crossing options. The PER presented cost estimates for each alternative. The FLTP funds available from Reclamation exceed the local match requirement (13.42%) for the costs of the most probable alignment alternatives. The overall FY2024 cost of the Sun River Replacement Bridge Project is projected to be less than \$11,000,000. The eligible FLTP funds represent 16.1 % of this amount. The actual alternative to be implemented will be determined during final scoping by WFLHD and Reclamation. It is understood that any remaining local match obligations that may be required will be satisfied by Greenfields Irrigation District (GID).			
Other Contributions to the Project: Describe any additional contributions secured or being sought to implement the project proposal. Force account work during construction is typically not allowed as a match activity. Force account work is defined as the direct performance of highway construction work by a State transportation department, local government, or other government agencies eligible for FLAP, by use of labor, equipment, materials, and supplies furnished by them and used under their direct control (23 U.S. Code 635.203(c)). Please note applications proposing cash as match may rate higher in the evaluation criteria under "readiness" than those with proposed force account work. Provide a Public Interest Finding (PIF) if you are proposing any force account work (PIF form is located on the FHWA Montana FLAP website). Any proposed force account work will be concurred upon by FHWA (FHWA-MT and FHWA-WFL) in coordination with the PDC (or appropriate entity) as part of the evaluation process. Does this opportunity possibly leverage other funds?			
Other funding contributions being sought include a Treasure State Endowment Program (TSEP) grant application from the State of Montana. The bridge spans the boundary between the Lewis & Clark County and Teton County. GID, in conjunction with one of these local governments, will submit a TSEP grant application in May 2022 for any gap funding, escalation/inflation funding, or additional local matching funds that may be necessary for the project. TSEP funds would not be available until July 2023. The TSEP grant application request would be for at least \$500,000. Its success does not relieve GID of its obligation to provide any remaining local match requirement necessary beyond that of Reclamation's FLTP award (\$1,770,000).			
Contributions already received include \$2,500 in cash donations from local businesses and landowners who contributed when they learned of GID's effort to replace the crossing. These donations were used to fund the preliminary engineering studies.			
In-kind contributions already incurred include \$30,000 that GID paid in 2019 to a local engineering firm (TD&H Engineering). TD&H produced a Preliminary Engineering Report (PER) which detailed 11 different potential bridge replacement alternatives as well as related construction cost estimates. In addition, a Draft Environmental Assessment (EA) Document was prepared that described potential environmental impacts of the various replacement alternatives. This information was used to select 3 preferred alternatives for future consideration and to develop appraisal-level cost estimates. However, it is understood that the Western Federal Lands Highway Division (WFLHD) will be the lead agency to deliver this project and that actual alignment selected will depend on their efforts.			
The lead agency for project delivery: The lead agency for project delivery will usually be the WFLHD. Project delivery consists of federal environmental compliance, design, construction contract advertisement, and construction contract administration. However the lead agency and participating agencies roles will be considered during proposal evaluations. Decisions regarding lead and participating agency roles will be based on the type of project, project complexity, capabilities assessment and how the work is proposed to be delivered. The delivery agency will be mutually agreed to by a coordinated effort with MDT, FHWA-WFL, PDC, and FHWA-MT. The delivery agency shall meet regulations, delivery standards, procedures, an capabilities as identified in the attached assessment at the time of this application. If the delivery agency is not able to meet the capabilities identified, they will not be able to deliver a FLAP funded project. If proposing to deliver a project, the attached capabilities assessment must be completed and submitted with this application. TAG may approach the project applicants during proposal evaluation to discuss project delivery. The WFLHD will still be responsible for stewardship and oversight of the project to assure compliance with federal requirements.			
It is understood and expected that the lead agency for the new Sun River Bridge Crossing will be the Western Federal Lands Highway Division. Input and assistance, if necessary will be provided by Reclamation and the Greenfields Irrigation District.			
Other Funding Contributions to Project	\$500,000.00	From	Treasure State Endowment Program

Acres of Federal Land Accessed by the Project

Reclamation: +12,000 acres; Lewis & Clark National Forest: +100,000 acres; BLM: +3,000 acres Shown on Attachment #1.

Functional Classification of the Roadway (Show official designations of route)	<input type="checkbox"/> Principal Arterial (NHS)	<input type="checkbox"/> Major Collector	<input checked="" type="checkbox"/> Local Road
	<input type="checkbox"/> Minor Arterial (NHS)	<input type="checkbox"/> Minor Collector	

Traffic Volumes	Current				21 Year Projections		Basis for Projections? (e.g. Transportation Plan, population growth rate...)
	Actual Counts		Estimated		Start of Project	End of Project	
	Start of Project	End of Project	Start of Project	End of Project	Start of Project	End of Project	
Average Daily Traffic (ADT) on Highway	NA	NA	30	30	300	300	Estimated by Reclamation
Seasonal Average Daily Traffic (peak season) (SADT) on Highway	NA	NA	30	30	300	300	No Distinction Between ADT & SADT Has Been Documented
% Trucks	NA	NA	0	0	5	5	Bridge Load Limits and Access Preclude Any Truck Traffic
% Federal Land Related	NA	NA	95	95	95	95	Very Few, Non-Federal Destinations Exist

Comments
 Basis for Traffic Counts
 Traffic counts have been estimated by Reclamation in their biennial bridge inspection reports. However, the traffic estimates do account for the potential and likely crossings that will result when a suitable replacement bridge and navigable approach roads are constructed. The condition of the existing bridge and the nature of the road approaches are tremendous restrictions to the number of possible crossings. The current weight load restriction (5 tons) excludes vehicles larger than passenger type vehicles i.e., cars and pick-ups. The narrowness and appearance of the existing bridge deck/driving surface can even deter some drivers from wanting to cross the bridge. The approach roadways are narrow, have steep grades and sharp curves and switch backs which preclude larger vehicles and towed units. Again, an improved crossing would result in a drastic increase (est. 10-fold) in usage and access to Federal lands and recreational sites.

	NBI Structure Number	Dimensions (Overall Length x Width)	Bridge Type	No. of Spans	NBIS Sufficiently Rating (1-100)
+ -	MTA-SR-001	221ft x 14.5ft	Steel Truss	2	14.8

Pavement Condition						
	Route No./Segment	Mileposts	Surface Type	Surface Rating	Rating Method	Comments
+ -	0028-2980		Gravel			No Conditional Assessment has been completed yet.

Problem Statement: What purpose does this transportation facility serve? What is the need for this project? Who will this project serve (such as skiers, communities, hikers...)? What are the conditions requiring relief? Describe the consequences if these conditions are not addressed. Describe physical and functional deficiencies, anticipated changes in use, safety problems, capacity issues, bridge deficiencies, pavement or surface conditions, etc.

PURPOSE OF EXISTING FACILITY:
 The Sun River Bridge (NBI# MTA-SR-001) was originally built in 1916 by Reclamation as part of the Sun River Project. Its primary purpose at the time was to support and convey an 8-foot diameter wood-staved, siphon pipe across the Sun River. The original design intended for lightly loaded vehicles to travel across the upper truss chord of this single-lane structure, primarily for to support GID's maintenance duties although it has been used by the general public from the start. In the 1940s, the wood-stave siphon was removed and replaced with a buried, cast-in-place concrete siphon that passes under the Sun River channel.

The bridge crossing, although highly restrictive, remains open to the public as well as providing limited access for GID maintenance crews. The purpose of this FLAP application and the Sun River Bridge Replacement project is to replace the existing, structurally deficient, and functionally obsolete bridge and access roads with a new crossing that improves public safety while maintaining and expanding access to Federal lands.

NEED FOR THIS PROJECT:

This project is needed to provide access to Federal lands, not only for the land managers and agency personal, but also for the general public and those who leases these lands.

This project is needed to maintain a local crossing across the Sun River. Without this bridge, vehicular traffic would have to travel over 56 miles taking over 2 hours simply to get to the other side of the river. For larger vehicles and towed trailers, the detour route is longer; 76 miles and nearly 3 hours. The detour routes are shown on Attachment #2. This bridge provides a vital link between the recreational sites on each side of the river. This is critical to the local businesses and communities as a local economic generator. The vast number and variety of recreational sites and travel destinations are shown on Attachment #1.

This bridge is also needed by the Greenfields Irrigation District as it allows the resident dam tender, based at Gibson Dam, to travel and inspect the Pishkun Supply Canal (PSC) twice a day, seven days a week from April to September. The PSC supplies water at a rate of 1,400 cfs from the Sun River Diversion Dam downstream 14 miles to Pishkun Reservoir where it is then released to irrigate over 83,000 acres within Greenfield Irrigation District.

In addition, a new bridge and crossing are needed to mobilize construction equipment and materials for repairs along the Pishkun Supply Canal (PSC) to Pishkun Reservoir. An example of this need occurred this Spring when a portion of the roof section of Tunnel #3 collapsed. Even though Tunnel # 3 is just 5 miles downstream from the Sun River Bridge along the PSC, the repair materials had to be delivered using the northern detour route through Choteau, MT (see Attachment #2).

This project is needed because the current bridge is structurally deficient, is beyond its service life, is a safety hazard, and the bridge and approach roadways restrict the number of crossings as well as the types of vehicles. The structural condition and fracture critical members mandate an in-depth, arm's-length inspection every two years. The last inspection was September 2019, and the next inspection will be Fall of 2021. Given the age, condition, and limitations, it is neither prudent nor cost-effective to attempt extensive repairs to the bridge crossing.

THOSE SERVED BY THIS PROJECT:

The bridge is open to the public and is used by Reclamation, Greenfields Irrigation District, local landowners, and numerous State and Federal agencies. Public access is to United States National Forest Service (NFS), Bureau of Land Management (BLM), and Reclamation (BOR) lands. Public land access includes those for recreation, hunting, fishing, boating, hiking, sight-seeing, Federal and State land lessees, as well as agency personnel. The bridge spans the Lewis and Clark/Teton county line. The bridge is used for local law enforcement and emergency response vehicles including fire-fighting activities. The bridge is also used by the Sun River Watershed Group and the Rocky Mountain Front Weed Roundtable in their efforts to help control and manage noxious and invasive weeds.

The Sun River Crossing also benefits use, access, and management of State of Montana lands including personnel of the Montana Department of Natural Resources and Conservation (DNRC) and Fish, Wildlife and Parks (FW&P). Reclamation leases space to MT FW&Ps at both Willow Creek and Pishkun Reservoirs for fishing access, boat launches, campgrounds, and restrooms.

The new bridge and approach improvements will be built along a different alignment than the existing bridge which will increase use of the crossing both in frequency and the size and types of vehicles. Once the new bridge is complete, Reclamation proposes that the existing historic bridge and access road be converted for pedestrian, mountain bike, and equestrian use. This conversion will include necessary repairs to the existing bridge and constructing interpretive signs and kiosks detailing the historic bridge and other Reclamation features.

CONDITIONS REQUIRING RELIEF:

The current structure is a two-span, steel truss bridge supported on concrete, terminal abutments, and a central concrete pier. The last inspection of the bridge by Reclamation took place in September 2019. The structural evaluation resulting from that inspection indicates that the bridge is in overall poor condition and has been deemed Structurally Deficient. Based on this inspection, the Federal Highway Administration method assigns an NBIS Sufficiency Rating of 14.8.

A Preliminary Engineering Report (PER) was completed by TD&H Engineering at the request of GID in 2019. The PER echoed Reclamation's assertion that the bridge is structurally deficient and is also functionally obsolete, as stated in the PER:

"The sufficiency rating formula considers structural adequacy, functional obsolescence, and level of services provided to users. The ratings vary from 0 (entirely insufficient) to 100 (entirely sufficient) and are indicative of bridge sufficiency to remain in service. The Sun River Bridge has a sufficiency rating of 14.8, indicating that the bridge is insufficient, structurally inadequate, and functionally obsolete."

The current load restriction of 5 tons precludes use of heavier vehicles. Also, larger maintenance vehicles or trailer units are unable to traverse the approach roadways due to the narrow widths, steep grades and sharp switchbacks and curves. These types of vehicles must undertake a 56-mile detour just to reach the other side of the river for maintenance. Larger, heavier vehicles and towed units must undertake a longer, 76-mile detour (see Attachment #2). The same is true for campers, boats and livestock trailers accessing Federal lands.

CONSEQUENCES OF NON-REPLACEMENT:

A consequence of not replacing the bridge, means the bridge will continue to age, deteriorate, and eventually experience catastrophic failure or the bridge will be condemned and closed for public use. Access to Federal lands will be drastically hampered as small vehicle

and local access would be forced to take the 56-mile detour. Local businesses would be detrimentally impacted as well as the two local counties' tax bases. Also, the existing historic bridge would not be converted to a pedestrian/recreational crossing and the interpretative signage and kiosks would not be constructed.

GID is responsible for the overall maintenance of the bridge. Reclamation inspects the bridge every two years. Over time conditions continue to worsen, and the list of deficiencies grows. The PER determined that the cost of implementing future substantial repairs to the 105-year-old bridge is short-sighted and therefore is neither cost-effective nor advisable. It was recommended that resources and effort should be extended towards replacing the bridge and improving vehicular access down to the crossing.

PHYSICAL AND FUNCTIONAL DEFICIENCIES:

The original design parameters, nature of construction, length of service, and on-going deterioration of the bridge are all readily evident and collectively contribute to the "Structurally Deficient" determination. Some of the steel members in the bridge are "fracture critical" because they are in tension, or with a tension element, whose failure could cause a portion of, or the entire bridge to collapse catastrophically. According to National Bridge Inspection Standards (NBIS), Fracture Critical Inspections must be performed at least every 24 months to examine the fracture critical members within arm's length of the steel members to identify and monitor critical deficiencies. This type of inspection, which is performed by Reclamation personnel, requires the use of rope and climbing techniques and is very labor intensive. A bridge inspection truck with an extending boom cannot access the bridge deck.

As of the 2019 inspection, the bridge railing, transitions, approach guardrail, and terminal sections do not meet currently applicable safety standards. Deterioration of support material below the concrete jersey barriers at the north end approach has progressed to the point that the barriers span across open, eroded areas and rest against the existing approach guard rail system, which is inadequate. In this existing condition, the barriers and approach rail system would not sufficiently resist a substantial vehicle impact (see Photo #14).

The bridge deck consists of 6.5-inch thick, precast concrete panels. These deck panels are not secured to the underlying steel support stringers, thus allowing for lateral movement i.e., "walking" of the precast concrete decking under repetitive vehicle loadings (see Photo #8). An isolated concrete pier located on the north approach is severely deteriorated. Riprap placed within the approach span has added a substantial and undesirable lateral load to the structure and therefore could displace the supporting structure off the pier, leading to failure of the approach span.

The steel truss portion of the bridge has experienced damaged in the past from debris-laden, flood flows. The impacts have resulted in twisted, bent, and buckled members. Examples are shown in Photos #10, #11, and 12. A new bridge would have a higher elevation above the Sun River channel thereby eliminating future, flood-related impacts.

Functionally, the bridge approach sections consist of narrow, steep roadways with switchbacks and sharp curves at both ends of the bridge, which require a drastic reduction in speed when approaching the structure. These roadways also preclude larger vehicles or trailer units from using the crossing (see Photos #2 through #5).

The bridge requires concrete repairs to one concrete footing and rehabilitation of the roller bearings, as well as a variety of less extensive maintenance items (see Photos #6 and #7). There are also several items identified in the inspection which need to be addressed to provide for safe travel to the public. Due to the public safety concerns and the magnitude of repairs required for the bridge to remain serviceable into the future, it has been deemed practical by Reclamation and the TD&H PER to pursue bridge replacement alternatives as soon as possible. Functionally, replacing the crossing would significantly increase and expand access to Federal and State lands.

An adjacent and related issue involves the Pishkun Supply Canal which has capacity of 1,400 cfs and is operational from April to September. This canal supplies irrigation water from the Sun River Diversion Dam upstream of this bridge downstream 14 miles to the Pishkun Reservoir and then eventually for delivery and use on the District. On the south side of the bridge crossing, seepage losses emerge from the adjacent hillside and flow down the existing roadway towards the bridge impacting the roadway's condition and travelability (see Photo #5). The most likely potential bridge replacement alternatives require considerable earthwork to widen and improve the access roadways. In addition, the curves will need to be more gradual, and the approach grades will need to be reduced. Geotechnically, the required excavation and earthwork will be impacted by the canal seepage losses as new excavation will promote seepage. Also, a reduction in the global slope stability will result from the increased canal seepage losses and slope steeping. A cost-effective solution was determined which involves the construction of a concrete lining for the Pishkun Supply Canal in the vicinity of the new bridge crossing and approach roads to control and reduce seepage losses. Since the actual alignment to be implemented has yet to be finalized, the cost of the canal liner was included in the project cost estimate.

Detailed Description of Proposed Capital Improvement or Enhancement: Describe how the proposed project will address the problem. Describe the overall design concept, scope of work, any unusual design elements, design or operational standards, and any work affecting structures (bridges and major culverts). Include widths, surfacing type, surfacing depth, earthwork needs, roadside safety features, ancillary parking areas, signing improvements, bridge work, guardrail improvements, etc. Include optimum year work should be done and year work needs to be done no later than.

DETAILED DESCRIPTION:

In short, the proposed project includes replacing the structurally deficient bridge with a new structure meeting current design and safety standards. The new crossing will have a new alignment separate from the existing alignment. The new approach roadways will facilitate use by semi-tractor trailers and other GID maintenance equipment, as well as large RVs, livestock trailers, and towed recreational units

which are currently precluded from using the existing crossing. This project will not only maintain access to Federal and State lands by replacing a failing bridge but will greatly expand land access by improving the crossing. In addition, public safety will be improved. The existing historic bridge will be maintained to allow continued use for recreational purposes. The adjacent Pishkun Supply Canal will be lined to reduce seepage losses thus improving the long-term, slope stability of the required earthwork for the new roadway approaches.

The new bridge will be 2-laned, having a travelled surface width of 24 feet. The structure will incorporate crashworthy bridge rail and approach rail on both sides of the roadway. The capacity of the bridge will be designed for HL-93 live loading conditions in accordance with current AASHTO LRFD specifications. Placement of the bridge will be sufficiently high to allow adequate freeboard for the +100-year design flood event of the Sun River passing below.

Eleven possible alternatives, with varying superstructure types, span configurations, and alignments were evaluated in the PER completed in 2019 by TD&H Engineering. The alternatives are shown on Attachment 3#. In addition, corresponding cost estimates were developed, and the potential environmental impacts summarized for each of the 11 alternatives.

In the PER, TD&H evaluated all 11 alternatives and then short-listed and identified 3 preferred options. An appraisal-level estimate was developed for the three preferred alternatives. It is understood that the actual preferred alternative to be designed and constructed will be determined by the lead agency to deliver this project i.e., Western Federal Lands Highway Division, in conjunction with the owner, Reclamation, and the primary user, Greenfields Irrigation District.

The three preferred options include of Options 1A, 7 and 10 which are shown on Attachment #3. The expanded view of one of the short-listed alternatives (Option 7) is shown on Attachment #4. Each of the three options include 3-span configurations comprised of prestressed concrete bulb tees and a cast in-place deck wearing surface. The substructure consists of intermediate drilled shafts at each edge of the river and spread footing and abutment foundations at each end of the crossing. Each alternative varied in length because of the of the proposed crossing location, the degree of bridge alignment skew and the height of crossing above the river. These variations had a tremendous effect on the nature and magnitude of the necessary earthwork for the corresponding roadway improvements.

The design criteria for the roadway approaches includes a 22-foot gravel driving surface with 4:1 ditch slopes. Backslopes will depend on the subsurface conditions and will most likely include a considerable use of retaining wall systems. The grades will be reduced to a maximum of 5.5% and curves will be designed to ensure safe and adequate turning of semi-tractor trailer combos. Guardrail will be installed where required.

Cost estimates were developed in accordance with FAC 09-01. The included cost estimates account for inflation and are estimated for 2024-year dollars. Cost estimates also include a 20% contingency on the construction phase. The cost estimates included \$200,000 for removal of the existing bridge. Rather than remove the existing historic bridge, it is proposed to convert this bridge and access road for pedestrian and recreational use. The costs to convert the bridge and add interpretive signage and kiosks could be done for the \$200,000 bridge removal cost.

UNUSUAL DESIGN ELEMENTS & CONSIDERATIONS

Geotechnically, subsurface conditions consist locally of shallow bedrock of varying lithology and are favorable for foundation support of the proposed bridge structure and as a guard against river scour. Unfortunately, these same conditions will impact design and construction of the new approach roadways. It is anticipated that pre-split blasting will be warranted to facilitate excavation and construction. The primary concern is the buried 10.7-foot diameter, cast-in-place concrete siphon buried parallel to the existing bridge that conveys the Pishkun Supply Canal under and across the Sun River. This structure was built in the early 1940s and its present condition is not known. It will be necessary to dewater the siphon and conduct an inspection prior to any consideration of rock blasting.

The upper soils unconformably overlie the bedrock and consist of coarse gravel alluvium which are highly permeable. Seepage losses from the Pishkun Supply Canal (PSC) exit the hillside along the gravel/ bedrock contact and follow the existing approach roadways down to the bridge. This problem creates maintenance and trafficability issues (see Photo #5). The proposed earthwork to improve access will most likely exacerbate the seepage problem and initiate the potential for slope instability. If one of the crossing alternatives that is adjacent to and immediately downslope from the PSC is selected, it will be necessary to seal the wetted perimeter of the canal with a concrete lining incorporating a basal drainage system. Attachment #4 illustrates the required earthwork in the vicinity of the existing Pishkun Supply Canal.

The estimated costs for this project are elevated for two reasons. First, the location is remote with respect to worker lodging and per diem and importing construction materials. Second, any work related to the siphon or canal will require winter construction as the normal water conveyance season is April to September. Another aspect of construction is that the existing crossing must remain operational while the replacement alternative is being constructed. Given the proximity to Threatened & Endangered species, there may be other time of year constraints.

Detailed Description of Proposed Transit Service: Provide operational details of the proposed service. What are specific destinations the route will serve? Is the service year-round or seasonal? What are the operating dates/service hours/day of week? Describe transit route details, including miles, number of stops, and variability in service operations. Describe any marketing, way finding, or other information that will be disseminated to promote service.

Project being proposed is not a Transit Service project.

Detailed Description of Proposed Planning: Describe the details of this planning and the final product that will be developed. Would this planning effort support projects that could be submitted under future Federal Lands Access Program requests for proposals?

Project being proposed is not for a Planning project.

Detailed Description of Proposed Research: Describe the type of research and the final product for this effort. Describe the need for the research and how this research enhances safety, access or sustainability.

Project being proposed is not for Research.

Right-of-Way Acquisition: Describe which agency (agencies) has title for the project and how that title is documented. Describe which agency (agencies) has maintenance responsibilities for the project. Provide any agreement(s), easement(s) or documentation to support title/jurisdiction. Does new ROW need to be acquired? If so, how much, how many owners, and what is the anticipated time (months) to acquire all needed ROW? How does the applicant plan to acquire the ROW? Will coordination with any railroads be needed? What is your agency's experience acquiring ROW for federally-funded or assisted projects?

ROW DISCUSSIONS

The Sun River Bridge, the Sun River Siphon, and the Pishkun Supply Canal are owned by Reclamation. In accordance with a 1926 O&M agreement, GID is responsible for the operation and maintenance of these Reclamation structures. The bridge is not at risk for Turn Back. For this project, the supply canal, siphon, existing bridge, and approaches are located within the Boundaries of the Lewis & Clark National Forest on land withdrawn for Reclamation's use. Reclamation is the owner of the structures and has authority over the withdrawn land.

Most of the bridge replacement alternatives evaluated are contained within Reclamation's withdrawn land. The approach road improvements on the downstream side of the new crossing will involve expanding and amending existing easements with a private landowner. This landowner has expressed support for the new bridge and road improvements.

A couple of alignment alternatives involved adjoining BLM land. GID and Reclamation have a good history working with BLM on easement issues involving irrigation infrastructure. Given the benefit of the Sun River Replacement project to BLM, cooperation is fully anticipated, in fact, BLM has submitted a letter of support for this project and the FLAP application (see Attachment #5). Another alternative (not being considered) involves privately owned land. Therefore, ROW concerns and easements are not considered an issue for this project. The land ownerships and various alignment alternatives are shown on Attachment #3.

Utilities: Identify utilities in the roadway corridor or project site. Would relocation be needed? What agreements exist and who pays for relocation costs? Provide name of companies and any existing permits/agreements for the facilities within the public ORW.

The only utilities in the anticipated project area are a single-phase electrical distribution line and GID's supply canal and siphon. The electrical line is owned by the Sun River Electric Co-Op (SREC) and a relocation of this line is not anticipated. SREC is in support of this project and also provided a letter of support. For several bridge alignment alternatives, the supply canal warrants a concrete lining to eliminate seepage losses that would otherwise impact the proposed improvement project. The siphon requires dewatering and an inspection to evaluate its condition in relation to any proposed blasting activities that may be necessary to facilitate roadway excavation and construction. Costs related the siphon and canal concerns have been incorporated into the construction cost estimates for those alternatives. Conflicts and impacts to non-project utilities are not considered an issue for this project.

Project is identified within the following (Check all that apply and show plan name)	
<input type="checkbox"/> System Transportation Plan	
<input type="checkbox"/> Federal Land Management Plan	
<input type="checkbox"/> Regional Transportation Plan	
<input type="checkbox"/> County Transportation System Plan	
<input type="checkbox"/> Tribal Transportation Plan	
Would the proposal require modification or amendments to any of these plans?	

Which of the following environmental and social issues are within the project area?

	Yes	No	Unknown	Comments
Wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wetlands related to the Sun River and the Pishkun Supply Canal
Threatened & endangered Species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Given the promity to the Rocky Mountain Front and the NFS boundaries, T&E will be concern that must be addressed in the environmental documents.
Other Fish & Wildlife Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drilled shaft foundations are anticipated in the River for support of the new bridge. Preliminary discussions (albeit unofficial) with Montana FW&P indicate that minor scour pools provide favorable fish habitat when the Sun River levels are low in the summer months.
Wildlife Movement Corridors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bear, Elk, Deer & Sheep
Wild & Scenic River	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The Sun River is not a wild and scenic river
Non-Attainment Air Quality Areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unknown
Cultural/Archeological/Historic Sites	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The historic nature of Reclamation structures and activity in the area extends back over 100 years.
Public Parks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Numerous state and federal campgrounds and fishing access sites are in the general vicinity.
Wildlife Refuge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sun River Elk Refuge is south of the bridge crossing.
Hazardous Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No known hazardous materials exist within the project area
Stream Encroachments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bridge construction will require egress into the Sun River

Describe any other environmental or social issues that should be considered that are within the project area: Is the route included in an area receiving special management considerations for water quality, wildlife security, connectivity?

There are no known environmental or social issues that need to be addressed.

Describe the range of attitudes, both support and opposition, that this proposed project may receive from organizations, the public and within your own agency: State the basis for this supposition and include coordination efforts and public involvement efforts completed to date. Will this proposal be your agency's priority and will staff resources be dedicated to assure completion?

Support for this proposed project has been all positive. This includes the public, local landowners, local businesses, recreationalists, and all State and Federal agencies that GID has discussed the project with. GID has received numerous letters of support for this project and local community members have even contributed financially towards GID's efforts to secure funding for the replacement bridge. The Teton County Commissioners have embraced and expressed support for the new bridge as they realize the economic benefits to the County. To date, GID has received \$2,500 in unsolicited cash donations from local landowners and local businesses who learned that efforts were underway to upgrade the crossing. The GID Board of Commissioners as well as the staff and management of GID are in full support of the project.

****Transit Supplemental Questions:** *For Transit Proposals only*, please answer the following: If transit service is currently being provided to this Federal Land Management Agency unit or service has been provided in the past, please provide details about service parameters, ridership, cost per passenger, and any other pertinent information. What revenue will be collected to support the service? Describe fare pricing, discounts, pass programs, etc. Provide number, type, and age of current fleet. What is the daily number of riders estimated currently and/or at project completion? Describe how the proposed transit service will be financially sustainable with current and future sources of funding.

Not a Transit Project

****Research Supplemental Questions:** *For Research Proposals only*, please answer the following: Please provide details on how this research is broad-based and not narrowly focused on a localized problem. Provide specific examples showing how this research product can be used across multiple agencies.

Not a Research Project

Cost Estimate for Capital Improvements and Enhancement Projects

Fill-in estimates for appropriate items. Add items as needed. **Use Current Unit Prices.**

Quantity	Item	Unit Price	Unit	Total
5.5	Clearing and Grubbing	\$4,500.00	Acres	\$24,750.00
146,900	Roadway Excavation	\$15.00	Cubic Yards	\$2,203,500.00
	Imported Borrow		Cubic Yards	
	Sub-Excavation		Cubic Yards	
	Water / Dust Abatement		Gallons	
	Recycled Asphalt (milling, pulverizing, ripping)		Square Yards	
	Asphalt concrete pavement		Tons	
4,450	Aggregate Base (may include stabilization)	\$30.00	Cubic Yards	\$133,500.00
	Aggregate Sub-Base		Cubic Yards	
	Major Culverts		Each	
	Minor Culverts		Each	
4,450	Retaining Walls	\$82.15	Square Feet	\$365,567.50
865	Rip Rap & Slope Protection	\$100.00	Cubic Yards	\$86,500.00
2	Revegetation	\$13,866.50	Acres	\$27,733.00
	Signing		Square Feet	
	Pavement Marking		Linear Feet	
800	Roadside Safety (barriers, guardrail)	\$25.00	Linear Feet	\$20,000.00
9,800	Bridges	\$210.00	Square Feet	\$2,058,000.00
1	Traffic Control	\$3,500.00	Lump Sum	\$3,500.00
1	Utility Relocation	\$6,500.00	Lump Sum	\$6,500.00

Use table on the next page for additional items.

			Sub-Total	\$6,787,087.50
	Mobilization (As percentage of Sub-Total) Typically 10%, input estimated percentage in decimal form. For example: 0.10	0.12	Lump Sum	\$814,450.50
	Contingencies(As percentage of Sub-Total)Typically 30%, input estimated percentage in decimal form. For example: 0.30	0.2	Lump Sum	\$1,357,417.50
			Total Estimated Construction Cost	\$8,958,955.50
			Estimated Scoping Costs	\$25,000.00
			Estimated Preliminary Engineering Costs (As a percentage of the Total Estimated Construction Cost) Typically 5 to 25 percent, depending upon project scope and complexity. Input estimated percentage in decimal form. For example: 0.15	0.12
0	Estimated Right of Way	\$0.00	Acres	\$0.00
			Total Estimated Preliminary Engineering Costs	\$1,144,869.44
			Estimated Construction Engineering Costs (As a percentage of the Total Estimated Construction Cost) Typically 5 to 20 percent, depending upon project scope and complexity. Input estimated percentage in decimal form. For example: 0.10	0.10
			Estimated Construction Modifications (CM) (As a percentage of the Total Estimated Construction Cost) Cost to cover changes during construction, typically 10 percent of construction cost. Input in decimal form. For example: 0.10	895,895.55
			Total Project Costs	10,999,720.4875

Cost Estimate for Capital Improvements and Enhancement Projects (Cont.)

Add items as needed. Use Current Unit Prices.

		Quantity	Item	Unit Price	Unit	Total
+	-	1	Remove or Convert Existing Bridge	\$200,000.00	Lump Sum	\$200,000.00
+	-	1	Blasting Consultant	\$10,000.00	Lump Sum	\$10,000.00
+	-	1	Tempoary Erosion Control	\$30,197.00	Lump Sum	\$30,197.00
+	-	4	Guardrail STL/BR APPR-TY 2	\$2,000.00	Each	\$8,000.00
+	-	4	Guardrail Term Sect	\$3,010.00	Each	\$12,040.00
+	-	7,500	Concrete Canal Lining, 8 inches thick	\$100.00	Square Yards	\$750,000.00
+	-	2,050	Perm Erosion Control - High Surv	\$6.00	Square Yards	\$12,300.00
+	-	1	Work Bridge	\$800,000.00	Lump Sum	\$800,000.00
+	-	1	Siphon Dewatering & Evaluation	\$35,000.00	Lump Sum	\$35,000.00
Sub-Total						\$1,857,537.00

Comments: The quantities and unit prices are representative of the three likely alternatives developed in the PER by TD&H Engineering. It is understood that the WFLHD will deliver the project and that the actual alignment and final quantities have yet to be determined. Depending on the final alignment chosen, some quantities may vary, and some line items may not be warranted. As presented, the quantities and unit prices reflect sufficient detail to construct the most likely selected alternative.

Cost Estimate for Transit Projects

Add items as needed. Use Current Unit Prices.

		Quantity	Item	Unit Price	Unit	Total
+	-					
Total Project Costs						

Comments: Not a Transit Project

Cost Estimate for Planning and Research Projects

Add items as needed. Use Current Unit Prices.

		Quantity	Item	Unit Price	Unit	Total
+	-					
Total Project Costs						

Comments: Not a Planning or Research Project

How does the project relate to the following evaluation criteria?

1. SAFETY

Improvement of the Transportation Network for the safety of its users.

- a) How many and what type of crashes have occurred on the project site in the last five years? Describe the basis for your information and include reported accidents and anecdotal information. Provide maps showing accident locations.
- b) How would the proposed project improve unsafe conditions such as crash sites, inadequate sight distance, roadside hazards, poor vertical/horizontal alignment, hazardous intersections, inadequate lane and shoulders widths, etc?
- c) How does the proposed project address potentially unsafe locations such as where recreation use may create traffic conflicts with local or through traffic?
How does the proposed project address areas where recreation use may create traffic conflicts with local or through traffic?
- d) How does the project address safety for a wide range of users (freight, destination motorists, touring motorists, bicyclists, pedestrians, public transportation)?
- e) What are the results/recommendations of any road safety audits conducted for the project?
- f) Is the project identified in a strategic safety plan?

1. SAFETY

a) There have not been any "reported" crashes related to the bridge within the last 5 years although it has been observed by GID maintenance crews that collisions or vehicular impacts have occurred to the bridge and guard rails. This is typically the result of the narrow bridge and the sharp curves at either end of the bridge and people trying to cross the bridge with large vehicles and trailers. Occasionally vehicles will drive into the adjacent Pishkun Supply Canal.

The safety issues impacting GID maintenance crews, the public, and Federal land managers involve components of the bridge. These issues are summarized as follows:

- **Weight Limitations** – The bridge is currently load restricted to 5 tons. Public transportation on the area roadways includes heavier vehicles beyond 5 tons. Some of the steel members in the bridge are "fracture critical" because they are in tension, or with tension elements without redundancy, whose failure could cause a portion of, or the entire bridge to collapse. Members of the public are not always cognizant of their vehicle's weight, and they may unknowingly be putting themselves and the bridge in danger.
- **Bridge Railings** – The top chord of the steel truss structure serves as the bridge guardrail. This condition is not desirable because vehicular impact to the truss structure can cause damage and collapse of the entire truss. As of the 2019 inspection, the bridge railing, transitions, approach guardrail, and terminal sections do not meet currently applicable safety standards. Deterioration of the foundation support material below the concrete jersey approach barriers at the north end approach has progressed to the point that the barriers span across open, eroded areas and rest against the existing approach guard rail system, which is inadequate. In this existing condition, the barriers and approach rail system would likely not sufficiently resist a substantial vehicle impact.
- **Approach Guardrail** – Concrete jersey barriers on the northeast approach are not properly supported. Substantial loss of subgrade material below the barriers is leaving the barriers in potentially unstable conditions. As such, the existing barrier may not be capable of containing an errant vehicle.
- **Concrete Deck** - The bridge deck consists of 6.5-inch thick, precast concrete panels. These deck panels are not secured to the steel support stringers, thus allowing for lateral movement ("walking") of the precast concrete decking under repetitive vehicle loadings. The deck panels are free to slide off the bridge and fall to the river below, putting people below in danger. If a deck panel were to fall off, the bridge users would then also be in danger of falling through the hole in the deck.
- **Steel Superstructure** – Besides fracture critical members without redundancy that could fail catastrophically, the steel truss superstructure has several deficiencies. The expansion bearing plates are non-functional due to excessive movement, debris, and deterioration. The truss paint has worn off and left the steel exposed to weathering, leading to minor structural deterioration due to corrosion. Some truss members have sustained impact damage to the driving surface from vehicles and damage to the lower superstructure due to flood debris. Seven gusset plates are missing rivets. Many bolted connections have loose or missing bolts (see Photo #13). Further deterioration of the existing superstructure could lead to a further reduced load rating or potentially a bridge closure to protect the public's safety.
- **Substructure** – An isolated concrete pier located on the north approach is severely deteriorated. Riprap or slope debris placed within the approach span has added a substantial and undesirable lateral load to the structure and therefore could displace supporting structure off the pier, leading to failure of the approach span. Further deterioration or movement of the pier could structurally compromise the northeast approach span resulting in bridge closure.
- **Roadway Width** – The bridge approach from the southwest descends the steep terrain by incorporating a switchback 600 feet northwest of the bridge end. The hairpin turn has a 25-foot radius on a 7% slope. 30 feet away from the bridge end, the road makes a 60-degree turn on a 65-foot radius onto the bridge alignment. The bridge approach from the northeast descends the steep slope by utilizing a switchback 275 feet north of the bridge end. The hairpin turn has a 25-foot radius on a 7% slope. 20 feet away from the bridge end, the road makes an 80-degree turn on a 25-foot radius onto the bridge alignment. The sharp curves at both ends of the bridge require a drastic reduction in

speed when approaching the structure and reduce the line of sight across the bridge. These conditions present safety hazards for oncoming traffic. The steep grades of 7 to 10% on the gravel roads also make passage difficult, especially for heavy loads and during inclement weather. Canal seepage exits the backslope and follows down the road surface towards the bridge. The water deteriorates the road surface and exacerbates unsafe conditions when subject to freezing.

• Emergency Response – Emergency responders have been notified of the weight restrictions on the existing bridge. Heavy emergency response vehicles, such as fire trucks, may not be able to safely cross the existing bridge, and emergency personnel could be delayed in their response due to utilizing alternate routes.

The biennial inspections by Reclamation yield a growing list of deficiencies. Unfortunately, the expenditure of funds and effort to address these issues is not a wise choice for this 100-plus year-old bridge. Many of the safety concerns, such as fracture critical members, cannot be realistically remediated; therefore, a complete replacement is warranted.

b) This project results in replacing the structurally deficient bridge and improving the access roadways thereby eliminating all of the existing safety issues.

c) Conflict between recreational use and local, through traffic will not be an issue once the new bridge and approaches are constructed. Currently any stopping for wildlife viewing or sight-seeing creates stoppage of traffic. This project will eliminate that potential. If the existing historic bridge is saved and converted to recreational use, separate access and a parking or staging area will be constructed thus not impacting the new roadways or crossing.

d) Although conditions will be greatly improved with the new bridge and roadways, a reduced speed limit will still be posted. In short, the proposed project includes replacing the structurally deficient bridge with a new structure meeting current safety standards. It is anticipated that once the historic bridge is converted to pedestrian, bicycle, and equestrian use, there will be fewer potential conflicts associates with the new crossing.

e) Any reference to safety issues for the existing crossing have been identified and high-lighted in the biennial inspections by Reclamation. The growing number and nature of safety concerns have prompted efforts to replace the bridge and improve access as soon as possible.

f) Currently Reclamation does not have a Strategic Safety Plan for this crossing.

2. ASSET IMPROVEMENT

Improvement of the transportation Network.

- a) If the project includes a bridge or culvert, how will the project extend the useful service life? Would the proposal improve the condition factor of one or more elements of bridge or culvert within National Bridge Inventory System (NBIS)?
- b) How will the project improve the structural capacity of the roadway and extend the useful life of the asset?
- c) Is the roadway included in a paved or unpaved surface management system? What is the current condition to the existing surfacing? If the surfacing is pavement, what is the Pavement Condition Index (PCI)? If the surface is gravel, what is the PASER rating? How would the project improve the surface condition?

2. ASSET IMPROVEMENT

a) A new bridge and approach roadways would be designed and built to current AASHTO standards and would ensure a safe, functional crossing for at least another 100 years or longer.

b) The improvements would expand access to Federal Lands both in numbers and types of vehicles which is currently limited. The proposed HL-93 design loads are equivalent to those used for Inter-state bridges and would allow use by GID maintenance crews mobilizing heavy equipment and similar needs for Federal land managers.

c) Currently the approach roadway is gravel-surfaced but does not meet applicable safety standards. The roadways are narrow, steep, and have tight curves. Seepage from the adjacent canal also impacts the quality of the surface and creates icing conditions during freezing. Due to drainage issues, insufficient crown, and sporadic gravel coverage with exposed bedrock in the road, a PASER rating of 2 is appropriate and, in fact, maybe generous. The Montana Area Office is scheduled to receive road condition assessments in FY22 which will include a PASER evaluation of the bridge approach roadways. This proposed project would reroute the bridge and approach roadways allowing for a wider traveled roadway with shallower grades and curve radii that allow trailers and larger vehicles. Drainage would be drastically improved as well as line-of-sight conditions.

3. RECREATION AND ECONOMIC

Development and utilization of the Federal Land and its resources.

- a) Describe any high use Federal recreation sites or Federal economic generators (as determined by the Federal Land Manager) that are accessed by this project. How many visitors access/use the site annually? How does the project directly enhance access to these sites? How does the proposal improve the visitor experience?
- b) Which Federal Lands are accessed by this project? How much Federal Land (acres) is accessed by the project? If multiple Federal Lands are accessed, itemize acreage by agency.

Enhancement of economic development at the local, regional, or national level, including tourism and recreational travel.

Note: Direct effects of implementing the project, i.e. construction employment will not be scored.

- c) Identify the community or communities economically dependent on the network, and the elements that comprise the economy (e.g. timber, tourism, etc.) How is the economy tied to the transportation network? How will the proposed project improve the transportation network and support the community's economic goals/needs or other economic plan?
- d) If the proposed project is located on a designated federal, state, or county scenic byway, identify the scenic byway and explain the anticipated benefit related to the byway. Would the project meet the needs identified in the Byway's management plan?

3. RECREATION AND ECONOMIC

a) Recreation Usage and Economic Generation – The Sun River Bridge provides a primary access route into the Lewis & Clark National Forest, Bob Marshall Wilderness, Gibson Reservoir, Pishkun Reservoir, Willow Creek Reservoir and Sun River which all provide significant recreation opportunities for the public. Hunting, fishing, wildlife viewing, camping, boating, scenic driving, and trail use are major recreation opportunities within the general area. The Reclamation-owned bridge is vital for public access within the area. Recreation activities in the area are a significant economic contributor for the region with tourism being a primary industry supporting outfitters, guides, sporting goods stores, lodging, campgrounds, gas stations, visitor centers, restaurants, and other service providers.

The institute for Tourism and Recreation Research at the University of Montana has conducted a number of Economic Contribution studies from recreation/tourism spending. The 2018 Economic Contribution of Nonresident Travel Spending in Montana Travel Region and Counties found that non-resident travelers spent \$3.58 billion throughout Montana during 2018 up 10.5% from the previous year's spending. Within central Montana, non-resident travelers spent \$317,750,000, approximately 9% of total spending. 81% of Montana residents participate in outdoor recreation each year. This recreation use generates \$7.1 billion in consumer spending annually, creates 71,000 direct jobs, produces \$2.2 billion in wages and salaries, and generates \$286 million in state and local tax revenue. Approximately 10% of the economic benefits are generated within the central Montana region including the Sun River Project area.

The PER by TD&H details outdoor recreation opportunities in the area: "The general public uses the bridge to access USFS, BOR, and BLM lands. The Sun River, Gibson Reservoir, and Rocky Mountains provide numerous outdoor recreational opportunities. Various public campgrounds, trailheads, guest ranches, hunting areas, and fishing access sites are in the Gibson Reservoir area. General public traffic includes passenger vehicles, boat trailers, campers, and horses. However, the current bridge condition and road deficiencies limit the route's usage by the general public."

The existing bridge limits the size and weight of vehicles. A new 2-lane bridge which meets current safety standards and includes an improved approach roadway alignment would open the area up further to recreation traffic, including large recreational vehicles. Converting the existing historic bridge for pedestrian use will also enhance the recreation by opening the area up to more hiking, walking, or biking. The construction of historic interpretive signs will also draw people to the area and engage recreationists in learning about the history of Reclamation projects on the surrounding lands. The bridge is eligible for the National Register of Historic Places. Consultation action will likely be required to comply with Section 106.

While Reclamation is not responsible for the maintenance of this structure, inspection of the structure is performed by Reclamation every 24 months per NBIS standards. Replacing the Fracture Critical bridge with a modern bridge would no longer necessitate the need for this in-depth inspection requirement and would significantly reduce the costs associated with owning and inspecting the bridge. Those saved resources could be applied towards replacing the 100-year-old irrigation infrastructure comprising the Sun River Project.

b) The Federal lands accessed by this project include over 100,000 acres of the Lewis & Clark National Forest; over 3,000 acres of BLM land; and over 12,000 acres of Reclamation land which encompasses the reservoirs of Gibson, Pishkun and Willow Creek and the related structures supporting the Sun River Project such as the Diversion Dam.

c) The local communities of Augusta, Choteau and Fairfield will benefit from the proposed project. Choteau and Augusta have a strong tie to the tourism and recreation-based economies related to use of Federal lands along the Rocky Mountain Front. The proposed project will expand access to these Federal lands and the increased use will be reflected in those related communities and businesses. Reclamation's Sun River Project includes over 95,000 acres of irrigated farmland. Greenfields Irrigation District, based in Fairfield, irrigates over 83,000 acres. The proposed Sun River bridge replacement project is critical to the operation and maintenance of Reclamation's Sun River Project. Fairfield is the economic hub for the vast irrigation production in the regional and is highly dependent on the success of GID.

d) The proposed project is not located on a designated scenic byway nor is it part of the National Highway System (NHS).

4. MOBILITY

Continuity of the transportation network serving the Federal Land and its dependent communities.

- a) Is the road the sole access to the area? Will the proposed project mitigate the potential of the route closing?
- b) How would the proposed project improve the continuity of the transportation network? Which gaps or missing links would the proposed project address? What travel restrictions, bottlenecks, or size/load limits impede travel? What work has been completed on adjacent sections to create route continuity? How would the proposal support federal land related freight?
- c) Does the proposed project connect to a designated route on the Federal Land Management Agency's FLTP inventory? Are there any future improvements planned on the designated route?
- d) Identify all planning documents related to this project. Is the project specifically identified in any of these plans? What is the local or regional priority (high, medium, low) of the project considering the Federal Land, State or County network? How does this proposal fit with the Federal Land Management Plan? How does the proposal fit with the county comprehensive plan? How does the proposal fit with any Transportation System Plans or Corridor Plans? What are the consequences to the transportation system of not addressing these needs?

Mobility of the users of the transportation network and the goods and services provided.

- e) How would the proposed improvements reduce travel time and congestion, increase comfort and convenience for the federal land user?
- f) How would the proposed project improve the choices for alternative modes of travel (pedestrian, bike, bus, or rail)? Would the proposed project make any ADA improvements?
- g) What are the major traffic generators within the Federal Land for this route?

4. MOBILITY

a) Although the Sun River Bridge crossing is not the sole access to local Federal lands, a detour of at least 56 miles must be incurred to reach the other side of the river. The detour is 76 miles for larger, heavier vehicles and towing units (see Attachment #2). This is a significant obstacle and hindrance and would have a detrimental impact to the local economies. Also, loss of this crossing would be a tremendous impact to the maintenance activities of GID. The Sun River Bridge provides maintenance access to the Pishkun Canal, a feature of Reclamation's Sun River Project. A replacement bridge would meet current load design requirements and would allow larger maintenance, recreational, and emergency vehicles to safely cross.

b) The proposed project would greatly expand access to Federal land as it would allow larger and heavier recreational vehicles, boats, and horse trailers. As explained previously, the current bridge and associated roadways actually limit access to Federal lands. The 5-ton load limit, narrow bridge, narrow and steep roadways with sharp curves preclude most recreational vehicles. These conditions also hamper efforts to maintain the crossing.

c) Yes, this project is located on a Reclamation FLTP inventory. Reclamation was selected to receive FLTP funding for this project in FY2024. The amount is \$1,177,000 which is 16.1% of the total estimated project cost. This satisfies the local match requirement for this FLAP request.

d) Because the bridge and roads are owned by Reclamation, it is our understanding that this project is not part of any local or regional Transportation Study or Plan. The only planning documents specifically addressing the Sun River Bridge crossing are the biennial Reclamation inspection reports and the Preliminary Engineering Report which GID commissioned to support a bridge replacement effort.

e) Besides improving safety, the proposed project would eliminate the need for a 56-mile detour for cars and pick-ups, and 76-mile detour for larger vehicles and towed units if someone needed to get to the other side of the river. The improved approach roadways and bridge crossing would increase comfort and the overall driving experience. When two, on-coming vehicles meet, one vehicle has to get dangerously close to the edge of the road or back up to the nearest wide spot in order to let the other vehicle pass.

f) The historic Reclamation bridge is proposed to be converted to a pedestrian, bicycle, equestrian bridge. This would provide a more relaxing and enjoyable crossing without contending with normal traffic expected to increase with improved conditions. The converted historic bridge would incorporate ADA improvements where possible.

g) The major traffic generators for this route include Federal and State land managers, GID maintenance crews, emergency response and law enforcement personnel, recreationalists of all types, lessees of Federal and State lands, and private landowners.

5. SUSTAINABILITY AND ENVIRONMENTAL QUALITY

Protection and enhancement of the rural environment associated with the Federal Land and its resources.

Note: It is assumed all projects will be constructed in accordance with all environmental regulations.

If applicable, describe how the project:

- a) Contributes to the environmental goals and objectives of the Federal Land Management Agency and/or other applicable land management plans.
- b) Enhances wildlife connectivity, wildlife habitat and/or aquatic organism passage.
- c) Enhances water quality, riparian and/or wetland function.
- d) Uses design, materials or techniques that would exceed the minimum environmental requirements and/or mitigates an existing environmental problem.
- e) Promotes sustainable practices (e.g. reduces greenhouse gas or vehicle miles traveled).

5. SUSTAINABILITY AND ENVIRONMENTAL QUALITY

This area is located on the Rocky Mountain Front near a designated wilderness area with wildlife and fisheries resources present. Found in this region are 64 of Montana's 89 fish species, 75 of Montana's 109 mammals, and 338 of the state's 389 birds. FW&P is currently managing populations of all ten of the state's common big game animals. There are three known Threatened and Endangered Species of animals located in Lewis and Clark and Teton Counties that could potentially occur within the area of interest (AOI). They include the Grizzly Bear, North American Wolverine, and Canada Lynx. The project area is not located in or near any Sage Grouse habitat. There are no known threatened or endangered plants in the area.

The narrow steep canyon and limited flood plain limit the riparian vegetation to a strip along the river's edge that generally consist of densely populated growth comprised of tall and medium trees, grasses, forbs, and shrubs. However, the northeast bank of the river located upstream of the existing bridge structure is only moderately vegetated with similar species, and the riverbank is predominately a rock canyon.

- a) This project contributes to the environmental goals and objectives of the FLMA as it helps to reduce greenhouse gases created by not having to traverse the 56-mile and 76-mile detours.
- b) This project has no known impact that would degrade wildlife connectivity nor harm wildlife habitat of the passage of aquatic organisms. Fish biologists have commented that the minor scour pools around the drilled shaft foundations actually are beneficial to fish as they provide a sanctuary against low river flows during the hot summer months. The MT Department of Fish, Wildlife, & Parks is a strong supporter of improving access with a new replacement crossing (see Attachment #5),
- c) This project has no known impact that would degrade water quality, riparian and/or wetlands.
- d) The overall design has yet to be completed, but it is not anticipated to be environmentally unfriendly.
- e) Once constructed, the new bridge and crossing will allow larger and heavier vehicles to cross the river and avoid the 76-mile detour that would unfortunately use more gas and fuel and put more hydrocarbon-based greenhouse gases into the atmosphere.

6. READINESS AND SUPPORT

Project readiness, local support, financial support, capacity and project delivery.

- a) List project support, describe how funding this proposal fits with agency priorities and describe the previous federal investment, if known.
- b) Describe the applicant's share of project costs, type of funds, availability of funds and certainty of funds.
- c) Describe the project readiness, and the preferred project delivery schedule (with the knowledge that construction funding for project will be programmed in an out-year).

6. READINESS AND SUPPORT

a) Given the condition of the existing bridge and its on-going deterioration, a new crossing alternative is high on GID's priority list. It has been determined not to be cost-effective to make any significant or non-safety related repairs to the failing bridge as they may be short-lived. Rather it is advisable to apply that effort and those resources towards a new and improved crossing.

It is also high on Reclamation's priority because of the concerns for the public's safety. In addition, replacing the Fracture Critical bridge with a modern bridge would then not require in-depth, biennial inspections thereby significantly reducing the time and costs associated with owning and inspecting the bridge.

We have also received concerns from recreational groups, landowners, agency personnel regarding the status of the bridge and its likelihood of collapse or closure. Therefore, support for this proposed project has been all positive. This includes the public, local landowners, local businesses, recreationalists, and all State and Federal agencies that GID has discussed the project with. See Attachment #5 for an example of the comments contained in the letters of support received for this project.

A partial list of supporters who have submitted letters of support include:

Trout Unlimited	Bureau of Land Management
Broken O Land & Livestock, LLC	Great Falls Chamber of Commerce
Montana Fish, Wildlife & Parks	Sun Canyon Lodge & Outfitting**
US Montana Senator Daines	Teton County Conservation District
Upper Sun River Wildlife Team	Sun River Electric Co-op
Raimund Hahn	City of Fairfield
First Bank of Montana	Sun River Watershed Group
Montana Salinity Control Association	Gulick Farm Fertilizer, LLC
Teton County Commissioners	Bonnie Dale**
Carlson Family Farms**	

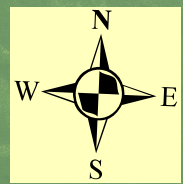
**= contributed unsolicited cash donations

GID also received verbal support for the new bridge crossing from both the National Forest Service and the Lewis & Clark County but they declined to express their support in writing as both indicated that they would be submitting competing FLAP applications.

b) The total cost of for the new bridge and improved approach roadways is estimated to be \$11,000,000 (FY2024) per TD&H. The project is planned to be funded primarily through FLTP and FLAP grants. Reclamation has already been selected to receive FLTP funding for this project for FY2023. The amount of that award is \$1,177,000 which is intended to satisfy the local match requirement (13.42%) of the FLAP grant. This application is intended to secure the balance of the necessary funds. GID, in conjunction with Teton County will pursue a Treasure State Endowment Program (TSEP) grant in May 2022. That amount is estimated to be up to \$500,000 and if successful would be available after July 2023. The TSEP funding would be used as gap funding should escalation occur such that the FLPT portion and the FLTP award fall short.

c) GID and Reclamation are ready for this project. In 2019, GID commissioned a Preliminary Engineering Report (PER) from a local firm with bridge design experience. The PER fully vetted 11 different alternatives to replace the existing bridge and improve the approach access roadways. In-depth cost estimates were prepared on the three most likely alternatives. In addition, a Draft Environmental Assessment was also prepared to assist with the alternative vetting process. This work cost \$30,000 which GID paid for. It was felt that studies were warranted to identify possible alternatives and bracket the probable costs for the WFLHD who will deliver the project.

Destinations Around Sun River Bridge



Legend

Destinations

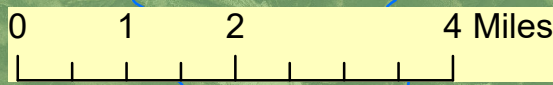
- Boating
- Camping
- Dam
- Elk Viewing
- Fishing
- Hiking
- Horseback Riding
- Information 1
- Off Road Trails
- Pictographs
- Ranger Station
- Restaurant
- Restrooms
- Scenic Drive
- Wildlife Viewing

— Roads
— Hydrology

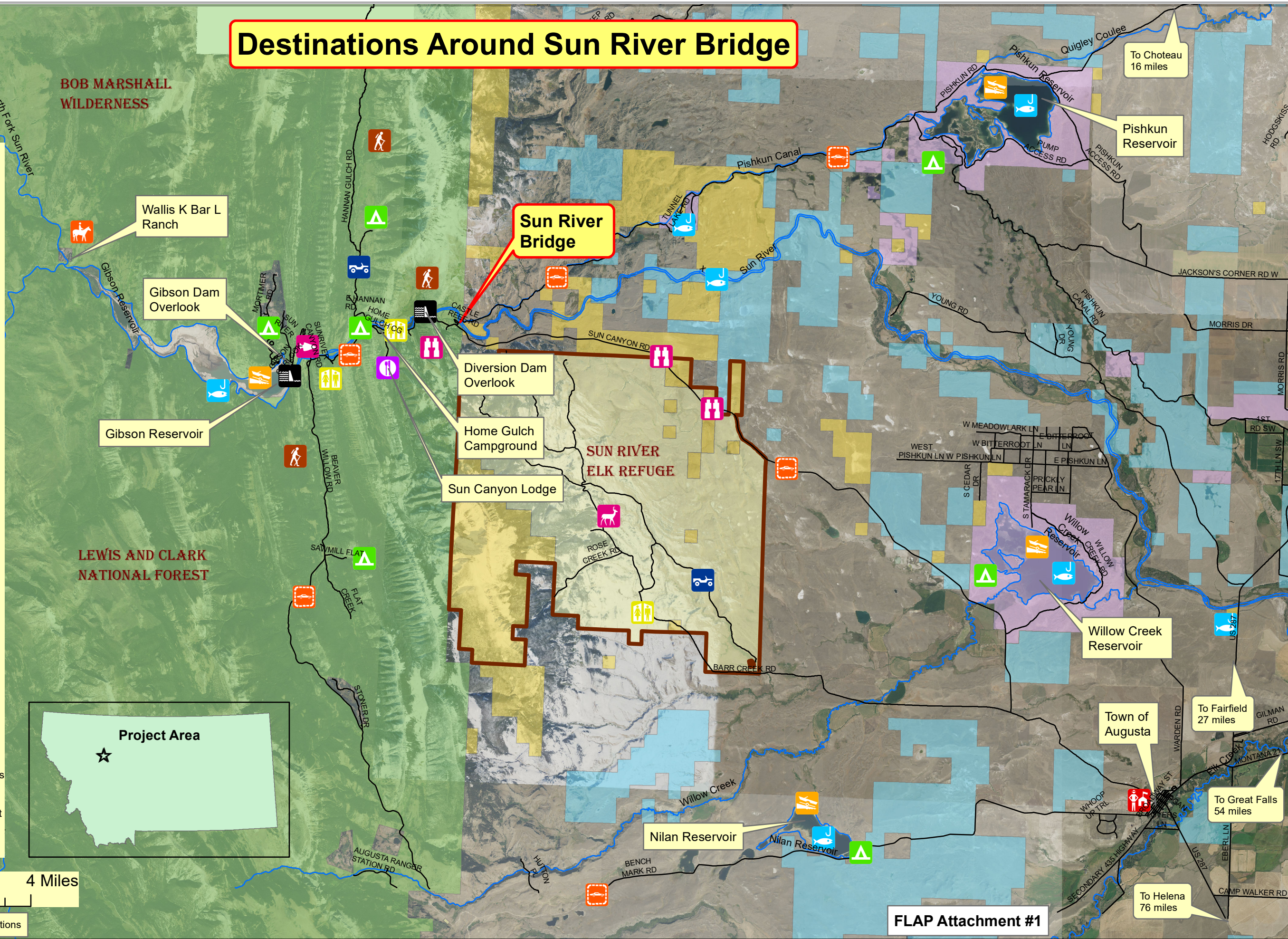
Sun River Elk Refuge

OWNER

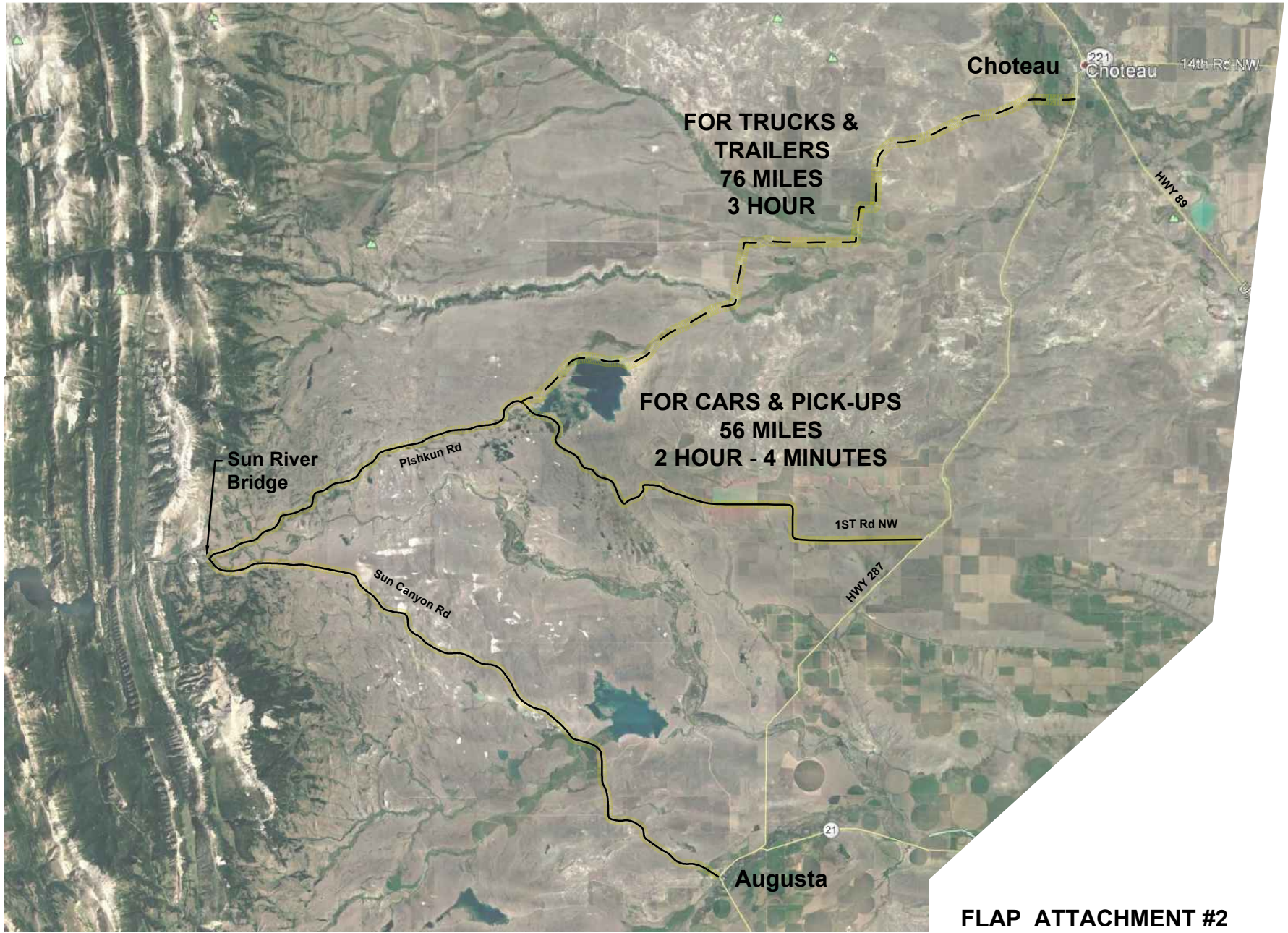
- Montana Fish, Wildlife, and Parks
- Montana State Trust Lands
- US Bureau of Land Management
- US Bureau of Reclamation
- US Forest Service



X:\GIS\Maps\Sun River Bridge Destinations



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FLAP ATTACHMENT #2

**GID SUN RIVER BRIDGE REPLACEMENT
FAIRFIELD, MT**

DETOUR MAP

TD&H
Engineering

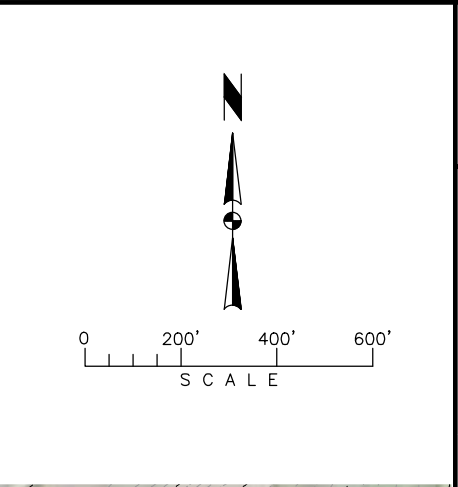
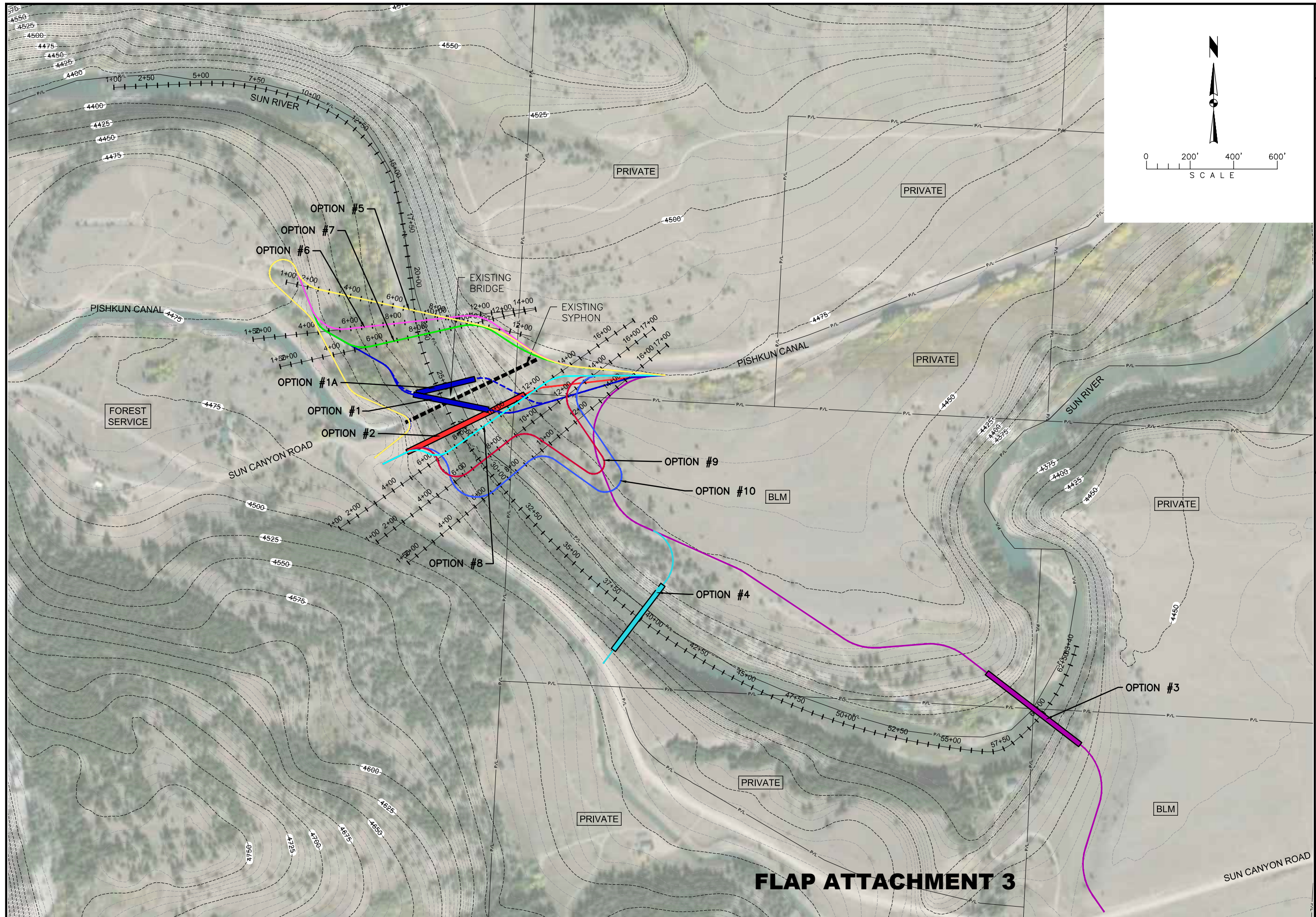
406.761.3010 • tdhengineering.com

1800 RIVER DR. NO. • GREAT FALLS, MONTANA 59401

DRAWN BY:	DSO
DESIGNED BY:	
QUALITY CHECK:	
DATE:	4.23.19
JOB NO.	19-090
CAD NO.	19-090 FIGURES

**FIGURE
4**

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NOT FOR CONSTRUCTION

REV	DATE	REVISION

TD&H
Engineering
406.761.3010 • tdhengineering.com
1800 RIVER DR. NO. 3 GREAT FALLS, MONTANA 59403

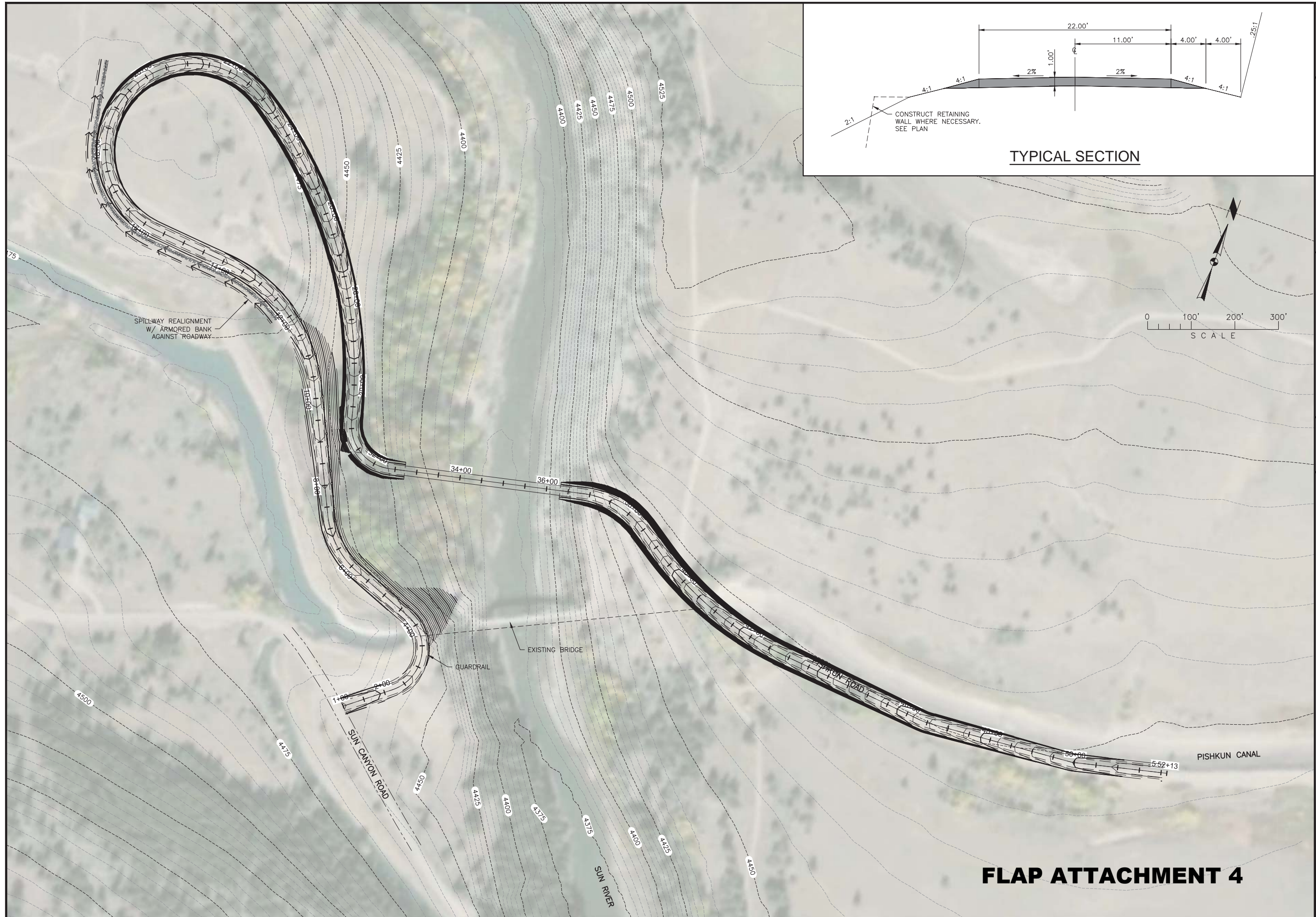
DRAWN BY: CDF
DESIGNED BY:
QUALITY CHECK:
DATE: 03/27/2019
JOB NO.
FIELDBOOK

**SUN RIVER BRIDGE REPLACEMENT
GREENFIELDS IRRIGATION DISTRICT**

SUN RIVER ALIGNMENT AND CROSS SECTIONS

FLAP ATTACHMENT 3

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REV	DATE	REVISION

DRAWN BY: CJS
 DESIGNED BY:
 QUALITY CHECK:
 DATE: 6/10/19
 JOB NO. 19-090
 FIELDBOOK

**SUN RIVER BRIDGE REPLACEMENT
 NEAR AUGUSTA, MONTANA
 BRIDGE AND APPROACH
 OPTION 7**

FLAP ATTACHMENT 4

LOCAL AND REGIONAL SUPPORT FOR MAINTAINING AND EXPANDING ACCESS TO FEDERAL LANDS VIA A NEW SUN RIVER BRIDGE CROSSING

(Excerpts from Select Letters of Support, over 25 Letters Received)



TROUT UNLIMITED – “TU supports GID’s Sun River Bridge project to replace the existing bridge along the Pishkun Supply Canal just downstream of Diversion Dam. This bridge has serious capacity limitations and is well-beyond its design life. The bridge is critical to GID for its daily operations, but currently cannot be used to transport GID’s maintenance equipment. The bridge is also used extensively by the public to access State, Federal and private lands.” *Laura Ziemer w/ TU*



BUREAU OF LAND MANAGEMENT – “The BLM supports replacement of the Sun River Bridge as it provides access to over 1000 acres of BLM lands that would otherwise be difficult to access for both the public and BLM employees. Additionally, the Sun River Bridge provides access to BLM lands that allow for direct access to the Sun River itself which offers users an exceptionally high recreation experience. Without the bridge, visitors must incur considerable travel (75+ miles) just to get to the opposite side of the Sun River. This is a tremendous limitation for both the public and BLM employees – including emergency responders such as wildland firefighters. Without the Sun River Bridge, wildland fire initial attack on those BLM acres would be delayed, increasing the likelihood of a larger wildland fire event.” *Linsey Babcock, MT Field Manager*



MT FW&P – “Recent hunter use estimates (2018) obtained through formal FWP hunter harvest survey efforts estimate over 8,000 hunter days during the fall hunting period between the three hunting districts that encompass that immediate area. Additional and significant recreational use stemming from that area includes carious “non-consumptive” use (hiking, horseback riding, wildlife viewing, photography, etc.) pertaining to accessible public lands. Clearly, the value of access needs and interest via the Sun River bridge presence has demonstrated and proven its worth over time.” *Gary Bertellotti, Region 4 Supervisor*



PLWA – “The Sun River Bridge is an important route to many great recreational opportunities in the Augusta/Choteau area. It is located about 10 miles away from the Boadle bridge. The recreational public using the Boadle road/bridge that was subject of PLWA’s major 15-year litigation effort also use the Sun River bridge as access to the extensive and popular public recreational lands along Pishkun and Gibson reservoirs, and the expansive Rocky Mountain Front.” *Bernard Lea, President*

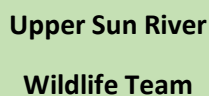


GFCOC – “The replacement of the Sun River Bridge would be beneficial for local businesses, residents and visitors to access federal and private lands looking for recreational activities. This replacement would also be beneficial to state and federal agencies for access to control noxious weeds, firefighting, EMS and service for people with the National Forest Service, Bureau of Land Management, Bureau of Reclamation, FWP and DNRC to the area to name just a few benefits.” *Shane Etwiler, President/CEO*



SENATOR DAINES – “The Sun River Bridge provides key access to public and private lands across the Sun River for both public and numerous state and federal agencies.

However, the bridge is over 100 years old and well beyond its service life. As a result, restricted load ratings limit usage to cars and pick-ups, not towing trailers. These load restrictions greatly reduce access by recreationalists, federal and state land managers as well as their lessees, local landowners, emergency response vehicles, and canal maintenance crews of Greenfields Irrigation District.” *Steve Daines, U.S. Senator*



USRWT – “We are writing on behalf of the Upper Sun River Wildlife Team (USRWT), we are the only sportsman’s group focusing on wildlife and land management issues in the upper Sun River area. The group unanimously agreed that replacing that bridge would be in the best interest of the many sports men and women that use that bridge to access public land to hunt, fish, view wildlife and generally enjoy host of public resources in that area. As you well know, loss of use of a bridge in that area would make it logistically very difficult to access the thousands of acres of public land that bridge provides.” *Rich Clough & Brad McBratney, Facilitators*

SUN RIVER BRIDGE REPLACEMENT PROJECT

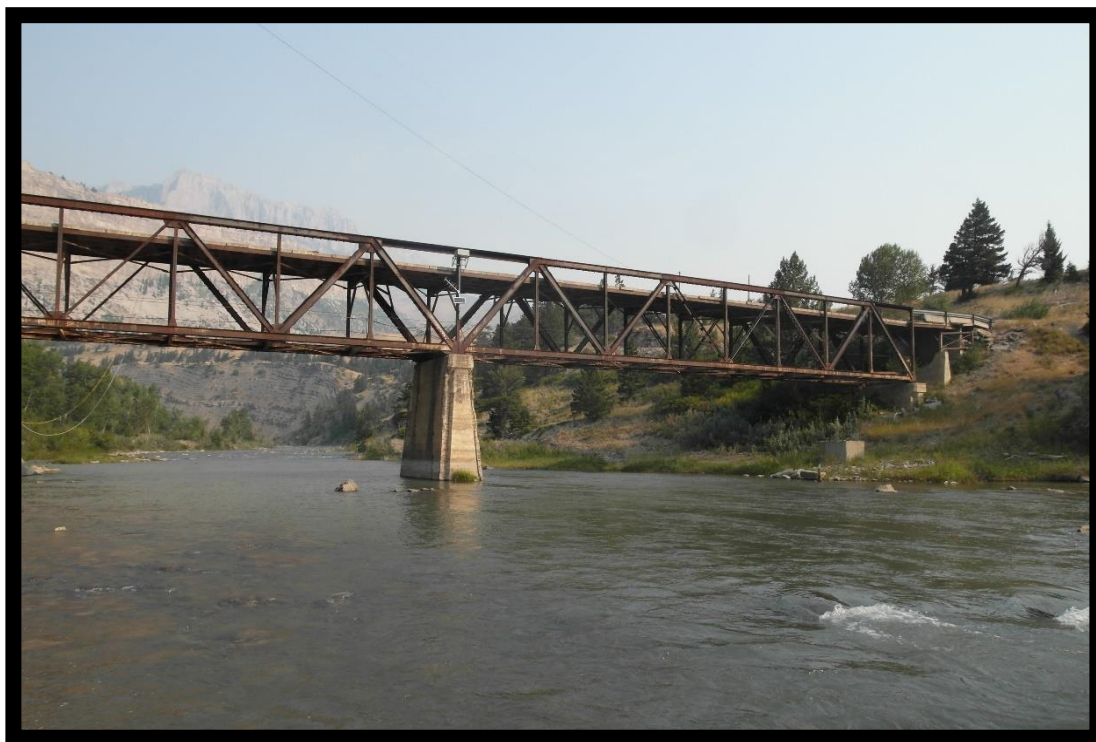


Photo 1 – The Sun River Bridge looking upstream.



Photo 2 – The Sun River Bridge looking downstream. Note the sharp, abrupt angled bridge approaches that limit bridge use and restricts access to Federal lands.

SUN RIVER BRIDGE REPLACEMENT PROJECT



Photo 3 – Right Bridge Abutment. Note narrow and crossing sharp curves on the approaches.



Photo 4 – Left Bridge Abutment. Note right angle turn onto bridge and exposed bedrock in approach subgrade.

SUN RIVER BRIDGE REPLACEMENT PROJECT



Photo 5 – South Approach Road. Photo shows regular maintenance by mini-excavator needed to clean ditches and redirect seepage losses from the Pishkun Supply Canal. Regular excavator or backhoe is too large to do work. Lining the PSC would eliminate the groundwater issues and geotechnical concerns.



Photo 6 – Right Abutment Roller Bearing System. Note right roller is off the bearing plate and bent anchor rod is sheared at the top of the plate.

SUN RIVER BRIDGE REPLACEMENT PROJECT



Photo 7 – Approach Pier (P1) on Downstream Face of Left Abutment. Note deteriorated concrete and exposed rebar.



Photo 8 – Bridge Deck Looking Towards Right Abutment. Note laterally offset concrete deck planks because they are not restrained to the stringers. Also note sharp, narrow approach in background.

SUN RIVER BRIDGE REPLACEMENT PROJECT



Photo 9 – Left Abutment Backwall. Note the concrete is being crushed where the stringers brace the left abutment backwall.



Photo 10 – Member U5B to L4B. Note buckling of member.

SUN RIVER BRIDGE REPLACEMENT PROJECT



Photo 11 – Node L3B Towards L4B. Note “S” shape around node which also twisted the gusset plate.

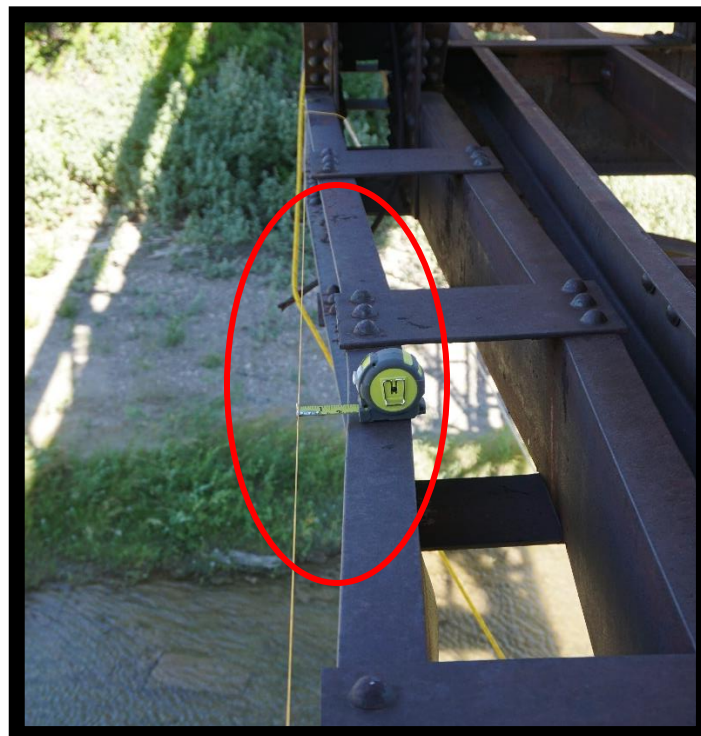


Photo 12 – L2B to L1B Member. The straight-line deflection measured 2-3/8 to 2-1/2 inches.


SUN RIVER BRIDGE REPLACEMENT PROJECT



Photo 13 – Looking Upstream at U7A From Bridge Deck. 14 bolts were observed to be loose. Marked in the field with yellow crayon but circled red here for clarity.



Photo 14 – Downstream Face of Left Abutment. The slope debris behind P2 is producing considerable lateral load to P2 and P1 that could lead to failure of the left abutment approach span. Note concrete jersey barriers leaning on steel guardrails.

2021 Montana Federal Lands Access Program JOINT ENDORSEMENT - This project is supported and endorsed by (add agency endorsements as needed)	
Project Name	Sun River Bridge Replacement
Federal Land Agency (ies)	U.S. Department of the Interior, Bureau of Reclamation
Federal Land Unit Manager's Name	Ryan Newman
Title	Area Manager, Montana Area Office
Signature	RYAN NEWMAN <small>Digitally signed by RYAN NEWMAN Date: 2021.05.05 15:04:21 -06'00'</small>
Date	5/5/2021
Email Address	rnewman@usbr.gov
Telephone	406-247-7338
Point of Contact	Morgan Kimmet
Title	Civil Engineer
Email Address	mkimmet@usbr.gov
Telephone	(406) 247-7312
State, County, Local, or Tribal Government	Greenfields Irrigation District
Agency Official's Name	Tim Brunner
Title	Board President
Signature	
Date	05/11/21
Email Address	bmrfrms@gmail.com
Telephone	(406) 467-2533
Point of Contact	Erling A. Juel, P.E.
Title	District Manager
Email Address	erling@gid-mt.com
Telephone	(406) 799-4416
<i>Signatures are required for BOTH the Federal Land Management Agency being accessed and the State, County, Local or Tribal Government. Proposals that do not have the appropriate signature will NOT be eligible for consideration.</i>	

2021 Montana Federal Lands Access Program JOINT ENDORSEMENT - This project is supported and endorsed by (add agency endorsements as needed)	
Project Name	Sun River Bridge Replacement
Federal Land Agency (ies)	U.S. Department of the Interior, Bureau of Reclamation
Federal Land Unit Manager's Name	Dan Staton
Title	Reclamation Transportation Program Manager
Signature	DANIEL STATON <small>Digitally signed by DANIEL STATON Date: 2021.05.06 06:29:09 -06'00'</small>
Date	5/6/2021
Email Address	dstaton@usbr.gov
Telephone	303-445-3858
Point of Contact	
Title	
Email Address	
Telephone	
State, County, Local, or Tribal Government	
Agency Official's Name	
Title	
Signature	
Date	
Email Address	
Telephone	
Point of Contact	
Title	
Email Address	
Telephone	
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