

**FINAL ENVIRONMENTAL ASSESSMENT FOR THE BRIDGE
REPLACEMENT AND SCOUR PROTECTION
AT AVON PARK AIR FORCE RANGE, FLORIDA**



MARCH 2012

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**COVER SHEET
ENVIRONMENTAL ASSESSMENT FOR
BRIDGE REPLACEMENT AND SCOUR PROTECTION
AT AVON PARK AIR FORCE RANGE, FLORIDA**

a. Responsible Agency: United States Air Force (USAF), Avon Park Air Force Range, (APAFR).

b. Proposals and Actions: The USAF proposes actions on two bridges to regain and maintain their structural integrity. To accomplish structural integrity, the project sites would need to be dewatered before and during construction.

c. For Additional Information: Telephone inquiries may be made locally from the National Environmental Policy Act (NEPA) Coordinator, APAFR Mr. Tod Zechiel at (863) 452-4287 or by e-mail at tod.zechiel@us.af.mil.

d. Designation: Final Environmental Assessment (EA)

e. Abstract: This EA was prepared in accordance with NEPA. Two different sets of actions were proposed for the two bridges as well as a no-action alternative. Impacts to the environment, to include the overall training mission at APAFR, were assessed by an in-house NEPA team. Impacts were marginal to the environment and training mission for the two action alternatives. A common impact was increased travel time due to following a detour around a road closure. The No-Action Alternative resulted in several notable impacts. The assumption was made that with no corrective action, both bridges would be condemned at some point in the future and would consequently close the two main roads serving east-west travel on the installation. Denied east-west travel by vehicles resulted to all but one training/impact range being closed and about three quarters of the installation no longer having training activity on it. Having access to only one training/impact range adversely affected the training mission. The denied travel also adversely impacted natural resource management by increasing the likelihood of wildfire escaping the installation, difficulty in documenting threatened and endangered species experiencing harassment or take caused by ordnance ignited wildfires, discontinued the Grazing and Forestry programs, and greatly reduced the services of the Public Outdoor Recreation Program.

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FINDING OF NO PRACTICABLE ALTERNATIVE AND FINDING OF NO SIGNIFICANT IMPACT (FONSI/FONPA) FOR BRIDGE REPLACEMENT AND SCOUR PROTECTION ENVIRONMENTAL ASSESSMENT (EA) AT AVON PARK AIR FORCE RANGE, FLORIDA

Pursuant to the Council of Environmental Quality regulations for implementing the procedural provisions of the Nation Environmental Policy Act of 1969, as amended, 40 Code of Federal Regulations (CFR) Parts 1500-1508, and 32 CFR 989, the Environmental Flight at Avon Park Air Force Range (APAFR) has conducted an EA that determines the impacts of maintaining the main canal that drains the airfield at APAFR.

1.0 NAME OF ACTION

Environmental Assessment for Bridge Replacement and Scour Protection Measures at Avon Park Air Force Range, Florida.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action: The Proposed Action considered two alternatives. Alternative 1 would replace a steel span bridge, the H.R. Smith Grade Bridge traversing over Morgan Hole Creek, with a similar bridge having the same dimensions and load capacity. Riprap would be placed around the bridge to minimize scouring by the water flow of the creek. A second bridge, the Kissimmee Road/Rim Canal Bridge traversing over the Rim Canal, would have riprap placed around its footings to prevent channel scouring that is currently undermining the bridge. Both work sites would require damming and dewatering. Alternative 2 would remove the steel span bridge and replaced it with a seven culvert system. The second bridge would have the same riprap treatment as with Alternative 1. Replacing the H.R. Smith Grade Bridge would require a road closure of H.R. Smith Grade for up to 90 days for both Alternatives 1 and 2. It would offer a detour on Kissimmee Road that would add about one half hour of vehicle travel time.

2.2 No-Action Alternative: The No-Action Alternative would not address the bridge deficiencies and would allow the bridges to degrade until condemned. If condemned, only one of six impact/training ranges would have access to vehicles. Only the Main Base and the northwest quarter of the installation would have access to vehicles.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Operations: Both Alternatives 1 and 2 would only temporarily impact Operations by detouring vehicles around the closed H.R. Smith Grade Bridge. This would add approximately one half hour of travel time. Alternative 2 would allow heavier vehicles to cross Morgan Hole Creek with a culvert system rather than a steel span bridge under Alternative 1. While heavy vehicles used in military training at APAFR are infrequent, about twice a year, allowing them to use the H.R. Smith Grade culvert system would reduce travel time by not requiring a detour. The No-Action Alternative would result in continued heavy vehicle detours for the short term. Long term, if both the H.R. Smith Grade Bridge and Kissimmee Road/Rim Canal Bridge were allowed to fail; only

one training range could be used by ground-based training personnel as well as ordnance and gunnery scoring personnel. The training mission would be highly compromised at APAFR.

Noise: Both Alternatives 1 and 2 would have noise generated by heavy equipment. Being in isolated locations, only bridge workers would be subjected to distracting noise. Impacts could be reduced by wearing hearing protection. The No-Action Alternative would not introduce additional noise in the short term. Long term, with three quarters of the installation not being accessible to vehicle travel, noise would be reduced for those non-vehicle accessed areas.

Safety: Alternatives 1 and 2 would improve safety by adding approach guard rails and guard rails on the bridges. Traffic delays on the Kissimmee Road/Rim Canal Bridge during construction would slightly increase safety risk, but the impacts would be minimized by traffic control personnel on-site. The No-Action Alternative would increase safety risk by continuing to have lack of guardrails in the short term. Long term, with many of the vehicles and personnel not being able to access the installation, safety would be improved with reduced road traffic. However, safety would be greatly compromised with a lack of emergency response vehicles responding to aircraft mishaps and wildfires. Safety would also be compromised with wildfires that would be ignited by ordnance and lightning strikes that would initially start on the installation and spread to non Air Force, adjacent properties.

Hazardous Materials and Waste: Alternatives 1 and 2 would involve heavy equipment containing hazardous materials at the project sites. The potential for spills would be unlikely; the contractor would be provided with a copy of APAFR's Spill Prevention, Control, and Countermeasures Plan to minimize potential spills and impacts from spills. The No-Action Alternative would not involve hazardous materials and waste.

Soils: Alternatives 1 and 2 would disturb soils with equipment and when establishing dams for dewatering. Soil disturbance would be minimal, although Alternative 2 would disturb about 25% more area. Riprap placed around both bridges would reduce soil erosion long term. The No-Action Alternative would not disturb soils, but would allow soil to continue to erode under the Kissimmee Road/Rim Canal Bridge and undermine the bridge. Long term, soil erosion could lead to the demise of this bridge.

Environmental Restoration: Alternatives 1 and 2 would not involve open environmental restoration sites. The No-Action Alternative would not affect environmental restoration activities in the short term. Long term, with much of the installation closed to vehicle access, monitoring and remediation obligations would not be met for much of the program.

Water Resources: Alternatives 1 and 2 would improve water quality by reducing sedimentation. Ground water would not be affected by any alternative. None of the project areas are in a floodplain. Wetland vegetation would be disturbed, but would recover fairly quickly and would continue to help stabilize soils.

The No-Action Alternative would allow increased sedimentation by allowing both bridges to continue to erode. The erosion would cause deposition downstream and would adversely affect channel dynamics by creating deltas.

Air Quality: Alternatives 1 and 2 would slightly increase vehicle emissions temporarily at the project sites. The No-Action Alternative would not increase vehicle emissions at the project sites. Long term, with much of the installation closed, emissions by vehicles would be greatly reduced for the entire installation.

Wildlife: Wildlife associated with water – fish, reptiles, amphibians, birds, and mammals would be temporarily displaced at the project sites during construction under Alternatives 1 and 2. After construction, these sites would re-vegetate and the animals would return. The federally listed eastern indigo snake, wood stork, and federally listed candidate species gopher tortoise, could be in the project work areas. If so, they should be allowed to leave the work site on their own accord prior to work beginning. Once construction ends and vegetation recovery occurs, these species would be expected to return. The No-Action Alternative would not involve these species for the short term. Long term, monitoring of these and other threatened and endangered species would be greatly hampered due to a lack of access to the installation. Their success or failure under management and impacts by training would be difficult to quantify.

Weeds: Noxious weeds could establish on the project work sites following soil disturbance under Alternatives 1 and 2. These could easily be chemically treated. The No-Action Alternative would have less chance of weeds establishment. In the long term, the spreading of weeds by vehicles would be decreased if access is denied to much of the installation, but locations where noxious weeds are already established and spreading would be difficult to treat.

Cultural Resources: For Alternatives 1 and 2, ground disturbance at both project locations could remotely encounter cultural resources, particularly under the stream channels. The Cultural Resource Manager would be onsite to ensure that if artifacts are uncovered, a determination could be made to if the project work could continue or work temporarily delayed until consultation with the State Historic Preservation Officer (SHPO) or Tribes were completed. The No-Action Alternative would not impact cultural resources. If much of the installation did not have vehicle access, then ongoing, mandated cultural surveys would not be conducted.

Transportation: Alternatives 1 and 2 would affect transportation by detouring vehicle traffic around H.R. Smith Grade Bridge via Kissimmee Road. Added travel time would be about one half hour. The No-Action Alternative would ultimately close about three quarters of the roads on the installation resulting in greatly reduced road maintenance costs.

Outdoor Recreation: Alternatives 1 and 2 would cause detour delays for vehicles. The No-Action Alternative would not affect the program in the short term. Long term, if both bridges were closed, much of the installation would not be accessible to the public. The program would continue, but at greatly reduced services.

Grazing: Alternatives 1 and 2 would only affect the Grazing Program if work took the full 90 days at the H.R. Smith Grade Bridge. At some point cattle would have to enter the pasture that includes the respective H.R. Smith Bridge worksite. Cattle would be on pasture for about three weeks. Cattle could be expected to trample, rub, and chew worksite materials and equipment. The No-Action Alternative would not impact the Grazing Program in the short term, aside from detours. Long term, with the much of the installation inaccessible to vehicles, grazing would discontinue on much of the installation. The grazing program would shut down due to lost income.

Forestry: Alternatives 1 and 2 would only affect the Forestry Program due to detours. The No-Action Alternative would not affect the program in the short term. Long term, with much of the installation not accessible to vehicles, the program would shut down due to lost income.

Socioeconomics, Environmental Justice, and Protection of Children: Alternatives 1 and 2 would slightly benefit local economic activity due to employing personnel at the work sites. Due

to the remote locations, minority, low-income, or youth populations would not be impacted. The No-Action Alternative would not have impacts in the short term. Long term, with bridge closures, existing economic activity both on the installation and off the installation would be reduced. Much of the ground based training that relies on local vendors for food, fuel, supplies, and sometimes lodging, would be somewhat reduced. The Grazing and Forestry programs would terminate. The Outdoor Recreation Program would be greatly reduced.

Conflicts with Installation Objectives: Alternatives 1 and 2 would meet the installation objects set out in the Range Comprehensive Plan, the Integrated Natural Resources Management Plan, and the Integrated Cultural Resources Management Plan. The No-Action Alternative, in the short term, would meet the plan objectives. Long term with bridge and road closures, military training, natural resource management, and cultural resource management objectives would not be met.

Irreversible and Irretrievable Commitment of Resources: Alternatives 1 and 2 would expend fuels during construction activities. The No-Action Alternative would not expend fuels during construction. Long term, the No-Action Alternative would reduce fuel consumption with much less vehicle travel on the installation.

Energy, Natural or Depletable Resource Requirements and Conservation Potential: Alternatives 1 and 2 would not require energy once the bridge and scour protection measures would be built. Under the No-Action Alternative, no energy requirements would be required.

3.4 Recommendation For Selection

The Proposed Action, Alternative 1, is recommended for selection. Alternative 1 replaces the existing H.R. Smith Grade Bridge with similar construction within the existing bridge's footprint and places scour protection measures on both the H.R. Smith Grade Bridge and the Kissimmee Road/Rim Canal Bridge. Alternative 1 would result in continuing to meet the installation objectives. Alternative 2, while having a higher load bearing capacity with the H.R. Smith Grade Culverts and also meeting the installation's objectives, requires a larger footprint of disturbance resulting in slightly more environmental impacts than Alternative 1. The No-Action Alternative is also not recommended because long term, this alternative would result in not meeting the installation's objectives. The No-Action Alternative would, cumulatively, have significant impacts on the operation and objectives of Avon Park Air Force Range.

4.0 FINDING OF NO PRACTICABLE ALTERNATIVE

Wetlands cannot be avoided with the Proposed Action, Alternatives 1 and 2. Both Morgan Hole Creek and the Rim Canal are wetlands that would require damming, dewatering, and disturbance for bridge construction and scour protection being established. Pursuant to Executive Order 11990, the authority delegated by Secretary of the Air Force Order 791.1, taking into account the information above and the analysis presented in the attached Environmental Assessment, I find that there is no practicable alternative to either alternative, each of which includes all practicable measures to minimize harm to the environment.

5.0 FINDING OF NO SIGNIFICANT IMPACT

The attached EA was prepared and evaluated pursuant the National Environmental Policy Act (Public Law 91-190, 42 U.S.C. 4321 et seq.) and in accordance with 32 CFR 32-989 *The Environmental Impact Analysis Process*. Based on the analysis presented in this EA, I conclude that neither of the action alternatives would not have a significant adverse impact on the quality of the human or natural environment. Therefore, an environmental impact statement is not required.

References: Final Environmental Assessment for Bridge Replacement and Scour Protection at Avon Park Air Force Range, Florida, March 2012.

4/3/2012

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GARY D. CHESLEY, Colonel, USAF
Deputy Director, Installations & Mission Support

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**Environmental Assessment
For Bridge Replacement and Scour Protection
at Avon Park Air Force Range, Florida**

1.0 PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

Avon Park Air Force Range has two main roads that lead to training and ordnance impact ranges; H.R. Smith Grade and the Kissimmee Road. Each road has one bridge that are the subject of this environmental assessment (EA). One bridge requires entire replacement and scour protection measures, while the other requires only scour protection measures.

1.2 BACKGROUND

APAFR is the largest bombing and gunnery range east of the Mississippi River. Located in central Florida in Polk and Highlands counties, APAFR provides an important training facility for active duty, guard, and reserve military units from the Army, Navy, Air Force, Marines, and Coast Guard (Figure 1.2-1).

The host unit for the APAFR is the Deployed Unit Complex (DUC), 23rd Wing, Detachment 1; which is a unit of the 23rd Wing (23 WG), an Air Combat Command (ACC) composite fighter and rescue wing located at Moody Air Force Base, Georgia. The major command (MAJCOM) is Air Combat Command located at Langley Air Force Base, Virginia.

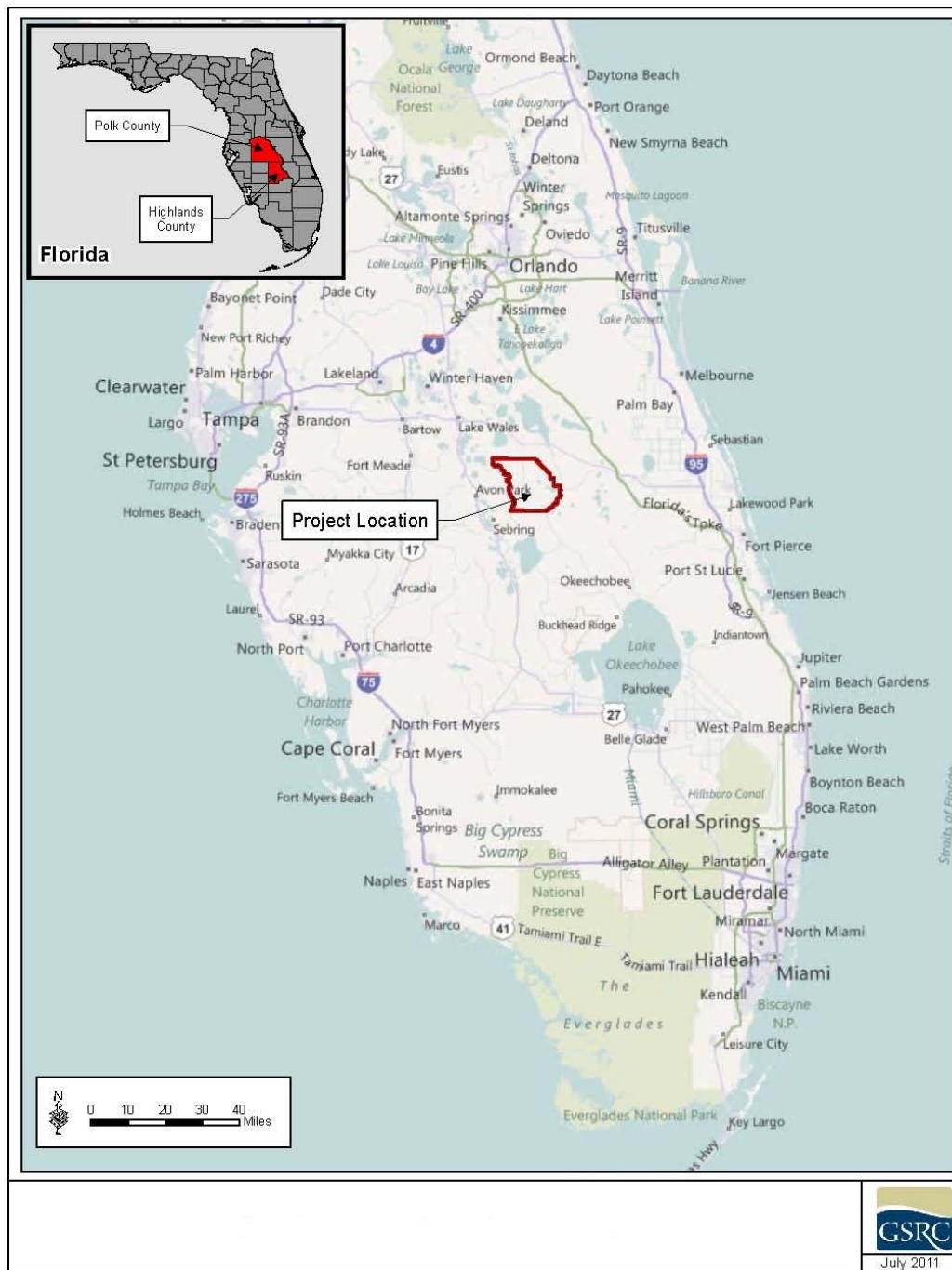


Figure 1.2-1. The Avon Park Air Force Range location map showing peninsular Florida.

1.3 PURPOSE AND NEED

The two bridges described in this EA are the H.R. Smith Grade Bridge and the Kissimmee Road/Rim Canal Bridge (Figure 1.3-1). The purpose of the H.R. Smith Grade Bridge is to provide vehicle access across Morgan Hole Creek via H.R. Smith Grade on Avon Park Air Force Range (APAFR), Florida. The bridge is an essential link for vehicles traveling east/west on the northern half of the installation. The bridge links the cantonment area with the North Tactical Range. The North Tactical Range provides ground training or air-to-ground training for military personnel on nearly a daily basis during the work week. The bridge also provides a link to the north center and east side of the installation for military training in buffer areas, public recreationists, logging trucks, cattle trucks, land managers, and emergency response vehicles – both wildfire suppression vehicles and personnel emergency response vehicles. While there are other minor roads and vehicle trails that cross Morgan Hole Creek itself or the headwaters of Morgan Hole Creek upstream of the bridge, H.R. Smith Grade and the respective bridge provide the only reliable two-wheel drive vehicle access for the northern portion of the installation.

The need for replacing the H.R. Smith Grade Bridge is that the structural integrity is currently compromised due to age (USAF 2008). The lost structural integrity has reduced the bridge from a load bearing limit of a designed 27 tons to 10 tons. The result is that heavy, short-based wheeled vehicles are unable to use the bridge and must access the North Tactical Range and northeast portions of the installation via Kissimmee Road and the respective Kissimmee Road Bridge located approximately eight vehicle travel miles to the south. These vehicles include armored vehicles, dump trucks, and armored targets.

Another need is to protect the bridge abutments from water erosion so that H. R. Smith Grade will no longer erode behind the bridge's abutments resulting in road closures. Road closures occur on average once every four years. The result is that Smith Grade Road is closed to all vehicles from one day to two weeks while undergoing road repairs.

The purpose of the Kissimmee Road/Rim Canal Bridge is to provide vehicle access across the Rim Canal to southern half of the installation. This bridge supports a load limit of 34 tons and currently accommodates all vehicles using it. This bridge serves Kissimmee Road. Kissimmee Road accesses the South Tactical and South Conventional Ranges. These ranges provide similar military training as the North Tactical and Conventional range. In the southern buffer areas of the installation, the same groups of individuals for the same purposes require access as with the north central and eastern portions of the installation. There is one alternative access route around the Kissimmee Road/Rim Canal. It is less than 450 feet to the east of the bridge. This route relies on a culvert system with a shell/clay road that is only partially maintained. Clearance from the Airfield Control Tower needs to be made before using this road. The alternative route could not support the amount of vehicle travel of Kissimmee Road for an extended period of time nor is it aligned well for higher speeds.

The need for placing scour protection measures is that the soil is eroding underneath the footings of the bridge. This erosion, if left unchecked, will compromise the bridge in the future.

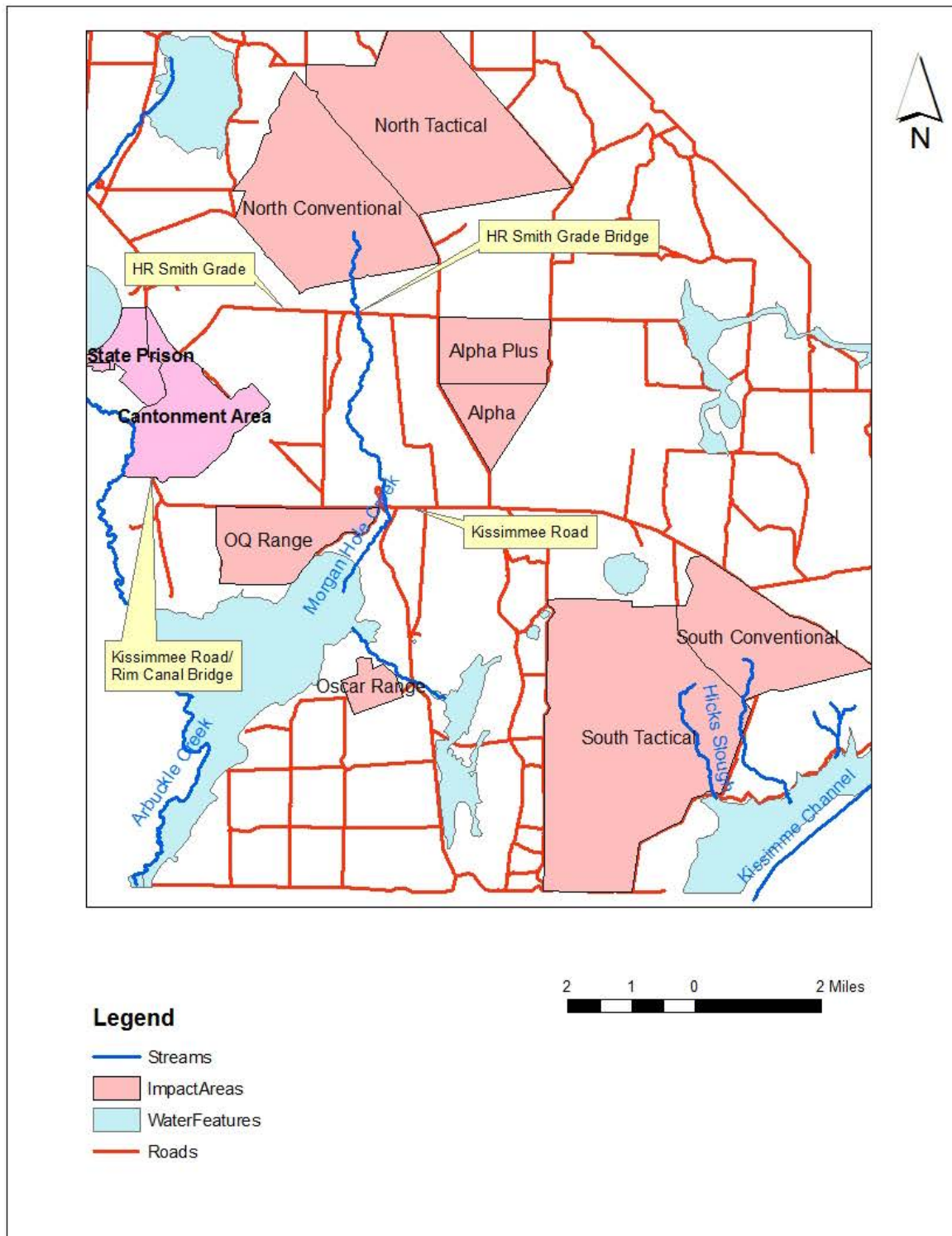


Figure 1.3-1 The location of the HR Smith Bridge and Kissimmee Road/Rim Canal Bridge at Avon Park Air Force Range, Florida.

1.4 REGULATORY FRAMEWORK

In December 1969, the United States (U.S.) Congress passed NEPA (42 U.S. Code [USC] 4321 *et seq.*) which requires agencies of the Federal government to make available information regarding the environmental impacts of its proposed actions. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee Federal policy in this process. These regulations are based on NEPA, Executive Orders (EO) 11514 and 11991, the Environmental Quality Improvement Act of 1970, as amended (42 USC 4371 *et seq.*), and Section 309 of the Clean Air Act (CAA), as amended (42 USC 7609).

A decision on whether to proceed with the Proposed Action rests on numerous factors, such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, the USAF is guided by relevant statutes (and their implementing regulations) and EOs that establish standards and provide guidance on environmental and natural resources management and planning. This includes NEPA requirements, CEQ regulations (40 CFR 1500-1508) and Air Force Instruction (AFI) 32-7061 codified in 32 CFR 989 (The Environmental Impact Analysis Process [EIAP]). This EA requires compliance with the Federal regulations and EOs presented below in Table 1.4-1. These authorities are addressed in various sections throughout this EA when relevant to particular environmental resources and conditions.

1.5 AGENCY, LOCAL GOVERNMENTS, AND PUBLIC INVOLVEMENT

APAFR offered review of the *Draft Environmental Assessment for the Bridge Replacement and Scour Protection at Avon Park Air Force Range* as well as the *Finding of No Practicable Alternative (FONPA) and Finding of No Significant Impact (FONSI) for Bridge Replacement and Scour Protection at Avon Park Air Force Range, Florida* to the Florida Clearinghouse and local governments. The draft and FONPA/FONSI were mailed hardcopy to each recipient with a 30 day review period. The draft was mailed in October, 2011. The Florida Clearinghouse responded that environmental restoration permits would be required from the South Florida Water Management District (SFWMD) regarding bridge replacement and scour protection activities, while dewatering activities may also require SFWMD Water Use Permits. The Clearinghouse also affirmed that the alternatives were consistent with the Florida Coastal Management Program (the Florida Coastal Management Program oversees the implementation of the Coastal Zone Management Act). The Clearinghouse's e-mail response is located in Appendix A.

The Florida State Historic Preservation Officer (SHPO) was consulted by APAFR in June 2011 regarding H.R. Smith Grade Bridge and in October regarding the Kissimmee Road/Rim Canal Bridge. The SHPO responded in a letter dated 13 July 2011 regarding the H.R. Smith Bridge and a letter dated 7 December 2011. In both letters, the SHPO concurred with APAFR in that bridge replacement and rip rap establishment should have no adverse effects on historic properties, but requested the staff archaeologist to be on-site during excavation (Appendix A).

The United States Fish and Wildlife Service (USFWS) was consulted by APAFR in June 2011 regarding the H.R. Smith Grade Bridge. The USFWS responded in a letter dated 29 July 2011 and concurred with APAFR that replacing the H.R. Smith Grade Bridge may affect, but not likely to adversely affect the indigo snake, wood stork, and gopher tortoise (Appendix A).

No responses were received from local governments.

The Draft EA proceeded to the Preliminary Final EA. The Preliminary Final EA was supplied on 9 November to the 23rd Wing/Judge Advocate, located at Moody Air Force Base (AFB), Georgia, for review. The 23rd Wing/Judge Advocate completed the review on 21 November with no comments.

The Final EA and unsigned FONPA/FONSI were released for public review for 30 days. Notifications were announced in newspapers circulated in Highlands and Polk counties on 21 and 22 January, respectively. The announcements gave the library locations where the documents were reserved and informed the public on procedures to make comments. No public comments were received.

The Final EA and unsigned FONPA/FONSI were forwarded to the Major Command/Deputy Director of Installations and Mission Support, located at Langley AFB, Virginia, for EA approval and FONPA/FONSI signature.

Table 1.4-1. Summary of Relevant Regulations Including Potential Permits or Licensing Requirements

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations*
FEDERAL				
General	National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321 <i>et seq.</i>)	Council on Environmental Quality (CEQ)	Compliance with NEPA, in accordance with CEQ regulations (40 Code of Federal Regulations [CFR] 1500-1508)	Full compliance would be achieved upon issuance of a signed Finding of No Significant Impact (FONSI)
	32 CFR 989 (Environmental Impact Analysis Process [EIAP])	USAF	Compliance with regulations specified in 32 CFR 989	Full compliance would be achieved upon issuance of a signed FONSI/FONPA
Sound/ Noise	Noise Control Act of 1972 (42 USC 4901 <i>et seq.</i>), as amended by Quiet Communities of 1978 (Public Law [PL] 95-609)	U.S. Environmental Protection Agency (USEPA)	Compliance with surface carrier noise emissions	Full compliance would be achieved upon implementation of repair activities
Air	Clean Air Act (CAA) and amendments of 1990 (42 USC 7401-7671q) 40 CFR 50, 52, 93.153(b)	USEPA	Compliance with National Ambient Air Quality Standards (NAAQS) and emission limits and/or reduction measures	Full compliance; emissions would be below <i>de minimis</i> thresholds
Water	Clean Water Act (CWA) of 1977 (33 USC 1342) 40 CFR 122	USEPA	Section 402 Dewatering Permit	Full compliance. Dewatering permits would need to be obtained.
	EO 11990 (<i>Protection of Wetlands</i>), as amended by EO 12608	U.S. Army Corps of Engineers (USACE)	Compliance	Full compliance.
	CWA of 1977 (33 USC 1341 <i>et seq.</i>)	USACE	Section 401/404 Permit	Full compliance; existing APAFR Section 404 and Section 401 permits would be applicable.

Table 1.4-1 Continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations*
Water, continued	Coastal Zone Management Act (CZMA) of 1972 (16 USC 1456[c]) Section 307	National Oceanic and Atmospheric Administration (NOAA)	Compliance	Full compliance
Soils	Resource Conservation and Recovery Act of 1976 (42 USC 6901-6992k), as amended by Hazardous and Solid Waste Amendments of 1984 (PL 98-616; 98 Stat. 3221)	USEPA	Proper management, and in some cases, permit for remediation	Full compliance
	Comprehensive, Environmental Response, Compensation, Liability Act (CERCLA) of 1980 (42 USC 9601-9675), as amended by Emergency Planning and Community Right-To-Know-Act of 1986 (42 USC 11001 <i>et seq.</i>) Release or threatened release of a hazardous substance	USEPA	Development of emergency response plans, notification, and cleanup	Full compliance
Natural Resources	Endangered Species Act (ESA) of 1973, as amended (16 USC 1531-1544)	USFWS	Compliance by lead agency and/or consultation to assess impacts and, if necessary, develop mitigation measures	Full compliance
Health and Safety	Occupational Safety and Health Act of 1970	Occupational Safety and Health Administration (OSHA)	Compliance with guidelines including Material Safety Data Sheets	Full compliance would be achieved upon implementation of repair and/or replacement activities

Table 1.4-1 Continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations*
Cultural/ Archaeological	National Historic Preservation Act of 1966	Advisory Council on Historic Preservation (ACHP) through State Historic Preservation Officer (SHPO)	Section 106 Consultation	APAFR coordinated with SHPO on the actions – Cultural Program Manager to be on-site during excavation activities
	Archaeological Resources Protection Act of 1979	Affected land-managing agency	Permits to survey and excavate/remove archaeological resources on Federal lands; Native American tribes with interests in resources must be consulted prior to issue of permits	Full compliance
	American Indian Religious Freedom Act of 1978, as amended		Compliance	Full compliance
	Native American Graves Protection and Repatriation Act of 1990	National Park Service (NPS)	Compliance	Full compliance
	EO 13175 (<i>Consultation and Coordination with Indian Tribal Governments</i>)	Bureau of Indian Affairs (BIA)	Coordinate directly with tribes claiming cultural affinity to project areas	Full compliance
	Antiquities Act of 1906	Department of the Interior	Compliance	Full Compliance
	EO 13007 (<i>Indian Sacred Sites</i>)	ACHP	Compliance	Full Compliance
Social/Economic	EO 12898 (<i>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations</i>) of 1994	USEPA	Compliance	Full compliance; no minority or low-income populations would be affected
	EO 13045 (<i>Protection of Children from Environmental Health Risks and Safety Risks</i>)	USEPA	Compliance	Full compliance; no children would be exposed to the construction activities

Table 1.4-1 Continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status	Status of Compliance with Relevant Laws and Regulations*
	EO 13101 (<i>Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition</i>)	USEPA	Compliance	Full compliance
	EO 13123 (<i>Greening the Government Through Efficient Energy Management</i>)	USEPA	Compliance	Full compliance

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The Proposed Action describes, in general, what actions would occur. The two Alternative Actions further describe, in detail, what would be conducted within the scope of the Proposed Action. The No-Action Alternative describes what actions would continue if the bridge replacement and scour protection measures were not pursued. Other actions that were considered, but not pursued, are also discussed.

2.1 PROPOSED ACTION

The Proposed Action would remove all elements of the existing H.R. Smith Grade Bridge (Figure 2.1-1). In order to accomplish removal, the project area would be de-watered. This would be accomplished by damming Morgan Hole Creek above the bridge and pumping water around the construction site and indirectly back into the creek's channel after passing through a filtration bag. Whichever structure is selected, scour protection measures would be established to protect the structure as well as the earth leading up to the bridge. Also, vehicle safety guard rails would be established on the approach to the bridge and safety rails would also be placed on the bridge structure itself. Bridge load limit signs would be established on both sides of the structure. The work area would be closed for construction for approximately 90 days. Work could begin at any time after the NEPA process is complete. Practically, the optimal time for work would be during the dry season from January through May when Morgan Hole Creek typically does not flow, although the creek always has water in the channel just above the existing bridge.

For the Kissimmee Road/Rim Canal Bridge (Figure 2.1-2) the Proposed Action would retain all elements of the existing bridge and establish scour counter measures as described by those for H.R. Smith Grade Bridge. In order for scour protection measures to be established, the project area would be dewatered. Dewatering would be accomplished by damming the Rim Canal upstream (east) of the bridge and pumping water downstream into a filtration bag with discharge back into the canal. The scour counter measures would prevent scouring at the base of the bridge and the earth that the bridge spans. As with the H.R. Smith Grade Bridge, guardrails and signage would be established. Kissimmee Road would remain open during the construction, although short, five minute delays could be expected before crossing the bridge. Work could begin any time after the NEPA process is complete.

2.2 ALTERNATIVE 1 – NEW BRIDGE AND RIPRAP PLACEMENT

Alternative 1 would replace the existing H.R. Smith Grade Bridge within the same footprint and with at least a load bearing capacity bridge of 27 tons.

The existing bridge is approximately 30 feet long and 16 feet wide and would be demolished entirely. The existing steel deck and guard rails would be removed and placed in the target salvage yard for recycling. The salvage yard is located adjacent to the airfield. The concrete abutments would be partially crushed onsite, then hauled to the old Civil Engineering Compound to be further crushed as aggregate and reused for riprap or for road maintenance. The old Civil Engineering Compound is located in the Cantonment area and west of the airfield. The existing signage would be disposed of as



Figure 2.1-1 The HR Smith Grade Bridge as it currently appears at Avon Park Air Force Range, Florida. The photo is looking upstream and northeast.



Figure 2.1-2. The Kissimmee Road/Rim Canal Bridge as it currently appears at Avon Park Air Force Range, Florida. The photo is looking west and downstream.

construction waste. The new bridge would have the same dimensions as the old bridge (Figure 2.2-1). The deck could be concrete, steel, or wood. The deck would rest on concrete bents on both ends of the deck. Each bent would consist of three concrete pilings sunk into the streambed with a concrete bulkhead resting on top. On top of the bulkhead would rest the deck. The bridge would have concrete wing walls at all four corners to support the soil on either side of the abutment. Guardrails would be placed on the deck and consist of galvanized steel. Also, guardrails would be established along both sides of the road on the approaches to bridge. Warning signs on both sides of the bridge would post weight limits. The new bridge would support at least 27 tons.

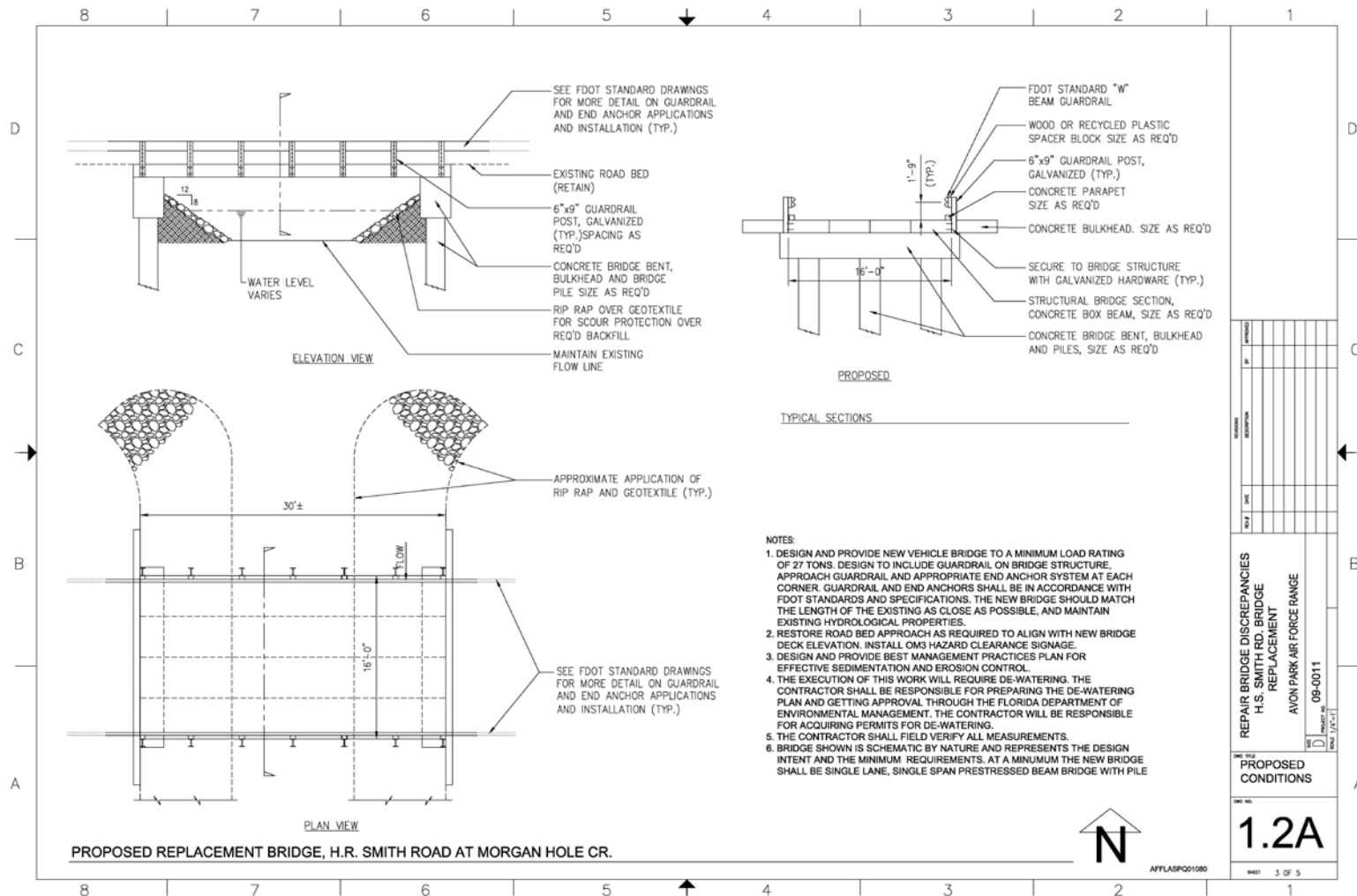


Figure 2.2-1. A schematic of the proposed new H.R. Smith Bridge with scour protection measures at Avon Park Air Force Range, Florida.

Scour protection measures would consist of backfill soil overlaid with geotextile plastic and then aggregate (broken concrete). The backfill soil would come from off-site from an existing borrow pit located on the installation approximately eight vehicle travel miles to the south. The toe of the materials would be placed 12 feet from each abutment and then sloped up to eight feet high on the abutment. The measures would extend past the abutments to include the toe and banks of the road grade that are up against the concrete abutments. The protection measures for the road grade would have the same dimensions as the abutments.

To establish the new bridge and scour protection measures, the work area would need to be dewatered (Figure 2.2-2). Dewatering would be accomplished by building a 40 foot wide temporary dam using on borrow pit soil, plastic sheeting, and aggregate upstream (north) of the bridge. Once dammed, water would be pumped west along the north side of H.R. Smith Grade approximately 150 feet away, then cross under H.R. Smith Grade via an existing culvert and discharged south of H.R. Smith Grade approximately 20 feet away from the culvert. The water would be discharged into a filtration bag with the filtered water traveling south into an ephemeral tributary that discharges into Morgan Hole Creek south of the bridge's project work site. Sediment from the filtration bag would be hauled by truck into an improved Bahia grass cattle pasture in an upland area approximately two miles to the west. H.R. Smith Grade Road would be closed for 100 yards on either side of the bridge and vehicles and equipment would be staged on the roadway. When the project would be finished, the soil for the dam would be spread on Smith Grade.

The Kissimmee Road/Rim Canal Bridge does not have pilings, rather it has concrete footers that the bridge span rests upon. Currently, the sand bottom of the canal is scouring underneath these footers. The scour protection methods would include placement of fill and plastic geotextile overlaid with concrete aggregate on the canal floor where the canal and footers meet. Also, there are concrete wing walls that flare out from the bridge span and hold back the earthen berm of Kissimmee Road. The riprap, geotextile and concrete aggregate would be placed at the interface between the canal floor and concrete wing walls. The fill would come from a borrow pit located two miles to the south.

For dewatering, a temporary earthen berm overlaid with plastic and broken concrete would be placed upstream (east) of the work site and would dam the Rim Canal. Soil for the berm would be from an existing borrow pit located approximately two miles to the south. Dewatering would pump the water via hose lay under the bridge and due west along the north side of the Rim Canal (Figure 2.2-3). The distance would be approximately 350 feet. The water would be pumped into a 15 foot by 15 foot filtration bag placed on hay bales. Water would discharge back into the Rim Canal. Brush would have to be removed from both sides of the bridge. The brush would be hauled off the installation. Approach guardrails and vehicle weight signage would be established on both sides of the bridge. After the dewatering would be complete, the berm material would be replaced back in the borrow pit. The sediment from the filtration bag would be spread on a Bahia grass cattle pasture east of the Kissimmee Road.

Traffic control would be accomplished by flag personal at both ends of the bridge to ensure construction vehicle clearance before allowing traffic to proceed through the bridge. Delays of up to five minutes would be expected.



Figure 2.2-2. Aerial view showing the dewatering of the H.R. Smith Bridge.

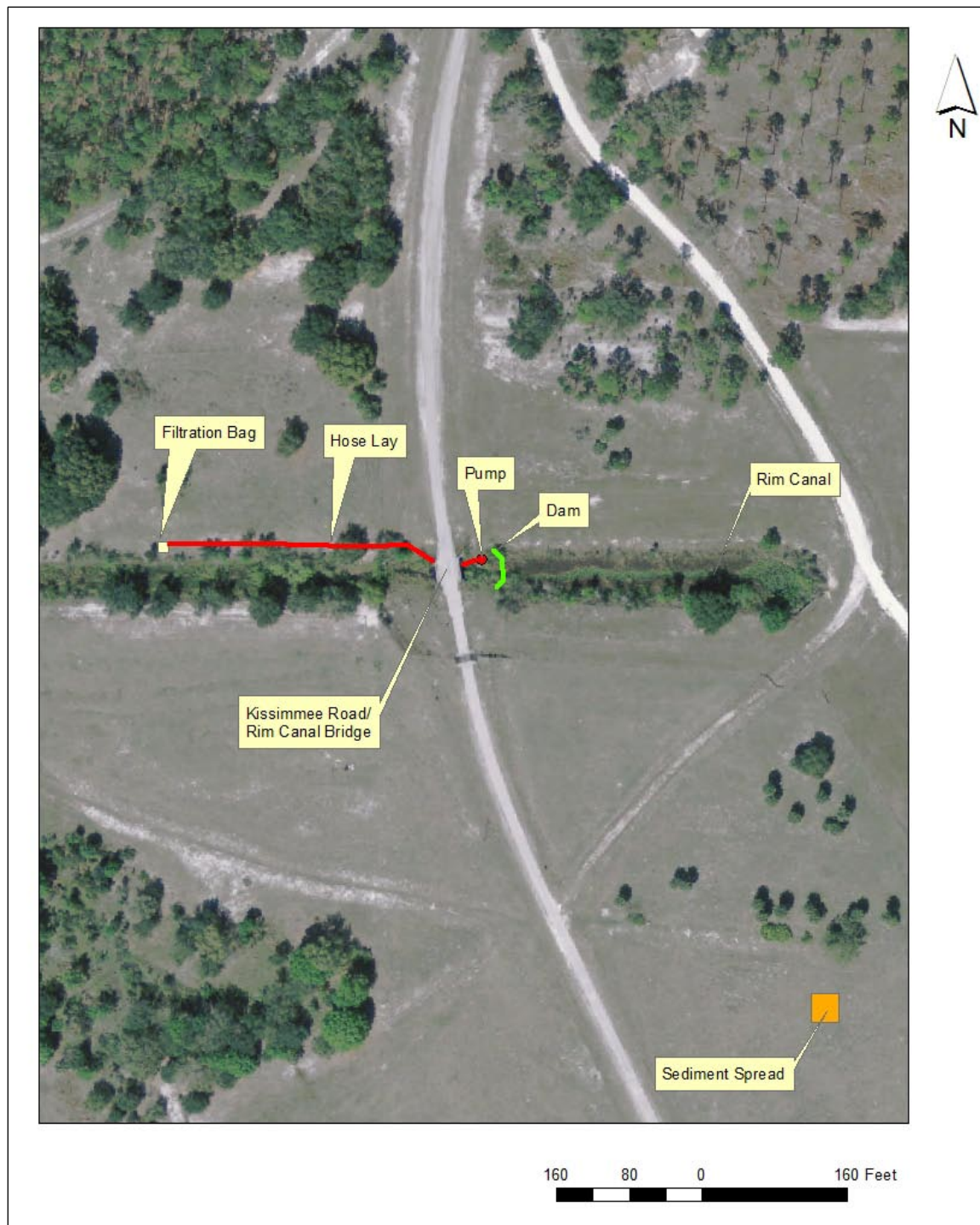


Figure 2.2-3. Aerial view showing the dewatering of the Kissimmee Road/Rim Canal Bridge.

2.3 ALTERNATIVE 2 – CULVERT SYSTEM AND RIPRAP PLACEMENT

Alternative 2 would remove the H.R. Smith Bridge as described under Alternative 1. Dewatering would be accomplished in the same manner with the exception that the temporary dam would approximately double in size. Road closures, staging, guard rails, signage, and construction time frames would also be the same. The bridge would be replaced with a seven piece, culvert system (Figure 2.3-1). Each culvert would be 60 inches in diameter, 30 feet long, concrete, and arched. The headwalls (upstream) would be concrete as would be the endwalls (downstream). There would also be concrete wingwalls coming off the headwalls and endwalls to protect the road grade that would meet the culvert system. Fill and road base would be brought in to fill in between the culverts and walls to meet the existing Smith Grade. No scour protection methods would be established. However, the culvert system would be longer than the existing bridge, 60 feet instead of 30 feet. The culvert system would also result in a wider road – about 25 feet verses the bridge being 16 feet wide. While the load limit is not known for the culvert system, it is anticipated to be greater than 27 tons. A longer culvert span would require widening the streambed by removing portions of the channel banks. The removed soil could be used for the temporary dam along with soil taken from the borrow pit eight miles away. When the dam would be removed, the soil would be spread along H.R. Smith Grade.

The Kissimmee Road/Rim Canal Bridge would be treated under Alternative 2 as it would be for Alternative 1.

2.4 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, both bridges would remain as is. Neither bridge would have any repairs, replacement, or additions. Both bridges would receive regular engineering inspections as prescribed to monitor/determine their soundness. Potentially, over time, both bridges could be closed due to safety concerns.

2.5 COMPARISON OF ALTERNATIVES

A comparison of Alternative 1, Alternative 2, and the No-Action Alternative is found in Table 2.4-1.

2.6 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

One alternative was considered that involved establishing bridges at other locations. This was only briefly considered because these locations entailed considerable road improvements leading to the new bridges, the new bridges still failed to avoid wetlands, and the travel distance to destinations increased.

Another alternative precipitated from the No-Action Alternative. Long term, if both bridges were condemned, detours for the HR Smith Grade Bridge would be to the north using an existing road that travels west to east along the northern boundary of the installation, while for the Kissimmee Road/Rim Canal Bridge, a detour through the airfield via a shell/clay road traveling over culverts that across the Rim Canal and returning back to Kissimmee Road would be possible. These detours were deemed not feasible. The northern boundary road is not designed for frequent travel and heavy vehicle travel and would require costly upgrades. The travel time would add up to an additional hour travel for some destination locations. The Kissimmee Road/Rim Canal detour would require coordination with the Airfield Control Tower to

access the airfield. The road system also is not designed for frequent travel and heavy vehicles and would have to be upgraded to include straightening the road.

A third alternative considered replacing the H.R. Smith Grade Bridge with a low water crossing. This was only a brief consideration since the site is constantly wet and the impact to wetlands and equipment would be greater. Three months out of the year would likely preclude the use by passenger vehicles due to high water at the crossing.

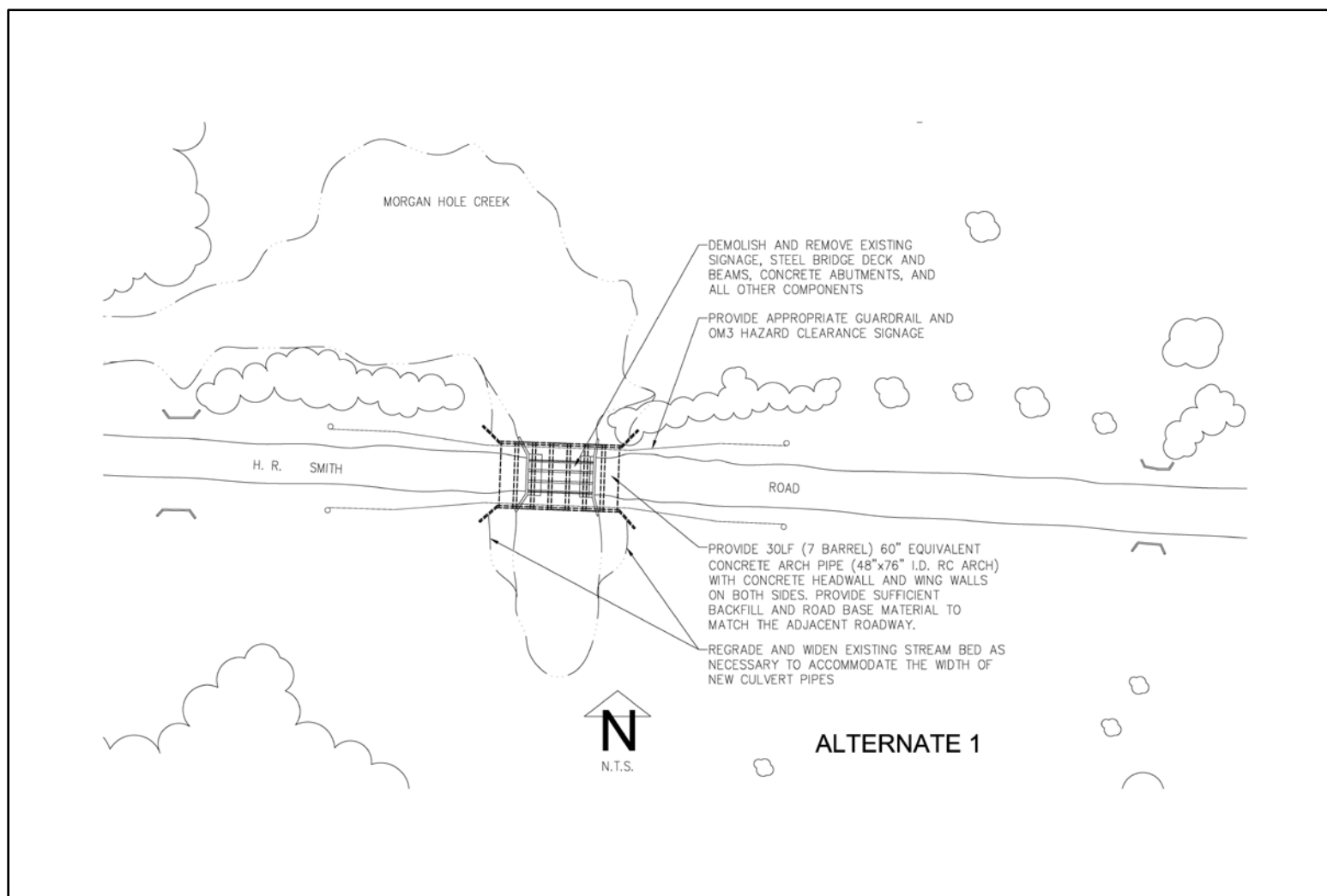


Figure 2.3-1. A schematic showing the removal of the HR Smith Bridge and being replaced with a seven culvert system.

Table 2.4-1. Summary of the Potential Impacts of the Action Alternatives and No-Action Alternative.

IMPACT	Alternative 1	Alternative 2	No-Action Alternative
Operations	Normal operations would continue. H.R. Smith Bridge would still deny travel of heaviest military training vehicles.	Normal operations would continue. H.R. Smith Culverts would allow travel of heaviest military training vehicles.	Normal operations would continue short term. Long term, much of the ground based training would not be possible.
Safety	Decreased risk with addition of guard rails.	Decreased risk with addition of guard rails.	Short term increased risk with lack of guard rails. Long term decreased risk with no access to bridges and much of the installation.
Noise	No appreciable impact.	No appreciable impact.	No appreciable impact.
Hazardous Materials and Waste	Minor amounts of hazardous materials in heavy construction equipment.	Minor amounts of hazardous materials in heavy construction equipment.	No hazardous materials with absence of heavy construction equipment.
Soils	Minor disturbance.	Minor disturbance, slightly more than Alternative 1.	No disturbance.
Environmental Restoration	No impacts.	No impacts.	Short term – no impacts. Long term- much of monitoring and remediation would not be possible.
Water Resources	Minor impacts to wetlands and water quality.	Minor impacts to wetlands and water quality. Slightly more than Alternative 1.	Short term - minor impacts to stream channel due to deposition. Long term-much water quality monitoring on the installation would not be possible.
Vegetation	Minor impacts to upland and wetland vegetation.	Minor impacts to upland and wetland vegetation.	No impacts to upland and wetland vegetation.
Wildlife	Minor, temporary displacement of wildlife, very slight possibility of impacts to threatened and endangered species.	Minor, temporary displacement of wildlife, very slight possibility of impacts to threatened and endangered species.	Short term – no impacts. Long term -fewer impacts to threatened and endangered and game species struck by vehicles, higher impact with species and habitat lost to wildfires.
Noxious weeds	Mild risk of noxious weeds establishing on work site after work is completed.	Mild risk of noxious weeds establishing on work site after work is completed	Short term – minor risk of noxious weeds establishing. Long term – reduced risk of new infestations caused by vehicle traffic, however, increase spread of weeds in surrounding, existing infestations because they would not be chemically treated.
Cultural Resources	Minimal probability of encountering cultural resources.	Minimal probability of encountering cultural resources.	Short term – no probability of encountering cultural resources. Long term – majority of cultural surveys on unsurveyed areas of the installation would not be carried out.
Transportation	Minor inconvenience due to detour.	Minor inconvenience due to detour.	Short term – non inconvenience due to detour. Long term – reduced road maintenance costs by about 75%.
Outdoor Recreation	Minor inconvenience due to detour.	Minor inconvenience due to detour.	Short term – no inconvenience due to detour. Long term –

Table 2.4-1 continued

IMPACT	Alternative 1	Alternative 2	No-Action Alternative
			reduced access by 75%, services reduced.
Grazing	Detour inconvenience, possible adverse interaction between cattle and work site during construction.	Detour inconvenience, possible adverse interaction between cattle and work site during construction.	Short term – no impacts. Long term – Grazing Program would close down.
Forestry	Marginal detour inconvenience.	Marginal detour inconvenience.	Short term – no impacts. Long term – Forestry Program would close down.
Socioeconomics, Environmental Justice, Protection of Children	Very minor increase in economic activity.	Very minor increase in economic activity.	Short term – no impacts. Long term, reduced economic activity on and off the installation due to reduced training, reduced recreation, and Forestry and Grazing Program closed down.
Installation Objectives	Objectives met.	Objectives met.	Most objectives not met.
Irreversible and Irretrievable Commitment of Resources	Fuels used by equipment would be irretrievable.	Fuels used by equipment would be irretrievable.	Short term – no commitment. Long term – large reduction of fuels used on the installation.
Energy, Natural or Depletable Resource Requirements and Conservation Potential	No additional energy required after construction.	No additional energy required after construction.	Short term – no energy or resources required. Long term – large reduction in energy use by vehicles.

3.0 AFFECTED ENVIRONMENT

3.1 OPERATIONS

Both bridges serve the military operations directly by allowing personnel on the ground to access the North and South complex impact ranges. Personnel are needed on these ranges to score aircraft delivering ordnance and conducting gunnery. Access to these ranges is also critical for training military personnel. Specifically, air-ground controllers use these ranges to coordinate ordnance deliveries to include ground personnel guiding the ordnance in with lasers. Other training includes coordinating sensory equipment from aircraft with forces on the ground, communications, and simulated ground combat using aircraft as support. Personnel on these ranges also coordinate field artillery and mortar fire. The bridges are also used to transport personnel to other locations on the installation for a myriad of training opportunities. Examples of such training includes small arms and crew served (machine guns) weapons on ranges, artillery and mortar firing points, drop zones for personnel and weapons, convoy training, simulated downed air crew rescues, infantry tactics, and survival training. Generally, most vehicles used for training can use both existing bridges because the vehicles are light. There are a few exceptions such as mine sweeping trucks and armored personnel carriers. These do not use the H.R. Smith Grade Bridge and detour using Kissimmee Road.

3.2 SAFETY

Both the H.R. Smith Grade Bridge and Kissimmee Road/Rim Canal Bridge lack proper approach guard rails and guard rails on the bridges themselves. The H.R. Smith Grade Bridge experiences road washouts behind the abutments about every fourth year and requires road closure until the washouts have been filled. The road closures are signed and last from one day to two weeks.

3.3 NOISE

Noise is measured in units called decibels (dB). A-weighted decibels (dBA) is a common filtered measurement of decibels that considers noise level and time of exposure. Acceptable noise levels are 65 dBA and below for prolonged periods (USHUD 1984).

Noise generated around the project areas are vehicular in nature. Most of the vehicles are passenger vehicles passing over the bridges. Logging trucks and trucks transporting vehicles or targets occasionally pass through as well as graders maintaining H.R. Smith Grade. The heavier vehicles exceed the 65 dBA limit when a human receptor is in close proximity. For the project locations, rarely are human receptors present. Therefore, existing noise generation is not a concern or consideration. Current noise generation has very minimal impact.

3.4 HAZARDOUS MATERIALS AND WASTE

Currently, hazardous materials and waste are managed under APAFR Permit No. 38564-004-HF, issued by the FDEP on 14 December 2007. APAFR is considered a Large Quantity Generator (LQG) at this time since the last designation indicates that APAFR generates >1000 kilograms (kg) of hazardous waste per month or >1 kg of acute hazardous waste per month. There are several satellite accumulation points (SAPs) and one central accumulation point (CAP) located at Building 27 for the storage of hazardous waste on the Range. Other waste generated at APAFR is managed as solid waste or recycled waste. With the exception of common trash/garbage/refuge derived from Range personnel or recreationists, the remaining solid waste, hazardous waste, and recycled waste are stored and/or accumulated at Building

27, prior to proper disposal through a contract with Defense Reutilization and Marketing Services (DRMS), an Air Force qualified waste disposal service.

APAFR is currently permitted to terminate post-closure care of a miscellaneous unit (Open Burn/Open Detonation (OB/OD Pit, SWMU 11), including corrective action requirements, under Florida Department of Environmental Protection's (FDEP's) authorized program for continuing the federal Hazardous and Solid Waste Amendments (HSWA).

Historical Environmental Restoration Program (ERP) sites have been investigated and/or remediated on Avon Park Air Force Range (APAFR) since 1981. The "72" ERP sites plus "2" Areas of Concern (AOCs), previously managed in the Air Force Restoration Information Management System (AFRIMS) under the ERP, are listed as Solid Waste Management Units (SWMUs) in the HSWA portion of the Resource Recovery and Conservation Act (RCRA) permit (issued 14 Dec 07) in Appendix A. One additional Compliance Site (MBS No. 31, NE Echo Range), which was investigated during 2007 and 2008, is listed in the Corrective Action Management Plan (CAMP) under the HSWA portion of the RCRA Permit. Since this MBS is within an active impact area, the site is restricted to public access.

From the "72" ERP sites, 28 MBSs, plus the Old Abandoned Foxtrot Range (AOC-109 - SWMU 70) were transferred to the Range's Compliance Program ~2006. AOC-109 was close as No Further Action (NFA) on 22 Sep 06. Approximately ½ of the MBSs are within active impact areas and the remaining ½ are outside the impact areas. The MBSs within the impact areas have restricted public access and the MBSs outside the impact areas have been remediated (swept and covered) via the Compliance Program. Four (4) additional Compliance Sites (Bldg 74/75 Former POL Storage - SWMU 30, Bldg 73 OWS - OW-C500, Charlie Range Center Tower AST - Bldg 1059A - SS-C502, and Bravo Range Center Tower AST - Bldg 1052 - SS-C503) were validated by URS as eligible Compliance Restoration Program (CRP) Sites in their September 2009 Final Evaluation Report. This validation resulted in the transfer of these 4 sites from the Compliance Program to the CRP on 1 October 2009. None of the ERP sites, MBSs, Compliance Program sites, or CRP sites would be considered to have an impact on the bridge replacement/scour protection/culvert installation at the Smith Grade or Kissimmee Road/Rim Canal Bridge. Even though closed ERP sites LF-33 (Old Sanitary Landfill) and SS-98 (Rim Canal) are adjacent to the Kissimmee Road Bridge, the proposed alternatives should not be an impact to either site.

3.5 SOILS

The NRCS soil survey shows the H.R. Smith Grade Bridge to occupy the Valkaria Sand soil mapping unit (USDA-NRCS 2011). This soil belongs to the entisol soil order meaning that the soil lacks horizons in the soil profile. The soils around the H.R. Smith Bridge are sandy alluvial deposits from Morgan Hole Creek. These soils have been disturbed, both naturally by alluvial deposition, and by the road grade. The soil survey shows the Kissimmee Road/Rim Canal Bridge to occupy the Malabar Sand soil mapping unit. It belongs to the alfisol soil order. This soil order is more stable and has horizons developed in the soil column with the top horizon having minerals excessively leached and deposited in the lower horizon. However, soils in the canal channel would be an entisol due to deposition. Soils around the bridge would be mixed due to past construction of the bridge and road so that the soil profile may not remain. Soils at both project locations are very sandy.

3.6 ENVIRONMENTAL RESTORATION

The Environmental Restoration Program (ERP), formerly known as the Installation Restoration Program, is a subcomponent of the Defense ERP that became law under the Superfund

Amendments and Reauthorization Act (SARA). The ERP requires each DOD installation to identify, investigate, and clean up hazardous waste disposal or release sites. Avon Park AFR began its ERP in 1981 with 11 sites originally identified. This consisted of a Phase I Records Search to identify potential sites of concern, which warranted further investigation. In accordance with USAF policy, all ERP sites at the base are addressed in a manner consistent with the CERCLA or RCRA process. Restoration projects on Avon Park AFR are conducted under two regulatory programs: those governing petroleum releases from underground storage tanks (USTs), and those governing cleanup of Solid Waste Management Units (SWMUs) in accordance with the installation's RCRA permit. There are 74 SWMUs and ERP sites scattered throughout the installation. Of the 74 SWMUs and ERP sites, 61 are No Further Action (NFA), Transferred to another program or agency, or removed from the Hazardous and Solid Waste Amendments (HSWA) permit; and the remaining 13 are completing investigation phases or have Remedy in Place (RIP). None of these sites have been identified on the National Priorities List under CERCLA. Plans for future development in the areas of any of the ERP sites should take into consideration the possible restrictions and constraints that they represent. The FDEP regulates cleanup activities at petroleum sites, and has entered into a Petroleum Contamination Agreement with Avon Park AFR. The investigation and cleanup of SWMUs is conducted in accordance with the HSWA permit issued to the base under USEPA ID No. FL8 572 128 3587.

The HR Grade Smith doesn't occupy any ERP sites. However, the Kissimmee Road/Rim Canal occupies two former ERP Sites, LF-33 and SS-98. LF-33 is the Old Sanitary Landfill that was used during the 1940s. This site was closed with unrestricted land use on July 19, 2010. SS-98 is the Rim Canal site which was investigated for potential contaminants in 2001. This site was also closed with unrestricted use on July 23, 2004.

3.7 WATER RESOURCES

3.7.1 Surface Water Quality

The physiographic region in which APAFR occurs is traversed and occupied by several major water bodies, including lakes, rivers, creeks, ponds, and marshes. Water quality within these water bodies is monitored for parameters set forth by the Clean Water Act, and is expected to meet specific standards. All water flowing off of the APAFR, either West to Arbuckle Creek or East to the Kissimmee River, will culminate in Lake Okeechobee and ultimately, the Everglades.

One of the major creeks, Morgan Hole Creek, is the only waterway at the HR Smith site. All water in this area flows south and through the lower section of the Arbuckle Marsh, finally flowing offsite into Arbuckle Creek, creating the Morgan Hole Creek Watershed. Water level data collected at this specific site indicates an average stage fluctuation of 3.0 feet in a normal rain year, with high levels being close to 80 feet in elevation North American Vertical Datum (NGVD).

The Kissimmee Road/Rim Canal site bisects the Southwest end of the Rim Canal. This canal is a man-made storm water control system which moves water off of the cantonment area, including the airfield. In this area of the Rim Canal, water flows to the West, meeting Arbuckle Creek. Water quality samples are collected near this site monthly for the total maximum daily load (TMDL) program.

3.7.2 Groundwater

APAFR is located on the south east-central Florida groundwater basin. There are three aquifer systems underlying the installation, the surficial aquifer, intermediate aquifer, and the Floridan

aquifer. The water table in the surficial aquifer is shallow, typically about 4 feet below land surface. Groundwater flow direction is generally to the north and west, and levels vary with seasonal rainfall amounts.

In both the Kissimmee Road/Rim Canal site and the HR Smith site, groundwater interaction is limited to the surficial aquifer. Groundwater and surface water interaction may occur during wetter times of the year when surface flows are more readily influenced by a shallow water table.

3.7.3 Floodplains

Despite being in water body channels, the project areas are not located in the 100 year floodplain as defined Federal Emergency Management Agency (USDHS-FEMA 2011).

3.7.4 Wetlands

APAFR comprises 106,074 acres, of which 54,262 acres are wetlands, or approximately 51 percent. These wetlands include both alluvial and non-alluvial systems, where alluvial wetlands are associated with stream channels and non-alluvial wetlands are influenced by groundwater emergence and shallow water tables. The non-alluvial wetlands on APAFR include seepage areas, isolated wetlands, and broad hydric flatwoods.

At the HR Smith site, Morgan Hole Creek is natural stream which fluctuates in level based on rainfall on the North-Central area of the range. There is a wide wetland area encompassing all of Morgan Hole Creek and its banks as it flows south to the Arbuckle Marsh and then to Arbuckle Creek. This site is entirely within the Morgan Hole Creek Watershed, which also includes numerous isolated wetlands and seepage areas.

The Kissimmee Road/Rim Canal site sits entirely within the Arbuckle Creek Watershed. The Rim Canal is an artificial system which moves stormwater off of the cantonment area and the airfield. There are various small isolated wetlands within this watershed. The closest and largest wetland to this site is the floodplain of Arbuckle Creek to the west, to which the Rim Canal flows.

3.8 COASTAL ZONE MANAGEMENT ACT

Florida's coastal zone consistency concurrence for evaluating proper stewardship of coastal areas under the Coastal Zone Management Act (CZMA) is addressed under a network of 23 Florida statutes. Interior counties in Florida are still considered coastal due to their relatively close distances to the coast and that water courses from these counties often reach coastal areas and contribute to estuaries. However, Avon Park Air Force Range is uniquely situated in a watershed where water courses do not reach the coast in the form of estuaries; rather the water courses flow into the Everglades and reach the coast as broad, overland flows. Due to this uniqueness, statutes that address water quality are the main focus under the CZMA for APAFR. For water quality, both Morgan Hole Creek and the Rim Canal empty into Arbuckle Creek which then flows into Lake Istokpago. Canals from Lake Istokpago flow to the Kissimmee River and Lake Ocheechee. Lake Ocheechee flows into the Everglades.

3.9 AIR QUALITY

The United States Environmental Protection Agency (USEPA) established National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be a concern with respect to the health and welfare of the general public (USEPA 2011). When an area exceeds or reaches these pollutant levels it is designated as non-attainment or maintenance. Federal actions that

generate air pollutants in such areas are assessed and determined if the pollutants will exceed establish thresholds and if so, mitigation measures must be taken. APAFR is in an attainment area, meaning levels of these pollutants are not exceeded. However, APAFR still measures and reports emissions to the Federally appointed Florida Department of Environmental Protection (FDEP) caused by stationary sources to be in compliance of the Clean Air Act. Stationary sources at APAFR are emergency generators. The project areas have temporary mobile source (vehicle) emissions.

3.10 BIOLOGICAL RESOURCES

3.10.1 Vegetation

For H.R. Smith Grade Bridge, aquatic vegetation in the perennial pond adjacent and north of the bridge is dominated by pickerelweed with minor amounts of lily pads and cattails. The upland vegetation along the road grade is predominately Bahia grass with some wax myrtle and young, small live oaks.

The Kissimmee Road/Rim Canal Bridge has a shallow water column resulting in vegetation growing along the sides and the bottom of the channel. Typical vegetation includes willows, cattails, lily pads, sedges, and rushes. Upland vegetation on the road grade and above the canal are Bahia grass.

No federally listed plants are found in the project areas.

3.10.2 Wildlife

Both locations may best be described as altered floodplain wetlands. Even so a wide array of wildlife species may be present including the following: dwarf salamander, two-toed amphiuma (*Amphiuma means*), lesser siren (*Siren intermedia*), oak toad, southern cricket frog (*Acris gryllus*), pine woods treefrog (*Hyla femoralis*), barking treefrog, squirrel treefrog (*Hyla squirella*), little grass frog, southern chorus frog (*Pseudacris nigrita*), eastern narrowmouth toad (*Gastrophryne carolinensis*), eastern spadefoot toad, gopher frog, pig frog (*Rana grylio*), leopard frog (*Rana pipiens*), American alligator (*Alligator mississippiensis*), eastern mud snake (*Farancia abacura*), banded water snake (*Nerodia fasciata*), limpkin, bald eagle, white ibis, wood stork, and Florida sandhill crane great egret (*Ardea alba*), white ibis (*Eudocimus albus*), little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), black-crowned night-heron, yellow-crowned night-heron, great blue heron (*Ardea herodias*), bobcat, white-tailed deer, raccoon, and river otter.

3.10.3 Noxious Weeds

Cogon grass and Brazilian pepper are located just west of the HR Smith Grade Bridge. All known plants have recently been chemically treated, but a seed source may be present in the soil.

Cogon grass occupies the upland portion of the Rim Canal adjacent and northeast of the construction site. The cogon grass is untreated.

3.10.4 Endangered and Threatened Species

Three sensitive, threatened, and endangered species have been documented at the site or are known to occur at or near the project locations: Eastern indigo snake, (*Drymarchon corais*

couperi) is present throughout the range and is known to frequent wetlands in search of prey. Wood stork (*Mycteria americana*) has been observed at HR Smith bridge location and may be present at the Kissimmee bridge location as well. Gopher tortoise (*Gopherus polyphemus*) is a candidate for federal status as a threatened or endangered species. Not known to inhabit wetlands, tortoise may be observed near both project locations, foraging or traversing the landscape in search of mates or new territory. The occurrence of other species documented in APAFR is highly unlikely.

3.11 CULTURAL RESOURCES

The original construction of H.R. Smith Grade Bridge was in 1970, which places the bridge at 41 years old. A cultural resource is not considered historic until the resource has reached the age of 50 years unless there are special circumstances as defined by the Department of Interior Standards and the National Historic Preservation Council. The bridge is named after the founder of APAFR, Major Harry R. Smith. He was the first officer to cross onto Kissimmee Island and begin building what would become the largest bombing range in the world during WWII. While this is a defining event during WWII, it does not justify special circumstances to declare the bridge eligible for the National Register. Known Cultural Resources identified in the proposed Area of Potential (APE) effect is site 08PO5299 which is a historic site that was declared *Not Eligible* in 1997. The site is 4,761 feet from the construction site. The area has been surveyed all around the APE. The area under the bridge and the ponds has not been surveyed because of the water. There is potential for archaeological artifacts to be found in the ponds so we are requiring the presence of the base Archaeologist, Kathy Couturier, to be present during construction phases that require excavation of the site.

The bridge over the Kissimmee Rim Canal was built in 2000 and does not have any noteworthy historical characteristics. However, the Dragline Site (08HG0035) a paleo-site and one of the oldest sites found on APAFR is only 449 meters from where the work would be performed on the bridge and most critically the boundaries of this site have not been established. Also included in the APE is the Francis Site 08HG1059 which is only 335 meters from the work site. The Old Government Railroad site 08HG1064 is 590 meters from the work site. This site is a railroad bed, historic earthwork, and bridge piers. It has a NRHP assessment recommended on the state file. While the Old Government Railroad site is very identifiable and should not be impacted, the Dragline Site could be impacted because the borders on site 08HG0035 have not been determined. The proposed activities at the Kissimmee Rim Canal have the potential to adversely affect unknown archaeological sites in the APE. Therefore, the proposed activities must be monitored by the staff archaeologist, Kathy Couturier while excavation activities are being performed.

3.12 TRANSPORTATION

Both HR Smith Grade and Kissimmee Road serve as main roads that access the range complexes. These main roads provide access to less traveled, lateral roads. Due to their importance, both are frequently maintained. HR Smith Grade is a shell/clay grade that requires frequent grading while Kissimmee Road is a one-lane, paved road that is repaired by adding asphalt or concrete aggregate to the edges of the road.

Roads on the installation are frequently closed down to all vehicle travel during the work week. Closures occur on a daily basis. The closures are a result of safety fans imposed on and off the impact range and training ranges. These fans accommodate small arms and crew served weapons firing, aerial gunnery, aerial laser training, and aerial ordnance deliveries. As would be expected, most of the road closures are on roads within or close to the ranges. However, the laser guided and GPS guided bombs have large footprints that cover the northern third and

southern third of the installation around the North Range and South Range Complexes, respectively. Therefore, H.R. Smith Grade is closed when laser training, laser guided bomb training, and GPS guided bomb training is active, which on average is about five days during a given week per month. Kissimmee Road is closed nearly on a daily basis because it travels through the South Range Complex. However, most other lateral roads coming off Kissimmee Road remain accessible because they occur well west of the South Range Complex.

3.13 RECREATION

Both HR Smith Grade and Kissimmee Road serve as main roads for access to the Public Recreation Area (PRA). The PRA is generally open to the public weekly (Thursday through Monday) throughout the year. The most active time annually is the period September through December with approximately 500 visitors per weekend on average. The PRA experiences about 20,000 user-days per year with most of that traffic flow utilizing either HR Smith Grade or Kissimmee Road.

3.14 CATTLE GRAZING

The H.R. Smith Grade Bridge is located in a cattle grazing pasture. It is one of nine other pastures in a grazing lease. During the dry season, the pond just north of the bridge is often the only reliable source of water in the pasture. Cattle can graze the other pastures while work is being conducted at the bridge; however, if construction goes the full 90 days, the pasture must be grazed for approximately three consecutive weeks during that time. Cattle must have access to the water north of the bridge.

The Kissimmee Road/Rim Canal Bridge does not occupy a grazing pasture.

3.15 FORESTRY

No forestry activities occur at the locations of the project sites.

3.16 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

Social economics addresses employment, income, population, housing, and public schools. The Environmental Justice is prompted by Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This executive order requires that minority and low-income populations be identified and any adverse impact that may be experienced be assessed. Protection of Children is prompted by Executive Order 13045 *Protection of Children from Environmental Health Risks and Safety Risks*. This executive order requires assessment to any health risks resulting from the action that may affect children.

The location of the bridges are remote with buildings of employment being over a mile away and housing nearly two miles away. It is worth noting that the closest housing to the project areas is the Avon Park Youth Academy with approximately 160 youth and the Avon Park Correctional Institution with approximately 950 inmates. While ethnicity in these communities cannot be disclosed, it is noted that the United States Census tract that encompasses the both facilities, as well as property north and east outside of the installation, indicates minority populations and lower income populations in that tract (USCB 2011). in higher populations than that of Polk County, the county where these facilities reside).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 OPERATIONS

4.1.1 Alternative 1

Bridge replacement and modification would not impact Operations. Some of the heavier military vehicles used in training would not be able to use the H.R. Smith Grade Bridge due to the 27 ton load limit. The Kissimmee Road detour would be the selected route with about one half hour of travel time added to reach the North Tactical Range.

4.1.2 Alternative 2

Replacing the HR Smith Grade bridge with a culvert system and modifying the Kissimmee Road/Rim Canal bridge would not impact Operations. The culvert system would support the heavier vehicles.

4.1.3 No-Action Alternative

Taking no action regarding the bridges would have no impact to Operations.

4.2 SAFETY

4.2.1 Alternative 1

Alternative 1 would slightly decrease safety temporarily as the bridges would undergo replacement or modifications. This would be due to heavy equipment and personnel working in the area and in the case of the Kissimmee Road/Rim Canal Bridge, would add vehicle traffic interacting with personnel and heavy equipment. Alternative 1 would improve safety long term by having approach guardrails and guardrails on the bridges themselves. Updated weight limit signs would also improve safety.

4.2.2 Alternative 2

Alternative 2 would have the same short term, decrease in safety as with Alternative 1. Alternative 2 would improve safety slightly more than Alternative 1 because the width of the HR Smith Grade culvert system is 30 feet as opposed to 16 feet with the new HR Smith Bridge. A wider crossing would increase vehicle safety.

4.2.3 No-Action Alternative

The No-Action Alternative would not improve safety and would keep existing deficiencies in place. These deficiencies would include a lack of approach guardrails, lack of bridge guardrails, and preventing the future degradation of bridges that currently have structural deficiencies. Continuous safety monitoring would be required allowing for a determination to close the bridges if necessary.

4.3 NOISE

4.3.1 Alternative 1

Heavy equipment such as backhoes, dump trucks, and bull dozers typically generate noise above 65dBA when human receptors are 50 feet or less from the noise source (USFHWA 2007). Both project sites would have such equipment emitting noise above these levels. The effects of noise would be reduced by workers and equipment operators wearing hearing protection. The HR Smith Grade Bridge would have the road closed to vehicle traffic, so personnel not associated with the project would be outside of the noise impact area. Personnel

not associated with the Kissimmee Road/Rim Canal Bridge would briefly be subjected to noise levels above 65 dBA when driving through with vehicles. Exposure is anticipated to be less than five minutes. Furthermore, the personnel would not be engaged in tasks requiring non project site concentration, rather they would be focused on construction and vehicle movements for safe passage. In this context, noise levels could actually help personnel better assess the project's work environment and improve awareness during passage through the project site.

4.3.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.3.3 No-Action Alternative

The No-Action Alternative would not increase noise levels above current operations.

4.4 HAZARDOUS MATERIALS AND WASTE

4.4.1 Alternative 1

Two 5,000-gallon aboveground storage tanks (ASTs) are used and maintained to store diesel fuel for the Avon Park Air Force Range (APAFR). Another, 5,000-gallon AST is used and maintained to store jet fuel for the Avon Park Air-Ground Training Complex (AAGTC). There are also five stationary diesel generators (< 550 gallons) at Buildings 1058, 3029, 3043, 3044, and 3557. All these tanks are operated under the Range's Spill Prevention, Control, and Countermeasure Plan (SPCCP) dated September 2007 and should not be any impact to either bridge project. However, the Contractor(s) approved to work on the Smith Grade bridge replacement project (with another bridge) and/or Kissimmee Road-Rim Canal bridge scour protection project (Alternative 1) should be aware they must follow and/or obtain the applicable plans/permits for pesticide/herbicide application(s), dewatering, wetland protection, erosion control, and spill prevention/control prior to and during the proposed construction activities. A copy of the Range's September 2007 Spill Prevention, Control, and Countermeasure Plan (SPCCP) is available from the Range's Compliance Program Manager for Contractor(s) to follow when conducting the Alternative 1 activities. In addition, material safety data sheets (MSDSs) as well as projected quantities for all chemical substances (i.e. 250 gallons diesel fuel), must be presented to the Range's Compliance Program Manager and/or the Range's Fire Department Chief prior to conducting any field activities.

4.4.2 Alternative 2

Alternative 2 would have the same impacts, precautions, and processes as Alternative 1.

4.4.3 No-Action Alternative

Other than previously stated in the No-Action Alternative, there should be no additional impacts associated with Hazardous Materials and Waste.

4.5 SOILS

4.5.1 Alternative 1

Alternative 1 would not appreciably change the soils. They would remain entisols or convert from early forming inceptisols to entisols. Being sandy, they would be expected to compact well against the new or existing bridge structures. Being sandy, however, they would remain erosive. The proposed riprap would help hold the soils in place. Adjacent, undisturbed vegetation would seed or vegetate the exposed soils naturally. To help establishment, post construction areas could be seeded with Bahia grass to help stabilize the soil. Dewatering and using sediment filter bags would reduce soil displacement.

4.5.2 Alternative 2

Alternative 2 would have the same similar effects as Alternative 2. The culvert system is wider than the bridge and therefore would require more soil removal to establish the culverts, about 25% more soil.

4.5.3 No-Action Alternative

The No-Action Alternative would not disturb soils.

4.6 ENVIRONMENTAL RESTORATION

For all alternatives to include the No-Action Alternative, The Proposed Action does not involve construction in any portion of an ERP site.

4.6.1 Alternative 1

Impacts would only occur with the Kissimmee Road/Rim Canal Bridge. There would be some soil disturbance in the canal channel by heavy equipment with the placement of the dam and riprap. These impacts would be minimal because the SS-98 Rim Canal is a closed site with no land use restrictions. No contaminants from the disturbance would be expected.

4.6.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.6.3 No-Action Alternative

The No-Action Alternative would have no impacts.

4.7 WATER RESOURCES

4.7.1 Surface Water

4.7.1.1 Alternative 1

Surface water over time would be improved due to the erosion protection provided by this alternative. With continued maintenance, the erosion protection offered would reduce sedimentation issues; further, the overbank flow and erosion issues would be resolved.

The APAFR Water Quality Program Manager coordinated with the South Florida Water Management District (SFWMD) in November 2011 for compliance with water quality as per Section 401 of the Clean Water Act. The SFWMD determined that replacing the H.R. Smith Grade Bridge abutments would already be permitted under the existing APAFR's Section 404 Permit SAJ199403890(IP-LC) that was modified by letter on 3 December 2010 by the USACE Tamp Regulatory Office. The SFWMD coordinated with the USACE in this letter permit modification to include state authorizations for the same activities as authorized by the USACE. Regarding water quality impacts with the proposed placement of new riprap at both bridge locations, the SFWMD requested that APAFR submit an Environmental Resource Permit (ERP) application for state review of the riprap placement. APAFR submitted an ERP application in November 2011. The SFWMD responded in a letter, dated 25 January 2012 (see Appendix A), that the proposed riprap placement would be in compliance with an existing permit issued to APAFR, Permit 53-00087-S. This permit, issued in 1987, expanded the Rim Canal.

Under Section 402 of the CWA, dewatering permits would be required for both bridges. These permits would be acquired from the Florida Department of Environmental Protection (FDEP). The contractor hired to perform the work would be required to obtain these permits. Because

the project sites would be under one acre in size, a national pollution discharge elimination system (NPDES) for stormwater runoff would not be required.

4.7.1.2 Alternative 2

Surface water over time would be improved due to the erosion protection provided by this alternative. With continued maintenance the erosion protection offered would reduce sedimentation issues.

Permits as specified for Alternative 1 would be required.

4.7.1.3 No-Action Alternative

No-Action Alternative: The no action alternative will further degrade the bridges on both H. R. Smith and Kissimmee, as the erosion continues to increase due to the degrading. The high potential of water quality degradation would also increase. Currently the H.R. Smith Bridge has been downgraded so that existing equipment must take alternate routes (approximately eight miles). No permits would be required.

4.7.2 Groundwater

4.7.2.1 Alternative 1

The groundwater would not be affected by any of the alternatives presented.

4.7.2.2 Alternative 2

The groundwater would not be affected by any of the alternatives presented.

4.7.2.3 No-Action Alternative

The groundwater would not be affected by any of the alternatives presented.

4.7.3 Floodplains

4.7.3.1 Alternative 1

The project areas are not in floodplains.

4.7.3.2 Alternative 2

The project areas are not in floodplains.

4.7.3.3 No-Action Alternative

The project areas are not in floodplains.

4.7.4 Wetlands

4.7.4.1 Alternative 1

Wetland areas exist on both sides of the bridge. During the short construction time the wetlands and wildlife would be temporarily impacted by equipment and dewatering activities, but the unlimited long-term impacts would be positive as plants and downstream areas recover from the constant erosion from the current condition. BMPs would be put into place to ensure no erosion or sediment transport occurs during construction. Specifically, these measures would include:

- (a) Providing turbidity barriers or similar devices for the duration of dewatering and other construction activities in or adjacent to wetlands or other surface waters.

- (b) Stabilizing newly created slopes or surfaces in or adjacent to wetlands and other surface waters to prevent erosion and turbidity.
- (c) Providing proper construction access for equipment to ensure that dredging and rutting from vehicular traffic does not occur.
- (d) Maintaining construction equipment to ensure that oils, greases, gasoline or other pollutants are not released into wetlands or other surface waters.
- (e) Controlling the discharge from soil disposal sites.
- (f) Preventing any other discharge or release of pollutants during construction or alteration that will cause water quality standards to be violated.

No additional wetland permitting from the USACE would be required. APAFR's Section 404 Permit SAJ199403890(IP-LC) was modified by letter on 3 December 2010 by the USACE Tamp Regulatory Office. The letter modification issued bridge specific repair or replacement under Nationwide Permit #3. The letter modification would apply to both the H.R. Smith Grade Bridge and the Kissimmee Road/Rim Canal Bridge.

4.7.4.2 Alternative 2

Wetland areas exist on both sides of the bridge. While during the short construction time the wetlands and wildlife would be temporarily impacted by equipment and dewatering activities, the unlimited long-term impacts would be positive as plants and downstream areas recover from the constant erosion from the current condition. BMPs would be put into place to ensure no erosion or sediment transport occurs during construction. Specifically, the same as those for Alternative 1, above (4.7.4.1(a)-(f)).

4.7.4.3 No-Action Alternative

Wetland areas exist on both sides of the bridges. A no-action alternative will continue to allow eroded soil to pass to downstream areas, there will be an accumulation of these soils downstream over time that will create deltas and ultimately change the flow downstream of the facility.

4.8 COASTAL ZONE MANAGEMENT ACT

4.8.1 Alternative 1

Dewatering and using filtration bags would minimize sedimentation for both Morgan Hole Creek and the Rim Canal. Disturbed, riparian vegetation would reestablish in the water channels to help reduce soil erosion in the long term.

The FDEP determined concurrence with the CZMA in an e-mail from the Florida Clearinghouse dated 21 Oct 2011 (Appendix A).

4.8.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

The FDEP determined concurrence with the CZMA in an e-mail from the Florida Clearinghouse dated 21 Oct 2011 (Appendix A).

4.8.3 No-Action Alternative

No-Action Alternative would not have any impacts regarding the CZMA.

4.9 AIR QUALITY

4.9.1 Alternative 1

Alternative 1 would emit air pollutants from the exhaust of mobile, heavy equipment and particle dust from vehicles traveling on shell/clay roads and moving earth and fill. These emissions would not exceed existing thresholds for the area.

4.9.2 Alternative 2

Alternative 1 would emit air pollutants from the exhaust of mobile, heavy equipment and particle dust from vehicles traveling on shell/clay roads and moving earth and fill. These emissions would not exceed existing thresholds for the area.

4.9.3 No-Action Alternative

The No-Action Alternative would not create emissions.

4.10 BIOLOGICAL RESOURCES

4.10.1 Vegetation

4.10.1.1 Alternative 1

Both upland and riparian vegetation would be removed within the footprint of the bridges and where the dams would be established. Upland vegetation would be disturbed where heavy equipment would access the bridges. The vegetation would recover within three to six months except for the willows, wax myrtle, and live oaks. These would take two years or more to reestablish.

4.10.1.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.10.1.3 No-Action Alternative

The No-Action Alternative would not impact the vegetation.

4.10.2 Wildlife

4.10.2.1 Alternative 1

Effects to wildlife in general:

Under the proposed action (alternative one) approximately 4,000 acres of wetlands would be altered, drained and pumped dry in the vicinity of Kissimmee Bridge and HR Smith Bridge. This would result in displacement and mortality of fish, reptiles, frogs, and other amphibians in the wetland. Birds and mammals would be displaced during the construction by noise and human activity. Once construction would be complete the sites would slowly re-vegetate with a mix of native and non-native wetland plant species. Animal diversity would return to near pre-construction levels in approximately three to five years.

Effects to threatened, endangered, and sensitive species:

Construction activity is known to disturb indigo snake or result in unintentional injury to individual snakes. In order to reduce this possibility to a discountable level the following measures for indigo snake would be implemented.

1. An eastern indigo snake protection/education plan would be developed for all construction personnel to follow. The educational materials for the plan may consist of a combination of

posters, videos, pamphlets, and lectures (e.g., an observer trained to identify eastern indigo snakes could use the protection/education plan to instruct construction personnel before any clearing activities occur). Informational signs should be posted throughout the construction site and along any proposed access road to contain the following information: a description of the eastern indigo snake, its habits, and protection under Federal Law; instructions not to injure, harm, harass or kill this species; directions to cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming clearing; and, telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is encountered. The dead specimen should be thoroughly soaked in water and then frozen.

2. If not currently authorized through an Incidental Take Statement in association with a Biological Opinion, only individuals who have been either authorized by a section 10(a)(1)(A) permit issued by the Service, or by the State of Florida through the Florida Fish Wildlife Conservation Commission (FWC) for such activities, are permitted to come in contact with an eastern indigo snake.

3. An eastern indigo snake monitoring report must be submitted to the appropriate Florida Field Office within 60 days of the conclusion of clearing phases. The report should be submitted whether or not eastern indigo snakes are observed. The report should contain the following information: a. any sightings of eastern indigo snakes and b. other obligations required by the Florida Fish and Wildlife Conservation Commission, as stipulated in the permit.

Potential indigo snake refugia: gopher tortoise burrows, active or inactive, other holes, ground cavities, and root hollows, will be identified, flagged, and avoided if possible. If not, they will be evacuated prior to site manipulation. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an indigo snake, no work will commence until the snake has vacated the vicinity of proposed work. With implementation of the above measures mortality of indigo snake is not anticipated. Indigo snakes will depart the area however when construction activity ends and vegetation recovers snakes will occasionally utilize this area for foraging and cover.

Wood stork

Wood storks forage in wetlands, along roadsides, in ditches, and other sites where water accumulates. Some disturbance of foraging activities by construction and maintenance would be unavoidable but would be temporary, small in size, and discountable. Perennial water around the bridges would be pumped out hence wood stork would be deprived of this area as a foraging site during construction, however this will be discountable since there are numerous foraging locations in the vicinity. The following measures to protect wood stork would be implemented: contractors would be informed to the possible presence of wood storks and told not to deliberately disturb them if encountered. Contractors would be instructed to obey the speed limit on installation roads to avoid collisions and wait for birds to leave the construction site before proceeding. Some loss of habitat would occur under this scenario. As the wetland vegetation recovers wood stork would return to the foraging area afforded by these sites.

Gopher Tortoise

Gopher tortoise, a candidate for listing as threatened or endangered, has documented crossing HR Smith Road and Kissimmee Road in the vicinity of the projects and may be encountered by construction crews. The protection measures for indigo snake would provide some benefit for gopher tortoise. Construction workers would be informed of the presence of gopher tortoise at the site and along the access route(s). Informational signs would be posted throughout the construction sites and along any proposed access roads to contain the following information: a description of the gopher tortoise, its habits, and instructions not to injure, harm, harass or kill this species; directions to cease activities and allow the gopher tortoise sufficient time to move away from the site on its own before resumption of activities. The effects on gopher tortoise would be limited to displacement and disturbance, with no mortality expected, assuming the above mentioned conservation measures would be implemented.

4.10.2.2 Alternative 2

Alternative 2 is not markedly different from Alternative 1 (proposed action) in terms of its effects on wildlife. The same amount of acreage would be disturbed and the construction would occur over the same time period hence disruption of wildlife would be about the same under this alternative. Likewise the effects of the project on eastern indigo snake, wood stork, and gopher tortoise would be essentially the same, assuming the same conservation measures would be implemented for these species.

4.10.2.3 No-Action Alternative

Under the no-action alternative, no repair would occur and both bridges would eventually be closed to vehicle use. Under this alternative the displacement and disturbance to wildlife would not occur and the habitat surrounding the bridges would continue to provide cover and foraging habitat to a variety of the amphibians, reptiles, birds and mammals. If these bridges are closed the disturbance created by daily vehicle travel would be reduced in the immediate vicinity of these structures. Likewise vehicle-caused mortality due to collision with wildlife would also be reduced. However traffic on other roads in the range would increase and vehicle mortality and disturbance would increase. Hence the net result of bridge closures would shift vehicle mortality or disturbance away from West Kissimmee Road and HR Smith Road toward other roads on the range.

USFWS Consultation

Consultation with the USFWS was conducted early in 2011 regarding the replacement of the H.R. Smith Grade Bridge. The Service responded in a formal letter dated 29 July 2011 (see Appendix A). The Service recommended that wood storks not be deliberately disturbed if encountered and that speed limits be observed to avoid collisions with wood storks.

4.10.3 Noxious Weeds

4.10.3.1 Alternative 1

Ground disturbance at both bridges may cause noxious weed seed to establish new plants. Monitoring should follow with chemical treatment if the weeds establish. Cogan grass could establish at both sites, while Brazilian pepper may establish at the HR Smith Grade Bridge.

4.10.3.2. Alternative 2

Impacts would be the same as with Alternative 1.

4.10.3.3 No-Action Alternative

The No-Action Alternative would have less potential to establish noxious weeds. The potential, however, would not be eliminated as infestations are possible along the roadsides.

4.11 CULTURAL RESOURCES

4.11.1 Alternative 1

Ground disturbance at both bridges may cause displacement of cultural resources. Any ground disturbance should only be done while under the supervision of the base archaeologist. The SHPO concurred with these management recommendations for work conducted on the H.R. Smith Grade Bridge in a consultation response letter dated 13 July 2011 and for the Kissimmee Road/Rim Canal Bridge in a consultation response letter dated 7 December 2012 (Appendix A).

4.11.2 Alternative 2

Ground disturbance at both bridges may cause displacement of cultural resources. Any ground disturbance should only be done while under the supervision of the base archaeologist. Because work conducted at the H.R. Smith Grade Bridge under Alternative 2 is similar to Alternative 1, the SHPO concurrence letter would apply for Alternative 2 as well. Consultation with the SHPO regarding the Kissimmee Road/Rim Canal Bridge is pending.

4.11.3 No-Action Alternative

No-Action would have no impact on Cultural Resources.

4.12 TRANSPORTATION

4.12.1 Alternative 1

The H.R. Smith Grade Bridge road closure would result in the Kissimmee Road detour with approximately one half hour road trip delays. The Kissimmee Road/Rim Canal Bridge would receive this detour traffic and could, at the same time, also be undergoing construction activities that would require temporary traffic closure – up to five minutes. While inconvenienced, traffic would flow on Kissimmee Road.

The H.R. Smith Grade Bridge would be repaired during the historical spring dry season. This also corresponds with the most active wildland fire season. The closing of H.R. Smith Grade for 90 days closes a major transportation artery for wildfire response. While the Kissimmee Road detour adds travel time the wildfire incident, a response would be made. There may be a unique situation in that aerial training in the South Ranges have closed down the detour route to a wildfire response in the North Range Tactical. If this were the case, the aerial training would have to close down so that wildfire suppression equipment could access the North Tactical Range.

4.12.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.12.3 No-Action Alternative

The No-Action Alternative would not result in road closures.

4.13 RECREATION

4.13.1 Alternative 1

Recreation traffic will need to be detoured around the construction, but should not impact the overall program.

4.13.2 Alternative 2

Recreation traffic will need to be detoured around the construction, but should not impact the overall program.

4.13.3 No-Action Alternative

The No-Action Alternative would not affect Outdoor Recreation Program in the short terms as vehicle travel would continue unimpeded. Alternative 1

4.14 CATTLE GRAZING

4.14.1 Alternatives 1

If construction at the HR Smith Grade Bridge continued for the full 90 days, then cattle would need to be in the respective pasture for three consecutive weeks. They would seek water at the bridge construction site. Workers need to be mindful of possible impacts by cattle to include equipment protection during non working hours (cows typically chew on plastic and insulated wires) may trample the dam, and rub on stationary objects.

No impacts to cattle would be anticipated for the Kissimmee Road/Rim Canal Bridge because this bridge is not in a grazing pasture.

4.14.2 Alternative 2

Impacts by Alternative 2 would be the same as with Alternative 1.

4.14.3 No-Action Alternative

The No-Action Alternative would not affect the Grazing Program directly.

4.15 FORESTRY

4.15.1 Alternative 1

Alternative 1 would not have any direct impacts to the Forestry program.

4.15.2 Alternative 2

Alternative 2 would not have any direct impact to the Forestry program.

4.15.3 No-Action Alternative

The No-Action Alternative would not have any direct impact to the Forestry program.

4.16 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

4.16.1 Alternative 1

Alternative 1 would not have direct impacts to social economics, Environmental Justice, or Protection of Children because the project locations are in isolated areas.

4.16.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.16.3 No-Action Alternative

The No-Action Alternative would not impact social economics, Environmental Justice, or the Protection of Children.

4.17 CONFLICTS WITH INSTALLATION OBJECTIVES

4.17.1 Alternative 1

Alternative 1 would continue to meet the objectives of the Comprehensive Range Plan as embodied in the mission statement “The Air Force’s premier East Coast air-ground training complex, relevant and sustainable, focused on the joint interagency multinational air-ground combat team while supporting compatible missions for National Defense” (USAF 2006). Alternative 1 would also continue to meet the objectives of the Integrated Natural Resources Management Plan as stated “The Environmental Flight will maintain and restore the health and integrity of the native ecosystems of Avon Park Air Force Range” (USAF 1997). In both plans, vehicular access on all established roads is required in order to carry out the objectives guided by their respective mission statements. Replacing and repairing the bridges allows vehicular access to continue. Increasing the weight limit of the HR Smith Bridge from 10 tons to at least 27 tons would allow heavier, short wheel-based vehicles to use the bridge.

4.17.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.17.3 No-Action Alternative

The No-Action Alternative would slightly impede the objectives of the plans by the H.R. Smith Grade Bridge continuing to have a weight limit of 10 tons. The weight limit restricts some vehicles and requires them to detour using Kissimmee Road.

4.18 IRREVERSIBLE AND IRRETRIEVEABLE COMMITMENT OF RESOURCES

4.18.1 Alternative 1

Alternative 1 would use fuel to power the heavy equipment used to replace and modify the bridges.

4.18.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.18.3 No-Action Alternative

The No-Action Alternative would not use heavy equipment, nor the respective fuel.

4.19 ENERGY, NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL

4.19.1 Alternative 1

Once constructed, the bridges would not require energy, or natural or depletable resources. There would be no conservation potential.

4.19.2 Alternative 2

Alternative 2 would have the same impacts as Alternative 1.

4.19.3 No-Action Alternative

The No-Action Alternative would have the same impacts as Alternative 2 less the use of energy for construction.

5.0 CUMULATIVE EFFECTS AND INDIRECT EFFECTS ON RESOURCES

The CEQ has defined cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or persons undertake such other actions. Cumulative impacts can result from individually minor but collectively significant action taking place over a period of time” (40 Code of Federal Regulation (CFR) 1508.7).

The CEQ has defined indirect effects as effects that “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable” (40 CFR 1508(b)).

One identified, future, cumulative impact is that a fiber optic communication cable is planned to be established during the fall or winter of 2011 while the bridge replacement is anticipated during the spring of 2012. The cable would be buried underground along the south side of HR Smith Grade Road. Currently, the cable is planned to go 30 feet south (downstream) of the bridge. The cable would be bored and cased about three feet under the creek channel. Once out of the channel, the cable would be buried by direct burial with a static plow. The cable would not be cased.

Identified indirect effects would occur at the same time as bridge construction. Specifically, HR Smith Road would be shut down for potentially 90 days and would divert traffic to the south on Kissimmee Road. The Kissimmee Road/Rim Canal Bridge would remain open, but could cause vehicle travel delays by about five minutes.

Long term under the No-Action Alternative, it would be possible for both bridges to structurally fail and both roads to be closed. This would effectively allow access to only the Main Base and northwest quarter of the installation.

5.1 OPERATIONS

Alternatives 1 and 2 would indirectly cause minor delays to Operations. When HR Smith Grade would be closed, vehicles would have to use Kissimmee Road to the south to access the North Tactical Range, about a one half hour delay. Operations would affect the H.R. Smith Bridge Replacement during construction as lasing and bombing operations would have a safety footprint over the bridge and require personnel not to be in the area. This would typically delay construction efforts one day a week with possibly one full week per month.

The No-Action Alternative would not affect operations in the short term.

5.2 SAFETY

Adding communication cable along H.R. Smith Grade would not appreciably decrease safety for the alternatives and No-Action Alternative. Additional drive time using a detour with the H.R. Smith Grade Bridge being closed would not increase or decrease safety. However, emergency response regarding medical emergencies or wildfire in the North Tactical Range or northeast quarter of the installation could adversely affect the response time and response outcome. Regarding wildfire, this could be a likely event as the North Tactical Range experiences ordnance ignited wildfires during the dry season, the same time the detour around the H.R. Smith Grade Bridge would be in place.

5.3 NOISE

Aircraft noise could cumulatively contribute to construction noise at both project sites. For the Kissimmee Road/Rim Canal Bridge under Alternatives 1 and 2, the project site is within the 65 dBA noise level for aircraft using the runway (USN 2005). Currently, the airfield is not certified so fixed wing aircraft use is limited to C-130s. Combined noise levels of aircraft use and construction is possible, but not likely. Even if both occurred, the aircraft use would be very temporary and infrequent. Rotary wing (helicopters) aircraft use the airfield about 10 percent of the time of operational periods. If they would be present during construction, they could easily reroute their flight paths to avoid the project site and contribute to additional noise.

For the H.R. Smith Grade Bridge under Alternatives 1 and 2, additional noise sources would include aircraft using the North Range Complex less than a half mile away to the north and mortars using firing points less than a half mile to the northwest. Noise matrices have not been determined from these ranges nor the mortar firing points. Personnel not associated with the project site are not anticipated to be present since H.R. Smith Grade would be closed. Hence they would not be impacted by combined noise effects from the project site, aircraft, and mortars. The workers present at the project site would likely be subjected to aircraft noise and possibly mortar fire noise. Again, they would be supplied with hearing protection to minimize noise impacts.

The No-Action Alternative would result in the bridges still receiving noise from aircraft and in the case of the H.R. Smith Grade Bridge, possible mortar fire. However, since no work would be conducted on the bridges, human receptors would only temporarily be in the area.

5.4 HAZARDOUS MATERIALS AND WASTE

There should be no cumulative or indirect effects associated with Hazardous Materials and Waste for either bridge project.

5.5 SOILS

The communication cable that would be bored under Morgan Hole Creek just south of the H.R. Smith Grade Bridge would require two soil pits (approximately three feet by three feet) to be dug on either side of the creek to establish the cased bore under the creek. These pits would be filled with the excavated materials and would be exposed for a few hours. This disturbance is not anticipated to interact with the bridge activities.

No other cumulative impacts or indirect effects are anticipated for the Kissimmee Road/Rim Canal Bridge.

5.6 ENVIRONMENTAL RESTORATION

The ERP will be conducting field work at the Bravo Range Center Tower AST (Building 1052) located in the North Conventional Range, and Charlie Range Center Tower (Building 1059), located in the South Tactical Range, beginning fiscal year 2012 through fiscal year 2012. Both bridges (HR Smith and Kissimmee Road/Rim Canal) are to be used when going to these sites. However, if one bridge is closed, then the other should be open in order for the contractor to reach the two sites mentioned above.

5.7 WATER RESOURCES

The project areas are not located in floodplains.

5.8 COASTAL ZONE MANAGEMENT ACT

Cumulative impacts and indirect impacts would not affect the CZMA.

5.9 AIR QUALITY

Emissions generated from the action alternatives would not contribute to other foreseeable emissions that would cumulatively exceed pollutant thresholds. No indirect effects are known for emissions caused by the action alternatives.

5.10 BIOLOGICAL RESOURCES

It is anticipated that these actions combined with continued maintenance of the existing roads system will continue to result in fragmentation and disruption of native wildlife and habitat. Mortality, due to vehicle collision, would continue for all species which reside near or cross roads on a regular basis. The amount of disruption and mortality cannot be quantified at this time.

Noxious weed infestation at the project sites would provide a source site to transport weed seeds via vehicles and road grading equipment. However, being located on a road that is highly visible, the extent of weeds spreading would be minimal because chemical treatments could easily ensue. Establishing the communication cable may cause enough soil disturbance within the project site to also increase weed establishment, but again, chemical treatments could ensue.

5.11 CULTURAL RESOURCES

No cumulative effects or indirect effects to cultural resources are foreseen with the action and No-Action alternatives.

5.12 TRANSPORTATION

Temporary detours are not expected to cause an increase or decrease in road wear. Programs using vehicle transportation would expect about one half hour of additional travel time when accessing the North Tactical Range or northeast quarter of the installation when the H.R. Smith Grade Bridge would be closed. This would be a minor inconvenience.

5.13 OUTDOOR RECREATION

Under the No-action Alternative, no repair would occur and both bridges would eventually be closed to vehicle use.

5.14 CATTLE GRAZING

Alternatives 1 and 2 would temporarily detour lessees needing to access their cattle in the northeast portion of the installation. They could, however, detour using Kissimmee Road.

5.15 FORESTRY

The proposed action, Alternatives 1 and 2, would have generally the same impact upon the Forest Management program. Empty logging trucks typically use HR Smith Grade to access the northeast portion of the installation. Under the action alternatives, they would have to detour and use Kissimmee Road. However, it should be noted that loaded logging trucks and equipment are required to use Kissimmee Road, which is paved, to keep from causing unnecessary road wear on HR Smith Grade, which is unpaved. In summary, empty log trucks would be unconvinced only.

5.16 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

Alternatives 1 and 2 would have a slight indirect benefit to socioeconomics within the local commuting area by employing personnel to work on the bridges. The No-Action Alternative would have no indirect benefit.

The inmate and youth camp population would have some indirect adverse impact by increased vehicle traffic as vehicles have to travel through both properties to access the Main Base. This traffic would be minimal, however. The No-Action Alternative would not impact inmates or youth.

Cumulatively, the work on the bridges could coincide with other, minor, temporary work being contracted on the installation, but collectively this work would marginally benefit socioeconomics and marginally impact inmate and youth with increased traffic.

Long term, Alternatives 1 and 2 would not impact socioeconomics. The No-Action Alternative would if both bridges failed. Only the North Conventional Range would have access and the Northwest one quarter of the installation. In short, ground based units would not come to train at APAFR. Lodging, fuels, food, supplies, and catering are commonly purchased within the local commuting area. Personnel train at APAFR on a weekly basis with the number of personnel ranging from 50 to 3,000 per week. Most of these personnel would not come to APAFR. Also public recreationists, grazing leases, and logging companies would only be able to use the northwest one quarter of the installation. These programs typically generate \$300,000, \$140,000, and \$100,000 to \$350,000 annually, respectively. Loss of revenue could be expected to be reduced by at least 75% with indirect loss of revenue to local businesses within the commuting area.

5.17 LONG TERM, CUMULATIVE, INDIRECT EFFECTS OF THE NO-ACTION ALTERNATIVE RESULTING IN PERMANENT BRIDGE CLOSURES.

Closing both bridges permanently due to structural failure would have far reaching impacts. Vehicular access would be limited to the North Conventional Range and the northwest quarter of the installation. While there are secondary roads that ultimately provide access to the rest of the installation, under the current, scheduled maintenance, these roads would rapidly degrade to the point where only all terrain vehicles could use them. In short, the majority of the installation would not be accessible. Objectives under the Range Comprehensive Plan, Installation Natural Resources Management Plan, and Installation Cultural Resources Management Plan would not be met. For the range plan, personnel would not be able to access the ranges and other installation locations for ground based training. Range scoring systems could not be manned. Medical emergency and wildfire suppression teams would not be able to respond to most of the installation. Target maintenance equipment would not be maintained and targets not replaced.

For natural resource objectives, natural resource managers would not be able to access most of the range. The recreating public would not be able to access most of the range. Three natural resource management programs, Grazing, Forestry, and Outdoor Recreation, all rely on revenue generated from their respective programs to operate their programs. With only one quarter of the range being accessible, the economy of scale would be too small to maintain the Forestry and Grazing programs, while the Outdoor Recreation Program would greatly reduce services.

Approximately 25,000 acres are burned under controlled burn prescriptions annually. This acreage is coordinated primarily to minimize wildfire escaping the installation from ordnance ignition sources, secondarily to meet ecosystem objectives – particularly the management of federally listed threatened and endangered species. Failure to administer prescribed fire would likely result in wildfire originating by ordnance and lightning strikes and leaving the installation on an annual basis. Impact to federally listed species from ordnance caused wildfire would be difficult to document.

Noxious weeds are chemically treated annually and also integrated with prescribed fire as an integrated approach. A lack of vehicle access to many of the range and most of the remaining installation would result in noxious weeds spreading in already established areas. A lack of vehicles and road maintenance activities would reduce the amount of weed spread in unfested areas.

Existing, unsurveyed areas for Cultural Resources would remain unsurveyed. Finally, the Environmental Restoration Program and Environmental Compliance Program would not be able to access many sites for monitoring and remediation. The programs would lose much of their effectiveness.

A lack of vehicle access would actually reduce the number of wildlife/vehicle strikes that occur annually. On average, one threatened or endangered species is lost every three years (typically the Florida Scrub-jay or eastern indigo snake) to vehicular strikes, while one deer is hit per year. Noise over much of the installation would be reduced due to a lack of vehicles and human activity to include small arms and crew served weapons. Road maintenance costs would be greatly reduced.

5.18 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Aside from fuel, no cumulative irreversible and irretrievable commitments of resources were identified for the action alternatives. No commitment of resources would be expended for the No-Action Alternative.

5.19 ENERGY, NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL

No cumulative energy, natural or depletable resource requirements were identified for the alternative and the No-Action Alternative.

6.0 REFERENCES

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7.0 PERSONS AND AGENCIES CONTACTED

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8.0 LIST OF ACRONYMS AND ABBREVIATIONS

ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
AFI	Air Force Instruction
AFIRMS	Air Force Restoration Information Management System
APAFR	Avon Park Air Force Range
APE	Area of Potential
AOC	Area of Concern
AST	Aboveground Storage Tank
BLG	Building
BIA	Bureau of Indian Affairs
CAA	Clean Air Act
CAP	Central Accumulation Point
CAMP	Corrective Action Management Plan
CEQ	Council on Environmental Quality
CERCLA	Comprehensive, Environmental Response, Compensation, Liability Act
CFR	Code of Federal Regulations
CRP	Compliance Restoration Program
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibel
DUC	Deployed Unit Complex
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FGS	Florida Grasshopper Sparrow
FHWA	Federal Highway Administration
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FWC	Florida Fish and Wildlife Conservation Commission
HWSA	Hazardous Waste Storage Area
ICRMP	Integrated Cultural Resources Management Plan
MAJCOM	Major Command
MBS	Munitions Burial Site
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System

NPS	National Park Service
NRCS	Natural Resource Conservation Service
NGVD	North American Vertical Datum
POL	Petroleum, Oils, and Lubricants
PRA	Public Recreation Area
RCRA	Resource Recovery and Conservation Act
ROI	Region of Influence
SAP	Satellite Accumulation Point
SARA	Superfund Amendments and Reauthorization Act
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Officer
SWMU	Solid Waste Management Units
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Loads
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USCB	United State Census Bureau
USDA	United States Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WG	Wing

9.0 LIST OF PREPARERS

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10.0 APPENDIX A CONSULTATION RESPONSES



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Lt. Col. Charles E. MacLaughlin
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OL A, DET 1, 23 WG/CC
29 South Boulevard
Avon Park Air Force Range, Florida 33825-9381

July 13, 2011

RE: DHR Project File Number: 2011-2710
Proposed Bridge Replacement on HR Smith Grade Road
Avon Park Air Force Range, Polk County

Dear Colonel MacLaughlin:

This office reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*. The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

We concur that the proposed project should have no adverse effect on historic properties conditioned that your staff archaeologist, Kathy Couturier, be onsite to monitor ground disturbing activities. Should potential significant cultural features or artifacts be encountered, the staff archaeologist must be empowered to direct the construction activities to shift away from such features or artifacts. This discretionary power will enable the monitor to contact this office or proceed to recover the cultural material and record cultural features in a professional manner and then project activities could continue. The resultant archaeological monitoring report for the project shall be forwarded to this office for review and comment.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail sedwards@dos.state.fl.us, or at 850.245.6333.

Sincerely,

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

PC: Kathy Couturier, Avon Park AFR Cultural Resources Manager

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South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960



July 29, 2011

Charles MacLaughlin
Department of the Air Force
Avon Park Air-Ground Training Complex
29 South Boulevard
Avon Park Air Force Range, Florida 33825

Service Federal Activity Code: 41420-2011-CPA-0226
Service Consultation Code: 41420-2011-I-0220
Date Received: June 29, 2011
Applicant: Avon Park Air Force Range
Project: HR Smith Bridge
County: Polk

Dear Colonel MacLaughlin:

The U.S. Fish and Wildlife Service (Service) has reviewed the United States Air Force's (USAF) email to the Service dated June 29, 2011, conducted a site visit on June 27, 2011, and reviewed other information provided to the Service for the application referenced above. This letter represents the Service's review of the proposed project in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

PROJECT DESCRIPTIONS

The USAF proposed action will replace the existing bridge and establish riprap around the bridge. The existing bridge deck, abutments, and all other components and accessories associated with the bridge will be removed. The existing steel deck will be placed in the Avon Park Air Force Range (APAFR) target salvage yard and disposed of as recycled metal. The concrete abutments will be crushed and stored at one of two existing aggregate storing locations on the main base of APAFR. The existing signage will be removed and disposed of as construction waste.

The new bridge has the same dimensions as the existing bridge. The deck will be approximately 30 feet (ft) long by 16 ft wide. The deck will rest on concrete bents at both ends of the deck. The bents will consist of column pilings topped with a rectangular bulkhead. The pilings will be protected by a concrete aggregate laid over plastic geogrid cells. The combination of the bent, aggregate and geogrid will have approximately the same cross channel dimensions as the existing concrete abutments. In short, the creek channel flowing under the new bridge will have the same dimensions as the channel flowing under the old bridge. Unlike the old bridge, the riprap will extend out past the deck approximately 20 ft upstream (north) of deck and 8 ft downstream (south) of the deck.



Demolition and construction will take approximately 60 days and would occur sometime during the months of November through May within the next 5 years. March through May is the most likely time frame for demolition and construction, because this portion of Morgan Hole Creek typically does not flow during these months. However, perennial water ponds just above the bridge will require dewatering prior to and during construction.

For dewatering, the water will be pumped via hose from the upstream side of the bridge, west along the north side H R Smith Grade to a culvert approximately 180 ft away. At the discharge location water will flow into filtration bags. The filtered water will then flow into a tributary channel of Morgan Hole Creek. Sediment collected from the bags will be transported and spread into a bahia grass cattle pasture located west and adjacent to H R Smith Grade approximately 2 miles to the west in an upland area.

THREATENED AND ENDANGERED SPECIES

Eastern indigo snake (*Drymarchon corais couperi*)

The threatened eastern indigo snake (indigo snake) is a large snake which can reach lengths of up to 8.5 ft (Moler 1992). Its color is uniformly lustrous-black, dorsally and ventrally, except for a red or cream-colored suffusion of the chin, throat, and sometimes the cheeks. Its scales are large and smooth (the central 3 to 5 scale rows are lightly keeled in adult males) in 17 scale rows at mid-body. Its anal plate is undivided. Critical habitat has not been designated for this species.

The indigo snake is found throughout APAFR in a variety of habitats including wetlands. Construction activity may disturb indigo snakes or result in unintentional injury to individual snakes. The USAF will brief construction crews on the possible presence of indigo snakes and will implement the "2004 Standard Protection Measures for the Eastern Indigo Snake" (Service 2004). Additionally the project area will be inspected for the presence of gopher tortoise (*Gopherus polyphemus*) burrows and other possible indigo snake refugia prior to construction. These sites will be flagged and avoided during project activities.

Wood stork (*Mycteria americana*)

The wood stork was federally listed as endangered on February 28, 1984, through Federal Register notice 49 FR 7332. The wood stork uses wetlands for foraging throughout the year. Typical foraging sites for the wood stork include freshwater marshes, stock ponds, shallow and seasonally flooded roadside or agricultural ditches, narrow tidal creeks, shallow tidal pools, managed impoundments, and depressions in cypress heads, swamps, and sloughs. Because of their specialized feeding behavior, wood storks forage most effectively in shallow water (*i.e.*, 2 to 16 inches deep) with highly concentrated prey. Almost any shallow wetland depression where fish become concentrated, either through local reproduction or receding water levels, may be used as foraging habitat during some portion of the year.

Wood storks have been observed foraging in wetlands around HR Smith Bridge. The USAF has determined some disturbance of foraging activities by construction and maintenance is unavoidable, but will be temporary, small in size, and discountable. The temporary dewatering of the site will eliminate potential wood stork foraging during construction; however, this will be discountable since there are numerous foraging locations in the vicinity. In order to reduce possible adverse effects the USAF has proposed following protective measures.

1. Contractors will be informed to the possible presence of wood storks and told not to deliberately disturb them if encountered.
2. Contractors will be instructed to obey the speed limit on installation roads to avoid collisions and wait for birds to leave the construction site before proceeding.

Gopher Tortoise

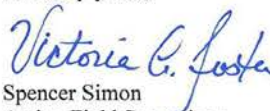
Gopher tortoises, a species proposed for listing, have been documented crossing HR Smith Road in the vicinity of the project and may be encountered by construction crews. The protection measures for indigo snake will provide some benefit for gopher tortoise. In addition the construction workers will be informed of the presence of gopher tortoises at the site and along the access route(s). Informational signs will be posted throughout the construction site and along any proposed access road to contain the following information: a description of the gopher tortoise, its habits, and instructions not to injure, harm, harass or kill this species; and directions to cease activities and allow the gopher tortoise sufficient time to move away from the site on its own before resumption of activities.

The USAF concluded the project "may affect, but is not likely to adversely affect" the indigo snake, wood stork, and gopher tortoise. Given the small size and scope of the proposed project and the aforementioned protective measures, the Service concurs with the USAF's determination.

This letter fulfills the requirements of section 7 of the Act and further action is not required. If modifications are made to the project, if additional information involving potential effects to listed species becomes available, or if a new species is listed, reinitiation of consultation may be necessary.

Thank you for your cooperation in the effort to protect fish and wildlife resources. If you have any questions on this project, please contact Brian Scofield at 863-452-4213.

Sincerely yours,


for Spencer Simon
Acting Field Supervisor
South Florida Ecological Services Office

Charles MacLaughlin

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cc: electronic only

FWC, Tallahassee, Florida (FWC-CPS, Traci Wallace, Mary Ann Poole)

USAF, Avon Park, Florida (Paul Ebersbach)

LITERATURE CITED

Moler, P.E. 1992. Rare and endangered biota of Florida. Volume III. Amphibians and reptiles. University presses of Florida; Gainesville, Florida.

U.S. Fish and Wildlife Service. 2004. Standard protection measures for the eastern indigo snake. Fish and Wildlife Service, South Florida Ecological Services Office; Vero Beach, Florida.

From: Milligan, Lauren [Lauren.Milligan@dep.state.fl.us]
Sent: Friday, October 21, 2011 10:45 AM
To: ZECHIEL, TOD P GS-11 USAF ACC ACC/CEVN
Subject: APAFR DEA for Bridge Replacement and Scour Protection - State Clearance Letter

Mr. Tod P. Zechiel, NEPA Coordinator
OL A, DET 1, 23 WG/CEVN
Department of the Air Force
29 South Boulevard
Avon Park AFR, FL 33825-9381

RE: Department of the Air Force – Draft Environmental Assessment for Bridge Replacement and Scour Protection at Avon Park Air Force Range – Polk and Highlands Counties, Florida.

SAI # FL201110216001C

Dear Tod:

Florida State Clearinghouse staff has received and reviewed the subject Draft Environmental Assessment (EA) under the following authorities: Presidential Executive Order 12372; Section 403.061(42), Florida Statutes; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

Please note that the proposed bridge replacement and scour protection activities will require an environmental resource permit (ERP) from the South Florida Water Management District (SFWMD). Certain construction dewatering activities may also require a SFWMD Water Use Permit (WUP). Further inquiries concerning the state's permitting requirements should be directed to the ERP and WUP Programs staff in the SFWMD's Orlando Service Center at (407) 858-6100.

Based on the information contained in the Draft EA and minimal project impacts, the state has determined that, at this stage, the proposed federal actions are consistent with the Florida Coastal Management Program (FCMP). The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of any issues identified during subsequent regulatory reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting process in accordance with Section 373.428, Florida Statutes.

If you have any other questions regarding this message or the state intergovernmental review process, please don't hesitate to contact me at (850) 245-2170 or Lauren.Milligan@dep.state.fl.us. Thank you.

Best regards,

Lauren P. Milligan

Lauren P. Milligan, Environmental Manager Florida State Clearinghouse Florida
Department of Environmental Protection 3900 Commonwealth Blvd, M.S. 47
Tallahassee, FL 32399-3000 ph.



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Lt. Col. Paul E. Neidhardt
Department of the Air Force
DET 1, 23 WG/CC
29 South Boulevard
Avon Park Air Force Range, Florida 33825-9381

December 7, 2011

RE: DHR Project File Number: 2011-5366
Replacement of the Scour Protection under the Footing of the Bridge on Kissimmee Road at the Rim Canal
Avon Park Air Force Range, Highlands County

Dear Colonel Neidhardt:

This office reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*. The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

We note there are a number of archaeological sites recorded within close proximity to the project area. Based on the information provided, it is the opinion of this office that the above-referenced undertaking should have no adverse effect on the historic properties conditioned that the staff archaeologist (Kathy Couturier) will be on site monitor construction activities.

The purpose of the monitoring is to determine if significant archaeological deposits would be disturbed by this project and to assist this office in determining measures that must be taken to avoid, minimize, or mitigate adverse impacts to archaeological sites. In addition, should potential significant cultural features or artifacts be encountered, the archaeologist doing the monitoring must be empowered to direct the construction activities to shift away from such features or artifacts. This discretionary power will enable the monitor to contact this office or proceed to recover the cultural material and record cultural features in a professional manner and then project activities could continue. The resultant archaeological monitoring report for the project shall be forwarded to this office for review and comment.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail scott.edwards@dos.myflorida.com, or at 850.245.6333 or 800.847.7278.

Sincerely,

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

PC: Kathy Couturier, Avon Park AFR Cultural Resources Manager
500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245.6300 • FAX: 245.6436

☐ Archaeological Research
(850) 245.6444 • FAX: 245.6452

☒ Historic Preservation
(850) 245.6333 • FAX: 245.6437



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

District Headquarters 3301 Gull Club Road, West Palm Beach, Florida 33406 (561) 686-6800 www.sfwmd.gov

Regulation
Application No.: 111114-31

January 25, 2012

U.S. DEPARTMENT OF THE AIR FORCE
DET 1 23 W G/ C C
29 SOUTH BOULEVARD
AVON PARK AIR FORCE RANGE, FL 33825-570

Dear Permittee:

SUBJECT: PERMIT NO.: 53-00087-S

Project : SCOUR INSTALLATION/ H R SMITH GRADE RD BRIDGE/ KISSIMMEE RD

Location: Polk County, S22/T32S/R30E

Location: Highlands County, S6/T33S/R30E

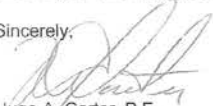
District staff has reviewed the information submitted December 20, 2011, for the installation of rip-rap for scour protection at the HR Smith Grade Road bridge and at the Kissimmee Road Rim Canal bridge.

Based on that information, District staff has determined that the proposed activities are in compliance with the original surface water management Permit and appropriate provisions of FAC Rule 40E-4.331(2)(b). Therefore, these changes have been recorded in our files.

Please understand that your permit remains subject to the Standard Limiting Conditions and all other Special Conditions not modified and as originally issued.

Should you have any questions concerning this matter, please contact this office.

Sincerely,


Hugo A. Carter, P.E.
Sr Supv Engineer
Okeechobee Service Center

HC/kc