South Dakota Game, Fish and Parks

Final Environmental Assessment

Rapid City Shooting Range Complex

Meade County, South Dakota

Prepared by:

South Dakota Game, Fish and Parks

U.S. Fish and Wildlife Service

July 1, 2022

Table of Contents

CHAPTER 1: PROJECT DESCRIPTION

1.1 NEED AND PURPOSE

An estimated population of 78,369[5] in 2020 makes the City of Rapid City the second largest community in the State of South Dakota. A high concentration of shooting enthusiasts exists in the community while access to safe places to shoot in the area are limited. Area shooting enthusiasts, members of the public and the City of Rapid City and surrounding areas, have all expressed support for a shooting range facility as a greatly needed, safe, controlled, patrolled, and accessible site for a variety of shooting disciplines.

Currently, there are no publicly owned and operated outdoor shooting facilities in the Rapid City area that include an outdoor range to accommodate pistol, rifle, and shotgun shooting activities in the same location. Existing shooting ranges are either private or offer shooting opportunities limited to short range rifle and pistol shooting. Shooting activity is also taking place on private land, scattered public sites or undeveloped state areas. This range will provide a safe, confined, and controlled location for shooting activities.

Therefore, the purpose of this project is to provide a range that is safe, confined, and a controlled location for shooting activities. Users of the range will include recreational shooters, hunters and other individuals or groups interested in shooting sports. All parts of the range will have ADA accessible areas.

1.2 BACKGROUND

In 2020, the South Dakota Department of Game, Fish and Parks (GFP) put together a group to develop a strategic plan for the enhancement of shooting sports across South Dakota with an immediate goal of building a shooting range in the Rapid City area. GFP enlisted help from area realtors and others to search for property that could be suitable for a firearms range and in a location where the range would not impede neighboring lands now and into the future. A stakeholder group was formed in February of 2021 consisting of shooting enthusiasts, city and state officials, local gun and shooting clubs, area retailers, and other interested parties. Following months of meetings, a draft Master Plan for the property was adopted in June of 2021 with the most recent version posted in January 2022. For more information on the Master Plan design please visit:
https://gfp.sd.gov/userdocs/docs/southdakotashootingsportcomplex_booklet_spreads.pdf
(Appendix A).

The property to be developed at the preferred site for this project was purchased from the 7 O Ranch LLC in 2021 by the South Dakota Parks and Wildlife Foundation (SDPWF). GFP purchased the property in March of 2022 from the SDPWF. The land was used primarily for agricultural and ranching purposes and only one minor improvement was made by the previous owner, an earthen berm created in one draw to collect water for cattle.

1.3 PROJECT LOCATION

The GFP proposes to construct a shooting range on property owned by GFP in Meade County, South Dakota (Figures 1 and 2). The proposed site is approximately 11 miles north of Rapid City on Elk Vale

Road and the legal description is W ½ Section 34, Township 4N, Range 8E and N ½ of NW ¼ Section 03, Township 3N, Range 8E with coordinates at North 44.261°, West -103.147°. The property is 400 acres of rolling, short grass prairie that is surrounded by
rolling, short grass prairie (Figure 3).

Figure 1. *State of South Dakota*

Figure 2. *Meade County, South Dakota*

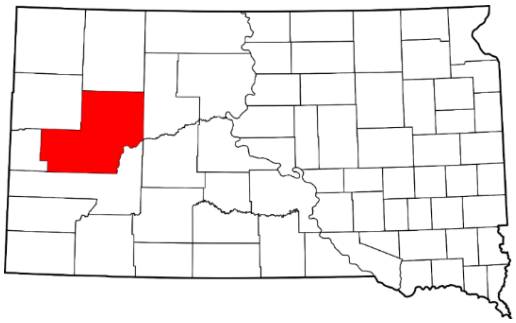
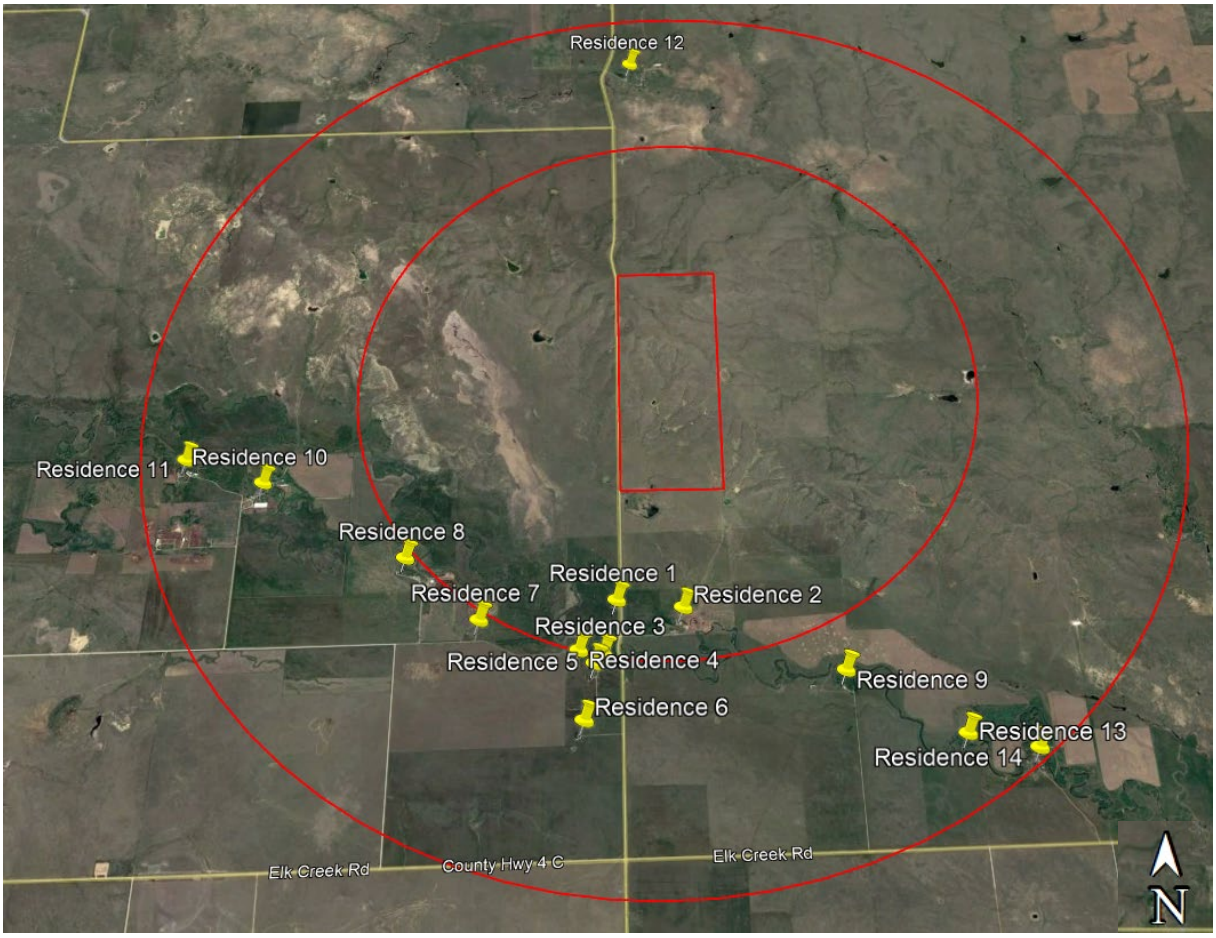


Figure 3. *Project site for the proposed Rapid City Shooting Range Complex*

Two residences are located within a 1.5-mile radius from the center of the proposed shooting range property. There are fourteen residences located in a 2.5-mile radius from the center of the proposed

range (Figure 4). The closest two residences are located to the south approximately .68 miles from the southern property boundary of the proposed range. Thirteen of the fourteen residences are located to the south of the property. There is one residence located approximately 1.5-miles from the northern property boundary.

Figure 4. *Residences in relation to the proposed shooting range*



The range will be designed with an east, northeast shooting direction. A site analysis was completed using wind roses to characterize the speed and direction of winds at this location. It was determined that during most months of the year the wind blows the greatest amount of time from a northwest direction (Appendix A).

1.4 PROJECT SUMMARY

The proposed improvements to the site include an outdoor shooting range consisting of pistol and rifle ranges, shotgun sporting clays areas, a 50-yard by 300-yard versatile training area, and a Hunter Education Building that will include a twelve-lane indoor archery/air rifle range. Other amenities include sheltered shooting bays, parking areas near bays, storage space, sidewalks, and vault toilets throughout the property. The range will be staffed with GFP personnel and volunteers and will be open to the public with hours to be determined. GFP does not anticipate that there will be shooting activities at the

complex all day on every day of the week and will implement hours of operation to ensure that shooting activities do not occur at less than ideal times.

The improvements will be broken down into three areas: Long Range, South End Range, and North End Range (Figure 5). The Long Range area located on the southwest end of the property will consist of one bay with twenty lanes with two shooting positions in each lane. The bay will utilize various targets ranging from 300 yards to 1,200 yards in distance. A 20-lane archery shooting range will be included in the area that will range in distances from 30 yards to 80 yards. A Hunter Education Building is also included in the range design but may not be built until 2023. The Hunter Education building will eventually house a staff office that has good visibility of the range and twelve indoor archery/air rifle lanes. A gravel parking lot with approximately 100 stalls will accommodate visitors and a green area for additional parking and outdoor activities.

The South End Range located on the southeast end of the property will consist of six 50-yard bays with five shooting lanes each, six 100-yard bays with ten shooting lanes each, 200/300 yards shooting area with forty shooting positions, ten stationary shotgun shooting clay target area, gravel roads and gravel parking spots to accommodate approximately 100 customers, and vault toilets located throughout the area. The stationary clay target area will have 10’ by 10’ concrete pads with stationary clay target throwers bolted down to the concrete pads and an open 900’ shot fall out area. Non-toxic shotgun shot will be highly encouraged for the shotgun shooting clay area.

Figure 5. *Range Layout (horizontal representation west end is at the top)*

The North End Range is located on the north end of the property protected by topography and in a draw from the Long Range. The North End Range will consist of eleven 30-yard wide by 50-yard long bays, three 30-yard wide by 75-yard long bays, and three 30 yard-wide by 100-yard long bays, one 50-yard wide by 300-yard long bay, a twelve position sporting clays shooting area, gravel roads and gravel parking area by each bay and area, and vault toilets located throughout the area. The sporting clays area will be developed by pouring 10’ by 10’ concrete pads at each location. There will be 900’ shot fall out area in the direction of each station. Non-toxic shot will be highly encouraged at the shotgun sporting clays area.

All shooting bays will be constructed with dirt side berms at a minimum height of 12' and minimum 20' end berm height. Berms will be constructed higher as needed to maintain safety at the range. The dirt berms will be constructed utilizing material that will come from within the boundaries of the project site.

Lead management guidelines in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges manual (Revised June 2005)[1] will be implemented at this site. In the design of the range, the BMPs that will be implemented will be utilizing clay-based soils that are naturally present at the shooting range site that will act as a barrier to control the mobility of soluble lead. The side and end berms of each shooting bay will also control the flow of surface water so lead particles will remain within each shooting bay.

GFP will also implement engineered runoff controls to slow the speed of surface water runoff. This will effectively help filter any lead material out of the water if it were to escape the bermed shooting bays. The engineered runoff controls will include small dams and dikes, leveled shooting bays and areas, and swales to lengthen the runoff area to further settle out lead within the footprint of the shooting range. This range will also utilize vegetation as another control to slow the speed of surface water runoff. GFP is committed to keep all lead contamination within the property boundaries of the range.

Per the Interstate Technology and Regulatory Council's Environmental Management at Operating Outdoor Small Arms Firing Ranges, vegetative controls "reduce the eroding impact of heavy rain on the soil surface, slows down the flow of surplus water over its surface, binds the soil more tightly through the root systems, and filters out lead particles or other constituents of concern from runoff water."[3] In a study conducted by EA Engineering, Science and Technology, Inc. "Lead Mobility At Shooting Ranges"[4], in summary it stated "metallic lead is slowly oxidized to forms that dissolve and becomes slightly mobile in the environment. The rates at which metallic lead will oxidize and migrate to the water column is therefore very slow. Complete corrosion of bullets and shot through oxidation and dissolution may take as much as 100-300 years or longer."

1.5 OPERATION AND MAINTENANCE

Operation and Maintenance of the shooting range property will be the responsibility of GFP. GFP currently operates and maintains seven firearms shooting facilities around the state of South Dakota and is well versed in operating and maintaining shooting ranges. GFP also partners with several third-party entities to help with operation and maintenance of shooting ranges. GFP is also well versed in the proper operation and maintenance of vault toilets. With properly maintained vault toilets, the smell disperses through a vent pipe and is dispersed into fresh air in a relative short distance. Vault toilets that are pumped and recharged regularly will significantly reduce the smell in the immediate area of the vault toilets. GFP operates and maintains numerous vault toilets on other GFP properties including parks, campgrounds, and lake access areas.

GFP will also routinely implement lead recycling and recovery activities such as raking and screening. Depending on the amount of usage at the range, GFP will hire a professional lead recycler to come in and clean the berms. All lead recovered will be disposed of properly at a lead recycler and will be documented for each occurrence.

1.6 FUNDING

Estimated project costs for the entire project will be approximately $9,905,524. Funding sources for this proposed project are GFP, Pittman-Robertson Federal Aid in Wildlife Restoration Act funds administered through the U.S. Fish and Wildlife Service (USFWS), and private donations.

1.7 DECISIONS THAT NEED TO BE MADE

All local, state, and federal laws and regulations are being followed. GFP has consulted and is working closely with agencies such as the South Dakota Department of Agriculture and Natural Resources, United States Army Corps of Engineers, State Historic Preservation Office, and United States Fish and Wildlife Service to mitigate or address any potential environmental issues with this project. GFP is closely following and will continue to follow the EPA's Best Management Practices for Shooting Ranges[1].

GFP and the USFWS will select one of the alternatives reviewed in this environmental assessment and the USFWS's Regional Director will determine if this environmental assessment is adequate to support a finding of no significant impact decision or if an environmental impact statement will be required.

CHAPTER 2: ALTERNATIVES

GFP has considered other locations to develop a public shooting range. Initially, a property was identified along SD Highway 44 near Caputa, SD. GFP partnered with third-party entities in hopes of purchasing this much larger tract of land to develop a public shooting range along with other amenities. Due to funding issues and other circumstances, however, the tract of land was not able to be purchased. This tract of land was eventually sold and could no longer be used as an alternative location for a shooting range.

A property south of New Underwood, SD was also identified. The property was land locked (meaning there was no available access road and had other property owners on all four sides of the property), neighbors were located less than one quarter of a mile away to a potential shooting range, and the price per acre was much higher. Due to the reasons mentioned above this tract of land was considered a non-alternative for a shooting range.

GFP also investigated the alternative of expanding the Fall River Shooting Range located approximately 45 miles away from the southern portion of Rapid City, SD. The Fall River Shooting Range is also located approximately one hour of travel time away from the main population area GFP is attempting to reach along the I-90 corridor around Rapid City, SD to include but not limited to Summerset, SD, Blackhawk, SD, Sturgis, SD, Box Elder, SD, and Ellsworth AFB. This location was not considered an alternative because the shooting range already utilizes the entire property. Therefore, GFP is not able to expand the existing shooting range and accommodate the main population area we are trying to reach.

2.1 ALTERNATIVE A – PREFFERED ALTERNATIVE

The site described in Project Location (Chapter 1.3) is the preferred alternative because it has many of the desired amenities supportive of the strategic plan goal for building a shooting range in the Rapid City area that would be easily accessible to the public and that would provide a safe, confined, and

controlled location for shooting activities. GFP has gone with third-party engineers to properly engineer this shooting range to implement mitigation efforts as described in this document.

2.2 ALTERNATIVE B – NO ACTION ALTERNATIVE

Under the no action alternative, the proposed project site would continue to be used as agriculture/ranch land and no additional shooting facilities would be constructed in the area. Recreational shooting at scattered sites in the area will continue to be the norm and basic shooting safety issues would continue to be an issue.

CHAPTER 3: AFFECTED ENVIRONMENT

3.1 PHYSICAL ENVIRONMENT

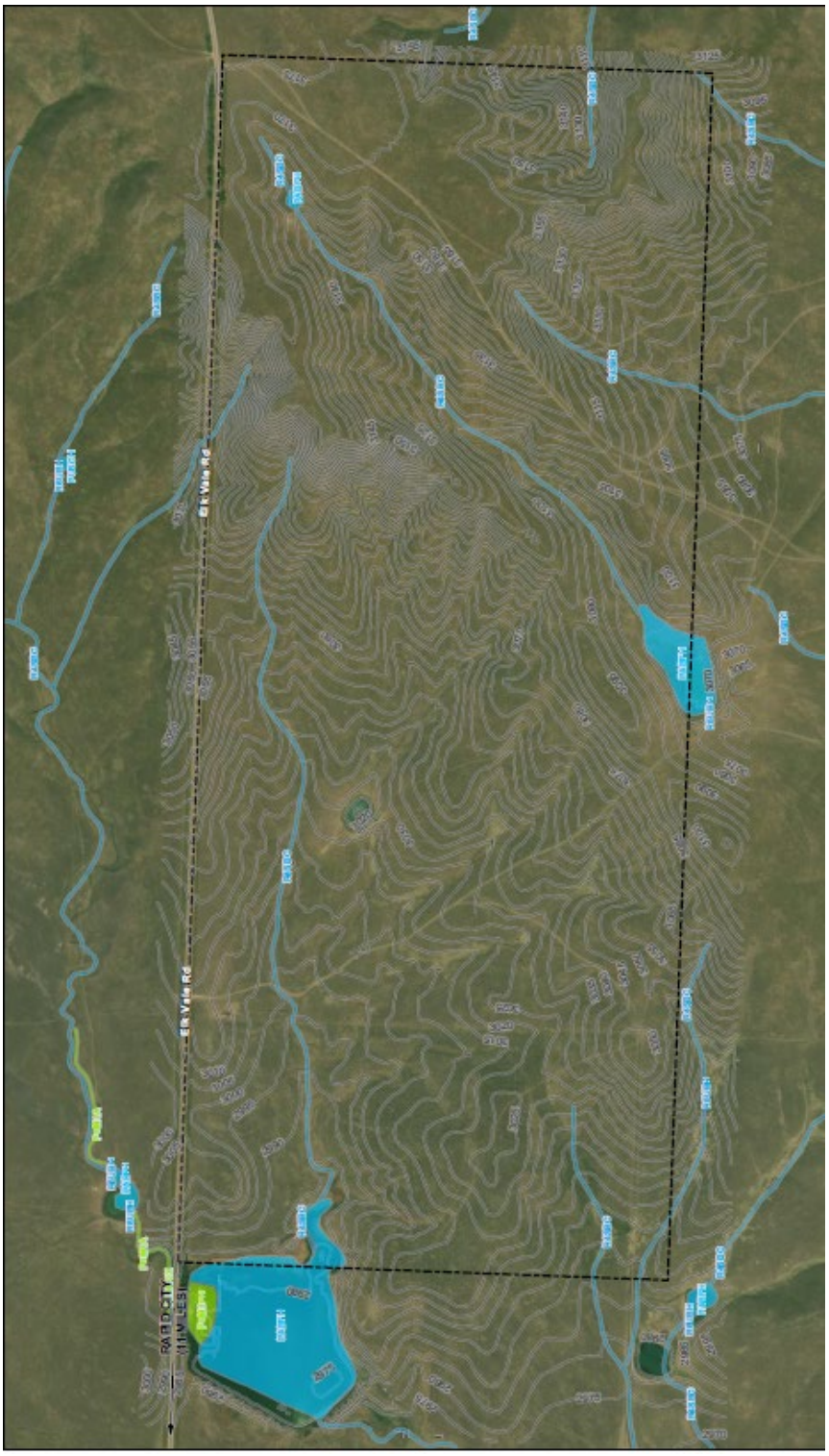
The physical environment of the property is located in a Semiarid Pierre Shale Plains on the Northwestern Great Plains. The preferred project site is in rural Meade County and is currently used as grazing land for a cattle ranch. The preferred project site is currently surrounded by rolling plains and is used for agricultural/ranching purposes.

3.2 WATER

An evaluation by FMG Engineering staff using field observations on November 16, 2021, desktop review of aerial imagery, NRCS soil data, and National Wetland Inventory data, determined that there are four areas of runoff streambeds within the project scope that are considered R4SBC, which means they are riverine, intermittent streambeds that seasonally flood. There is also one small manmade impoundment that is considered PABFh, which means it is a palustrine, aquatic bed that is semi permanently flooded diked/impoundment (Figure 6). The intermittent seasonally flooded areas inside the project area will be minimally impacted as the design of the range incorporates the intermittent seasonally flooded areas.

While reviewing the wetland areas and the topographical maps, engineers were able to identify two major drainage basins (Appendix E). This helped identify where water will flow and the engineers were able to design proper runoff controls to keep lead contaminated water confined within the property boundaries. There are currently no designated floodplains on the property per Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (Appendix F). According to the National Oceanic and Atmospheric Administration (NOAA), this area on average receives approximately 17.44 inches of moisture per year[7] (Appendix H).

Figure 6. *Water Resources*

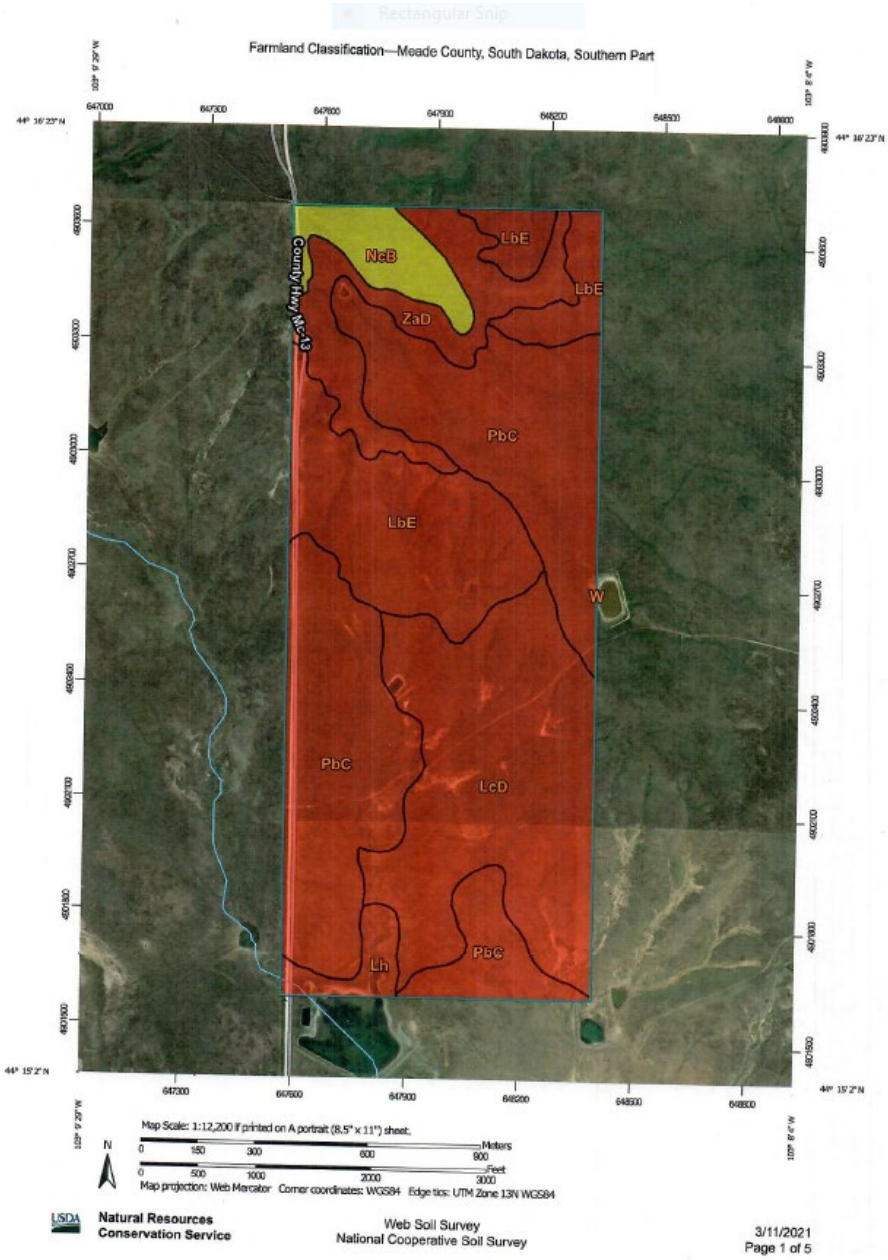


Note. The image depicts a USFWS, NWI Wetlands Map overlayed with the topography and property boundary lines and demonstrates the surveyed highwater marks during historically wet years.

3.3 SOILS

Soil types present in the construction areas include: KbB: Kyle clay, 2 to 6 percent slopes (0.0%), LbE: Lismas clay, 10 to 40 percent slopes (18.6%), LcD: Lismas-Winler clays, 6 to 25 percent slopes (27.1%), Lh: Lohmiller and Glenberg soils, channeled (2.4%), Ncb: Nunn clay loam, 2 to 6 percent slopes (4.3%), PbC: Pierre clay, 6 to 20 percent slopes (38.3%), ZaD: Zigweid-Nihill complex, 6 to 15 percent slopes (9.1%), W: Water (0.1%). Nun clay loam (NcB) encompasses 4.3% of the soil type and is considered prime farmland if irrigated per the National Resources Conservation Service (NRCS) (Figure 7).

Figure 7. *NRCS Soil Survey, March 11, 2021*



3.4 AIR QUALITY

The project area is in a rural area and has no known air quality measurements.

3.5 TOPOGRAPHY

Elevations at the preferred site (Figures 8 and 9) show an increase of approximately 175 feet in elevation from the south end of the range to the north end of the range. The Long Range and South End Range will be constructed on the south end of the property where there is minimal elevation change while utilizing a ridge that runs from the northwest side of the property that runs into the middle section of the property as a natural berm. The North End Range will be constructed on the backside of the ridge that has minimal decrease in elevation running northwest to southeast. Construction of the ranges will utilize the natural elevation changes throughout the property to use as natural berms for shooting bays.

Figure 8. *Topography at South End of Range (5 Feet Contours)*

Figure 9. *Topography of North End of Range (5 Feet Contours)*

3.6 BIOLOGICAL RESOURCES

Biological resources at the preferred site are a mixture of vegetation typical to this part of South Dakota. The area contains a mixture of natural short prairie grasses which include blue gramma, buffalograss, little bluestem, prairie junegrass, and threadleaf sedge. The area has not been previously disturbed. Threatened, endangered or candidate biological resources are not known to be present at this location.

3.7 WILDLIFE

Wildlife at the preferred site is typical to this part of South Dakota. Bird species documented at the site include mourning dove, raptors, sharp-tailed grouse, prairie chickens, and migratory songbirds. Common

mammals found on-site include mule deer, opossum, raccoon, skunk, badger, fox, coyote, jack rabbits and an occasional white-tailed deer. Reptiles utilizing the site include garter snakes, bull snakes, rattle snakes, painted turtles and snapping turtles during periods of high moisture. Birds of Conservation Concern (BCC) considered potentially affected by project activities per the USFWS' Information for Planning and Consultation (IPaC[6]) are bald eagles, lesser yellowlegs, and red-headed woodpeckers; however, these resources are not known to be present in the proposed project area. A search of the SD Heritage Database does not find any occurrences of these birds in the immediate project area.

3.8 FISH AND OTHER AQUATIC SPECIES

No fish or other aquatic species are deemed present at the preferred site. There is no year around water sources that are sustainable for fish and other aquatic species to inhabit the area permanently. Threatened, endangered or candidate fish and aquatic species are not known to be present. While stocking fish during wet times may provide fish and fishing opportunities for a limited time in these areas, it will not provide for sustainable fishery unless stocked routinely during wet years when water is readily available (Figures 10 -19). The previous landowner, who is also the landowner of the stock dams that are in and around the immediate vicinity of the proposed shooting range, stated he has never stocked the dams with fish. The landowner has owned the land since 2012.

Figure 10. *July 2005*

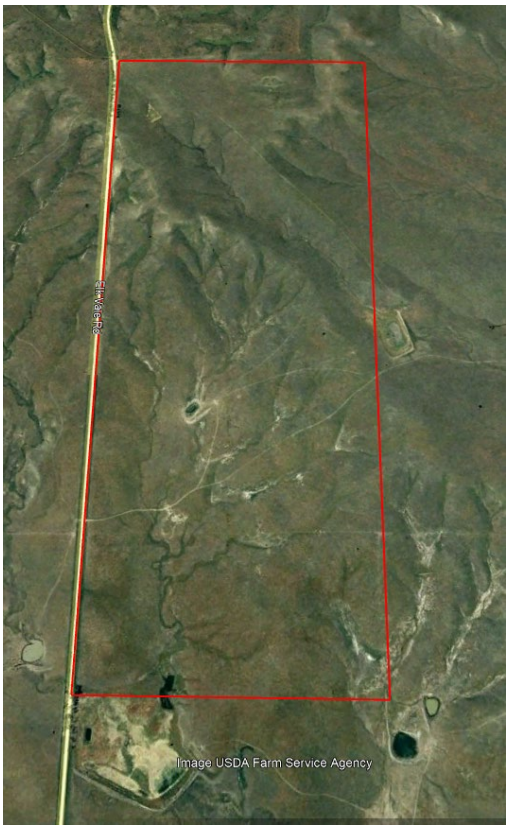


Figure 11. *August 2006*

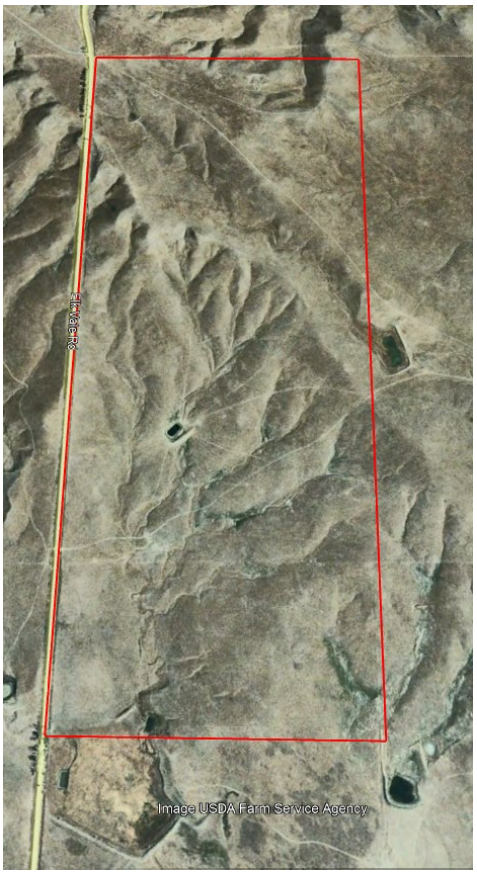


Figure 12. *April 2013*

Figure 13. *May 2017*

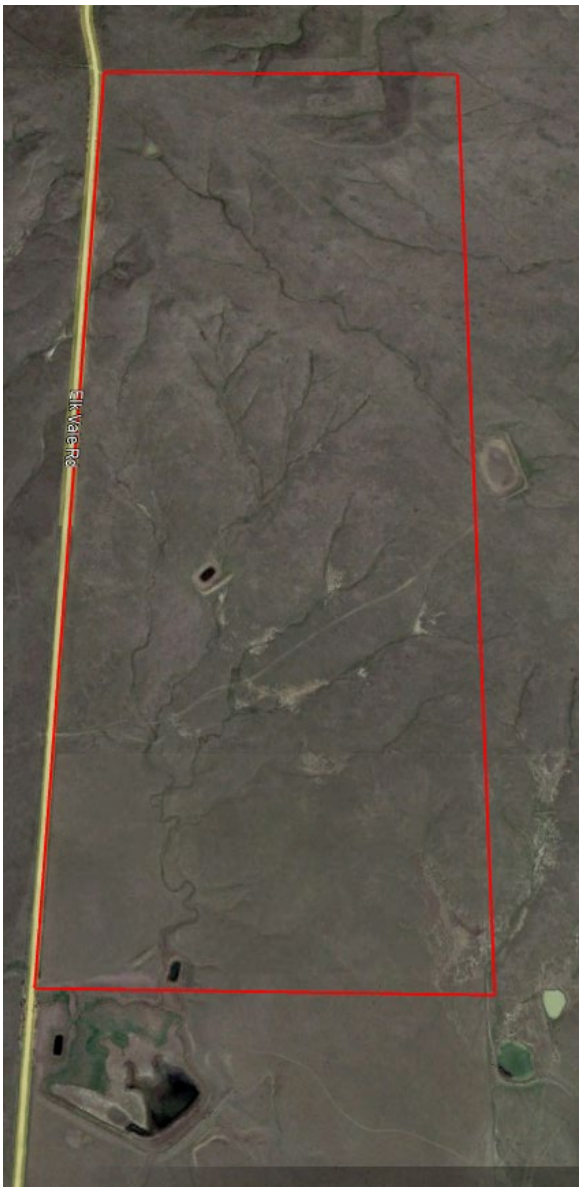


Figure 14. *Aerial image of the property, Winter 2022.* Note. The image depicts the area after a snow showing the stock dams frozen out after a snow event.

Figure 15. *North Stock Dam*

Figure 16. *East Stock Dam (not on property but overflows onto proposed property)*

Figure 17. *South Stock Dam*

Figure 18. *South Stock Dam*

Figure 19. *Central Stock Dam (Not Claimed by USACE)*

3.9 THREATENED AND ENDANGERED SPECIES

There are no known occurrences of endangered, rare, or threatened species in the immediate project area. Species considered per IPaC[6] are northern long-eared bats, red knots, whooping cranes, and monarch butterflies. A search of the SD Natural Heritage Database does not find any occurrences of endangered, rare, or threatened species in the immediate project area (Appendix D).

3.10 HISTORIC AND CULTURAL RESOURCES

A Class I Cultural Resources Record Search was conducted by the Archaeological Research Center (ARC). There was no record of cultural or historical findings in the immediate project area. While there was no record of documented cultural or historical resources there has been no survey conducted in the immediate area. Due to the project area not being disturbed, a Cultural and Historical Survey was ordered to ensure that no archaeological resources are present.

ARC was given the Rapid City Shooting Sports Complex (now referred to as South Dakota Shooting Complex) Master Plan to document where areas of disturbing the soil will be encountered. ARC completed a Class III Intensive Cultural Resources Survey on the proposed property. Investigators documented five new archaeological sites. Site 39MD1025 is an American Indian stone cairn site of unknown temporal or cultural affiliation. No cultural materials were observed in association with the features. No subsurface testing was conducted in the immediate area due to low buried site probabilities due to the type of soil. Sites 39MD1026, 39MD1027, and 39MD1028 are American Indian isolated finds of unknown temporal or cultural affiliation. Site 39MD1029 is an American Indian isolated find of Archaic or Late Prehistoric temporal affiliation. As a result of the survey, the isolated finds were found to possess little integrity and offer limited research potential to prehistoric procurement and modification activities in the region. Relative to site 39MD1025, the investigators recommended and SHPO concurred with the “No Historic Properties Affected” determination so long as all project activities avoid impacts to site 39MD1025 now and in the future (Appendix B).

3.11 LAND USE

The preferred site is currently being used as a pasture for grazing cattle. The previous owner of the parcel also used the land for a large cow/calf ranch operation. Currently, Meade County does not have a planning or zoning ordinance in that area of the county.

3.12 NOISE

Noise levels at the preferred site are considered generally low since the property has not been developed for uses that generate increased use or traffic instead the site is used as pasture for grazing cattle. The nearest airport (Ellsworth Air Force Base) is located approximately seven miles away and the nearest railroad is located approximately eleven miles away. The project location would be located along a county road that is paved, but turns into gravel approximately two miles from the proposed shooting range. Regular shooting activities outside of hunting seasons do not currently occur at the preferred site.

There are 14 residences located in a 2.5-mile radius from the center of the proposed range. The closest two residences are located to the south approximately 0.68 miles from the southernmost property boundary. The remaining 12 residences are located approximately one mile or more away from the property boundaries.

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

The Preferred Alternative is to construct a new public shooting range complex on 400 acres of rolling, short grass prairie that is currently being used for agricultural/ranching purposes. Three areas of the property will be converted from use as grazing land for a cattle ranch and developed into a shooting range facility to accommodate a greatly needed, safe, controlled, patrolled, and accessible site for a variety of shooting disciplines.

Environmental consequences of the proposed project will be examined in this section and the results will be identified as either "No Significant Impact" or "Mitigation Required". A determination of "No Significant Impact" will be made if the proposed action will not significantly impact the environment. A determination of "Mitigation Required" will be made if the proposed action will have an impact on the environment and recommended mitigation measures will be identified to reduce the overall impact to the environment.

4.1 WATER

Alternative A – Preferred Alternative – Mitigation Required

An Environmental Review was conducted by the South Dakota Department of Agriculture and Natural Resources (DANR) relative to the proposed project impacts to natural resources. DANR assessed project impacts to water resources including drinking water, ground water, and surface water among other potentially affected resources. DANR determined that the project will not have adverse environmental effects to drinking water in the area and that the project is unlikely to have adverse effects on ground water quality provided recommended design criteria and best management practices are followed (Appendix C). Lead management guidelines in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges manual (Revised June 2005)[1] will be implemented at this site to protect the ground water resources in this area.

DANR also assessed the proposed project impacts on surface water and determined that at a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Lead management guidelines in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges manual (Revised June 2005)[1] will be implemented at this site to protect the surface water resources in this area. GFP will follow all recommendations made by DANR and will apply for all pertinent permits prior to construction. During construction activities, some of the riverine areas may need to be crossed. Culverts covered by gravel will be utilized to protect the flow of the riverine areas.

The topographical survey conducted by third-party engineers (Figures 8 and 9) will help determine the direction of surface water runoff and the project will utilize engineered runoff controls to minimize potential runoff and level areas to create shooting bays with berms on three sides to control the runoff

from areas of shooting. Per EPA BMPs (Ch 2, pII-2)[1] annual precipitation is one of the most important factors that influence lead degradation and migration. This location only averages approximately 17.44 inches of moisture per year per NOAA[7].

Additionally, DANR recommended that the shooting range facility should be designed with permanent measures to ensure that all storm water is contained and does not run off site or run to waters of the state. GFP officials and DANR officials met on November 22, 2021, to discuss the surface water and concluded, "Additionally, the shooting range facility should be designed with permanent measures to ensure that all storm water is contained and does not run off site or run to waters of the state." After the discussion it was clarified that storm water may leave site, but contaminated storm water should not leave the site. As a result of this discussion, DANR recommended the use BMPs rather than retention ponds to keep lead out of any water that could get into waters of the state (Appendix C).

Finally, DANR advised that impacts to tributaries, creeks, wetlands, and lakes should be avoided by the project assuming the waterbodies were identified as waters of the state. However, a jurisdictional determination was completed by the Army Corps of Engineers on January 26, 2022, and they have determined that there are no waters of the United States within the review area (Appendix E).

Alternative B – No Action – No Significant Impact to water if no action is taken.

4.2 SOILS

Alternative A – Preferred Alternative – Mitigation Required

All of the soil required to construct the shooting range will come from the existing soils within the project area. When earth shaping activities are finished and construction is complete, topsoil will be placed in appropriate areas and seeded. In total, 778,550 cubic yards of dirt will be moved to level, grade, and create vegetative swales for lead management and proper berm height to contain bullets.

To complete the Long Range and hunter education building portion of the shooting complex, approximately 180,550 cubic yards of dirt will be moved to grade the area for proper runoff and lead management of water runoff and to create 12 feet minimum side berms and 20 feet minimum end berm. All the dirt that will be moved will come from the area of the Long Range and hunter education building. To complete the South End Range, approximately 306,800 cubic yards of dirt will be moved to grade the area for proper runoff and lead management of the water runoff and to create 12 feet minimum side berms and 20 feet end berms. All the dirt that will be moved will come from the area of the South End Range. To complete the North End Range, approximately 291,200 cubic yards of dirt will be moved to grade the area for proper runoff and lead management of water runoff and to create 12 feet minimum side berms and 20 feet minimum end berms.

Lead management guidelines in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges manual (Revised June 2005)[1] will be implemented at this site. Lead management will include the use of natural earthen backstops and natural vegetation to control and contain spent shot on the trap range. Lead migration will be prevented from reaching nearby waterways by leaving existing perimeter berms in place to keep all lead shot contained within the footprint of the outdoor shooting range. Lead shot will be removed and recycled from soils as needed by utilizing the services of a commercial lead

recycler and documenting lead management activities will be the responsibility of GFP. GFP will also routinely test the soil pH and adjust utilizing Lime/Phosphate (lawn fertilizer) to adjust the pH as needed for substantial lead binding to the soils for reclamation.

Alternative B – No Action Alternative – No Significant Impact to soils if no action is taken.

4.3 AIR QUALITY

Alternative A – Preferred Alternative – No Significant Impact

DANR reviewed the preferred site on November 15, 2021 and stated there may be minor impacts to air quality in South Dakota (Appendix C). DANR determined that the impact would be through source and fugitive emissions potentially from the operating equipment with point source emissions. GFP will follow the guidance of DANR and apply for the appropriate permits for the Rapid City Area. In addition, GFP discussed the issue with Meade County's Deputy Director of Planning and he stated that we will not need air quality permits for the proposed Rapid City Shooting Range.

Alternative B – No Action Alternative – No Significant Impact to air quality if no action is taken.

4.4 TOPOGRAPHY

Alternative A – Preferred Alternative – Mitigation Required

Natural existing berms within the current topography will be utilized for this project. During construction some material will be moved away to widen, lengthen, or increase the height of the natural topography. This alteration of the topography of the area will not significantly alter the character of the preferred site.

GFP determined this was a preferred site since the topography of the property follows EPA's BMPs[1] in areas where construction will take place. While there are areas of extreme slope and rugged terrain, the construction will not take place in those areas. The construction is designed to utilize the topography to follow BMPs that include an earthen backstop that is generally between 15 and 20 feet high with a recommended slope as steep as possible (EPA BMP for Lead Outdoor Shooting Ranges, P III-2)[1]. The BMPs also state that for shotgun range reclamation the area should be level and flat if possible PII-5)[1]. The versatile training bay and the main shotgun areas will be constructed on relatively flat topography (Figures 20-25). Gravel roadways will also be built for easily accessible shooting areas so heavy lead reclamation equipment can enter as needed.

Alternative B – No Action Alternative – No Significant Impact to topography if no action is taken.

Figure 20. *50 – 100 Yard Shooting Bays Area*

Figure 21. *200 – 300 Yard Shooting Area*

Figure 22. *Long Range Shooting Area Side View*

Figure 23. *Stationary Clay Target Area*

Figure 24. *Versatile Training Bay and Sporting Clays Area*

Figure 25. *Action Bay Area*

4.5 BIOLOGICAL RESOURCES

Alternative A – Preferred Alternative – No Significant Impact

Areas disturbed during construction of the shooting range at the proposed location will be seeded to permanent vegetation suitable for mowing and lead reclamation. Vegetation, once established, will not be disturbed beyond normal operation and maintenance activities such as lead reclamation to impact areas of the back berms of the shooting bays.

Alternative B – No Action Alternative – No Significant Impact if no action is taken.

4.6 WILDLIFE

Alternative A – Preferred Alternative – No Significant Impact

GFP environmental review staff visited the proposed location on October 21, 2021. The review determined that there is no anticipated significant impact to fish and wildlife resources at the proposed location (Appendix D). Furthermore, there are no occurrences of endangered, rare, or threatened species in the immediate project area. The project area is primarily pastureland that currently has heavy use from livestock grazing. There is very little suitable wildlife habitat on this property and very few documented occurrences of wildlife species in general (Chapter 3.7).

Alternative B – No Action Alternative – No Significant Impact if no action is taken.

4.7 FISH AND OTHER AQUATIC SPECIES

Alternative A – Preferred Alternative – No Significant Impact

No fish and other aquatic species are deemed present within the boundaries of the proposed location since there is no sustainable habitat for fish and other aquatic species within the project location. While there are two small impoundments in the area, they generally dry up during dry years making it uninhabitable for fish and other aquatic species to permanently occupy the preferred project site (Figures 10-19). The previous landowner who is also the landowner of the stock dams that are in and around the immediate vicinity of the proposed shooting range stated he has never stocked the dams with fish. The landowner has owned the land since 2012. GFP will utilize EPA's BMPs[1] to make sure spent rifle, pistol, and shotgun lead will be confined within the footprint of the shooting range and prevented from reaching nearby waterways by creating side and rear shooting range berms during construction and utilizing vegetation and lead recycling activities.

Alternative B – No Action Alterative – No Significant Impact if no action is taken.

4.8 THREATENED AND ENDANGERED SPECIES

Alternative A – Preferred Alternative – No Significant Impact

Species considered per USFWS's IPAC[6] environmental review tool are northern long-eared bats, red knots, whooping cranes, and monarch butterflies. A search of the SD Natural Heritage Database does not find any occurrences of endangered, rare, or threatened species in the immediate project area. GFP has reviewed the proposed location on April 12, 2021. GFP conducted a search of the SD Natural Heritage Database for the proposed location and did not find any occurrences of endangered, rare, or threatened species in the immediate project area (Appendix D).

Alternative B – No Action Alternative – No Significant Impact if no action is taken.

4.9 HISTORICAL AND CULTURAL RESOURCES

Alternative A – Preferred Alternative – No Significant Impact

A Class I Cultural Resources Record Search was conducted by the Archaeological Research Center (ARC). There was no record of cultural or historical findings in the immediate project area. While there was no record of documented cultural or historical resources there has been no survey conducted in the immediate area. Due to the project area not being disturbed a Cultural and Historical Survey was ordered to ensure that no archaeological resources are present. ARC completed a Class III Intensive Cultural Resources Survey on the proposed property during the period of October 4-8, 2021. The survey documented five new archaeological sites. Site 39MD1025 is an American Indian stone cairn site of unknown temporal or cultural affiliation. No cultural materials were observed in association with the features. No subsurface testing was conducted in the immediate area due to low buried site probabilities due to the type of soil. Sites 39MD1026, 39MD1027, and 39MD1028 are American Indian isolated finds of unknown temporal or cultural affiliation. Site 39MD1029 is an American Indian isolated find of Archaic or Late Prehistoric temporal affiliation. As a result of the survey, the isolated finds were found to possess little integrity and offer limited research potential to prehistoric procurement and modification activities in the region. Relative to site 39MD1025, the investigators recommended a Section 106 Finding of No Historic Properties Affected determination relative to the proposed construction provided that all project activities avoid impacts to site 39MD1025 now and in the future (Appendix B).

South Dakota's State Historic Preservation Officer (SHPO) reviewed the Class III Intensive Cultural Resources Survey for the South Dakota Game Fish and Parks Rapid City Firearms Range Complex on November 17, 2021 and concurred with the Section 106 Finding of No Historic Properties Affected for the proposed action on the preferred site provided that the following stipulations are met: 1) Eligible site 39MD1025 is avoided by all project activities; 2) Future development or construction at the shooting range, even that without federal funding, should avoid impacts to 39MD1025 and its immediate surrounding, as such future impacts to the site could be an adverse effect to the site which is reasonably foreseeable and later in time from the proposed current federal undertaking; and 3) All necessary gravel for the undertaking should come from an existing commercial source (Appendix B).

GFP will follow all recommendations and stipulations put forth by SHPO to meet all Section 106 requirements. GFP will also take precautions to protect site 39MD1025 such as, but not limited to, installing fences in strategic areas to protect sensitive locations, develop signage to make sure people stay on designated trails, and to protect the site from construction and on-going activities of the shooting range (Appendix B).

Alternative B – No Action Alternative – No Significant Impact if no action is taken.

4.10 LAND USE

Alternative A – Preferred Alternative – No Significant Impact

To date, the project site has only been used for grazing cattle. GFP recently met with Meade County representatives and they stated that there is currently no zoning or planning restrictions on the area in that part of the county so no further action is required.

Alternative B – No Action Alternative – No Significant Impact if no action is taken.

4.11 SOCIOECONOMIC CONDITIONS

The proposed shooting range will increase usage of the area and will result in a positive impact to the local economy through the increased sales of goods and services to the users of the shooting range. Shooting range users generally benefit the local economy by purchasing fuel, food, lodging and retail goods from area businesses. Increased sales of goods and services will also increase sales tax revenues to the City of Rapid City and the surrounding areas. Elevate Rapid City recently completed an Economic Impact Scenario for Rapid City and determined that Rapid City and the surrounding areas could see a potential increase of approximately $1,865,075 in worker earnings, 55 more jobs, and an approximate increase of $376,363 in taxes on production and imports. For more information on the potential economic impact to South Dakota generated from the proposed Rapid City Shooting Range Complex go to: https://gfp.sd.gov/userdocs/docs/southdakotashootingsportcomplex_booklet_spreads.pdf (Appendix A).

Alternative B – No Action – No significant impact will happen to the socioeconomic conditions if no action is taken

4.12 NOISE

Alternative A – Preferred Alternative – Some Mitigation

Noise levels will temporarily increase with the shooting range construction and normal operations at the shooting range will increase noise levels at the site on an ongoing basis. Although shots will be audible on an occasional basis, increased noise levels are not expected to pose a threat or disturbance to the residents living nearby.

GFP has designed the range with several noise mitigation techniques including the orientation of the entire shooting range with an east, northeast shooting direction, 10-20 feet tall earthen berms on three

sides of each shooting bay, and strategic placement of each range within the terrain. The majority of the usage of the range will happen at the Long Range and South End Range sections that sit in a basin that is lower in elevation and oriented towards a ridgeline of more than 100 feet of positive elevation change. Overhead shade structures over the line of fire will also assist to buffer the noise coming from the shooting ranges as will vegetation and noise reducing material that will be applied where necessary to dampen noise leaving the range. "GFP does not anticipate that there will be shooting activities at the complex all day on every day of the week and will implement hours of operation to ensure that shooting activities do not occur at less than ideal times. GFP will continue to do noise testing and will adjust noise mitigation strategies as needed.

There are very few studies on the impacts of sound to wildlife from shooting ranges. One study that was conducted was the Effects of Military Activity on Reproductive Success of Red-Cockaded Woodpeckers (Dorskey, et al)[2] conducted at Ft. Benning, Georgia. In summary, there were no records of any disturbance to reproducing Red-Cockaded Woodpeckers from nearby military operations. Beyond this, GFP has not observed any negative impacts to wildlife at other firearm ranges operated across South Dakota. There have been no documented sightings of Whooping Cranes or other threatened or endangered species in the proposed shooting range vicinity or for several miles around the property. GFP encourages all sightings of Whooping Cranes to be reported so that they may be documented. If there is a verified sighting of a Whooping Crane or other threatened or endangered species, all shooting activities on all ranges of the proposed shooting complex will stop until it is safe to resume activities.

Alternative B – No Action Alterative – No significant impact to noise levels if there is no action taken.

4.13 CUMULATIVE IMPACTS

Alternative A – Preferred Alternative – Mitigation Required

Total area impacted within the preferred site consists of approximately 400 acres. Topography and soils will be altered during construction as GFP will utilize the existing topography and soils to construct berms and backstops within each of the bays. Within the design of the range, minimal impacts will happen with the drainage as GFP will utilize the natural topography (slope) of the land to allow for natural drainage that currently exists at the site. Since EPA's Best Management Practices for Lead at Outdoor Shooting Ranges[1] will be utilized, no negative impact is expected to result from the construction and operation of the shooting range at the preferred site.

GFP currently operates and maintains seven firearms shooting facilities around the state of South Dakota and is well versed in operating and maintaining shooting ranges. GFP also partners with several third-party entities to help with operation and maintenance of shooting ranges. GFP is also well versed in the proper operation and maintenance of vault toilets. With properly maintained vault toilets, the smell disperses through a vent pipe and is dispersed in the fresh air in a relative short distance. Vault toilets that are pumped and recharged regularly will significantly reduce the smell in the immediate area of the vault toilets. GFP operates and maintains numerous vault toilets on other GFP properties including parks, campgrounds, and lake access areas.

Alternative B – No Action Alternative – No significant impacts will occur if no action is taken.

CHAPTER 5: COORDINATION AND CONSULTATION

South Dakota GFP consulted with the following state, county, and federal agencies:

Office of Waste Management, South Dakota Department of Agriculture and Natural Resources
Office of Air Quality, South Dakota Department of Agriculture and Natural Resources
Office of Drinking Water, South Dakota Department of Agriculture and Natural Resources
Office of Surface Water, South Dakota Department of Agriculture and Natural Resources
Office of Ground Water, South Dakota Department of Agriculture and Natural Resources
South Dakota Game, Fish and Parks Terrestrial Section
South Dakota Game, Fish and Parks Aquatic Section
South Dakota Game, Fish and Parks Environmental Review Team
United States Fish and Wildlife Service Wildlife and Sport Fish Restoration
United States Army Corps of Engineers
National Resources Conservation Service
Meade County Office of Planning
South Dakota Archaeological Research Center (ARC)
South Dakota's State Historic Preservation Office

CHAPTER 6: PUBLIC INVOLVEMENT PROCESS

Area shooting enthusiasts, members of the public and the City of Rapid City and surrounding areas have all expressed support for this proposed facility as a greatly needed, safe, controlled, patrolled, and accessible site for a variety of shooting disciplines. Currently, there are no publicly owned and operated outdoor shooting facilities in the Rapid City area that include an outdoor range to accommodate pistol, rifle, and shotgun shooting activities in the same area.

GFP has and will continue to meet with neighbors to the proposed firearm range site, local and county governments, local legislators, and other interested parties. A stakeholder group was formed in February of 2021 consisting of shooting enthusiasts, city and state officials, local gun and shooting clubs, area retailers, and other interested parties (Appendix G). Following months of meetings, a draft plan for the property was adopted in June of 2021 with the most recent version posted in January 2022 (Appendix A). GFP continues to meet with this stakeholder group to allow for public involvement and input on range design and construction. Once the proposed project is approved, updates will be completed monthly throughout construction and beyond. Updates will be posted at the GFP website https://gfp.sd.gov/.

GFP has met with the Meade County Commission on the details of this project and intends to meet as needed with the Commission to advise them of range progress and construction. GFP will also hold public meetings as needed to inform the public of range progress and construction. Along with public meetings, news stories from various news outlets have also reported on the possibility of the shooting range. The news outlets include but are not limited to; South Dakota Public Broadcasting, KOTA News, Black Hills FOX News, KNBN News, Rapid City Journal, Black Hills Pioneer, and South Dakota Free Press.

The draft EA for this project was posted for public comment (https://www.fws.gov/press-release/2022-02/proposed-shooting-range-rapid-city-south-dakota) from February 18, 2022 through March 24, 2022, and a link was placed on the SDGFP website. Twenty-one individuals and conservation organizations provided one or more comments during the comment period. GFP staff carefully reviewed the comments received during the public comment period and separated the issues into two groups; those key to the decision to be made and those considered to be other concerns (Appendix G). All comments received during the comment period have been addressed within the context of this Final Environmental Assessment for the Rapid City Shooting Range Complex in Meade County, South Dakota.

CHAPTER 7: PREPARERS

Graham Larson, South Dakota Game, Fish and Parks, Grants and Loan Specialist
John Kanta, South Dakota Game, Fish and Parks, Terrestrial Section Chief
Mike Klosowski, South Dakota Game, Fish and Parks, Region 1 Regional Supervisor
Adrianna Araya, United States Fish and Wildlife Service, Wildlife and Sport Fish Restoration Programs

CHAPTER 8: WORKS CITED

1. EPA Best Management Practices for Lead at Outdoor Shooting Ranges manual (Revised June 2005) https://www.epa.gov/sites/default/files/documents/epa_bmp.pdf
2. Effects of Military Activity on Reproductive Success of Red-Cockaded Woodpeckers John Doresky, Ken Morgan, Laura Ragsdale, and Howard Townsend - https://www.jstor.org/stable/4514591
3. ITRC's Environmental Management at Operating Outdoor Small Arms Firing Ranges Technical Guideline (Revised February 2005) https://connect.itrcweb.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=83c01740-bc23-4c71-9c81-7e650be98058
4. Lead Mobility At Shooting Ranges EA Engineering, Science, and Technology, Inc. (5 January 1996) - https://saami.org/wp-content/uploads/2018/05/Lead-Mobility.pdf
5. City of Rapid City 2020 population estimate: http://census.gov/
6. IPaC – Information for Planning and Consultation – https://ecos.fws.gov/ipac/
7. National Oceanic and Atmospheric Administration NOAA - https://www.weather.gov/wrh/Climate?wfo=unr

FIGURES

Figure 1. State of South Dakota, south-dakota-map.org

Figure 2. Meade County, South Dakota, https://en.wikipedia.org/wiki/Meade_County,_South_Dakota#/media/File:Map_of_South_Dakota_highlighting_Meade_County.svg

Figure 3. Project site for proposed Rapid City Shooting Range Complex, GFP Rapid City Firearms Range JLG Architects

APPENDICES

Appendix C – Department of Agriculture and Natural Resources (DANR) Environmental Review and Correspondence

1. Letter from SDGFP to DANR requesting project review, October 18, 2021
2. Letter from SD DANR to SDGFP with comments of the project review and potential impacts, November 15, 2021.
3. Email from SD DANR to SDGFP on permit requirements for stormwater and BMPs, November 23, 2021.

Appendix D – Consultation with SDGFP on Threatened and Endangered Species, April 12, 2021.
Appendix E – Army Corps of Engineers Correspondence

1. Letter from FMG Engineering to US Army Corps of Engineers request for Jurisdictional Determination, November 30, 2021.
2. Letter from Department of the Army, Corps of Engineers, with jurisdictional determination that there are no waters of the United States within the project area, January 26, 2022.
3. Letter from the Department of the Army, Corps of Engineers determination on the requirement for and authorization of a Section 404 permit to construct an access road, March 24, 2022.

Appendix F – FEMA National Flood Hazard Layer FIRMette, February 7, 2022.

Appendix G – Public Meetings List and GFP's summarized Response to Public Comments.

Appendix H – NOAA National Weather Service data, 1991 – 2020. Normal Precipitation, Mean High Temperatures, Mean Low Temperatures, Mean Average Temperatures.