

## Compatibility Determination

For construction to replace the HWY 16 Bridge and the placement of riprap at Sand Lake National Wildlife Refuge

### Refuge Use Category

Rights-of-way and Rights to Access

### Refuge Use Type(s)

Rights to Access (environmental, hazard, and safety monitoring)

### Refuge

Sand Lake National Wildlife Refuge

### Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

Migratory Bird Hunting and Conservation Stamp Act, March 16, 1934, (16 USC Sec. 718-718h, 48 Stat. 452) as amended August 1, 1958, (PL 85-585; 72 Stat. 486) for acquisition of "Waterfowl Production Area."

Wetland Loan Act, October 4, 1961, as amended (16 USC 715k- 3 - 715k-5, Stat. 813), funds appropriated under the Wetland Loan Act are merged with duck stamp receipts in the fund and appropriated to the Secretary for the acquisition of migratory bird refuges under the provisions of the Migratory Bird Conservation Act, February 18, 1929, (16 USC Sec. 715, 715d- 715r, as amended).

"...as Waterfowl Production Areas" subject to "...all of the provisions of such Act [Migratory Bird Conservation Act] ... except the inviolate sanctuary provisions..." 16 USC 718(c) (Migratory Bird Hunting and Conservation Stamp).

"...for any other management purpose, for migratory birds." 16 USC 715d (Migratory Bird Conservation Act).

"...for conservation purpose..." 7 USC 2002 (Consolidated Farm and Rural Development Act).

### National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation,

management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105-57; 111 Stat. 1252).

## Description of Use

Is this an existing use?

Yes

What is the use?

The U.S. Fish and Wildlife Service (Service) is proposing to issue a temporary special use permit (SUP) to the South Dakota Department of Transportation (SDDOT) for rights to access fee title Service land at Sand Lake National Wildlife Refuge (Refuge) for the purposes of replacing a bridge along Highway 16 in Brown County, SD, and installing 0.05 acres of riprap underneath the bridge on both sides of the James River. The use will cause a temporary disturbance during construction; however, the bridge replacement is necessary to maintain public safety, and the 0.05 acres of riprap is needed to prevent erosion along the James River. The riprap installation would align with measures conducted by the Service to prevent erosion at the Refuge's water control structures.

Is the use a priority public use?

No

Where would the use be conducted?

The use would be conducted on the HWY 16 bridge in Brown County-Columbia, SD (T125N, R62W, Section 4, SW1/4). The County is proposing to replace a bridge (action) and place 0.05 acres of riprap to prevent erosion along the James River. The structure of the existing bridge is a five span stringer bridge that carries 396<sup>th</sup> Avenue over the James River. It is located in rural Brown County about 4 miles north of Columbia in a region of marshy bottomland. The north and south approach spans consist of four steel I-beam stringers. The three center (main) spans also have four I-beam stringers, but they are considerably deeper than those at the approaches. The stringers support concrete decking. Steel channel section rails on I-beam posts with rounded tops flank the deck. The abutments and backwalls are solid concrete. Intermediate piers are open concrete, each consisting of two square (in cross section) vertical posts with a solid, cantilevered cap. Steel plates with anchor bolts on the abutments and pier caps allow for expansion and contraction of the superstructure. Recessed panels bearing the date "1957" are found on the insides of the curbs and on the abutment faces. This structure remains essentially as-built. The bridge replacement would occur entirely on an existing highway right-of-way (ROW) though the main portion of the riprap would be placed outside of the ROW.

When would the use be conducted?

Due to the shortened construction season in the northern climates, the typical timeframe for a project to be let for bid is in the fall and winter months so construction can start in the spring/early summer. This allows construction to be completed in the

fall of the same year and not be carried over the winter months with long-term road closures in place. The Refuge anticipates that the proposed construction will take less than 6 months.

### How would the use be conducted?

Under a temporary SUP granted by the Service, the SDDOT would remove the extant Highway 16 bridge that carries 396<sup>th</sup> Avenue over the James River, construct a new bridge, and install 0.05 acres of riprap under the bridge on both sides of the James River. The in-place structure is a 249' 5-span steel girder bridge that was built in 1957, posted for a load restriction, and rated in poor condition according to the National Bridge Inspection Standards. All components of this structure will be broken down and removed to a minimum of 1 foot below the finished groundline or as required to construct the new structure which is following Section 110 of the SDDOT Specifications. All efforts will be taken to prevent material from falling in the James River and under no circumstances will asphalt be allowed to fall into the river.

An SDDOT contractor would start by driving pile for the abutments and the bents and sheet pile for the bents. They would construct the substructure (abutments and bents) using concrete that has been reinforced with rebar. When that concrete sets up, they would place prefabricated prestressed concrete beams between the substructure units. They would then form up deck, install the reinforcing steel, and then pour the concrete deck. After the deck concrete hardens, they would reconstruct the road to the bridge, install the railing, seed the ditches, and conduct other miscellaneous clean-up activities.

Required equipment would include: an excavator, crane, skid loader, generator, pump, job trailer, and concrete trucks. The work crew would be comprised of 5-10 construction workers, 1-2 engineers, 1 tester, 3-4 truck drivers, and 1 Highway Superintendent. The contractor would determine the number of people working at any given time.

The new structure would be a 242' 3 span prestressed concrete girder bridge with a cast in place concrete deck. Brown County 16/396<sup>th</sup> is classified as a Rural Major Collector with an Average Daily Traffic (ADT) county of 265 vehicles a day. The new structure would allow legally loaded trucks to pass over, which is vital to the agricultural community in this area. The prestressed concrete girder type bridge is one of, if not the most popular bridge type built in South Dakota and surrounding states. This structure will have a clear roadway (between the bridge rails) that is almost 6 feet wider than the previous structure, which will be safer for the traveling public, and be easier to maintain during winter maintenance efforts. This structure was designed for a 25-year event, which is consistent with requirements in the SDDOT Drainage Manual for this location and results in a "no rise" in the 100-year WSE. The approximate overtopping is estimated to be a 250-year frequency. The structure was designed to meet the latest American Association of State Highway and Transportation Officials standards. The structure design specifications and plans were stamped by a professional engineer (PE).

## Why is this use being proposed or reevaluated?

Bridge replacement is an ongoing activity by South Dakota Department of Transportation (SDDOT) and is required because the structural integrity of the Hwy 16 bridge no longer meets public safety standards. The installation of 0.05 acres of riprap is needed to prevent erosion along the James River.

## Availability of Resources

Financial and staff resources are determined to be sufficient at the field station to administer this request. No specialized equipment will be necessary, and all work associated with this project will involve a monitoring and compliance check. Brown County applied for a Bridge Improvement Grant (BIG) through the SDDOT in 2018 and was successful. They applied at a 50/50 cost-share ratio for state funds and county funds. The grant was awarded based on the construction estimate at the time in 2018. The County is responsible for any costs above and beyond the BIG amount. The project will be locally let, and the County will hire IMEG to provide construction inspection and administration. Project costs will be reimbursed by SDDOT up to the limiting grant amount.

## Anticipated Impacts of the Use

### Potential impacts of a proposed use on the refuge's purpose and the Refuge System mission

The effects and impacts of the proposed use to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the proposed use. This Compatibility Determination includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an "affected resource."

The Service has determined that the proposed project will have no effect on threatened or endangered species, as documented in the related Intra-Service Section 7 Biological Evaluation Form, dated April 11, 2023. Additionally, the Service previously found the property to be "Not Eligible" for the National Register of Historic Places and made the finding of "No Historic Properties Affected," as documented in the related Region 6 Request for Cultural Resource Review Form, dated August 7, 2023. The Service received concurrence for the latter determination from the South Dakota State Historic Preservation Office on August 15, 2023.

Anticipated general impacts associated with this project include, but are not limited to, impacts from construction e.g., staging of equipment, removal and movement of materials, installation of the new bridge and riprap, and the temporary closure of 39th Avenue. Such impacts to the Refuge include temporary obstruction of public and employee access. There would be alternate routes available for employees and the public to access the Refuge.

The Refuge's management plans (e.g., Comprehensive Conservation Plan [USFWS 2005], Habitat Management Plan [USFWS 2022], etc.) have been reviewed for potential impacts to Refuge resources from the proposed use, and no conflicts or adverse impacts were determined. Impacts to the Refuge purpose and the Refuge System mission are expected to be generally positive. Improving the safety of the bridge will allow for greater visitor satisfaction and a more positive impression of the Refuge by improving safety along a public route of travel. No negative impacts to the Refuge purpose or the Refuge System mission are anticipated.

### Short-term impacts

There will be temporary disturbance during the replacement of the HWY 16 bridge and placement of riprap on .05 acres. There will also be temporary disturbance to wildlife because of this activity, both at the construction site and surrounding area due to noise and other construction activities.

Human disturbance (including the presence of people, equipment, vehicles, movement, lights, and noise) can alter wildlife behavior (e.g., avoidance of areas, changes in foraging and energy expenditure, and temporal use of areas), population structure, and distribution patterns of wildlife (Gaynor et al. 2018, Barber et al. 2010). Temporary disturbance and displacement of wildlife during construction, trampling and removal of on-site vegetation, erosion and sedimentation, and disturbance to Refuge visitors are expected to be short-term impacts of the proposed project. Brief increases in noise could affect wildlife and visitors. Since the work site would be small, impacts to wildlife from the proposed bridge replacement project would be short-term, temporary, and similar to existing uses of the area. Wildlife would be expected to move to adjacent similar habitats during construction, and within a relatively short period of time resume full use of the area once construction ends (Bowles 1995). Erosion may result from the County clearing vegetation in the construction site, and from the movement of equipment and materials.

### Long-term impacts

There will be no long term or permanent loss of upland grassland habitat along the stream bed because of the use. The placement of riprap within the stream bed is not anticipated to permanently impact waterfowl, fish, herps, or grassland birds due to small size of the impact area and because nesting typically does not occur within the high-water mark adjacent to the James River.

Overall, long-term impacts are anticipated to be beneficial through the improvement to safety along a public travel corridor that provides access to the Refuge for both visitors and Refuge staff. Heavy equipment and vehicles used to maintain Refuge parking lots, trails, and infrastructure will have increased ease of access with the higher load-bearing capacity of the new bridge.

## Cumulative Impacts

No cumulative impacts will be associated with this project.

## Public Review and Comment

The Service considers the proposed activity to be minor, incidental, and short-term with minimal temporary disturbance and insignificant permanent and cumulative impacts. The draft compatibility determination will be available for public review and comment for 14 days during the winter of 2024 (exact days are to be determined). The Refuge will inform the public of this comment opportunity by posting a hard copy of this document at the Refuge Headquarters or Visitor Center (39650 Sand Lake Dr Columbia, SD 57433). It will also be made available electronically on the Refuge website (<https://www.fws.gov/refuge/sand-lake>). Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final.

## Determination

Is the use compatible?

Yes

### Stipulations Necessary to Ensure Compatibility:

1. A Temporary Special Use Permit outlining parameters and stipulations is required for all maintenance activities and will include provisions that ensure disturbance to wildlife and public use, and impacts to habitat and other resources, is avoided or minimized.
2. This CD does not apply to new ROW requests; it only addresses minor maintenance of the existing ROW at the HWY 16 bridge.
3. Construction designs must be available upon request.
4. Any authorization does not preclude the requirements for obtaining necessary permits and/or approvals from other County, State, or Federal agencies and from local landowners, if applicable.
5. Any authorization is contingent upon National Environmental Policy Act compliance, cultural resource review, and a Section 7 (federally listed species) analysis.
6. SDDOT will be responsible for job safety while operating on the Refuge.

## Justification

Bridge replacement of failing bridges is an ongoing activity on road systems within the district to meet SDDOT public safety standards. While Refuge personnel work

with local, state, and federal road authorities to ensure that road projects adopt appropriate measures to avoid resource impacts, this bridge replacement project requires temporary impacts outside of the ROW. This compatibility determination addresses minor ROW maintenance as defined in 50 CFR 26.41. The stipulations outlined above would help ensure that the use is compatible at Sand Lake NWR. Temporary disturbance during construction and placement of riprap permit, as outlined in this compatibility determination, would not conflict with the national policy to maintain the biological diversity, integrity, and environmental health of the Refuge. Impacts to the Refuge purpose and the Refuge System mission are expected to be generally positive. Improving the safety of the bridge will allow for greater visitor satisfaction and a more positive impression of the Refuge by improving safety along a public route of travel.

Based on available science and best professional judgement, the Service has determined that the temporary disturbance during construction and placement of riprap permit at Sand Lake NWR, in accordance with the stipulations provided here, would not materially interfere with, or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose of the Sand Lake NWR. Rather, appropriate, and compatible would be the use of the Sand Lake NWR through which the public can develop an appreciation for wildlife and wild lands.

## Signature of Determination

Refuge Manager Signature and Date

## Signature of Concurrence

Assistant Regional Director Signature and Date

## Mandatory Reevaluation Date

One time use.

## Literature Cited/References

Bowles, A.E. 1995. Responses of wildlife to noise. In R.L. Knight and K.J. Gutzwiller, editors. *Wildlife and recreationists: coexistence through management and research* (pp. 109-156). Island Press, Washington D.C., USA.

Gaynor, K. M., C. E. Hojnowski, N. H. Carter, and J.S. Brashares, J. S. 2018. The influence of human disturbance on wildlife nocturnality. *Science*, 360(6394):1232-1235.

U.S. Fish and Wildlife Service. 2005. Sand Lake National Wildlife Refuge Comprehensive Conservation Plan.



# Appendix A

## Figures



Figure 1. Location of the proposed right-of-way (ROW) and rights to access, Sand Lake National Wildlife Refuge at HWY 16 Bridge in Brown County. South Dakota. The map depicts temporary disturbance on the easement and the 0.05 acres of permanent riprap.

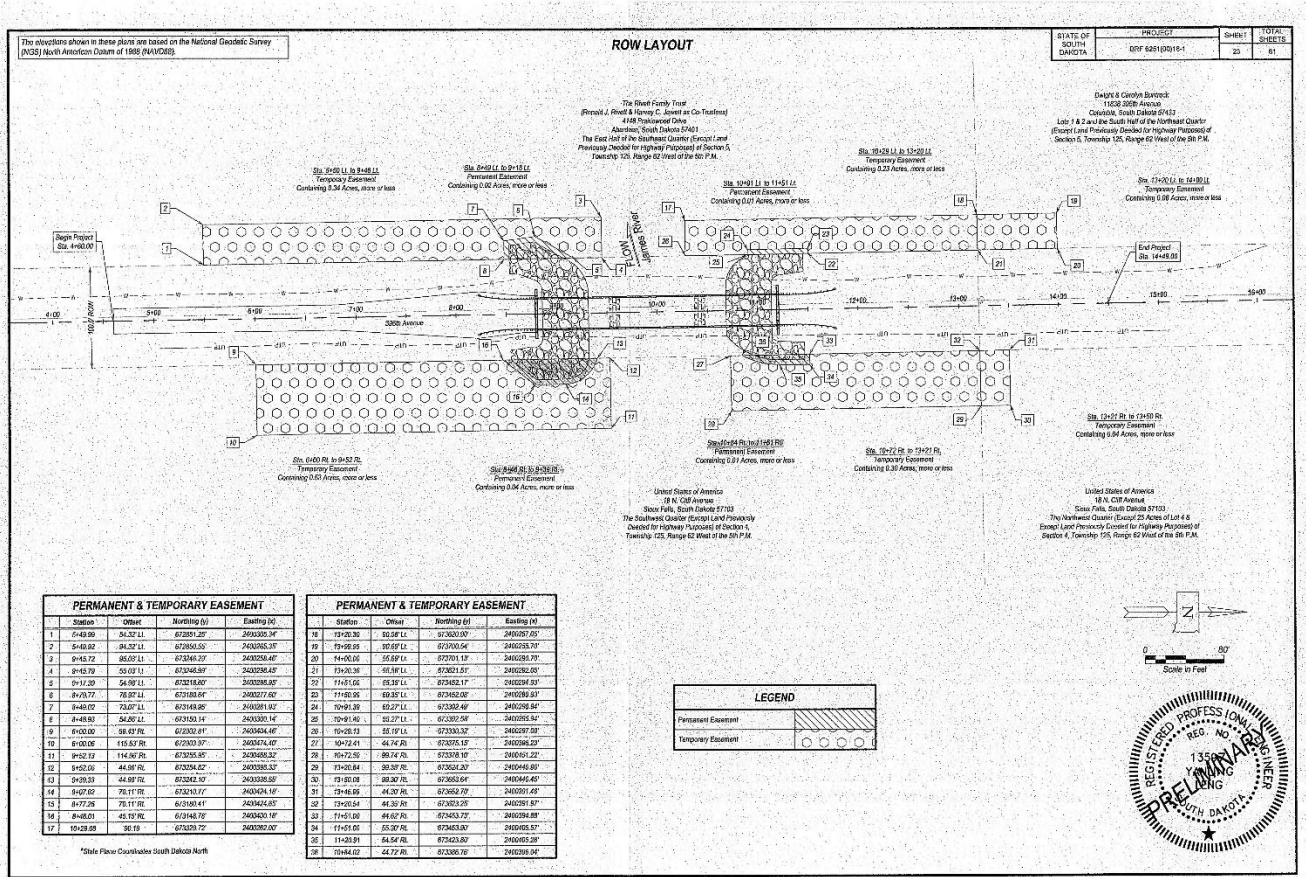


Figure 2. The map depicts the ROW Layout on permanent and temporary easements.