

**Final Environmental Assessment
for Maintaining the Rim Canal at
Avon Park Air Force Range, Florida**

February 2011



**Prepared by the
Environmental Flight
Avon Park Air Force Range, Florida**

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14. ABSTRACT

The Rim Canal is the main canal that drains the airfield at Avon Park Air Force Range (APAFR). The canal is approximately 6.2 miles long. The Preferred Alternative would maintain the canal by cutting and mulching vegetation that is currently growing in the canal and recontouring the channel. All materials would be left in place within the channel. The Alternative Action would excavate the canal by removing, then mulching, vegetation and excavating sediment from the canal. All materials would be transported off-site to grazing pastures adjacent and south of the canal and airfield. Both the Preferred Alternative and Alternative Action would only maintain the southern portion of the Rim Canal for a total of 2.3 miles. The No-Action Alternative would not maintain the canal. The Preferred Alternative would improve safety by more efficiently draining water off the runways and taxiways. Soil disturbance within the canal would temporarily attract foraging birds and increase the BASH hazard. The Alternative Action would improve safety by more efficiently draining water off the runways and taxiways. Soil disturbance within the canal would temporarily attract foraging birds and increase the BASH hazard. The mulch and sediment mixture placed on grazing pastures would have a slight fertilizing effect. Cogongrass, a noxious grass found along the canal, would likely be established in the grazing pastures where the mulch and sediment would be deposited. Vultures would temporarily be attracted to the mulch and sediment in the grazing pastures and slightly increase BASH south of the airfield for the short term. The No-Action Alternative would increase the risk to safety as the vegetation would continue to grow in the canal and thus reduce stormwater drainage and increase the risk of inundating the airfield. The vegetation would continue to encourage an increase in wading birds resulting in an increased BASH risk long term.

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**Environmental Assessment
At Avon Park Air Force Range, Florida**

Proposed Action: Maintain the Rim Canal at Avon Park Air Force Range, Florida

Type of statement: Environmental Assessment

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Abstract:

The Rim Canal is the main canal that drains the airfield at Avon Park Air Force Range (APAFR). The canal is approximately 6.2 miles long. The Preferred Alternative would maintain the canal by cutting and mulching vegetation that is currently growing in the canal and recontouring the channel. All materials would be left in place within the channel. The Alternative Action would excavate the canal by removing, then mulching, vegetation and excavating sediment from the canal. All materials would be transported off-site to grazing pastures adjacent and south of the canal and airfield. Both the Preferred Alternative and Alternative Action would only maintain the southern portion of the Rim Canal for a total of 2.3 miles. The No-Action Alternative would not maintain the canal.

The Preferred Alternative would improve safety by more efficiently draining water off the runways and taxiways. Soil disturbance within the canal would temporarily attract foraging birds and increase the BASH hazard.

The Alternative Action would improve safety by more efficiently draining water off the runways and taxiways. Soil disturbance within the canal would temporarily attract foraging birds and increase the BASH hazard. The mulch and sediment mixture placed on grazing pastures would have a slight fertilizing effect. Cogongrass, a noxious grass found along the canal, would likely be established in the grazing pastures where the mulch and sediment would be deposited. Vultures would temporarily be attracted to the mulch and sediment in the grazing pastures and slightly increase BASH south of the airfield for the short term.

The No-Action Alternative would increase the risk to safety as the vegetation would continue to grow in the canal and thus reduce stormwater drainage and increase the risk of inundating the airfield. The vegetation would continue to encourage an increase in wading birds resulting in an increased BASH risk long term.

FINDING OF NO PRACTICABLE ALTERNATIVE AND FINDING OF NO SIGNIFICANT IMPACT FOR MAINTAINING THE RIM CANAL ON THE AIRFIELD 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 environmental assessment (EA) that determines the impacts of maintaining the main canal that drains the airfield at APAFR.

1.0 NAME OF ACTION

Maintaining the south portion of the Rim Canal at Avon Park Air Force Range, Florida.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Preferred Alternative

The Preferred Alternative would conduct maintenance activities on the southern portion of the Rim Canal located on the airfield at APAFR. The Rim Canal is the main canal that drains the airfield. The Rim Canal is approximately 6.2 miles long. Approximately 2.3 miles of the canal would be maintained by mulching existing vegetation and re-contouring the slopes of the canal. The canal maintenance would be accomplished by an all terrain excavator with mulching and contouring heads.

2.2 Alternative Action

The Alternative Action would maintain the same portion of the Rim Canal by a traditional tracked excavator with a bucket. Woody vegetation would be removed from the channel and mulched while the sediment would be removed from the channel and piled on the edge of the canal. The piled sediment and mulch would be loaded on haul trucks with a front-end loader. The trucks would transport the materials to adjacent grazing pastures to the south where the materials would be spread.

2.3 No-Action Alternative

The No-Action Alternative would not maintain the Rim Canal.

3.0 SUMMARY OF ENVIRONMENTAL IMPACTS

3.1 Preferred Alternative

The Preferred Alternative would improve the drainage and reduce safety concerns with flooding on the airfield for the long term. Initially, and for a short term, the ground disturbing activities would increase the presence of foraging birds for about two months due to bare soil and thus increase the risk of a bird airstrike hazard (BASH). An increase in sediment loads would be

anticipated within the canal short term. Best management practices would need to be in place to minimize sedimentation.

3.2 Alternative Action

The Alternative Action would improve drainage, temporarily increase sediment loads in the canal, and increase foraging birds along the disturbed canal as the Preferred Alternative would. Spreading the mulch and sediment in the pastures would have a slight fertilizing effect for the pasture grasses. The potential is high to transport cogongrass, a noxious grass, from the canal to the pastures, precipitating herbicide and disking treatments to control the grass. Also, the decomposing organic material in the sediment would temporarily attract vultures and thus increase the BASH for about a month.

3.3 No-Action Alternative

The No-Action Alternative would result in increased vegetation in the canal over time resulting in poorer drainage. The airfield would experience increased safety risks as the runways and taxiways would have increasing standing water on them over time. Wading birds would be expected to increase over time thus increasing the BASH risk.

3.4 Recommendation For Selection

The Preferred Alternative is recommended for selection. Justification for the Preferred Alternative over the Alternative Action and No-Action Alternative is:

- a) The BASH risk is less with the Preferred Alternative than the Alternative Action.
- b) There is less ground disturbance with the Preferred Alternative.
- c) There is no risk of spreading cogongrass in the grazing pastures with the Preferred Alternative.
- d) The Preferred Alternative meets the objective of draining the airfield while the No-Action Alternative does not.

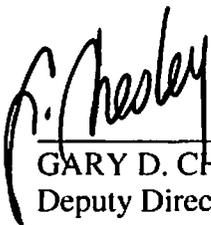
4.0 FINDING OF NO PRACTICABLE ALTERNATIVE

Neither wetlands nor the floodplain can be avoided with the Preferred Alternative and the Alternative Action. The Rim Canal itself is a jurisdictional wetland and currently traverses a floodplain in order to discharge into Arbuckle Creek. Pursuant to Executive Orders 11988 and 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 the Preferred Alternative or the Alternative Action, each of which includes all practicable measures to minimize harm to the environment.

4.0 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 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 Maintaining the Rim Canal at Avon Park Air Force Range, Florida, February 2011.



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



Date

ACRONYMS AND ABBREVIATIONS

ACC	Air Combat Command
AFI	Air Force Instruction
APAFR	Avon Park Air Force Range
BASH	bird airstrike hazard
BMPs	best management practices
CAA	Clean Air Act
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
DoD	Department of Defense
DNL	day/night average sound level
EA	environmental assessment
EIS	environmental impact statement
ERP	Environmental Restoration Program
EO	Executive Order
EOD	explosive ordnance disposal
FDEP	Florida Department of Environmental Protection
FONPA	finding of no practicable alternative
FONSI	finding of no significant impact
GIS	geographical information system
LF	landfill
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Office
SS	spill site
SWPPP	stormwater pollution prevention plan
TMDLs	Total Maximum Daily Loads
TRI-DDS	Toxic Release Inventory Data Delivery System
USACE	United States Army Corp of Engineers
US	United States
USAF	United States Air Force
USC	United States Code
USCB	United States Census Bureau
USDA	United States Dept of Agriculture
WG	wing

TABLE OF CONTENTS

1.0 PURPOSE AND NEED FOR ACTION	1
2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES	6
2.1 PREFERRED ALTERNATIVE	6
2.2 ALTERNATIVE ACTION	6
2.3 NO-ACTION ALTERNATIVE	8
2.4 COMPARISON OF ALTERNATIVES	9
3.0 AFFECTED ENVIRONMENT	
3.1 AIRSPACE AND AIRFIELD OPERATIONS	10
3.2 SAFETY	10
3.3 NOISE	11
3.4 AIR QUALITY	11
3.5 HAZARDOUS MATERIALS AND WASTE	11
3.6 ENVIRONMENTAL RESTORATION	12
3.7 WATER RESOURCES	12
3.8 GEOLOGY AND SOILS	13
3.9 VEGETATION	14
3.10 FISH AND WILDLIFE	14
3.11 THREATENED AND ENDANGERED SPECIES	14
3.12 RECREATION	14
3.13 CULTURAL RESOURCES	14
3.14 CATTLE GRAZING	15
3.15 ENVIRONMENTAL JUSTICE	15
3.16 COASTAL ZONE CONSISTENCY CONCURRENCE	15
4.0 ENVIRONMENTAL CONSEQUENCES	16
4.1 AIRSPACE AND AIRCRAFT OPERATIONS	16
4.2 SAFETY	16
4.3 NOISE	17
4.4 AIR QUALITY	17
4.5 HAZARDOUS MATERIALS AND WASTE	18
4.6 ENVIRONMENTAL RESTORATION	18
4.7 WATER RESOURCES	18
4.8 SOILS AND GEOLOGY	20
4.9 VEGETATION	20
4.10 FISH AND WILDLIFE	21
4.11 THREATENED AND ENDANGERED SPECIES	21
4.12 RECREATION	21
4.13 CULTURAL RESOURCES	22
4.14 CATTLE GRAZING	22

4.15 ENVIRONMENTAL JUSTICE	22
4.16 COASTAL ZONE CONSISTANCY CONCURRENCE.....	22
4.17 CUMULATIVE IMPACTS	23
4.18 IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES ...	23
5.0 LITERATURE CITED	24
6.0 AGENCIES, GOVERNMENTS AND PUBLICS CONTACTED	26
7.0 LIST OF PREPARERS	27
8.0 CHANGES TO THE FINAL EA	28
APPENDIX A: COORDINATION WITH AGENCIES	
LIST OF FIGURES	
Figure 1.1.1 The airfield at Avon Park Air Force Range	2
Figure 1.1.2 The airfield drainage system at Avon Park Air Force Range	4
Figure 1.1.3 The Avon Park Air Force Range area location, Florida.....	5
Figure 2.1.1 Rim Canal maintenance area	7
Figure 2.3.1 Photograph of the Rim Canal as it currently exists	8
Figure 3.1.1 Hard surface conditions of the Airfield.....	11
LIST OF TABLES	
Comparison of Alternatives.....	9

1.0 PURPOSE AND NEED FOR ACTION

The purpose for cleaning out the Rim Canal is to more efficiently transport stormwater off the airfield. The Rim Canal is the main canal that drains lateral ditches and swales that in turn drain the airfield. The need is to relieve a safety hazard by water backing up on the airfield and submerging the runway during and after intensive rainstorm events to include hurricanes and tropical storms. While water on the runway has not resulted in rescheduled or delayed training to date, the potential remains and increases over time as the Rim Canal continues to have vegetation grow in it. Sustained water also accelerates the degradation of the runway and taxiway surfaces and subsurfaces.

The airfield and respective runways at Avon Park Air Force Range (APAFR) currently serve aircraft for emergency landings. The airfield also currently serves as a staging and fueling area for rotary wing (helicopters) during training missions. Future plans for the airfield are to serve as a staging area for fixed wing (airplanes and jets) during training missions. Future plans also include flying in personnel by military air transportation for training in large scale exercises. Travel costs are greatly reduced if the personnel can be flown in by military transport rather than commercial air carriers in conjunction with ground transportation to APAFR. When the airfield is certified as active, the training tempo is expected to increase and the need for reliable drainage on the airfield also increases. Certification is expected in 2011.

The airfield consists of a primary runway that is nearly 8,000 feet long and 150 feet wide, a shorter runway that is nearly 5,000 feet long and 150 feet wide, an assault landing strip that is 3,700 feet long and 50 feet wide, 15,500 feet of taxiway, and two aprons totaling 14 acres. The airfield is defined as being located south, east, and north of the Rim Canal and west of South Boulevard. It is approximately 1,150 acres of which 1,070 acres are drained by the Rim Canal (Figure 1.1-1). All numbers were queried by the APAFR geographical information system (GIS) databases as of April 2010.

There are 2,342 feet of underground drainage pipes that drain the airfield directly or indirectly into the Rim Canal (Figure 1.1-2). There are 7,847 feet of drainage ditches or swales that drain from the airfield into the Rim Canal. These numbers were queried by APAFR GIS databases as of April 2010.

APAFR is located in Polk and Highlands Counties in Central Florida (Figure 1.1-3). The range complex covers approximately 106,073 acres and is about 10 miles east of Avon Park and 15 miles northeast of Sebring, Florida. The major highways serving the range are US Highway 27 and Polk and Highlands County Road 64. APAFR is the largest bombing and gunnery range east of the Mississippi River. The mission of APAFR is to provide a training environment that allows United States (US) air and ground forces to practice the latest combat training techniques and procedures safely, efficiently, and realistically and to design training facilities that meet training needs. The 23 Wing (WG), at Moody Air Force Base, Georgia, is responsible for the operation and maintenance of APAFR, which is assigned to Air Combat Command (ACC). The range is used for bombing practice by US Air Force units from throughout the southeast.

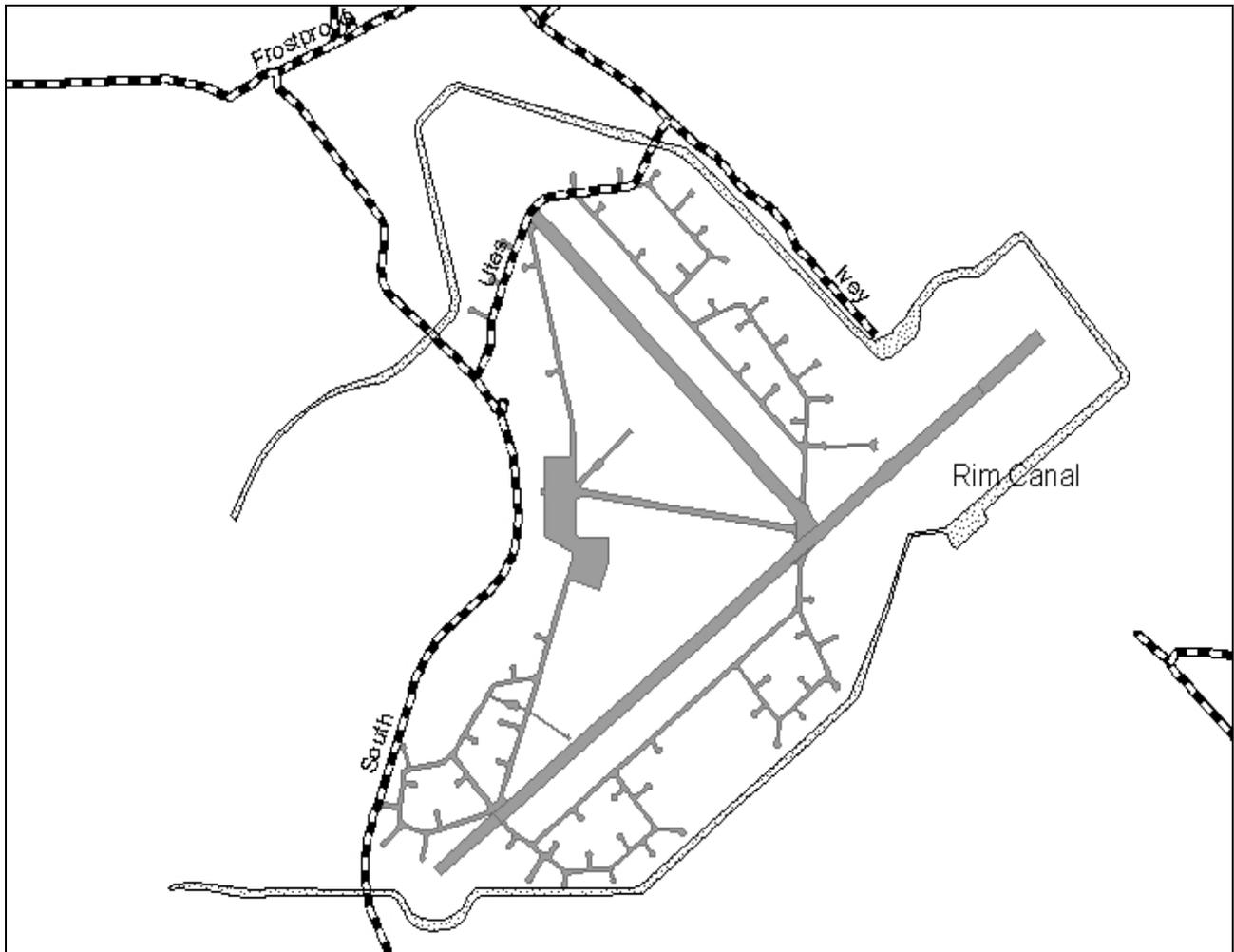


Figure 1-1.1 The airfield as defined being west the Rim Canal and east of South Boulevard at Avon Park Air Force Range, Florida.

The *Draft Environmental Assessment for Maintaining the Rim Canal at Avon Park Air Force Range, Florida May 2010* was supplied to local governments consisting of the town of Avon Park and Polk and Highlands counties. The Florida Clearinghouse, serving as the distribution center for state agencies, was supplied with hard and electronic copies. The public was supplied with the EA via one library in Polk County and one library in Highlands County. Newspapers in each county announced the availability of the EA. The EA was distributed to all entities with at least a 30 day review period during May and June 2010. Comments were received by the Florida Clearinghouse (see Appendix A) and were responded by APAFR as chronicled in Section 8 *Changes to the Final EA*.

The *Preliminary Final Environmental Assessment for Maintaining the Rim Canal at Avon Park Air Force Range, Florida, November 2010* was supplied to the public in the same manner as the draft EA. A second review ensued due to changes in the action alternatives – see the following paragraph for a description of the changes. Comments from the public were accepted for 33

days. No comments were received.

The draft EA differed from the preliminary final and final EAs in that the draft used the all-terrain excavator for both the Preferred Alternative and Alternative Action and dug a 900 foot portion of the Rim Canal that is poorly defined to the overflow discharge of a littoral mitigation pond. Spoil from the 900 foot portion of the canal was deposited in the grazing pastures under the Preferred Alternative, while the Alternative Action deposited the spoil in an existing borrow pit two miles away. For the preliminary final and final EAs, excavating the 900 foot canal portion was abandoned all together. The Preferred Alternative used the all-terrain excavator with no off-site hauling of material while the Alternative Action used the traditional excavator with off-site material being hauled to adjacent grazing pastures.

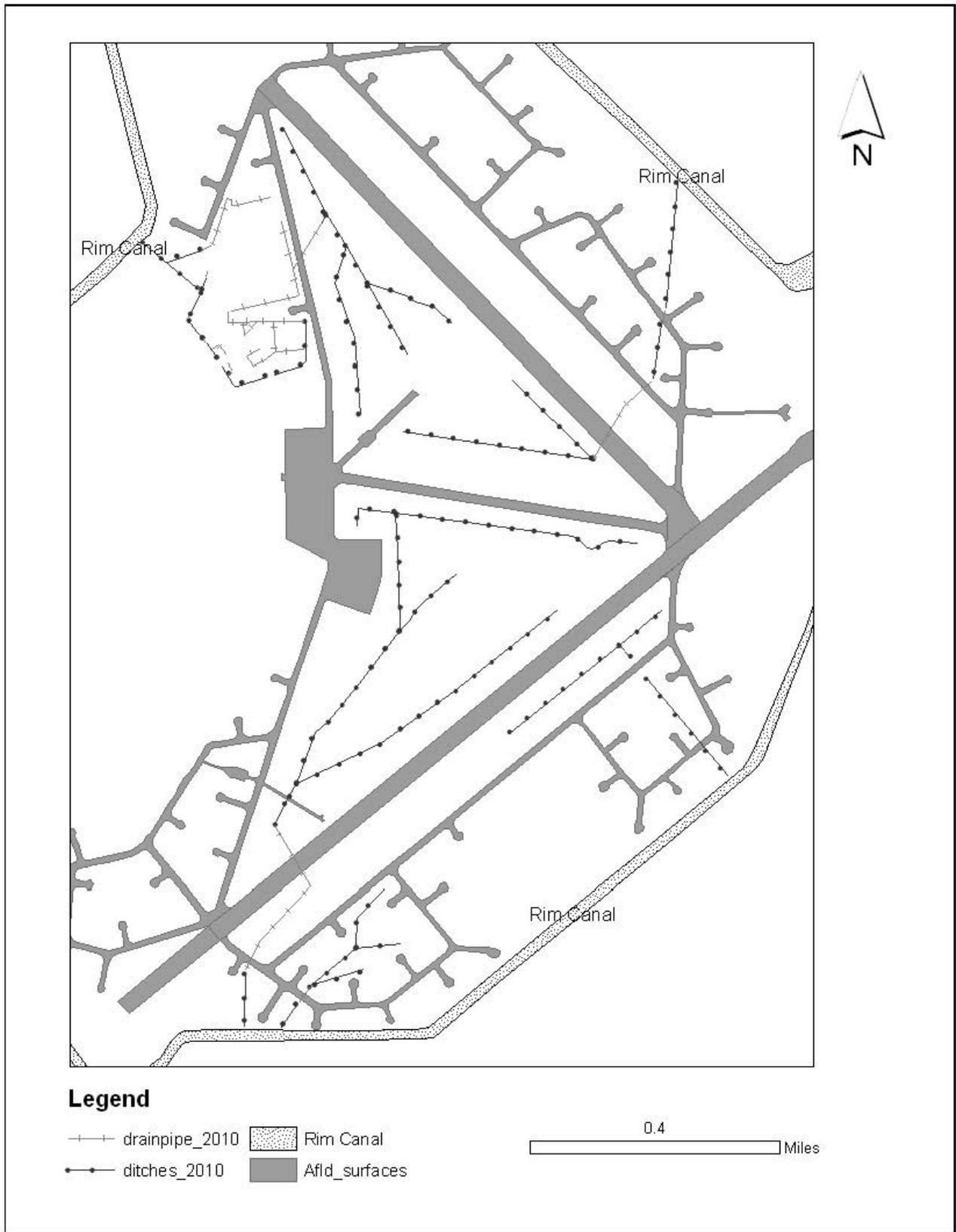


Figure 1-1.2 The airfield drainage system at Avon Park Air Force Range, Florida.

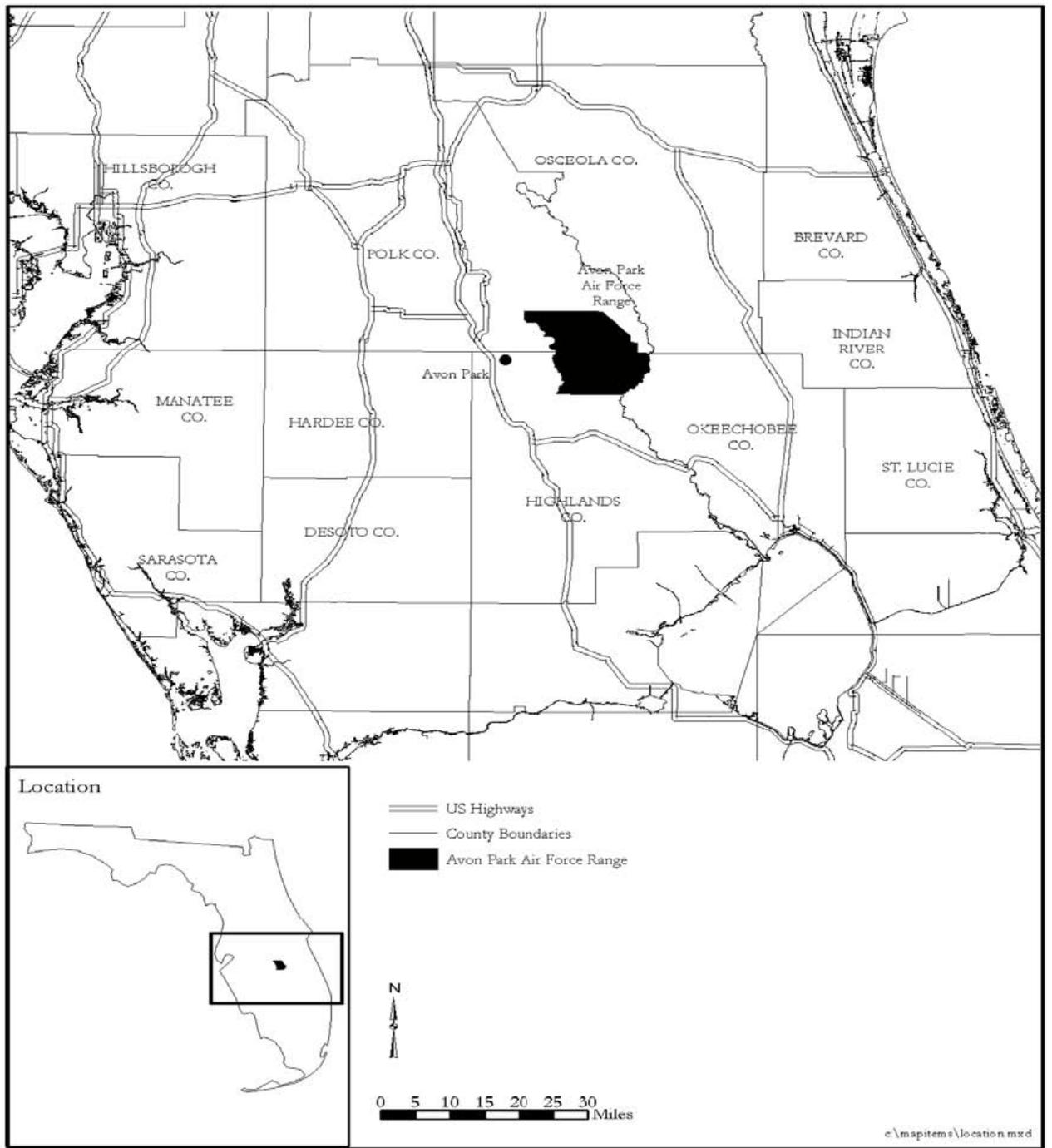


Figure 1.1.3 Avon Park Air Force Range’s location in Florida.

2.0 DESCRIPTION OF THE PREFERRED ALTERNATIVE, ALTERNATIVE ACTION, AND NO-ACTION ALTERNATIVE.

2.1 Preferred Alternative

The Preferred Alternative would clean 2.3 miles of the Rim Canal as well as up to 200 feet of connecting segments of lateral flow swales from the airfield that flow into the Rim Canal (Figure 2.1-1). The current dimensions of the canal channel are roughly a 50 foot wide bottom, 150 foot wide top, and a depth of approximately 12 feet. The current side slope of the canal is a 4:1 rise over run ratio. The slope would be contoured to 3:1 side slopes. Maintenance would consist of cutting and mulching vegetation and contouring soils along the sides of the canal with an all-terrain excavator using multiple brush cutting/mulching and soil contouring heads. The all-terrain excavator typically travels within the canal while maintaining it. The mulched vegetation would be placed on the side slopes of the canal above the flow channel. Work would begin during or after calendar year 2011.

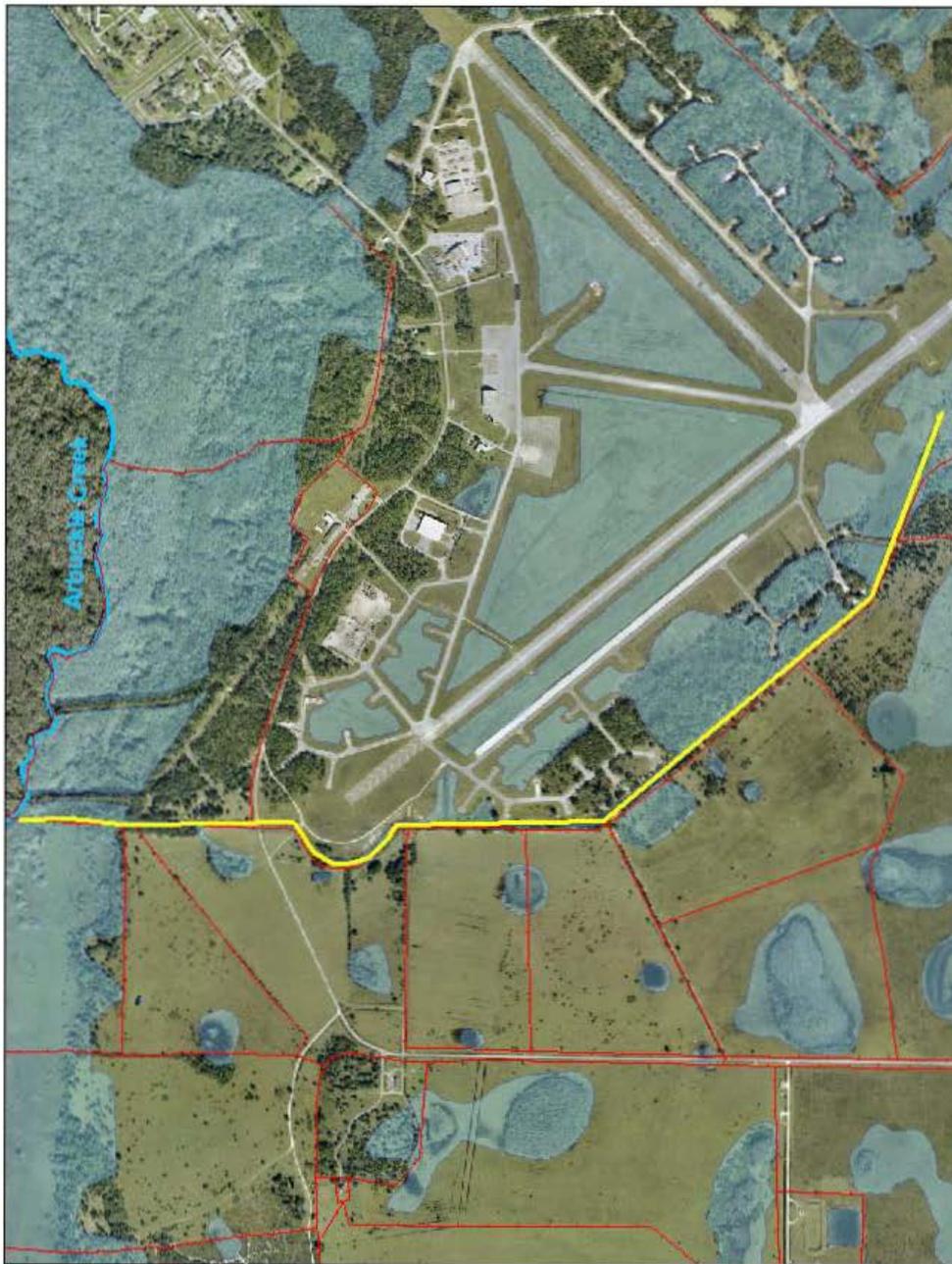
The project area is located in Township 32 South, Range 30 East, Sections 32 and 33 in Polk County, Florida and Township 33 South, Range 30 East, Sections 4, 5, and 6 in Highlands County, Florida.

The Preferred Alternative was originally part of a larger action that also included piping and filling in a large lateral ditch that feeds into the Rim Canal. The lateral ditch was removed from the Preferred and Alternative Actions, but remains in some of the agency correspondence found in Appendix A.

2.2 Alternative Action

The Alternative Action would clean the Rim Canal in the same location but in a more traditional manner using a tracked excavator positioned on either bank of the canal. The excavator would remove brush from the canal and mulch on-site. Large trees exist along the side of the canal where the excavator and haul trucks would travel. These trees would need to be cut and mulched along with the brush found in the canal. The remaining vegetation and sediment would be excavated and placed on either bank with the mulch. The vegetation, mulch, and sediment would be loaded on haul trucks with a front-end loader. The haul trucks would transport the material where it would be deposited and spread on grazing pastures south of the airfield. Front-end loaders would spread the materials to about a two inch depth to allow the grass to regrow in the pastures. It is anticipated that no more than five acres of pasture would be covered.

Which bank of the Rim Canal the excavator and deposited materials would initially be placed would depend on the presence or absence of wetlands. If wetlands are on one side of the canal, then the excavated materials would be placed on the opposite side without wetlands. If there were no wetlands on either side of the canal, then materials would be placed on the north or west side of the canal. If wetlands were on both sides of the canal, they could not be avoided. The materials would be placed on the side of the canal best deemed to support hauling operations. If the operators anticipate rutting with equipment in wetlands that could not be avoided, then portable road panels would be used to access this portion of the canal to prevent the rutting of wetlands. This was the least intrusive approach envisioned for removing deposited materials in wetlands.



Legend

- FenceLine
- Streams
- Wetlands

0.8
Miles

Figure 2.1.1. The portion of the Rim Canal proposed for maintenance on the airfield at Avon Park Air Force Range, Florida. The maintained portion of the canal is shown in yellow.

When the material would be hauled from the north or west side of the canal, haul trucks would use the closest existing road and pavement surfaces to access the materials. The materials would be hauled and placed in one location in one pasture to be spread. When the material would be hauled from the south or east side of the canal, the haul trucks would haul the material into one to four pastures due south and adjacent to the canal. The material would be spread in the pastures. No materials would be spread in wetlands.

A fence runs along the south and east side of the Rim Canal. The fence restrains cattle from the airfield when the fence is barbed wire. Some portions of the fence are woven wire and also deter feral hogs from the airfield. Portions of the fence would have to be removed for access when depositing and hauling the materials from the south and west sides of the canal. These fences would be replaced with woven wire after the hauling operations would be complete.

2.3 No-Action Alternative

The No-Action Alternative would not maintain the Rim Canal or the connecting flow swales. A photograph of the Rim Canal shown as it currently exists is in Figure 2.3-1.



Figure 2.3.1. The Rim Canal in its current condition during May 2010 at Avon Park Air Force Range, Florida. The photo was taken at the intersection of the Rim Canal and South Boulevard looking east.

2.4 Comparison of Alternatives

Alternative	Attribute Affected by Maintaining the Rim Canal			
	Safety	Water	Vegetation	Grazing
Preferred Alternative maintaining canal with all terrain excavator	The risk of mishap, delayed or cancelled training would be reduced as stormwater would be removed from the airfield. Disturbed soils would temporarily increase the risk of BASH within the airfield.	The water quality would result in increased sedimentation for the short term within the canal.	The vegetation would be removed from the canal. It would regrow over time.	No impacts would occur.
Alternative Action maintaining canal with traditional excavator	The risk of mishap, delayed or cancelled training would be reduced as stormwater would be removed from the airfield. Disturbed soils and spreading sediment in grazing pastures would temporarily increase the risk of BASH within the airfield and adjacent to airfield.	The water quality would result in increased sedimentation for the short term within the canal. BMPs would be in place to stabilize the materials spread on the grazing pastures.	The vegetation would be removed from the canal. It would regrow over time. Cogongrass, a noxious weed, would likely spread in the grazing pastures where the deposited materials would be placed.	At least four pastures and up to six pastures would be temporarily taken out of the grazing rotation for cattle due to fences being down and protecting BMPs.
No-Action Alternative no maintenance on the canal.	The risk of mishap, delayed, or cancelled training would remain the same to increasing over time as the canal would continue to vegetate. BASH would continue to increase long term with the presence of wading birds and birds seeking cover in the canal vegetation.	The water quality would remain unchanged.	The vegetation would continue to grow within canal.	There would be no changes to grazing.

Table 2.4 The Preferred Alternative, Alternative Action, and the No-Action Alternative compared in table format.

3.0 AFFECTED ENVIRONMENT

3.1 Airspace and Airfield Operations

APAFR flew 13,446 sorties in its airspace. A sortie is defined as one aircraft occupying airspace for one half hour. APAFR experienced 881 aircraft landings on the airfield in 2009, 15% of its capacity.

The airfield had a condition assessment that was conducted in 2006. Results determined the airfield pavement as overall degraded (USAF 2006). Individual portions of the airfield broken out by feature and condition were as follows: that the longer runway was adequate, the shorter runway unsatisfactory, the taxiways variable from adequate to unsatisfactory, and the aprons degraded (Figure 3.1-1). Adequate condition was defined as being full system capable, degraded as impacts to system capability with possible negative effects to operations or morale, and unsatisfactory as frequent system interruptions with health/safety/security shortfalls.

There are two mitigation ponds at the north end of the main runway that frequently fail to drain resulting in ponded water filling beyond the pond perimeters. During the summer rainy season these ponds fill to where the north runway overrun is underwater.

Repairs to the airfield drainage were made in 2006 and 2010. In 2006 the repairs included repairing and replacing two connecting stations where the airfield drainage ditches and swales connect to drain pipes that run underground. Also, a ditch 350 feet long was cleaned out and concrete rip-rap was placed where culverts from the runway emptied into the ditch. In 2010, a 300 foot length (a total of 74,250 square feet) of the main runway in unsatisfactory condition was removed and replaced with new material.

The immediate goal for the airfield is to achieve certified, active status by correcting deficiencies that currently prevent active status. Deficiencies that are either directly or indirectly affected by poor airfield drainage include tree removal, barrier overrun cable design modifications, resurfacing or replacing airfield pavements, and taxiway lighting.

3.2 Safety

No mishap has been directly attributed to water inundation on the airfield.

The airfield currently has an active BASH program that deters or removes wildlife. Typical wildlife involved includes deer, hogs, turkeys, cranes, vultures, and small birds.

The airfield has controlled access 24/7 with travel requests onto the airfield made to either APAFR Range Control or the APAFR Fire Department/Rescue Operations.

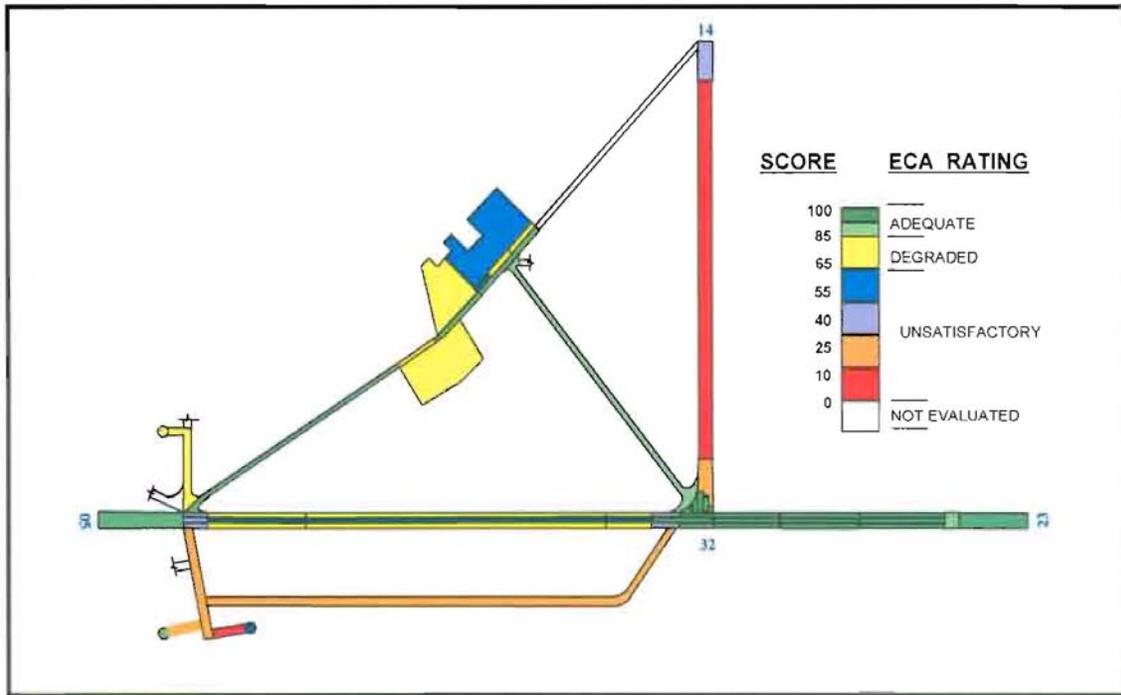


Figure 3.1.1 The condition of the hard surfaces of the airfield determined by the Comprehensive Range Plan Avon Park Air Force Range, Florida, October 2006.

3.3 Noise

Aircraft noise is the only noise source that has been studied on the airfield. Noise was measured in decibels over a 24 hour period in a metric called day/night average sound level (DNL). Noise levels have only been modeled for the main runway for air traffic and that for air traffic levels prior to 2005 (US Navy 2005). From this study, noise was modeled to range from 75 dBA on the main runway and tapering to 65 dBA approximately ¾ mile from the end of the paved surfaces at the north and south ends of the primary runway. Noise below 65dBA is not considered distracting. Noise levels above 65 dBA do not extend off the installation. Aircraft contributing the most noise included the C-141B, C-130, and A-10. This analysis was conducted when the runway was in an active status. Currently in inactive status, only the C-130 aircraft would be allowed to use the runway unless an in-flight emergency occurred with other aircraft. Therefore, the current DNL is lower than the 2005 model.

3.4 Air Quality

The project area is located in Polk County. The county is identified as an attainment zone. No past air quality complaints have been reported to APAFR for the project area.

3.5 Hazardous Materials and Waste

No hazardous materials or waste are stored along the project area of the Rim Canal. Mobile fuel storage and bunkers that temporarily store ammunition are located on the airfield, but would not be involved in the canal maintenance.

3.6 Environmental Restoration

There are several environmental restoration sites on the airfield. The two that would interface with the proposed work conducted on the Rim Canal would include the Old Sanitary Landfill (LF-33) and the Rim Canal itself (SS-98). The LF-33 was a sanitary landfill that was operated between 1950 through 1978. It is located north and south of the Rim Canal and just east of the Arbuckle Creek floodplain. The landfill is approximately 33 acres in size. The landfill is currently managed under the Environmental Restoration Program (ERP). Iron was the only exceedance above EPA ecological screening values found in the water in the canal where the canal runs through LF-33. Iron was attributed to background levels found naturally in the soil. The current feasibility study determined a preferred alternative of long-term monitoring with land use controls to be implemented in fiscal years 2011–2012 (FDEP 2006). A future feasibility study, currently in draft, recommends management for no further action.

The Rim Canal (SS-98) was designated an ERP site due to the fact that it intersects several ERP sites on the airfield. The Rim Canal is approximately 6.2 miles long. Water and sediment samples determined several exceedance levels for water and sediment, however, these exceedance levels were not found along the portion of the Rim Canal where the maintenance work is being proposed (Earth Tech, Inc 2004). ERP management of the Rim Canal currently entails no further action. Management acknowledges continued water sampling within the Rim Canal to ensure compliance for stormwater runoff associated with the current military training activities on the airfield.

3.7 Water Resources

Wetlands and Floodplains

Roughly 60% of the airfield is occupied by jurisdiction wetlands (ERC 1996). An elaborate system of swales, ditches, and drainpipes feed the Rim Canal. The Rim Canal flows into Arbuckle Creek in two locations, commonly called the north and south Rim Canal outflows. Arbuckle Creek ultimately flows into the Kissimmee River, which is a navigational river and therefore determines the wetlands on the airfield as being jurisdictional. All of the Rim Canal itself is classified as a jurisdictional wetland. None of the airfield is in the 100 year floodplain; however, the portion of the Rim Canal that flows from off the airfield to Arbuckle Creek (south outflow) occupies the 100 year floodplain for approximately 1,200 linear feet.

Water Quality

APAFR monitors for water quality in the Rim Canal following the Clean Water Act (33 USC §1251 *et seq*) under two different programs. The first program is the National Pollution Discharge Elimination System (NPDES) with the objective of not exceeding industrial site pollutant levels as a point source being discharged into Arbuckle Creek. The second program is Total Maximum Daily Loads (TMDLs). The TMDL objectives encompass a point source of pollutants from the Rim Canal as well, but also consider biological attributes in the water. Also, the pollutants/biological attributes found within the course of Arbuckle Creek and other point and non-point pollutant sources contributing to Arbuckle Creek are considered. TMDLs monitored in the Rim Canal are therefore part of a larger database that monitors pollutants over the course of Arbuckle Creek. Both programs sample in the same location, that being near the south Rim Canal outflow that flows into Arbuckle Creek. For NPDES, water is sampled for pH, levels of chloride, nitrate (as N), nitrite (as N), phosphorus (total), chemical oxygen demand,

phenols, aluminum, antimony, arsenic, cadmium, copper, iron, lead, manganese, selenium, silver, zinc, and mercury. Also sampled are volatile organic compounds Methyl-Tert-Butyl-Ether, Benzene, Toluene, Chlorobenzene, Ethylbenzene, m & p Xylene, 1,3 -Dichlorobenzene, 1,4-Dichlorobenzene, and 1,2-Dichlorobenzene. These constituents are monitored via a permit issued by the Florida Department of Environmental Protection (FDEP) to APAFR (FDEP 2006). Samples were taken four times in 2007 and four times in 2009. Iron was the only constituent that exceeded the permit parameters and it was attributed to high background levels found naturally occurring in the soil.

For TMDLs, the Rim Canal is sampled for temperature, dissolved oxygen, pH, specific conductance (a measure of salt, ions, and purity), turbidity, biological oxygen demand, color, nitrate, nitrite, total Kjeldahl Nitrogen (nitrogen, ammonia, and ammonium), total phosphorus, chlorophyll, total coliform and fecal coliform. Water samples were taken three times during 2004-05. Exceedences were found for all samples for low dissolved oxygen, low pH for 33% of the samples, high total coliform for all samples, and high fecal coliform for 66% of the samples (USAF 2005).

Arbuckle Creek is currently classified as being in attainment by FDEP for water quality under Section 303 of the Clean Water Act. This was determined through TMDL monitoring. However, Arbuckle Creek is proposed for being listed as impaired (not in attainment) due to a lack of indicator biological life forms in the creek and due to low dissolved oxygen levels in the water (FDEP 2010). Water samples taken in Arbuckle Creek prior to 2008 that were approximately two miles above the south Rim Canal outfall showed low dissolved oxygen levels, while a lack of indicator biological life forms were found in water samples taken approximately eight miles below the south Rim Canal's outfall. Water samples that were taken after 2008 will also be assessed by FDEP to further determine if other constituents are exceeded. Ultimately all data sets will be incorporated into a final listing in late 2010.

Arbuckle Creek is classified by the FDEP as a Class III water body, meaning it is suitable for recreation with a well balanced population of fish and wildlife.

Water Flow

Water flow volume has not been measured for the Rim Canal. Peak flow is during the summer months when precipitation is highest. Water flow volume for Arbuckle Creek at a United States Geological Survey Station located approximately 15 linear miles downstream from the south outfall averages 112 cubic feet per second (cfs) deviating to 44 and 262 cfs at the 20th and 80th percentiles, respectively, based on 70 years of data (USGS 2010).

3.8 Soils and Geology

Soils that the Rim Canal traverses consists of roughly 53% Felda Sand and Malabar Sand (alfisols) and 40% Oldsmar Sand (spodosol) (USDA 1990). The alfisol soils are deep, very poorly to poorly drained soils that are sandy in the upper soil column and grade to sandy loam to sandy clay loam in the lower column. The spodosol soil is a deep, fine, sandy soil throughout the column that is poorly drained. The other soil types that the Rim Canal traverses and would be maintained that are located in the floodplain (roughly 7%) includes Kaliga Muck (histosol). This histosol consists of hydrophytic nonwood plant remains in the upper half of the column,

then loam soils in the lower half of the column. This soil is very poorly drained and acidic. All the soils described here formed on sandy to loamy marine deposits.

The soils within and immediately around the Rim Canal and lateral drainage ditches and swales are disturbed soils as a result of the canal construction.

3.9 Vegetation

The vegetation within the Rim Canal is wetland obligate or facultative and includes rushes, sedges, willows, wax myrtle, and lily pads where the canal is in full sun. In most locations where the canal is exposed to full sun, the vegetation occupies the entire bottom and sides of the canal. Portions of the canal have an upland oak overstory adjacent to the canal's banks. This creates shade and reduces the amount of wetland vegetation. The uplands adjacent to the canal contain perennial grasses, mostly Bahia grass – a cattle forage grass. Cogongrass, considered an invasive species, is chemically treated on the installation. It is present with the perennial grasses and is at times on the canal slopes. The vegetation for the portion of the canal that is located in a floodplain consists mostly of bald cypress with little understory.

3.10 Fish and Wildlife

The airfield consists of wooded areas around the perimeter and open, mowed grass areas in the interior. Typical species in the wooded areas include white tailed deer, hogs, turkeys, raccoons, squirrels, and rabbits. Open, mowed areas have sandhill cranes, killdeer, raptors, and hogs. A fence runs along south and east side of the Rim Canal where the work would take place. Portions of the fence are woven wire with the intent to detract hogs from accessing the airfield.

3.11 Threatened and Endangered Species

The Rim Canal clean-out would result in the alteration of a narrow-strip, man-made wetland habitat. The presence of wood stork, a federal endangered species, has been documented in this area; however, the use of this habitat by this species is infrequent due to the human activity in and around the airfield. This activity includes the frequent dispersal of birds by the BASH specialist. This effectively prevents the wood stork from utilizing the habitat. Hence the maintenance activities around this wetland would have virtually no effect on this species.

There is a slight possibility that the eastern indigo snake may be found in the vicinity of the rim canal. This species is rare and wide-ranging but may occur virtually anywhere in APAFR including human-altered habitats.

3.12 Recreation

The airfield is part of a recreation unit that is designated for use by active duty and retired military personnel, APAFR employees, and Avon Park Department of Corrections personnel. Personnel are allowed to access the airfield when there is no training that requires the use of the airfield. Recreation entails hunting deer, hogs, and turkeys.

3.13 Cultural Resources

Approximately half of the area encompassing the Rim Canal has been culturally surveyed by hand digging narrow holes with shovels in a grid that culturally represents the surrounding area. These surveyed areas primarily were outside of the perimeter of the airfield with the survey

overlapping the Rim Canal and were conducted during 2005 and 2006. Areas that were surveyed determined no cultural resources that would be potentially eligible for the National Register of Historic Places (NRHP). Buried ordnance was located during the surveys and due to safety concerns, the surveys ended. Further surveys requiring digging have not been pursued due to safety concerns. A surface survey along the Rim Canal conducted by the APAFR Cultural Resource Manager in 2009 determined no cultural resources eligible for the NRHP. Furthermore, due to the soil mixing that occurred during the initial construction of the Rim Canal, the manager classified the area as disturbed with little potential to retain pre-historic or historical materials.

3.14 Cattle Grazing

Cattle graze in pastures found adjacent to the Rim Canal to the south and west where the project occurs. 2.5 miles of barbed wire fence and 0.6 miles of woven wire fence separates the pastures from the airfield. There are seven pastures adjacent to the project area. These pastures are part of two separate leases involving two separate operators. The four pastures due south of the canal are under one lease, while the three pastures southeast of the canal are under another lease. The leases are grazed year around with the pastures undergoing several grazing rotations a year. Cogongrass currently occupies three of the seven pastures adjacent the project area. The infestations are minor with the grass growing along fencelines.

3.15 Environmental Justice

Environmental justice was established by Executive Order 12898 in an effort to prevent federal activities from deliberately excluding or subjecting minority and low income populations to situations that adversely affect human health or the environment. Census Tract 0157 in Polk County contains minority populations (USCB 2000). This tract encompasses the northwest portion of APAFR, to include the airfield, as well as private property north and west of APAFR. The greatest concentration of the general population of this tract is located at the Avon Park Correctional Institution and the Avon Park Youth Academy located as an in-holding on the extreme west central part of APAFR.

3.16 Coastal Zone Management Act

Florida's coastal zone consistency concurrence for evaluating proper stewardship of coastal areas under the Coastal Zone Management Act 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, the Rim Canal empties into Arbuckle Creek which then flows into Lake Istokpago. Canals from Lake Istokpaga flow to the Kissimmee River and Lake Ocheechee. Lake Ocheechee flows into the Everglades.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Airspace and Airfield Operations

Preferred Alternative:

The Preferred Alternative would help drain the airfield and respective runway more quickly than the current condition. The runway would be more dependable for emergency aircraft landings. Under the long term plan of staging fixed wing aircraft for mission training and transporting personnel, a dependable runway becomes important. The Preferred Alternative would alleviate the concern of potential delayed or canceled training due to an inundated runway, particularly during the rainy summer season. Runways, taxiways, and aprons would require fewer repairs and maintenance with better drainage.

Alternative Action:

Impacts to military training by the Alternative Action would be the same as with the Preferred Alternative.

No-Action Alternative:

The No-Action Alternative would retain the current use of the airfield. The runways, taxiways, and aprons would have more frequent repairs and maintenance with poorer drainage. The risk of potential delayed or cancellation of training would increase over time.

4.2 Safety

Preferred Alternative:

Reducing the time that standing water would remain on the runway would result in eliminating a potential hazard that could cause a mishap.

While ordnance was found during past cultural resource surveys, encounters with ordnance would not be anticipated while cleaning out the canal because it is already a disturbed site.

Regarding the bird air strike hazard (BASH), the Preferred Alternative would help long-term to reduce the attractiveness of the airfield to wildlife. Habitat management is the most effective long-term strategy for alleviating wildlife populations on or near airfields. For the first two months after the clean-out is completed there could be an increase in wildlife species trying to use the areas that were disturbed, but this can be controlled by the BASH program with propane cannons, pyrotechnics, and firearms.

Alternative Action:

The Alternative Action would have the same impacts as the Preferred Alternative regarding the reduced safety risks for the runway.

For the BASH program, the impacts of reducing wildlife populations on the airfield would be the same as with the Preferred Alternative. In addition, the spoil spread on the pastures adjacent and south of the airfield would attract vultures due to decomposing organics in the spoil. This would increase the BASH potential slightly more than the Preferred Alternative. The impact would last for about two months. Again, the BASH program could employ techniques to discourage the vultures.

For both the Preferred Alternative and Alternative Action, the BASH program recommends the following to minimize the presence of birds due to short term impacts. The Rim Canal could be sloped 3:1 to 2:1, if possible, to reduce the amount of wading birds trying to utilize the canal and to follow the FAA Advisory Circular, Hazardous Wildlife Attractants on or near Airports. Any bare dirt areas that are left from the Rim Canal clean-out would need to be reseeded with Bahia grass to the water's edge. Bare dirt areas would attract birds such as mourning doves and killdeer. Filling in of bare dirt areas with grass seed on airfields is in accordance with the Air Force Instruction (AFI) 91-212 *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques, 1 February 2004*.

No-Action Alternative:

Currently, during the wet season standing water is often found on the airfield because the Rim Canal and drainage ditches do not work correctly. Standing water on an airfield creates a BASH hazard by attracting wading birds and water fowl. Also, the current Rim Canal has a lot of aquatic vegetation and bank slopes that are not graded to the required steepness. This condition creates prime foraging grounds for wading birds, sandhill cranes and blackbird nesting/roosting habitat. These conditions would remain and increase under the No-Action Alternative.

4.3 Noise

Preferred Alternative:

Noise would be increased with earth-moving equipment along the Rim Canal, but since human noise receptors would be over one-half mile away, noise levels would not affect human activity.

Alternative Action:

The Alternative Action would have more equipment on-site, but would have the same impacts as the Preferred Alternative do to human receptors being over one-half mile away.

No-Action Alternative:

The No-Action Alternative would not generate noise.

4.4 Air Quality

Preferred Alternative:

The Preferred Alternative would add minor amounts of diesel exhaust air emissions with the use of heavy equipment. The proposed project construction activities would not affect the area's air quality. APAFR would report the storage and use of diesel fuel under Sections 311 and 312 of the Emergency Planning and Community Right to Know (40 CFR Parts 350—372). For the Clean Air Act (CAA) as amended 1990, under 42 USC Sec. 7506 (c) (5), a general conformity applies only to federal actions undertaken in a nonattainment or maintenance area. Because Florida is in attainment, a Clear Air Act general conformity analysis would not be required for this action.

Alternative Action:

The Alternative Action would increase air emissions over the Preferred Alternative with the addition of front-end loaders and haul trucks. Impacts would be the same as the Preferred Alternative.

No-Action Alternative: For the No-Action Alternative, air quality levels would be unchanged from the existing conditions that are present at the project site.

4.5 Hazardous Materials and Waste

Preferred Alternative:

The construction related activities for the proposed project are not expected to generate any hazardous waste, and a small amount of solid waste. Unused materials would be taken offsite upon completion of the project. If a spill from operating equipment were to occur, it would be contained and cleaned-up by the contractor and reported to the Environmental Flight at the APAFR. The solid waste generated would be collected and disposed offsite on a daily basis.

The proposed activities related to the increased recreation usage would generate an insignificant amount of solid waste. The public would use no hazardous materials during recreational activities. For proper disposal the user would carry solid waste generated by the public back to the outdoor recreation office. Trash is collected on a predetermined schedule and no change to the schedule is needed due to the limited quantity that would be generated.

Alternative Action:

For the Alternative Action activities, there would be a minimal amount of potential concern for hazardous materials and waste management during maintenance activities. The impacts would be the same as the Preferred Alternative.

No-Action Alternative:

For the No-Action Alternative, there would be a limited solid waste generation, and no potential for the storage and generation of hazardous materials and waste.

4.6 Environmental Restoration

The Preferred Alternative, Alternative Action, and No-Action Alternative would not affect the ERP program.

4.7 Water Resources

Preferred Alternative:

The Preferred Alternative would temporarily decrease water quality by increasing the sediment load resulting from the maintenance activities within the Rim Canal channel. Best management practices (BMPs) as determined by federal and state permitting processes would minimize sedimentation. These permits are described in this section. Also, depending on the season of year for the maintenance work, the sediment load could be minimized during the dry season (March through May) when water flows are the lowest and grass vegetation could reestablish along the banks.

The proposed work in the Rim Canal was reviewed by the United States Army Corp of Engineers (USACE) in a permit application under 33 CFR 325 in accordance with the Clean Water Action, Section 404. The USACE issued Nationwide Permit # 41 *Reshaping Existing Drainage Ditches* for cleaning out the Rim Canal (Appendix A). Conditions of the permit include:

1. Following completion of the work, APAFR is required to submit a *Self-Certification Statement of Compliance* to the USACE. This will be accomplished by the APAFR hydrologist in coordination with the contractor completing the work.
2. Cultural resources listed or potentially eligible for the National Register of Historic Places shall not be adversely affected. Prior to starting the work, the National Register Information Systems needs to be consulted to determine if these resources are involved. Also, if during the work unexpected cultural resources are discovered, all work shall stop. Coordination with the USACE and the SHPO shall be initiated and work not resume until authorized by SHPO. Discovered unmarked human remains also results in ceasing work, consultation with the SHPO and State Archaeologist, and work not resuming until authorized by the State Archaeologist. APAFR has a registered archaeologist on-site who manages the cultural resources at APAFR. NRIS was consulted and determined that the work would not involve cultural resources eligible or potentially eligible for the National Register. Standard operating procedure for any work requiring excavation is to cease work when suspected cultural resources are uncovered. The installation archaeologist conducts a site visit and determines if the objects potentially are eligible for the National Register or are human remains. If eligible or human remains, work is stopped and coordination with SHPO initiated and if human remains, tribal consultation initiated.

A *Generic Permit for Stormwater Discharge from Large and Small Construction Activities* would have to be obtained from the Florida Department of Environmental Protection (FDEP) under the National Pollution Discharge Elimination System to address stormwater discharge. The Generic Permit would be obtained following the submittal of a storm water pollution prevention plan (SWPPP). The contractor who would conduct the work would submit the SWPPP as part of the work contract. The purpose of the SWPPP would be to specify site-specific BMPs to provide sediment and erosion controls. These BMPs, again, would be delineated in the SWPPP, and would include BMPs from the Avon Park Air Force Range "Guidance Manual: Best Management Practices & NPDES Permitting (APAFR 2009)." Examples of erosion and sediment controls that could be incorporated include: silt fencing; fiber rolls, storm drain inlet protection, rolled erosion control products, turbidity curtains, tracking control, vegetation techniques, and others.

State water quality requirements under the Clean Water Act Section 401 would be satisfied under noticed general, standard or individual environmental restoration permit administered by the South Florida Water Management District.

The Rim Canal itself is a jurisdictional wetland. Also, approximately 1,200 linear feet of the west end of the canal in the 100 year floodplain of Arbuckle Creek. Maintenance could not avoid wetlands and a floodplain. This precipitates a finding of no practicable alternative (FONPA) that must be reviewed and signed by the major command, Air Combat Command, as per 32 CFR 989.14(g).

Alternative Action:

The Alternative Action would have the same results as the Preferred Alternative with regards to

permitting, BMPs, meeting state water requirements, and a FONPA. In addition, because sediment would be spread over five acres of upland pasture, the *Generic Permit for Stormwater Discharge from Large and Small Construction Activities* would also have to encompass the pasture areas even though the pastures are not in wetlands. For the upland pastures, permitting would need to encompass these impacts and BMPs would have to temporarily retain the material until the pasture grass would grow and stabilize the sediment.

No-Action Alternative:

The No-Action Alternative would not change the water quality.

4.8 Soils and Geology

Preferred Alternative:

The Preferred Alternative would mix the soil profile within the Rim Canal with little impact as the current soil profile is already disturbed and mixed.

Alternative Action:

The Alternative Action would have the same results as the Preferred Alternative for the soils associated with the Rim Canal. The sediment spread on the pastures would be spread on Felda and Malabar Sands (alfisols). The organics in the sediment would oxidize and degrade within two years creating a slight fertilizer effect for the Bahia grass grazing pastures. The Bahia grass would regrow and cover the sediment over the year. The soils would remain alfisols with no changes to the soil profile. The mulch would remain longer, say five to ten years and increase the litter layer on top of the soil.

No-Action Alternative:

The No-Action Alternative would not change the characteristics of the soils.

4.9 Vegetation

Preferred Alternative:

The Preferred Alternative would reduce the amount of wetland facultative or obligate vegetation by physically removing it. The vegetation would regrow over time, although the volume of vegetation would be less because of steeper slopes in the canal. Also, the taller willows and wax myrtle that now occur in the canal would take several years (five to ten) to regrow and reach their present height and thickness. The length of time for the vegetation to reestablish would be even longer if the vegetation were periodically cut, herbicided, or burned.

Alternative Action:

The Alternative Action would have the same effects as the Preferred Alternative regarding the canal. While the spread sediment in the pastures would temporarily suppress the Bahia grass by burying it, the grass would regrow or grow through the sediment and recolonize within six months to a year. Clumps of vegetation and root wads would not spread or compress well when deposited with equipment and would displace the grass until degraded – one to five years. The magnitude of this impact would be minor.

Cogongrass seed and root rhizomes found in the Rim Canal would mix with the deposited materials placed the grazing pastures. The potential for cogongrass to establish within the

pastures is high and would require chemical or mechanical treatments for control later. Eradication is not possible so the control efforts would be very long term.

No-Action Alternative:

The No-Action Alternative would result in continued growth of vegetation in the Rim Canal resulting in continued water backing up on the airfield.

4.10 Fish and Wildlife

Preferred Alternative and Alternative Action:

The Preferred Alternative and Alternative Action would temporarily displace most wildlife during the maintenance activities. As identified in Section 4.2 Safety, the ground disturbance would temporarily attract foraging birds short term. Long term, with reduced vegetative cover and steeper canal banks, wading birds would be less numerous. Despite increased sediment discharge would be expected into Arbuckle Creek, adverse effects to fish would not be anticipated.

No-Action Alternative:

The No-Action Alternative would not affect the wildlife in the project area nor affect fish in Arbuckle Creek.

4.11 Threatened and Endangered Species

Preferred Alternative and Alternative Actions:

Workers at the site would receive an orientation regarding the possible presence of wood stork and indigo snake near the rim canal with instructions to avoid disturbing them if encountered.

The finding of no effect for eastern indigo snake and wood stork assumes that 1) the project would not deviate from the description, 2) neither species is present; or at least, the possibility of species presence is remote, and 3) no unforeseen effects occur. Should any assumptions change, (if, for example, indigo snake is found to inhabit the project site) then a new evaluation relative to endangered and threatened species would be required.

E-mail correspondence from USFWS supported APAFR's assessment and orientation training, see Appendix A.

No-Action Alternative:

The No-Action Alternative would not affect threatened and endangered species.

4.12 Recreation

Preferred Action and Alternative Action:

The Preferred Alternative and Alternative Action would negate hunting opportunities during maintenance activities for the short term.

No-Action Alternative:

The No-Action Alternative would provide for continuous recreation.

4.13 Cultural Resources

Preferred Alternative, Alternative Action and No-Action Alternative:

Due to limited alternations of the Rim Canal, it is the opinion of the cultural resources manager that the Preferred Alternative, Alternative Action, and No-Action Alternative would not adversely affect the historic integrity of the area. The State Historic Preservation Officer (SHPO) concurred with the cultural resources manager through letter correspondence (Appendix A).

4.14 Cattle Grazing

Preferred Alternative:

The Preferred Alternative would not impact the grazing program.

Alternative Action:

The Alternative Action would restrict grazing in one to four pastures where the spoil would be spread. These pastures are due south of the canal and are under one lease. Grazing would be restricted because the cattle would disturb the BMPs (examples: straw or hay mulch, silt fences) that would be in place. The BMPs would be in place so that the deposited materials could be revegetated by the Bahia pasture grass. Depending on the BMPs used to stabilize the spoil, cattle would be restricted for six months to a year while the grass would establish. Due to the timed rotations, the grazing lease would be cancelled for six months to year. Cancelling for a year would result in a loss of \$13,000 of revenue. The lease would have to be closed and rebid, incurring an additional administrative cost of \$13,000. Fences would be removed for four pastures and would need to be replaced before grazing resumed. For safety reasons, it is recommended that the fences be replace soon after the canal is maintained. Cattle from other leases can get out of their respective pastures and would need to be fenced out of the airfield.

No-Action Alternative:

The No-Action Alternative would not impact cattle grazing.

4.15 Environmental Justice

Preferred Alternative and Alternative Action: Minority populations are geographically one mile distant from the project area in the Avon Park Correctional Institution and would not be affected by the maintenance activities. Equipment accessing APAFR would travel through correctional property via a main road, but the impacts would be minimal.

No-Action Alternative: There would be no impacts.

4.16 Coastal Zone Consistency Concurrence

Preferred Alternative and Alternative Action:

The maintenance work conducted and best management practices would result in no compromise to water quality through the permitting process of FDEP as described under Water Resources 4.7.

There would be no additional impervious area proposed and the design drainage area would be re-established. Therefore the drainage area would be unchanged from the pre-development condition to the post-improvement condition. The result would be no increase (or decrease) in

the stormwater runoff (volume or rate) from the original intended design of the drainage area. Coastal zone management concurrence from the FDEP Clearinghouse is in Appendix A.

No-Action Alternative:

The No-Action Alternative would not adversely affect coastal zone management consistency concurrence.

4.17 Cumulative Impacts

The Preferred Alternative is part of an overall plan to upgrade the airfield. Other activities over the next five years include upgrading the airfield pavements, modifying the barrier overrun cables, constructing new roads, constructing security barriers, install apron lighting, piping and burying an open ditch, replacing portions of the underground drainage system, and removing trees. Also, over the next ten years the remainder of the Rim Canal would be maintained as well as some of the ditches and swales. Some of these activities improve the efficiency of draining the airfield. With improved drainage in higher elevations of the airfield, it becomes necessary to have efficient drainage first at lower elevations, which the Preferred Alternative and Alternative Action accomplishes by repairing the lowest portion of the Rim Canal to the southern outfall that reaches Arbuckle Creek. Ultimately, the airfield will have shorter periods of standing water. This would result in slower degradation of pavements, greater accessibility for mowing, and reduced attractiveness by wading birds. Improved drainage would also result in higher and shorter peak discharge flows into Arbuckle Creek, although still within the original design of the drainage system. If any of these or other possible improvements are pursued in the future, appropriate environmental analysis will be accomplished.

4.18 Irreversible and Irrecoverable Commitment of Resources

Preferred Alternative and Alternative Action:

Petroleum, oils, and lubricants as well as vehicle wear and tear for excavation would be irretrievable.

No-Action Alternative: There would be no irreversible or irretrievable commitment of resources.

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6.0 AGENCIES, GOVERNMENTS, AND PUBLICS CONTACTED

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Okeechobee Service Center
Ms. Kelly Cranford, P.E.
Lead Engineer
205 North Parrott Avenue, Suite 201
Okeechobee, FL 34972-2916

Dr. Janet Snyder Matthews, Ph.D.
Director and State Historic Preservation
Officer
Division of Historic Resources
Florida Department of State
500 South Bronough Street
Tallahassee, FL 32399-0250

United States Army Corp of Engineers
Jacksonville District
Mr. Charles A. Schnepel
10117 Princess Palm Drive, Suite 120
Tampa, FL 33610

Ms. Julie Jeeter
USFWS Liason
23 WG DET 1 OL A/CEVN
29 South Blvd
APAFR, FL 33825-9381

7.0 LIST OF PREPARERS

William BuChans

URS Corporation

B.S. Mining Engineering,

Univ of Missouri - Rolla, 1983

Year of Experience: 26

Cynthia Brown

Water Programs Manager

Masters of Environmental Management,

University of Maryland, 2007

B.S., Applied Biology,

Georgia Institute of Technology, 1987

Years of Experience: 22

Kathy J. Couturier

Cultural Resource Manager, Archaeologist

BA History and Anthropology

University of North Florida, 1996

Years of Experience: 17

Mark Fredlake

Wildlife Management Biologist

BS, Arizona State University 1977

30+ years experience

Roger Grebing

Chief, Compliance Branch

MS, Water Resources and Bioenvironmental

Engineering, Oklahoma State University,

1973

Years of Experience: 34

Clarence Morgan

Rangeland Management Specialist

B.S. Forest Resource Management,

University of Idaho, 1982

Years of Experience: 33

Marianne Sweeney, P.E.

ERP Title II (AECOM)

M.S.E., University of Central Florida, 1986

Years of Experience: 24

Steve L. Orzell

Botanist/Ecologist, Natural Resources

M.S., Southern Illinois University,

Carbondale, Illinois, 1983

Years Experience: 34

Tod Zechiel

NEPA Coordinator

Masters of Agriculture

Texas A&M University 1987

Years of Experience: 20

8.0 Changes to the Final EA

Section	Comment	Response
4.7 Water Resources	State water quality requirements under the Section 401 of the Clean Water Act are not met by the Generic Permits [NPDES] issued by the FDEP, rather by issuance of a noticed general, standard general or individual ERP in accordance with Rule 62-343.070(9), F.A.C. – Florida State Clearinghouse	Section 4.7, under Preferred Alternative, page 19 paragraph three, added text to read that state water quality requirements would be met by a noticed general, standard or individual ERP administered by the SFWMD, deleted water quality requirements met by NDPEs issued by FDEP.

APPENDIX A: COORDINATION WITH AGENCIES

From: Milligan, Lauren [Lauren.Milligan@dep.state.fl.us]
Sent: Monday, June 07, 2010 5:37 PM
To: 'Zechiel Tod Civ 23 WG DET 1 OL A/CEVN'
Cc: 'Ebersbach Paul F Civ 23 WG DET 1 OL A/CEV'; kcranfor@sfwmd.gov;
jgolden@sfwmd.gov
Subject: Draft EA for Maintaining the Rim Canal at Avon Park Air Force Range

Mr. Tod Zechiel, NEPA Coordinator
OL A, DET 1, 23 WG/CEVN
29 South Blvd.
Avon Park AFR, FL 33825-9381

RE: Department of the Air Force – Draft Environmental Assessment for Maintaining the Rim Canal at Avon Park Air Force Range – Polk and Highlands Counties, Florida.

SAI # FL201006075279C (Reference SAI # FL200907304887C)

Dear Tod:

Florida State Clearinghouse staff has reviewed the subject Draft Environmental Assessment (EA) under the following authorities: Presidential Executive Order 12372; Section 403.061(40), 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 rim canal maintenance activities may qualify for an exemption from the state's environmental resource permitting (ERP) requirements under § 40E-4.051(2)(a), Florida Administrative Code (F.A.C.). Verification of this exemption is recommended by contacting Kelly Cranford, P.E., in the South Florida Water Management District's (SFWMD) Okeechobee Service Center at (863) 462-5260, ext. 3005 or kcranfor@sfwmd.gov. The ERP exemption or required ERP permit may be necessary to forward to the U.S. Army Corps of Engineers if a revised Nationwide Permit authorization is required. Staff advises that Page 20 of the Draft EA incorrectly states that, "State water quality requirements under the Clean Water Act Section 401 would be satisfied under the Generic Permit [NPDES] issued by the FDEP." In the State of Florida, state water quality certification under Section 401 of the Clean Water Act is obtained by issuance of a noticed general, standard general or individual ERP in accordance with Rule 62-343.070(9), F.A.C. Water quality certification is waived for applications that qualify for an exemption from ERP permitting requirements.

Based on the information contained in the Draft EA, minimal project impacts and previous State Historic Preservation Office comments, the state has determined that, at this stage, the proposed federal activities are consistent with the Florida Coastal Management Program. Please continue to consult with the SFWMD and DEP's NPDES Stormwater Program to ensure compliance with the applicable ERP and NPDES permitting requirements.

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. (850) 245-2170
fax (850) 245-2190



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
10117 PRINCESS PALM DRIVE, SUITE 120
TAMPA, FLORIDA 33610

June 11, 2009

Tampa Regulatory office
SAJ-2009-01869 (NWPs 39 and 41)

United States Air Force
c/o Lieutenant Colonel Charles MacLaughlin
Det 1, 23 WG/CC
29 South Boulevard
Avon Park AFR, Florida 33825

Dear Lt. Col. MacLaughlin:

This is in reference to your Department of the Army permit application SAJ-2009-01869 (NWPs 39 and 41) to fill and culvert a ditch 500-by 40-feet. You are also proposing to excavate and retrench a portion of the existing Rim Canal to restore to its original dimension. The proposed work is located within the Avon Park Air Force Range, adjacent to the existing airfield and runway, in Section 32, Township 33 south, Range 30 east, in Avon Park, Polk County, Florida.

Your project, as depicted on the enclosed drawings, is authorized by Nationwide Permit (NWP) Numbers NWPs 39 and 41. In addition, project specific conditions have been enclosed. This verification is valid until March 18, 2012. Please access the U.S. Army Corps of Engineers' Jacksonville District's Regulatory web address at <http://www.saj.usace.army.mil/regulatory/permitting/nwp/nwp.htm> to access web links to view the Final Nationwide Permits, Federal Register Vol. 72, dated March 12, 2007, the Corrections to the Final Nationwide Permits, Federal Register 72, May 8, 2007, and the List of Regional Conditions. These files contain the description of the Nationwide Permit authorization, the Nationwide Permit general conditions, and the regional conditions, which apply specifically to this verification for NWPs 39 and 41. A copy of a portion of the Final Nationwide Permits, Federal Register Vol. 72, dated March 12, 2007, has been enclosed, specifically pages 11180 through 11198. Additionally, enclosed is a list of the six General Conditions, which apply to all Department of the Army authorizations. You must comply with all of the special and general conditions and any project specific condition of this authorization or you may be subject to enforcement action. In the event you have not completed construction of your project within the specified time limit, a separate application or re-verification may be required.

The following special conditions are included with this verification:

1. Within 60 days of completion of the work authorized, the attached "Self-Certification Statement of Compliance" must be completed and submitted to the U.S. Army Corps of Engineers. Mail the completed form to the Regulatory Division, Enforcement Section, 10117 Princess Palm Drive, Suite 120, Tampa, Florida 33610.

2. No structure or work shall adversely affect or disturb properties listed in the National Register of Historic Places or those eligible for inclusion in the National Register. Prior to the start of work, the Permittee or other party on the Permittee's behalf, shall conduct a search in the National Register Information System (NRIS). Information can be found at; <http://www.cr.nps.gov/nr/research/nris.htm>. Information on properties eligible for inclusion in the National Register can be identified by contacting the Florida Master File Office by email at fmsfile@dos.state.fl.us or by telephone at 850-245-6440.

If unexpected cultural resources are encountered at any time within the project area that was not the subject of a previous cultural resource assessment survey, work should cease in the immediate vicinity of such discoveries. The permittee, or other party, should notify the SHPO immediately, as well as the appropriate Army Corps of Engineers office. After such notifications, project activities should not resume without verbal and/or written authorization from the SHPO.

If unmarked human remains are encountered, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes, unless on Federal lands. After such notifications, project activities on non-Federal lands shall not resume without verbal and/or written authorization from the Florida State Archaeologist for finds under his or her jurisdiction.

This letter of authorization does not obviate the necessity to obtain any other Federal, State, or local permits, which may be required. In Florida, projects qualifying for this NWP must be authorized under Part IV of Chapter 373 by the Department of Environmental Protection, a water management district under §. 373.069, F.S., or a local government with delegated authority under §. 373.441, F.S., and receive Water Quality Certification (WQC) and Coastal Zone Consistency Concurrence (CZCC) (or a waiver), as well as any authorizations required by the State for the use of sovereignty submerged lands. You should check State-permitting requirements with the Florida Department of Environmental Protection or the appropriate water management district.

This letter does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NFPs, please contact Cynthia Wood by telephone at 813-769-7070.

Thank you for your cooperation with our permit program. The Corps Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to take a few minutes to visit the following link and complete our automated Customer Service Survey:
http://www.saj.usace.army.mil/permit/forms/customer_service.htm. Your input is appreciated - favorable or otherwise.

Sincerely,



Charles A. Schnepel
Chief, Tampa Regulatory Section

Enclosures

Copy Furnished:

Mr. Paul Ebersbach
OLA, Det 1, 23 WG,
29 South Boulevard
Avon Park AFR, Florida 33825

From: Jeter Julie D Contr 23 WG DET 1 OL A/CEVN
Sent: Thursday, June 25, 2009 8:13 AM
To: Fredlake Mark J Civ 23 WG DET 1 OL A/CEVN; Zechiel Tod Civ 23 WG DET
1 OL A/CEVN
Subject: RE: Rim Canal & Lateral Ditch 813

Mark and Tod,

I concur with your determination of "no effect" for both of the below-mentioned projects. I visited the site five or six times and did not see either of the species (wood stork or indigo snake). However, the fact that I did not see them is not confirmation they they do not use the area, particularly in regard to the indigo snake which is extremely difficult to detect and far ranging.

I also agree that an orientation should be provided to all workers involved with the project perhaps in the form of a powerpoint that allows easy identification of these two species. Rules concerning driving on the base and airfield access should also be discussed. I would like to be present at the kick off meeting. Please let me know if you need my assistance on the orientation or any other related activities. Also, I believe that one of us (Mark or Julie) should be present at the beginning and occasionally from time to time perform spot visits to check progress of the work.

Julie Jeter
USFWS Wildlife Biologist
South Florida Ecological Services Office APAFR, FL
863 452-4119, X303



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

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

September 1, 2009

RE: DHR Project File Number: 2009-4864
Proposed Rim Canal Maintenance and Lateral Ditch Pipe and Fill
Avon Park Air Force Range, Polk County

Dear Lt. Col. 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, *36 CFR Part 800: Protection of Historic Properties* and the *National Environmental Policy Act of 1969*, as amended.

Based on the information provided, it is the opinion of this office that the proposed undertaking is not likely to have an effect on historic properties, provided that the Department of Air Force makes contingency plans in the case of fortuitous finds or unexpected discoveries during ground disturbing activities within the project area:

- If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with early Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The Florida Department of State, Division of Historical Resources, Review and Compliance Section should be contacted at (850) 245-6333. Project activities shall not resume without verbal and/or written authorization.
- In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, *Florida Statutes*.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail sedwards@doh.state.fl.us, or at 850-245-6333 or 800-847-7278.

Sincerely,

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

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