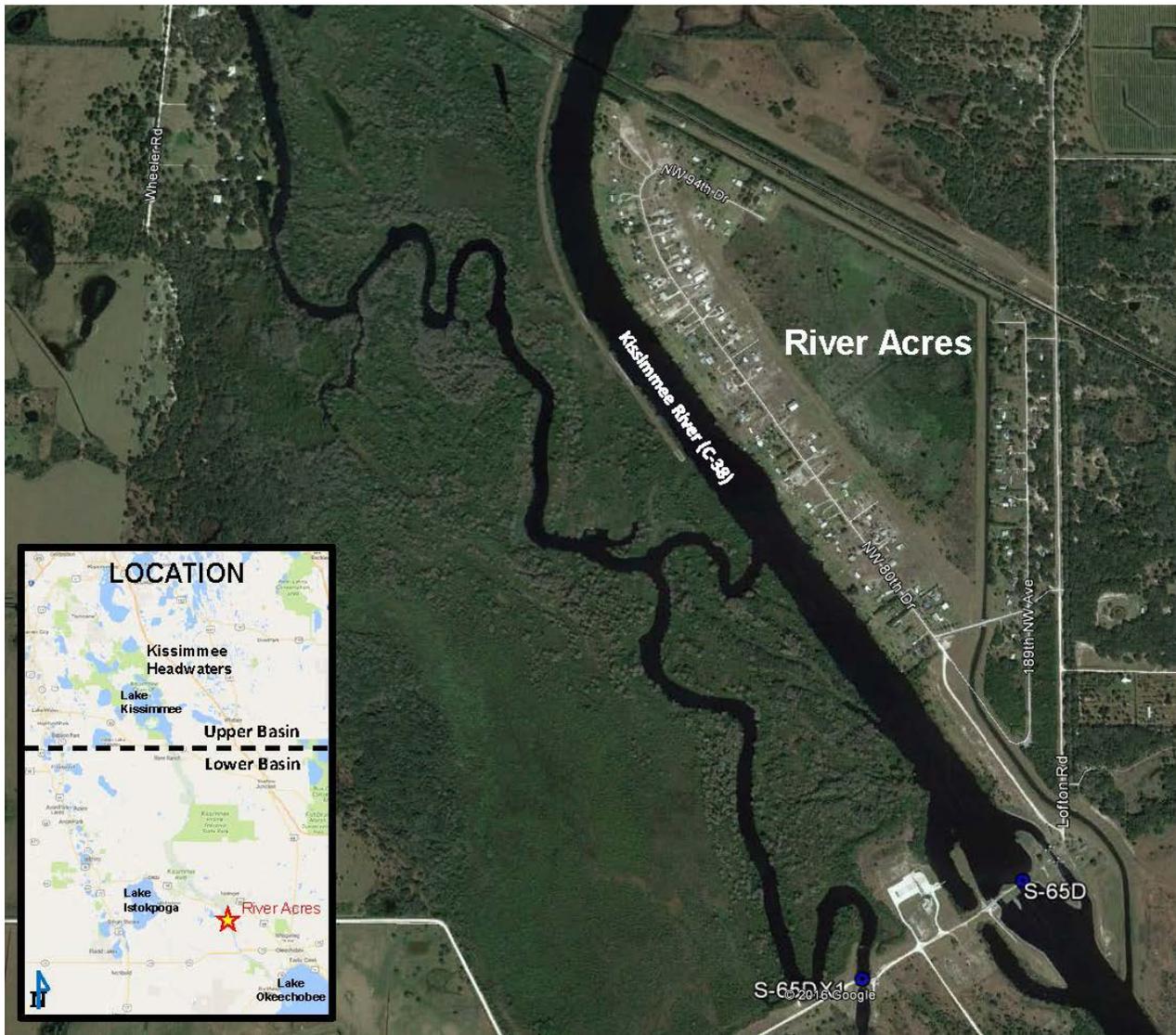


# Environmental Assessment and Finding of No Significant Impact

## KISSIMMEE RIVER RESTORATION PROJECT: RIVER ACRES FLOOD MITIGATION IN LIEU OF ACQUISITION



Okeechobee County, Florida



US Army Corps  
of Engineers®  
Jacksonville District

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## **FINDING OF NO SIGNIFICANT IMPACT**

### **KISSIMMEE RIVER RESTORATION PROJECT: RIVER ACRES FLOOD MITIGATION IN LIEU OF ACQUISITION, OKEECHOBEE COUNTY, FLORIDA**

The U.S. Army Corps of Engineers, Jacksonville District (Corps), has prepared an environmental assessment in accordance with the National Environmental Policy Act of 1969, as amended, to assess providing flood mitigation for the River Acres subdivision in lieu of acquiring property that was projected to be impacted by implementation of the Kissimmee River Restoration (KRR) project. The Corps assessed the effects of the following actions in the KRR Project: River Acres Flood Mitigation in Lieu of Acquisition Environmental Assessment (EA), dated April 2017 and the Corps' Design Documentation Report dated January 21, 2009 (Appendix A) for the KRR Project in Okeechobee County, Florida. The Preferred Alternative consists of the following:

- Seepage Canal: The existing ditch north of the CSX railroad maintained, as needed, to function as the seepage canal.
- CSX Protection Levee: A levee constructed north of the CSX railroad to protect the existing railroad embankment from increased floodplain stages post KRR Project. The embankment completes an unbroken line of protection for the River Acres community up to the SPF extending from the S-65D structure to high ground along Loftin Rd.
- Tieback Levee: A 600 linear foot tieback levee constructed in the west side yard of Lot 8, crossing the canal and tying to the railroad embankment to isolate the existing River Acres canal from the Kissimmee River upstream of Structure S-65D. A stop-log riser culvert (weir) installed through the tieback levee will provide minimum (non-stagnating) flows from the C-38 Canal to the modified canal.
- River Acres Levee: An earthen levee constructed along the east side of Lots 1 through 7 that border the Kissimmee River (adjacent to N.W. 80th Drive). The levee connects the existing S-65D Tie-back Levee to high ground creating an unbroken flood risk reduction feature for the River Acres community. A new shell rock road ties into N.W. 80th Drive and provides access to the lock operator's residence.
- River Acres Canal: The subdivision's existing canal is slightly realigned and deepened, as well as extended to the south. This modification allows the residents navigation access to the Kissimmee River downstream of S-65D.
- Road Relocation: A roadway at N.W. 83rd Terrace ties into a bridge over the new canal extension.

In addition to the No Action Alternative, four alternatives were evaluated, including the Preferred Alternative. The other alternatives consisted of two operational alternatives and an alternative that included an active structural modification. These alternatives were eliminated from detailed evaluation due to higher costs, the inability to meet KRR Project objectives, and the need to potentially acquire additional real estate within the Upper Kissimmee chain of lakes.

I have reviewed the Environmental Assessment (EA) for the Preferred Alternative. This Finding incorporates by reference all discussions and conclusions contained in the EA enclosed hereto. Based on the information analyzed in the EA, which reflects pertinent information obtained from

agencies having jurisdiction by law and/or special expertise, I conclude that the Preferred Alternative will not significantly affect the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are in summary:

- a. The Preferred Alternative is in compliance with the Endangered Species Act and the Fish and Wildlife Coordination Act. The Corps maintained open and cooperative communication with the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission regarding actions necessary to complete the KRR Project.
- b. The Florida Department of Environmental Protection provided an Environmental Resource Permit (ERP) March 22, 2006. The ERP (File Number 47-0182163-002) constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act. In addition, this permit also constitutes certification of compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341.
- c. Consultation for the Preferred Alternative has been completed with the Florida State Historic Preservation Officer and completed with the appropriate federally recognized Native American Tribes in accordance with the National Historic Preservation Act and considerations given under the National Environmental Policy Act.
- d. The Preferred Alternative maintains the authorized purposes of the Central and Southern Florida Project, which include environmental restoration, flood control, navigation, water supply for agricultural purposes and maintenance of lakes stages at desirable level for fish and wildlife purposes and for recreation purposes.

In view of the above, and the attached EA, and after consideration of public and agency comments received on the project, I conclude that the Preferred Alternative would not result in a significant effect on the human environment. This Finding of No Significant Impact incorporates by reference all discussions and conclusions contained in the EA enclosed herewith.

  
\_\_\_\_\_  
Jason A. Kirk, P.E.  
Colonel, U.S. Army  
District Commander

23 MAY 2017  
Date

**ENVIRONMENTAL ASSESSMENT  
ON  
KISSIMMEE RIVER RESTORATION PROJECT: RIVER ACRES FLOOD  
MITIGATION IN LIEU OF ACQUISITION, OKEECHOBEE COUNTY, FLORIDA**

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# **ENVIRONMENTAL ASSESSMENT ON KISSIMMEE RIVER RESTORATION PROJECT: RIVER ACRES FLOOD MITIGATION IN LIEU OF ACQUISITION, OKEECHOBEE COUNTY, FLORIDA**

## **1.0 PROJECT PURPOSE AND NEED**

### **1.1 PROJECT AUTHORITY**

The Kissimmee River Restoration (KRR) Final Integrated Feasibility Report and Environmental Impact Statement was authorized by Section 101(8) of Water Resources Development Act (WRDA) 1992, P.L. 102-580 (1991 KRR Report). Congress authorized the ecosystem restoration of the Kissimmee River as set forth in the Report of the Chief of Engineers, dated March 17, 1992. WRDA 1992 also included authorization for the construction of the Kissimmee River Headwaters Revitalization Project (HWR Project) or Upper Basin component, in accordance with the report prepared under Section 1135 of WRDA 1986.

Under WRDA 1992, the KRR Project was authorized to improve and rehydrate the marsh habitat that formerly surrounded the river, while maintaining the same level of flood protection as that provided by the previous flood control project; *i.e.* thirty percent Standard Project Flood [SPF].

The WRDA 1992 authorization reads as follows:

The following projects for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plans, and subject to the conditions, recommended in the respective reports designated in this section:

(8) KISSIMMEE RIVER RESTORATION, FLORIDA.--The project for the ecosystem restoration of the Kissimmee River, Florida: Report of the Chief of Engineers, dated March 17, 1992, at a total cost of \$426,885,000, with an estimated Federal cost of \$139,943,000 and an estimated non-federal cost of \$286,942,000. The Secretary is further authorized to construct the Kissimmee River headwaters revitalization project in accordance with the report prepared under section 1135 of the Water Resources Development Act of 1986 (100 Stat. 4251-4252) for such headwaters project and any modifications as are recommended by the Secretary based on the benefits derived for the environmental restoration of the Kissimmee River basin, at a total cost of \$92,210,000, with an estimated Federal cost of \$46,105,000 and an estimated non-federal cost of \$46,105,000. The Secretary shall take such action as may be necessary to ensure that implementation of the project to restore the Kissimmee River will maintain the same level of flood protection as is provided by the current flood control project.

## 1.2 PROJECT LOCATION

Located in Central Florida, the Kissimmee River watershed covers approximately 3,000 square miles (**Figure 1-1**). The Kissimmee watershed is up to 35 miles wide and approximately 105 miles long, extending from the City of Orlando southward to Lake Okeechobee.

The Upper Basin (the Headwaters) includes numerous lakes both rain driven and regulated by a system of canals and water control structures that are part of the Central & Southern Florida (C&SF) Flood Control Project for the Kissimmee and Istokpoga Basins, implemented in the 1960s. The system is managed by the South Florida Water Management District (SFWMD) in accordance with the Water Control Manual for the Kissimmee River-Lake Istokpoga Basin. The Upper Basin component of the project includes Lakes Kissimmee, Hatchineha, Cypress, and Tiger. The Upper Basin's largest lake, Lake Kissimmee, discharges into the Kissimmee River through the S-65 spillway structure. The S-65 structure controls flows from the Upper Basin into the Lower Basin (**Figure 1-1**), and effectively marks the delineation between the Upper and Lower basins.

The Lower Basin component of the project includes the sections of the Kissimmee River channelized as part of the C&SF Project, known as Canal 38 or C-38, and extends to the Kissimmee Basin outlet to Lake Okeechobee at S-65E.

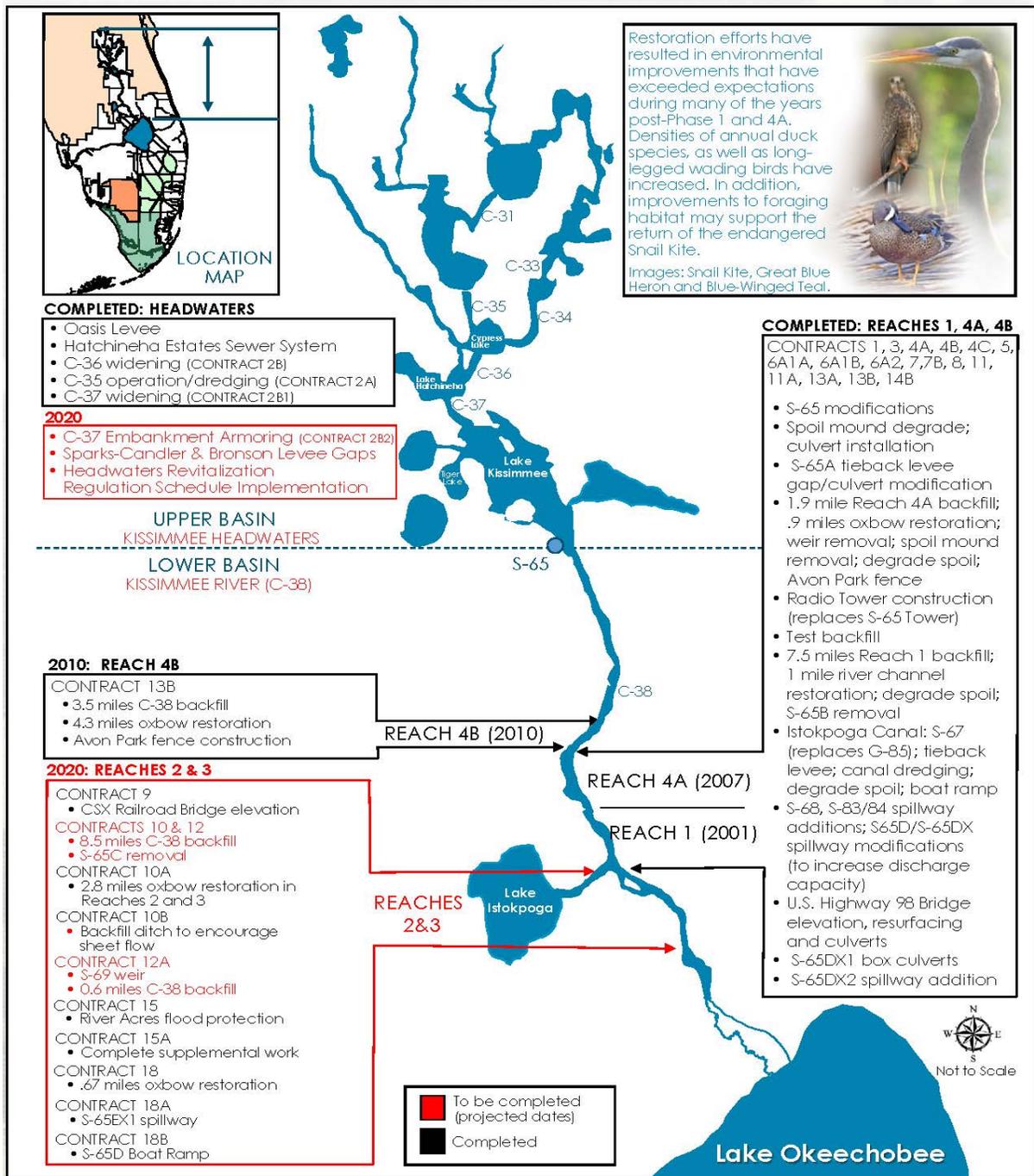


FIGURE 1-1: KRR PROJECT LOCATION

### 1.3 PROJECT BACKGROUND

The KRR Project is the largest river restoration effort to date, spanning over two decades of coordination and implementation throughout a 3,000 square mile watershed that includes the Upper and Lower Kissimmee River basins. Extending approximately 105 miles from Orlando to Lake Okeechobee, the Kissimmee River watershed forms the headwaters of Lake Okeechobee and the Everglades, and serves as a vital component of ecosystem restoration in South Florida as a whole. The 1991 KRR Report addressed restoration efforts in both the Upper and Lower basins of the Kissimmee River watershed, but focused mainly on the Lower Basin. Further analysis of the Upper Basin was included in the 1996 Kissimmee River Headwaters Revitalization Project Integrated Project Modification Report and Supplement to the Final Environmental Impact Statement (1996 HWR Report). Together, the components outlined in the 1991 KRR Report and 1996 HWR Report are known as the KRR Project. The two portions of the KRR Project were authorized under Section 101(8) of WRDA 1992, P.L. 102-580. The SFWMD is the non-federal sponsor of the KRR Project.

The goal of the KRR Project is to restore and significantly improve approximately 63,000 acres of wetlands within the Kissimmee River watershed. Restoration efforts for the Kissimmee River were expected to reestablish an environment suitable for fish, wildlife, and the wetland plants that existed prior to channelization in the 1960s. To achieve this, the goals established for the project (1991 KRR Report, page 6) were to restore the ecological integrity of the damaged ecosystem by:

- Reestablishing historic hydrologic conditions;
- Recreating historic river/floodplain connectivity;
- Recreating the historic mosaic of wetland plant communities; and
- Restoring historic biological diversity and functionality.

Restoring ecological integrity to the Kissimmee River system involves three integrated components: Upper Basin features, Lower Basin features, and a revised regulation schedule; the Headwaters Revitalization Regulation Schedule. All three components must be completed to achieve full project benefits. Furthermore, construction in both the Upper and Lower basins must be completed before the regulation schedule can be implemented (**Figure 1-1**). These components are described below:

- a) Lower Basin: Reestablishing the historic meandering stream channel that traditionally would overflow seasonally onto the surrounding floodplain. This feature improves hydrology and sustains restored habitat.
- b) Upper Basin: Construction features include maintenance dredging of C-35, and widening and deepening of C-36 and C-37, and additional discharge capacity at S-65 in order to maintain the same level of flood risk management as that provided by the previously authorized project. Other features include degradation of levees to increase storage in the littoral zone of the headwaters lakes.

c) Headwaters Revitalization Regulation Schedule (HWR Schedule): Upon completion of project construction, changes in the long-term water control plan are needed to facilitate restoration of the historic floodplain hydrology. To achieve and support ecological integrity in the Lower Basin, increased seasonal water storage in the headwaters, or Upper Basin, is necessary to provide for a more natural seasonality of flow into the Lower Basin. Greater storage capacity in the Upper Basin will be achieved by raising the Upper Basin lakes' historic frequency of stages above 52.5 feet National Geodetic Vertical Datum of 1929 (NGVD 29) and allowing these lakes to rise to 54.0 feet NGVD 29 to mimic historic stage frequencies. In addition to permitting a more natural flow regime for the river, changes in high pool elevations would seasonally increase wetland areas around these lakes to approximately 34,000 acres, improving the quality of littoral zone habitat. This stage regime allows the lake floodplains to be inundated long enough to meet the restoration goals of increasing the quantity and quality of littoral zone habitat to benefit fish and wildlife.

The project includes structural and non-structural restoration features in both of the river's two subbasins. Features in the Upper Basin provide the necessary storage and regulation schedule modifications to approximate the historical flow characteristics required for river restoration and to increase littoral zone habitat to benefit fish and wildlife. Features in the Lower Basin begin at the outlet of Lake Kissimmee and are intended to restore over 40 miles of river and floodplain ecosystem, including 43 miles of meandering river channel and 29,300 acres of riparian wetlands. The Upper Basin component of the 1996 HWR Project is a critical part of the larger KRR Project, as restoration of the river in the Lower Basin relies upon successful implementation of the HWR Schedule. Both Upper and Lower Basin features must be completed before the HWR Schedule (revised regulation schedule and water control plan) can be implemented to achieve optimal distribution of water throughout the watershed. It is important to note that the full benefits associated with the KRR Project occur as a result of the revised regulation schedule (1996 HWR Project, page 142).

#### **1.4 Land Interest**

The 1990 SFWMD *Restoration Report* recommended two types of land acquisition for the Level II Backfilling Plan: 1) fee title interest in lands defined as "floodplain", and 2) limited flowage easement interest in lands defined as "floodplain periphery". Floodplain lands were those areas where flooding would be expected to be of sufficient frequency and duration that vegetative changes would occur and eventually evolve to closely match the species and patterns of the historic floodplain. The limits of the floodplain were derived from SFWMD's Technical Publication 80-7, *Plant Communities of the Kissimmee River Valley* (September 1980). Floodplain periphery lands were those areas where flooding would be expected to occur infrequently and for such short durations that no significant vegetative changes would be expected to occur. The extent of land acquisition was estimated in SFWMD's *Restoration Report* to be 43,439 acres in the floodplain and 26,022 acres in the floodplain periphery, for a total of 69,461 acres. Of this total, SFWMD

estimated that 53,815 acres were lands for which real estate interests would have to be secured, and 15,649 acres were known public lands where no additional interests and costs were assumed.

However, in determining the extent of lands needed to achieve the restoration objective, this study considered three factors: environmental restoration, flood control operations, and induced flooding.

**Environmental Restoration and Flood Control:** The project purpose is environmental restoration; lands needed to achieve this purpose should be fully available and unconstrained. Therefore, lands for restoration will be acquired in fee to ensure that the purpose can be met over the life of project. The limit of these lands has been defined as the vegetation line established by the SFWMD; somewhat less than the 5-year floodplain. Consequently, acquiring fee to the 5-year flood line will, in addition to providing for environmental restoration, also maintain the current level of protection (*i.e.* thirty percent SPF) through non-structural flood control by ensuring a flood discharge flow-way capacity of 11,000 cubic feet per second (cfs) from the upper chain of lakes.

**Induced Flooding:** Elimination of the capacity of the C-38 to carry in-bank flood flows of up to thirty percent SPF may result in induced flooding. Fringe areas that are currently not at a significant level of flood risk may experience an increase in frequency of inundation with KRR Project implementation. Other areas closer to the river with a comparatively more frequent flood risk may experience flooding of somewhat greater depths for longer durations. The hydraulic and hydrologic data necessary to determine the limits of the historic floodplain were not available when the 1991 KRR Report was written. Studies necessary to obtain this data would have taken about 18 months and approximately \$500,000 in research and modeling costs, in 1992 dollars, with an estimated reliability of less than fifty percent. The estimated value of the flowage easement over 9,143 acres between the 5-year and 100-year limits is \$916,000 (1992 value). Due to the uncertainty of the induced effects and the costs associated with determining these damages, it was determined that the acquisition of a flowage easement up to, substantially, the 100-year floodplain, would be more financially prudent than conducting the analyses required to justify the purchase. The 100-year limit was selected in the 1992 KRR Chief's Report because: (1) there may be a significant induced effect up to the 100-year level, and (2) it is the limit used by the Federal Emergency Management Agency to regulate development outside the floodway. Therefore, the interest in real estate was determined by the Corps to be acquisition in fee up to the 5-year flood for restoration and flood control, and acquisition in standard flowage easement between the 5-year floodplain and, substantially, the 100-year floodplain, for assumed mitigation of induced flooding. Levee easements, channel easements (associated with the levees), and temporary construction easements will also be acquired. As the non-federal sponsor, SFWMD is responsible for all real estate acquisitions required for project implementation.

#### 1.4.1 River Acres

River Acres is a platted subdivision northwest of the City of Okeechobee in Okeechobee County, Florida. The subdivision consists of 135 lots including vacant lots, lots with mobile homes, and

lots with conventional houses. Portions of the River Acres subdivision were constructed on drained floodplains and were identified within the 1991 KRR Report for acquisition of standard flowage easement. Early on, it was well known that property in the River Acres subdivision would be impacted by the project and that the owners would be unwilling sellers. Acquisition of 65 of 135 parcels within the River Acres subdivision likely would have required a condemnation process that would have resulted in additional time and costs for acquisition. Both the 1991 KRR Report (**Section 10.2.2 Relocation Assistance**) and the 1992 KRR Project Chief's Report (**Section 9.8.11 Displacement of People, Businesses and Farms**) direct the Corps to minimize displacement of homeowners during project development and construction. Specifically, the 1992 KRR Chief's Report directed that flood proofing, such as the use of ring levees or modifications to site and structure elevations, should be utilized whenever feasible to limit the possibility of displacement.

In order to achieve KRR Project benefits and minimize the displacement of homeowners, the SFWMD developed an engineering solution that could avoid acquisition of properties within the River Acres subdivision. This engineering analysis was provided to the Corps and was incorporated into a Design Documentation Report, dated January 21, 2009 (**Appendix A**). Maintaining preexisting levels of flood protection (*i.e.* thirty percent SPF) was to be accomplished by construction of a tieback levee on the northwest corner of the subdivision, a levee and seepage canal north of the CSX right-of-way, canal extension and improvements, and a bridge across the new canal extension. As a result of this design refinement, the River Acres subdivision contract scope was modified to provide flood risk management measures that eliminated the need to acquire properties from unwilling sellers and avoid a lengthy condemnation process; refer to the 1991 KRR Report, page 226.

## 1.5 PROJECT NEED OR OPPORTUNITY

The purpose of this EA is to document, and disclose to the public, potential environmental consequences on the human environment related to the decision to provide flood mitigation to the River Acres subdivision in lieu of acquisition of standard flowage easements to maintain preexisting levels of flood protection. This EA discusses the potential environmental consequences of alternatives, including the Preferred Alternative, as described in the 2009 Design Documentation Report (**Appendix A**). The Preferred Alternative has been implemented consistent with the 2009 Design Documentation Report, but the Corps has decided to conduct additional NEPA analysis to ensure public disclosure of the action.

## 1.6 AGENCY GOALS AND OBJECTIVES

The objectives of this document are to evaluate and disclose to the public potential environmental consequences associated with the joint Corps and SFWMD decision to provide flood mitigation to the River Acres subdivision in lieu of standard flowage easement acquisition in order to maintain preexisting levels of flood protection.

## 1.7 RELATED ENVIRONMENTAL DOCUMENTS

The Corps has documented a number of environmental documents relevant to the Preferred Alternative:

- *Environmental Restoration Kissimmee River Final Integrated Feasibility Report and Environmental Impact Statement*, U.S. Army Corps of Engineers, Jacksonville District, December 1991
- *Fish and Wildlife Coordination Act Report, Kissimmee River Restoration Project*, U.S. Fish and Wildlife Service, Vero Beach, Florida, October, 1991
- *Kissimmee River Headwaters Revitalization Project: Final Integrated Project Modification Report and Supplement to the Final Environmental Impact Statement*, U.S. Army Corps of Engineers, Jacksonville District, December 1996
- *Fish and Wildlife Coordination Act Report for the Kissimmee Headwater Lakes Revitalization Project*, U.S. Fish and Wildlife Service, Vero Beach, Florida, June 1996
- *Department of the Army Environmental Assessment and Statement of Findings: Packingham and Buttermilk Sloughs, SAJ-2006-4466 (IP-MFN)*. U.S. Army Corps of Engineers, Jacksonville District, January 23, 2007
- *Kissimmee River Final Water Control Plan*, U.S. Army Corps of Engineers, Jacksonville District, March 2012
- *Kissimmee River Restoration Project General Reevaluation Report: Packingham Slough, Memorandum for the Record on National Environmental Policy Act Compliance* U.S. Army Corps of Engineers, Jacksonville District, March 2016
- *Kissimmee River Restoration Project General Reevaluation Report*, U.S. Army Corps of Engineers, Jacksonville District, May 2015. Note: This document has not yet been approved.

Information contained within the previous National Environmental Policy Act (NEPA) documents listed above, as well as others described later, are incorporated by reference into this EA.

## **1.8 DECISIONS TO BE MADE**

The adoption of the Preferred Alternative is the primary decision that must be made. Please reference **Section 1.5** for agency goals and objectives.

## **1.9 SCOPING AND ISSUES**

Please reference **Appendix B** for pertinent correspondence related to the Preferred Alternative. Please also refer to the 1991 KRR Report for full details on scoping under NEPA and the robust public engagement process related to the KRR Project.

## **1.10 PERMITS, LICENSES, AND ENTITLEMENTS**

The Florida Department of Environmental Protection (FDEP) provided an Environmental Resource Permit (ERP) March 22, 2006. The ERP, File Number 47-0182163-002, constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act. In addition, this permit also constitutes certification of compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341. The ERP was modified twice in 2010 and 2013. The ERP file numbers are identified below:

- Florida Department of Environmental Protection Permit No. 47-0182163-002;
- Florida Department of Environmental Protection Permit No. EM 47-0182163-004;
- Florida Department of Environmental Protection Permit Modification No. 0182163-005.

This activity also requires a proprietary authorization, as the activity is located on sovereign submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund, pursuant to Article X, Section 11 of the Florida Constitution, and Sections 253.002 and 253.77, F.S. The activity is not exempt from the need to obtain a proprietary authorization. The FDEP has the responsibility to review and take final action on this request for proprietary authorization in accordance with Section 18-21.0051 and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C. In addition to the above, this proprietary authorization has been reviewed in accordance with Chapter 253 and Chapter 18-21, Section 62-343.075, F.A.C.

As staff to the Board of Trustees, the FDEP reviewed the activity described above, and determined that the activity is within the boundaries described in Lease No. 4099 to the South Florida Water Management District, to restore the Kissimmee River in cooperation with the Corps. Proprietary Authorization therefore was also included within the 2006 FDEP ERP Permit, File Number: 47-0182163-002.

## **2.0 ALTERNATIVES**

### **2.1 DESCRIPTION OF ALTERNATIVES**

Each of the following alternatives described below in **Sections 2.1.1** through **2.1.4** were considered and evaluated as part of the 1991 KRR Report (Alternative A), the Corps' 2009 Design Documentation Report (Alternative C, **Appendix A**), and within this EA (Alternatives B and D). Two non-structural and two structural alternatives were compared and evaluated with regard to KRR Project purpose, goals, and objectives, as well as language within the 1992 KRR Chief's Report. A brief description of each alternative is provided in the following subsections.

#### **2.1.1 ALTERNATIVE A: NO ACTION ALTERNATIVE**

Evaluation of the No Action Alternative is a requirement of NEPA. The No Action Alternative, Alternative A, is a non-structural alternative. The No Action Alternative is, as defined in the 1991 KRR Report, acquisition of standard flowage easements in the River Acres subdivision.

#### **2.1.2 ALTERNATIVE B: OPERATIONAL MODIFICATIONS**

The C&SF Project was designed to provide flood damage reduction (*i.e.* maintain flows in-bank) for the thirty percent SPF and to safely pass (*i.e.* not exceed the design capacity of levees and/or water control structures) to the SPF. The thirty percent SPF equates to protection against approximately a ten-year flood event. Water levels within the Kissimmee Basin are controlled by a complex system of canals and control structures which are managed by the SFWMD in accordance with regulations prescribed by the Secretary of the Army.

##### **2.1.1 ALTERNATIVE B1: OPERATIONAL MODIFICATIONS**

Alternative B1 is a non-structural alternative and consists of operational modifications of the C&SF Project structures in the Kissimmee chain of lakes, including the Kissimmee headwaters lakes, to regulate flow into the downstream restored KRR floodplain to maintain preexisting levels of flood protection for the River Acres subdivision. In order to reduce discharges coming into the lower Kissimmee Basin, stages would be actively managed higher in the Kissimmee chain of lakes, and at S-65A, allowing storage of higher volumes of water during extreme wet conditions. Limiting discharge during high rainfall events and slowly releasing water to the Lower Basin could reduce stages in and around the River Acres subdivision during extreme wet conditions.

The Corps did not model revised regulation schedules in the Kissimmee chain of lakes as part of this EA. Based upon best professional judgment, Corps' engineers recognized that elevations in the Kissimmee chain of lakes required to allow success of Alternative B1 would be outside the KRR Project authority. In order to provide enough volume of storage to restrict discharges to the Lower Basin and potentially meet existing peak stages adjacent to the River Acres subdivision as experienced during large storm events, additional real estate acquisition would be required in the Kissimmee chain of lakes to legally allow lake stages to be held higher. Therefore, this alternative would require real estate acquisition in the Kissimmee chain of lakes to avoid real estate acquisition at the River Acres subdivision.

##### **2.1.2 ALTERNATIVE B2: OPERATIONAL MODIFICATION WITH STRUCTURAL MODIFICATION**

Alternative B2 includes provisions for modifications to the S-65D structure located at the base of Pool D, along with operational modifications of C&SF Project structures in the Kissimmee chain of lakes, including the Kissimmee headwaters lakes, to regulate flow into the downstream restored KRR floodplain. To maintain preexisting levels of flood protection within the River Acres subdivision and to not increase the risk of overtopping of the S-65D tieback levee from the SPF, the discharge capacity of S-65D would be increased to maintain existing flood stages up to the SPF. Operational and structural modifications would also be made to ensure that existing flood conditions were not increased south of this structure. In addition, operational modifications of C&SF Project structures within the Kissimmee chain of lakes, including the Kissimmee headwaters lakes, would be implemented to better regulate flow into the restored river channel and floodplain, while maintaining preexisting levels of flood protection.

Alternative B2 includes an increase in discharge capacity at the S-65D spillway structures that are located on C-38 just downstream of the River Acres subdivision. The ability to discharge flows from these spillways is the most important factor affecting peak flood stages in C-38 adjacent to the River Acres subdivision. Due to the removal of similar upstream spillways as part of the KRR Project and the increase in outflow capacity from Lake Kissimmee, higher peak flows are expected at S-65D under large flood events (100-yr and greater) than in the previous condition. In order to maintain the existing levels of flood protection at S-65D and the River Acres subdivision, the total discharge capacity at S-65D would need to be increased from the current 21,300 cfs up to 31,000 cfs. Likewise, the downstream spillway, S-65E, that receives flows from S-65D and from local inflows to Pool E, would require an increase in discharge capacity from 24,000 cfs up to 34,000 cfs.

### **2.1.3 ALTERNATIVE C: PASSIVE STRUCTURAL MODIFICATIONS**

Alternative C is a passive structural alternative. Under Alternative C, flood mitigation would be performed in lieu of acquisition of standard flowage easements in the River Acres subdivision to maintain preexisting levels of flood protection in this community with implementation of the 1991 KRR Project. Flood mitigation measures under this alternative include construction of a new levee and modification of an existing canal to collect seepage, which will run parallel to the north side of the CSX Railroad. A new tieback levee at the northwest end of the subdivision will be constructed to replace the entrance of the existing man-made canal with a gated culvert. The existing canal on the south side of the CSX Railroad levee will be widened, deepened, extended, and connected to Pool E, downstream of Structure S-65D on the Kissimmee River. Finally, a bridge will be constructed over the extended canal to reconnect the roads, and a levee and a maintenance access road connecting the existing S-65D East Tie-back Levee to high ground along the C-38 will be constructed. Please refer to **Appendix A** for complete details regarding this alternative.

### **2.1.4 ALTERNATIVE D: ACTIVE STRUCTURAL MODIFICATIONS**

Under Alternative D, flood mitigation would be accomplished through construction of a perimeter levee and pump station to ensure interior drainage of the River Acres subdivision to maintain preexisting levels of flood protection. Alternative D is considered an active structural alternative due to the addition of a pump station as opposed to the more passive canal modifications included

under Alternative C. The pump station is included to ensure seepage collection and removal of on-site drainage from direct rainfall to ensure preexisting levels of flood protection within the River Acres subdivision.

Under Alternative D, flood mitigation would be accomplished through construction of a perimeter levee, pumping station and detention area to ensure interior drainage of the River Acres subdivision to maintain existing levels of flood protection. The plan would need to include the same tieback levee feature as Alternative C in order to prevent C-38 stages from entering the existing canal and back flooding the subdivision. However, since the existing canal currently used for navigation access to the C-38 would terminate at the tieback levee, navigation access would need to be provided through either a boat lift across the tieback levee or the purchase of one of the residential lots abutting C-38 and the construction of a neighborhood access boat ramp into C-38.

The interior pumping station would be constructed to pump from the existing canal into a detention area, with the detention area outlet gravity draining to C-38. The pumping station and particularly the detention area would require purchase of a significant amount of real estate within the residential area. The pump and detention area would be sized for runoff from the 25-year/3-day storm event and peak discharge from the detention area would be limited to the Kissimmee basin allowable rate of 31.1 cfs/square mile of contributing drainage area.

## **2.2 ISSUES AND BASIS FOR CHOICE**

The 1991 KRR Report identified land interests necessary to achieve the project's restoration objectives. The extent of land needed to achieve the identified objectives was based upon three factors: environmental restoration, flood control operations, and induced flooding. From these considerations, it was determined that in order to achieve full project benefits, acquisition in fee up to the 5-year flood for restoration and flood control, and acquisition in standard flowage easements between the 5-year floodplain and, substantially, the 100-year floodplain for assumed mitigation of induced flooding. Since the River Acres subdivision lies within the area specified for standard flowage easement acquisition, this subdivision was slated to be acquired for assumed mitigation of induced flooding. However, early on it was apparent that homeowners within the River Acres subdivision were unwilling sellers. Thus to avoid a lengthy and costly condemnation process and to meet the spirit of the language included in the 1991 KRR Report and 1992 KRR Chief's Report, Alternative A, the No Action Alternative, is not the preferred alternative. Alternative A is not technically feasible due to lack of willing sellers within the River Acres subdivision and the increased costs associated with condemnation.

Alternative B1, Operational Modifications, includes changes in C&SF Project structures within the Kissimmee River and Kissimmee chain of lakes to balance flood mitigation and restoration benefits. Based on hydrologic modeling conducted as part of the 1996 HWR Report and the subsequent Kissimmee Basin Modified Water Control Plan study, it was determined that operational changes alone would not be sufficient to ensure that preexisting levels of flood protection for the River Acres subdivision would be accomplished. In order to provide enough volume of storage to restrict discharges to the Lower Basin and potentially meet existing peak stages adjacent to the River Acres subdivision as experienced during large storm events, additional real estate acquisition would be required in the Kissimmee chain of lakes to legally allow lake

stages to be held higher. Therefore, this alternative would require real estate acquisition in the Kissimmee chain of lakes to avoid real estate acquisition at the River Acres subdivision. Additionally, by limiting high stage events in the Kissimmee River floodplain, the restoration goals would not be fully met. Alternative B1, therefore, does not meet the 1991 KRR Project goals of environmental restoration and maintenance of preexisting level of flood protection. Alternative B1 is not technically feasible, and thus, not considered a viable alternative.

Alternative B2, Operational Modification with Structural Modification, includes optimization of operations in the Kissimmee River and Kissimmee chain of lakes within existing Federal real estate interest to limit discharges to the Lower Basin during infrequent high rainfall events. As shown by modeling conducted during the 1996 HWR Report, the stages experienced in the River Acres subdivision area under flood events; 5-year and 100-year, are higher than existing due to the upstream backfill. In order to maintain existing stages within the River Acres subdivision, the capacity at S-65D would have to be increased overall, substantially more than is required to maintain thirty percent SPF stages. Limiting stages in the lower portion of Pool D during high flow events would not allow for full restoration benefits in this area as envisioned in the authorized project in the 1992 KRR Chief's Report. In addition, increasing discharges significantly at S-65D would result in higher than design discharges into the downstream Pool E, causing the need for operational changes at the S-65E structure and/or potentially additional real estate acquisition in Pool E or structural modifications to the S-65E structure. Based on cost comparison with other technically feasible alternatives, the spillway capacity at S-65D, and potentially S-65E, required to maintain existing 5-year and 100-year flood stages would come at a higher cost and not meet KRR Project restoration objectives.

Alternative C, Passive Structural Modifications, best meets the intent of the 1991 KRR Project restoration objectives while maintaining preexisting levels of flood protection in lieu of acquisition of the River Acres subdivision. The 1992 KRR Chief's Report (**Section 9.8.11 Displacement of People, Businesses and Farms**) directed flood proofing, such as the use of ring levees or modifications to site and structure elevations, to be utilized whenever feasible to limit the possibility of displacement. Although similar in structural modifications to Alternative D, Alternative C is a less costly alternative due to its more passive nature and lower long-term operation and maintenance costs. Alternative C best meets the objectives of the KRR Project and the intent of the language within the KRR Chief's Report by allowing restoration of the Kissimmee River Floodplain without displacing property owners through condemnation. In addition, it is a less costly alternative than an active structural modification (Alternative D) that would accrue future operations and maintenance costs.

Alternative D, Active Structural Modifications, is also technically feasible and meets the intent of the 1991 KRR Project restoration objectives while maintaining preexisting levels of flood protection in lieu of acquisition of the River Acres subdivision. However, due to the inclusion of the pump station, Alternative D is more costly to construct and maintain than Alternative C. In addition, since a perimeter levee would be installed around the River Acres subdivision, boat access to the Kissimmee River would be impeded, necessitating a boat lock or boat lift in order to retain the River Acres subdivision's current boat access.

### 2.3 ALTERNATIVES ELIMINATED FROM DETAILED EVALUATION

Alternatives B1 and B2, Operational Modifications, were eliminated from detailed evaluation due to their high costs and the facts that they did not meet KRR Project restoration goals and may actually contribute to an increased risk of flooding within the River Acres subdivision. In the 1992 WRDA, Congress jointly authorized the ecosystem restoration of the Kissimmee River and the Kissimmee River Headwaters Revitalization Project. Modifications in the Kissimmee Upper Basin were deemed necessary for the successful restoration of the Lower Basin ecosystem. The 1992 WRDA also stipulates that construction of Kissimmee River Headwaters Revitalization Project will be based on the recommendations provided in the Project Modification Report and Supplemental Environmental Impact Statement (*i.e.* 1996 HWR Report).

Alternative D, Active Structural Modifications, was also eliminated from detailed evaluation based upon several factors including construction, operation and maintenance costs, and possible impacts to recreational boat access. Although Alternative D would allow restoration benefits associated with implementation of the KRR Project and maintain preexisting levels of flood protection in the River Acres subdivision, it is the more costly alternative due to costs associated with construction, and long term operations and maintenance of the pump station. Alternative C, Passive Structural Modifications, meets the same objectives of allowing restoration benefits while maintaining preexisting levels of flood protection, but at a lower cost than Alternative D.

For the reasons outlined above, only Alternative A (No Action Alternative) and Alternative C, Passive Structural Modifications, were retained for detailed evaluation. An evaluation and comparison of these two alternatives is located within **Section 4** of this EA.

### 2.4 PREFERRED ALTERNATIVE

Based upon the 2009 Design Documentation Report provided in **Appendix A**, as well as comparative evaluations conducted within this EA, Alternative C is the Preferred Alternative. This alternative is expected to best meet the KRR Project goals identified in **Section 1.3** and meets the intent of the language in the 1992 KRR Chief's Report to minimize displacement of homeowners. It is important to note that the engineering solution in lieu of acquisition of the River Acres subdivision, along with other KRR Project flood proofing measures, have contributed to an overall project savings (USACE 2015).

### 3.0 AFFECTED ENVIRONMENT

#### 3.1 GENERAL ENVIRONMENTAL SETTING

Section 3.0 of this EA will solely focus on existing conditions within the River Acres subdivision. A complete description of the affected environment with respect to the entire KRR Project Area may be found in the 1991 KRR Report.

The River Acres subdivision is a platted subdivision located in Okeechobee County (**Figure 3-1**). The subdivision consists of 135 lots, some vacant, some with mobile homes, and some with conventional houses. A grass runway, operated by River Acres residents, borders the rear property line of several interior lots, some of which have airplane hangars. In addition, there is also a common area and a boat ramp with access to the Kissimmee River. The majority of the lots have other structural improvements, such as car ports, wood decks, storage sheds, and other nonresidential outbuildings. In addition, some of the lots that border either the existing interior canal or the C-38 canal have docks. The existing interior canal is within the SFWMD right-of-way. The subdivision uses private wells and septic tanks for its water and sewer needs. (SFWMD 2001).



**Figure 3.1: RIVER ACRES (GOOGLE EARTH – JANUARY 22, 2011)**

The original subdivision plat consisted of lots 1-82 located on the western side of the subdivision, adjacent to the Kissimmee River. The eastern part of the subdivision adjacent to Lofton Road is

platted as River Acres Addition No. 1 and consists of lots 1-53. Approximately 101 lots lie within the 100-year floodplain and will be impacted to various degrees by KRR Project implementation.

### 3.2 VEGETATIVE COMMUNITIES

Historically, habitat types found within the general area included uplands, basin swamp, prairie hammock, wet flatwoods, mesic flatwoods, wet prairie, scrubby flatwoods, and floodplain marsh. The general area immediately surrounding the project area is urban with many agricultural fields. Currently, areas east and west of the project area have been subjected to residential and urban development. The project area itself consists of highly disturbed habitat. There are a few cabbage palm trees and oak trees within the subdivision, but otherwise very little native vegetation is found within the area. The ground is sandy and partially graveled with some grassy areas.

### 3.3 FISH AND WILDLIFE RESOURCES

Wildlife in the area consists of deer, small mammals, alligators and small reptiles, wading birds and ducks. Coot, Florida ducks, blue-winged teal, and ring-necked ducks constitute the bulk of the basin's waterfowl.

Prior to channelization, over 39 species of fish could be found in the Kissimmee River. However, due to channelization, low-and no-flow regimes in the C-38 Canal, and remnant river channels, chronically low dissolved oxygen levels resulted and sport fish species like largemouth bass were being replaced by species tolerant of low dissolved oxygen regimes, such as Florida gar and bowfin. With Kissimmee River restoration, it is anticipated that sport fish will once again thrive in the restored portions of the river channel.

### 3.4 THREATENED AND ENDANGERED SPECIES

Federally listed species that could potentially be in the project area include the 15 species listed in **TABLE 3-1**.

**TABLE 3-1: FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA**

Common Name	Scientific Name	Status
<b>Birds</b>		
Audubon's crested caracara *	<i>Polyborus plancus audubonii</i>	T
Everglade snail kite *	<i>Rostrhamus sociabilis plumbeus</i>	E
Florida grasshopper sparrow	<i>Ammodramus savannarum floridanus</i>	E
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	T
Ivory-billed woodpecker	<i>Campephilus principalis</i>	E
Red-cockaded woodpecker	<i>Picoides borealis</i>	E
Wood stork *	<i>Mycteria americana</i>	T
<b>Mammals</b>		

Florida manatee	<i>Trichechus manatus</i>	E
Florida panther	<i>Puma concolor coryi</i>	E
Florida bonneted bat	<i>Eumops floridanus</i>	E
<b>Reptiles</b>		
Bluetail mole skink	<i>Eumeces egregious</i>	T
Eastern indigo snake *	<i>Drymarchon corais couperi</i>	T
Sand skink	<i>Neoseps reynoldsi</i>	T
<b>Plants</b>		
Carter's mustard	<i>Warea carteri</i>	E
Okeechobee gourd	<i>Cucurbita okeechobeensis</i> ssp. <i>okeechobeensis</i>	E

**E=Endangered; T=Threatened; SC=Species of Special Concern**

**\* Species with a higher probability to be present within the project area**

The project area is a highly disturbed area and has not had any documented nesting by listed species. Though caracaras are known to nest in cabbage palms, lack of foraging habitat within the immediate area would make nesting highly unlikely. Though there is a potential for the species listed in **Table 3-1** to be within the project area, it is highly unlikely due to the unnatural disturbed habitat. In addition, the presence of humans, vehicular, and air traffic reduces the potential for the presence of the species listed above.

### 3.5 NATIVE AMERICANS

No portion of the project area exists within, or adjacent to, known Native American-owned lands, reservation lands, or Traditional Cultural Properties. However, Native American groups have lived throughout the region in the past and their descendants continue to live within the State of Florida and throughout the United States. There are two federally recognized tribes (Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida) that are located within the region of the project area. Both tribes maintain a strong connection to the project area through continued use and regard the indigenous populations of Florida as their ancestors. Currently no portion of the project exists within, or adjacent to, any known Native American properties.

### 3.6 CULTURAL RESOURCES

The project area is comprised of lands that were formerly natural, river floodplain prior to re-channeling of the Kissimmee River and that constitute low probability locations for archaeological resources. Historic aerials and LiDAR data confirm the floodplain nature of the project location, and confirm the ground alteration that has occurred in the project area since creation of the C-38 canal. The existing residential development footprint, and any higher lands within the project area, are comprised of dredge spoil from the creation of the C-38 canal and from excavation of flood control canals that have framed the project area since the 1970s. One cultural resource, the CSX Railroad, is recorded as part of Resource Group 8OB0271 within the project area. The Florida State Historic Preservation Officer (SHPO) found that this state-wide resource group appears to meet the criteria for National Register of Historic Places (NRHP) listing in 2010. The segment of rail line existing within the project area, however, is not eligible for listing in the NRHP as an individual resource.

No known cultural resource sites or historical structures eligible for listing on the NRHP are located within the project area.

### 3.7 AIR QUALITY

The Clean Air Act requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS 40 CFR part 50) for six common air pollutants (also known as “criteria air pollutants”). Air monitoring reports are also prepared annually by FDEP to inform the public of the air pollution levels throughout the State of Florida. All areas within the state are designated with respect to each of the criteria air pollutants carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particle pollution (10 microns or less in diameter (PM<sub>10</sub>), and 2.5 microns or less in diameter (PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>) as attainment (*i.e.* in compliance with the standards), non-attainment (*i.e.* not in compliance with the standards), or unclassifiable (*i.e.* insufficient data to classify). Each State has the primary responsibility for assuring air quality within the entire geographic area comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained within each air quality control region in such State.

Air quality attainment areas can be further classified as maintenance areas. Maintenance areas are areas previously classified as non-attainment which have successfully reduced air pollution concentrations to below the standard. Central Florida, including Okeechobee and Glades counties within the airshed, continues to be classified by the U.S. Environmental Protection Agency (EPA) as being in attainment for all criteria air pollutants.

### 3.8 WATER QUALITY

Section 303(d) of the federal Clean Water Act requires states to submit to EPA a list of surface waters that do not meet applicable water quality standards (impaired waters) and establish a Total Maximum Daily Load (TMDL) for each pollutant causing the impairment of the listed waters on a schedule. The FDEP has developed such lists, commonly referred to as 303(d) lists, since 1992. The list of impaired waters in each basin, referred to as the Verified List, is also required by the Florida Water Restoration Act (Subsection 403.067[4], Florida Statutes [F.S.]), and the state’s 303(d) list is amended annually to include basin updates.

The FDEP completed a TMDL to establish a target phosphorus load to Lake Okeechobee to achieve an in-lake target phosphorus concentration of 40 parts per billion (ppb) in the pelagic zone of the lake. The state of Florida established this restoration target intended to support a healthy lake system, restore the designated uses of Lake Okeechobee and allow the lake to meet the applicable water quality standards. While good quality water enters C-38 from Lake Kissimmee, progressive water quality degradation in C-38, resulting from nutrient loading from local inflows, becomes apparent at the downstream end of the canal. Lower Basin water quality concerns initially focused on the level of nutrients within the channelized Kissimmee River following construction of C-38, and the effect of possible nutrient-laden flow being delivered to Lake Okeechobee. The highly eutrophic condition of Lake Okeechobee is expected to persist for the foreseeable future due to past and future nutrient loading. Another water quality concern is the low dissolved oxygen

levels found within both C-38 and remaining Kissimmee River oxbows. Monitoring since completion of projects at the Kissimmee River headwaters has documented promising increases in dissolved oxygen levels (essential for aquatic life), reductions in river channel floating plant cover and accumulated sediments on the river bottom, recovery of wetlands, and increased populations of waterfowl, wading birds, and bass and other sunfishes. While the canal delivers a significant phosphorous load, ortho and total phosphorous concentrations are among the lowest of any inflow to Lake Okeechobee.

Following the adoption of the TMDL by rule, the FDEP has been working with stakeholders to cooperatively develop plans to restore the waterbody. This will be accomplished by creating Basin Management Action Plans (BMAP). BMAPs are the primary mechanism through which TMDLs are implemented in Florida (see Subsection 403.067[7], F.S.). The FDEP has been working with federal agencies, water management districts, local governments, as well as regional industries, such as agricultural and farming interests, in order to improve water quality. The Corps and SFWMD have been extensively planning and constructing restoration projects within the Kissimmee River Basin since 1999. Additionally, best management practices, both structural and non-structural, such as public education and outreach, are expected also to address the source of local water quality concerns and improve basin water quality.

### **3.9 HAZARDOUS, TOXIC, OR RADIOACTIVE WASTES**

A search of the FDEP petroleum spill and storage sites database identified no known petroleum spill or storage sites. In addition, a search of FDEP's databases of contamination sites and petroleum storage facilities identified no known contamination sites or petroleum storage facilities.

### **3.10 NOISE**

Noise levels are associated with surrounding land use. Within the major natural areas of Central Florida, external sources of noise are limited and of low occurrence. Existing sources of noise are limited to vehicular traffic travelling on roads adjacent to, and cutting through, the project area. Other sources of noise which may occur within these natural areas include air boats, off road vehicles, swamp buggies, motor boats, and air traffic. A grass runway, operated by River Acres residents, borders the rear property line of several interior lots, some of which have airplane hangars. Sources of noise in rural areas include noise associated with agricultural production such as the processing and transportation of produce. Within the rural municipalities and urban areas, sound levels would be expected to be of greater intensity, frequency, and duration. Noise associated with transportation arteries, such as highways, railroads, primary and secondary roads, airports, operations at commercial and industrial facilities etc., inherent in areas of higher population would be significant and probably override those sounds associated with natural emissions.

### **3.11 AESTHETICS**

The visual characteristics of Central Florida can be described according to the three dominant land use categories: natural areas, agricultural lands, and urban areas. The natural areas consist of a variety of upland and wetland ecosystems, including lakes, ponds, vast expanses of marsh, and wet prairie, with varying vegetative components. Uplands are often dominated by pine, although

other subtropical and tropical hardwoods do occur. Overall, the land is extremely flat, with few natural topographic features such as hills or other undulations. Much of the visible topographic features within the natural areas are man-made. Generally, urban development is concentrated along the Upper Kissimmee chain of lakes and Orlando. Development is typically immediately adjacent to, or nearby, protected natural areas.

### **3.12 RECREATION**

The River Acres subdivision contains a common area and boat ramp with access to the Kissimmee River. In addition, some of the lots that border the existing interior canal or the C-38 Canal have docks. Hunting and fishing are popular recreational sports along the Kissimmee River, within the Kissimmee chain of lakes, and Lake Okeechobee. Additional lodging at hotel establishments and fish camps surrounding Lake Okeechobee is also available.

## **4.0 ENVIRONMENTAL EFFECTS**

### **4.1 GENERAL ENVIRONMENTAL EFFECTS**

The following includes anticipated changes to the existing environment including direct, indirect, and cumulative effects. Environmental effects are expected to be spatially limited and low to moderate in magnitude. Potential environmental effects of the No Action Alternative, Alternative A, are fully documented in the 1991 KRR Report and are incorporated hereto by reference. In addition, environmental effects of Alternative C, the Preferred Alternative, are fully documented within the sections below.

### **4.2 VEGETATIVE COMMUNITIES**

#### **4.2.1 Alternative A: No Action Alternative**

The implementation of Alternative A, the No Action Alternative, would maintain the current vegetation within the project area. Acquisition of a standard flowage easement within the River Acres subdivision would not result in significant improvements or shifts to native floodplain vegetation. However, flooding of the historic floodplain in other portions of the Kissimmee River will restore native floodplain vegetation and improve ecological conditions for fish and wildlife within the restored river channel.

#### **4.2.2 Alternative C: Passive Structural Alternative**

Implementation of Alternative C, the Preferred Alternative, is expected to result in approximately 37 acres of wetland impact as a result of construction related to the new seepage levee, tieback levee, excavation of the existing canal, and the extension of the canal through the River Acres subdivision. Wetland impacts will be offset by the restoration of oxbows and restored wetland floodplain communities in other portions of the restored river channel associated with implementation of the KRR Project. The KRR Project is anticipated to significantly improve approximately 63,000 acres of wetlands within the Kissimmee River watershed.

### **4.3 FISH AND WILDLIFE RESOURCES**

#### **4.3.1 Alternative A: No Action Alternative**

The implementation of Alternative A, the No Action Alternative, would maintain the current conditions for fish and wildlife resources within the project area. Acquisition of a standard flowage easement within the River Acres subdivision would not result in significant improvements to fish and wildlife resources within the subdivision itself. However, flooding of the historic floodplain in other portions of the Kissimmee River will improve ecological conditions for fish and wildlife within the restored river channel.

#### **4.3.2 Alternative C: Passive Structural Alternative**

The implementation of Alternative C, the Preferred Alternative, would maintain the current conditions for fish and wildlife resources within the project area and allow the continuation of adverse effects on vegetative communities upon which fish and wildlife resources rely. However, the adverse effects within this stretch of the Kissimmee River will be offset by the KRR Project in other portions of the restored river channel and associated floodplain.

## 4.4 THREATENED AND ENDANGERED SPECIES

### 4.4.1 Alternative A: No Action Alternative

Implementation of Alternative A, the No Action Alternative, would maintain the current conditions for threatened and endangered species within the River Acres subdivision. As stated in Section 3.0, due to the disturbed native habitat and the presence of humans, including pedestrian, boat, vehicular, and air traffic, there is little probability that threatened and endangered species live or thrive within the project area.

### 4.4.2 Alternative C: Passive Structural Alternative

Since Alternative C, the Preferred Alternative, consists of flood mitigation in lieu of acquisition, the River Acres subdivision would remain largely unchanged from its current condition. Implementation of this alternative will have no effect on threatened and endangered species within the River Acres subdivision since the project area provides little suitable habitat. In addition, as described above in Section 4.4.1, it is highly unlikely that threatened or endangered species exist as permanent or transient residents due to the disturbed native habitat and presence of humans including pedestrian, boat, vehicular, and air traffic.

**TABLE 4-1: FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA AND SPECIES EFFECT DETERMINATION**

Common Name	Scientific Name	Status	Species Effect Determination
<b>Birds</b>			
Audubon's crested caracara *	<i>Polyborus plancus audubonii</i>	T	No effect
Everglade snail kite *	<i>Rostrhamus sociabilis plumbeus</i>	E	No effect
Florida grasshopper sparrow	<i>Ammodramus savannarum floridanus</i>	E	No effect
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	T	No effect
Ivory-billed woodpecker	<i>Campephilus principalis</i>	E	No effect
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	No effect
Wood stork *	<i>Mycteria americana</i>	T	No effect
<b>Mammals</b>			
Florida manatee	<i>Trichechus manatus</i>	E	No effect
Florida panther	<i>Puma concolor coryi</i>	E	No effect
Florida bonneted bat	<i>Eumops floridanus</i>	E	No effect
<b>Reptiles</b>			
Bluetail mole skink	<i>Eumeces egregious</i>	T	No effect
Eastern indigo snake *	<i>Drymarchon corais couperi</i>	T	No effect

Sand skink	<i>Neoseps reynoldsi</i>	T	No effect
<b>Plants</b>			
Carter's mustard	<i>Warea carteri</i>	E	No effect
Okeechobee gourd	<i>Cucurbita okeechobeensis</i> ssp. <i>Okeechobeensis</i>	E	No effect

#### 4.5 NATIVE AMERICANS

As stated in Section 3.5, no portion of the project exists within or adjacent to any known Native American properties. Therefore, no impacts to Native Americans or tribal lands are anticipated with implementation of either the No Action Alternative or the Preferred Alternative (Alternative C).

#### 4.6 CULTURAL RESOURCES

##### 4.6.1 Alternative A: No Action Alternative

As there are no known cultural resource sites or historic structures within the project area, none would be affected by implementation of Alternative A, the No Action Alternative.

##### 4.6.2 Alternative C: Passive Structural Alternative

Due to the original floodplain nature of this property, and to the previously disturbed footprint in which project activities occur, the Corps has determined that Alternative C, the Preferred Alternative will have no effect on known cultural resource sites or historic structures within the project area. The SHPO concurred with the Corps' finding of no effect in a letter dated July 13, 2009 (DHR Project 2009-3432 letter). Additionally, because project activities adjacent to the CSX Railroad, recorded as Resource Group 8OB0271 on the Florida Master Site File, take place in previously excavated canals, but not within the railroad right-of-way, the Corps has determined that the project has no effect on this resource. If historic or archaeological artifacts such as, but not limited to, Indian canoes, arrow heads, pottery, or physical remains are discovered at any time on the project site, the Corps shall immediately stop all activities which disturb the soil and notify the Department and the State Historic Preservation Officer.

#### 4.7 AIR QUALITY

##### 4.7.1 Alternative A: No Action Alternative

Air quality conditions within the project area are in compliance under the No Action Alternative.

##### 4.7.2 Alternative C: Passive Structural Alternative

Air quality within the project area would not be expected to change from current conditions with implementation of Alternative C. Fugitive dust from vehicular traffic, earth moving, and construction activities will be unavoidable, but temporary and insignificant.

## **4.8 WATER QUALITY**

### **4.8.1 Alternative A: No Action Alternative**

Under Alternative A, the No Action Alternative, it is anticipated that seasonal inundation of the floodplain would provide some improvements to water quality through uptake of nutrients by floodplain plant communities. However, since the project area consists of a residential subdivision, there is an increased potential for nutrient enrichment due to use of lawn fertilizers by homeowners.

### **4.8.2 Alternative C: Passive Structural Alternative**

Under Alternative C, the Preferred Alternative, turbidity will be temporarily elevated during construction, but will return to natural levels upon project completion. Effective means of turbidity control, such as, but not limited to, turbidity curtains, shall be employed during all operations that may create turbidity so that it shall not exceed 29 nephelometric turbidity units above background.

## **4.9 HAZARDOUS, TOXIC, OR RADIOACTIVE WASTES (HTRW)**

### **4.9.1 Alternative A: No Action Alternative**

Implementation of the No Action Alternative, Alternative A, would not result in the discovery of HTRW since there is no excavation or other construction activities being considered. There is a very low risk for increased mobilization of existing HTRW where it might exist within the study area. However, since the project area consists of a residential subdivision, there is an increased potential for potential hazardous or toxic chemicals due to pesticide use by homeowners.

### **4.9.2 Alternative C: Passive Structural Alternative**

Due to the need for excavation, Alternative C, the Preferred Alternative, could potentially result in the discovery of HTRW. The project has a very low risk for increased mobilization of existing HTRW where it might exist within the study area.

## **4.10 NOISE**

### **4.10.1 Alternative A: No Action Alternative**

Noise levels within the project area would not be expected to change from current conditions with implementation of Alternative A, the No Action Alternative.

### **4.10.2 Alternative C: Passive Structural Alternative**

Under Alternative C, the Preferred Alternative, temporary increases in noise levels caused by engines of earth-moving machinery would be expected during construction activities; however, this would be limited to the immediate area of construction. Noise levels are not expected to cause negative effects to human health. Implementation of Alternative C, the Preferred Alternative, would not result in significant, permanent impacts on noise levels within the project area.

## 4.11 AESTHETICS

### 4.11.1 Alternative A: No Action Alternative

Implementation of Alternative A, the No Action Alternative, would not alter aesthetics and would remain consistent with the existing condition.

### 4.11.2 Alternative C: Passive Structural Alternative

Alternative C, the Preferred Alternative, includes permanent structures, or structural modifications, to existing C&SF Project features. As such, the existing landscape profile would be altered. Construction of the seepage levee, tieback levee, and River Acres levee have the potential to adversely affect aesthetics within the River Acres subdivision, specifically, near lots 1-8. In addition, construction of a new shell rock road that will tie onto N.W. 80<sup>th</sup> Drive, as well as the roadway at N.W. 83<sup>rd</sup> Terrace, would also affect existing aesthetics within the River Acres subdivision through impairments to the view shed. However, it is anticipated that the ecological benefits associated with the KRR Project would assist to offset those impacts.

## 4.12 RECREATION

### 4.12.1 Alternative A: No Action Alternative

Implementation of Alternative A, the No Action Alternative, would not result in significant impacts to recreation. Acquisition of the River Acres subdivision in standard flowage easement would not affect the existing boat ramp, private docks, or recreational opportunities available to River Acres subdivision residents.

### 4.12.2 Alternative C: Passive Structural Alternative

Implementation of Alternative C, the Preferred Alternative, would not adversely affect recreation within the River Acres subdivision. Modifications to the River Acres Canal will allow the residents' access to the Kissimmee River downstream of Structure S-65D. Although boat access, once implemented, would place recreational boaters in Pool E as opposed to Pool D of the Kissimmee River, this is not considered as adversely affecting recreational opportunities.

## 4.13 CUMULATIVE EFFECTS

Cumulative effects are defined in 40 CFR 1508.7 as those effects that result 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 person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. The following summarizes past, present, and projected Corps efforts that cumulatively affect the regional environment of South Florida. **TABLE 4-2:** shows the net cumulative effects of the various resources which are directly or indirectly impacted.

The Kissimmee River Basin is the headwaters origin of the unique and complex regional ecosystem of central and southern Florida that extends from the Kissimmee through Lake Okeechobee and culminates in the Everglades at the southern tip of the State. The Kissimmee River Basin is a critical link in that overall system, providing both hydrological and ecological inputs. Restoration of the Kissimmee River Basin will ensure that the larger system can function

in a more natural manner, reflecting its historic values. The beneficial environmental effects of restoration will make important contributions to many significant resources which require cumulative efforts to preserve their values, including:

- Restoration of Atlantic flyway habitat of critical concern as recognized by the international North American Waterfowl Management Program.
- Improved quality of Kissimmee River waters will benefit the water quality of Lake Okeechobee.
- Increased wading bird populations will assist in wading bird recovery in the southeast landscape.

Restoration of the Kissimmee River wetlands also will make contributions to both the State's environmental protection and conservation objectives, such as the *Save Our River's Program*, as well as National environmental goals, such as the long-term goal to increase the quality and quantity of the Nation's wetlands, as established in the *Section 307 of the Water Resources Development Act of 1990*.

**TABLE 4-2: SUMMARY OF CUMULATIVE EFFECTS**

<b>Hydrology</b>	
<b>Past Actions</b>	Flood and water control projects have greatly altered the natural hydrology. Channelization of the Kissimmee River and construction of water control structures within the Kissimmee headwaters lakes and within the upper Kissimmee chain of lakes significantly affected hydrology. Residential, agricultural and urban development have also effected hydrology due to increased water supply demands and need for structural modifications to ensure flood damage mitigation to developed areas.
<b>Present Actions</b>	Federal and State agencies are coordinating on and implementing projects to restore more natural hydrologic conditions in the upper and lower Kissimmee Basin. This includes both structural and operational modifications to improve hydrology.
<b>Preferred Alternative</b>	Flood mitigation of the River Acres subdivision in lieu of acquisition will have no effect on existing hydrology.
<b>Future Actions</b>	Under the KRR Project, significant beneficial hydrologic effects are anticipated through restoration of the historic river channel, recreation of oxbows, and rehydration of historic floodplain habitats. Improved hydrologic conditions will result from increasing depths and extending hydroperiods. Additional changes to lake regulation schedules propose to restore hydrology to more natural conditions.
<b>Cumulative Effect</b>	Although it is unlikely that natural hydrologic conditions would be fully restored to pre-drainage conditions, improved hydrology would occur. The KRR Project is expected to significantly improve the quantity, quality, timing, and distribution of freshwater flow and rehydration of historic oxbows and the Kissimmee River floodplain.
<b>Threatened and Endangered Species</b>	
<b>Past Actions</b>	Water management practices and urbanization have resulted in the degradation of existing habitat function and direct habitat loss leading to negative population trends of threatened and endangered species.
<b>Present Actions</b>	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area. Implementation of the KRR Project is anticipated to significantly improve conditions for threatened and endangered species within the Upper and Lower Kissimmee basins.

<b>Preferred Alternative</b>	The Preferred Alternative would have no effect on threatened and endangered species as compared with the existing condition.
<b>Future Actions</b>	Ongoing projects would be implemented to maintain threatened and endangered species within the project area. Restoration of the historic river channel, recreation of oxbows, and rehydration of historic floodplain habitats are anticipated to provide substantial benefits to wetland-dependent threatened and endangered species. Conversion of range land to river floodplain habitat is anticipated to adversely affect Audubon's crested caracara, however, due to substantial suitable habitat available elsewhere within the vicinity of the Upper and Lower basins where the conversion will occur is anticipated to minimize the adverse effects.
<b>Cumulative Effect</b>	Habitat improvement, monitoring, and management of threatened and endangered species is anticipated to allow populations to be maintained. Improvement of degraded populations is expected to be facilitated by the restoration and enhancement of suitable habitat through efforts to restore more natural hydrologic conditions within the project area.

<b>Fish and Wildlife Resources</b>	
<b>Past Actions</b>	Water management practices have resulted in aquatic vegetation community changes and the resulting disruption of aquatic productivity and function that has had repercussions throughout the food web, including effects on wading birds, large predatory fishes, reptiles, and mammals.
<b>Present Actions</b>	Ongoing efforts have been made by Federal and state agencies to implement projects to improve hydrology within the project area to restore habitat conditions for fish and wildlife resources. It is anticipated that under the KRR Project that increases in forage prey availability resulting from improved hydroperiods would in turn provide beneficial effects for amphibian, reptile, small mammal, and wading bird species within the Upper and Lower Kissimmee basins.
<b>Preferred Alternative</b>	The Preferred Alternative would maintain the current conditions for fish and wildlife resources within the project area and allow the continuation of adverse effects on vegetative communities upon which fish and wildlife resources rely.
<b>Future Actions</b>	Some level of improvement to fish and wildlife resources is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality, and distribution of freshwater flow to the study area. Hydrologic restoration planned as part of the KRR Project and changes to regulation schedule in the Kissimmee headwaters lakes and Upper Kissimmee chain of lakes would further improve fish and wildlife habitat. Rehydration within previously dry areas of the historic floodplain would increase the spatial extent of suitable habitat for several fish and wildlife resources. Increases in forage prey availability would directly benefit amphibian, reptile, small mammal, and wading bird species. Nesting and foraging activities of resident bird species are anticipated to be significantly improved.
<b>Cumulative Effect</b>	Habitat improvement efforts are anticipated to benefit fish and wildlife resources.
<b>Vegetation and Wetlands</b>	
<b>Past Actions</b>	Drainage of Florida's interior wetlands, conversion of wetlands to agriculture, and urban development has reduced the spatial extent and quality of wetland resources.
<b>Present Actions</b>	Efforts are being taken by state and Federal regulatory agencies to reduce wetland losses. Significant beneficial effects are anticipated with full implementation of the KRR Project.
<b>Preferred Alternative</b>	Implementation of Alternative C, the Preferred Alternative, is expected to result in approximately 37 acres of wetland impact as a result of construction related to the new seepage levee, tieback levee, excavation of the existing canal, and the extension of the canal through the River Acres subdivision. Wetland impacts will be offset by restoration of oxbows and restored wetland floodplain communities in other portions of the restored river channel associated with implementation of the KRR Project. The KRR Project is anticipated to significantly improve approximately 63,000 acres of wetlands within the Kissimmee River watershed.
<b>Future Actions</b>	Some level of improvement to vegetative communities is expected to occur as a result of implementation of projects with the capability of improving the timing, quantity, quality, and distribution of freshwater flow to the study area. More natural hydrology as part of the KRR Project would assist in restoring natural plant communities. Improved hydroperiods and rehydration of the historic floodplain communities would restore native wetland vegetation to these areas.
<b>Cumulative Effect</b>	While the spatial extent of natural plant communities would not be restored to historic proportions, the quality of vegetative communities would be improved.
<b>Water Quality</b>	
<b>Past Actions</b>	Water quality has been degraded from urban, suburban, commercial, industrial, recreational and agricultural development.
<b>Present Actions</b>	Efforts to improve water quality from agricultural areas are ongoing. Federal and state projects would temporarily elevate localized levels of suspended solids and turbidity.
<b>Preferred Alternative</b>	With implementation of the Preferred Alternative, turbidity will be temporarily elevated during construction, but will return to natural levels upon project completion. Effective means of turbidity control, such as, but not limited to, turbidity curtains, shall be employed during all

	operations that may create turbidity so that it shall not exceed 29 nephelometric turbidity units above background.
<b>Future Actions</b>	Actions by the State of Florida including Total Maximum Daily Loads, Best Management Practices, and Basin Management Action Plans would decrease nutrient concentration and loadings to the project area.
<b>Cumulative Effect</b>	While anthropogenic effects on water quality are unlikely to be eliminated, water quality is expected to slowly improve over existing and recent past conditions.

#### **4.14 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

Construction and ongoing operation and maintenance will require the expense of time and resources, such as labor, energy, and project materials, purchased with the Federal and local sponsor's (SFWMD) financial contributions. Once used, these resources could not be recovered. In a larger sense, the Kissimmee River restoration represents a recovery, a practicable reversal and retrieval, of natural resources that had been lost or degraded with the commitment of lands and improvements for the flood control project over forty years ago. Although it is not possible or desirable to fully restore an identical pre-channelization ecosystem, the restoration project will provide more natural conditions that will facilitate the reestablishment and long-term maintenance of a full range of physical, chemical, and biological characteristics necessary for a resilient ecosystem.

#### **4.15 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS**

Environmental effects for each resource are discussed in **Section 4.0**.

#### **4.16 CONFLICTS AND CONTROVERSY**

Over the lifetime of the KRR Project, considerable interest has been generated among local and regional stakeholders. The Corps continually strives to include all interested parties in its decision making process and will continue to consider all issues that arise.

#### **4.17 ENVIRONMENTAL COMMITMENTS**

The Corps commits to avoiding, minimizing, or mitigating for adverse effects. All practicable means to avoid or minimize environmental effects were incorporated into the Preferred Alternative and into the FDEP ERP dated March 22, 2006 (FDEP File Number 47-0182163-002).

#### **4.18 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS**

##### **4.18.1 National Environmental Policy Act of 1969**

Environmental information on the project has been compiled and this EA has been prepared and coordinated for Tribal, public, state, and Federal agency review. The Preferred Alternative is in compliance with NEPA.

##### **4.18.2 Endangered Species Act of 1973**

Since Alternative C, the Preferred Alternative, consists of flood mitigation in lieu of acquisition, the River Acres subdivision would remain largely unchanged from its current condition.

Implementation of this alternative will have no effect on threatened and endangered species within the River Acres subdivision since the project area provides little suitable habitat. In addition, as described above in **Section 4.4.1**, it is highly unlikely that threatened or endangered species exist as permanent or transient residents due to the disturbed native habitat and presence of humans including pedestrian, boat, vehicular, and air traffic. The U.S. Fish and Wildlife Service issued a Biological Opinion in 2007, as well as several subsequent amendments, due to adverse effects on Audubon's crested caracara associated with the conversion of upland pasture to restored river floodplain. The River Acres subdivision, due to its disturbed native vegetation and use as a residential subdivision, does not contain habitat suitable for caracara habitation. The Corps has determined that implementation of Alternative C, the Preferred Alternative, would maintain current conditions and result in no additional effects on listed species, as compared with the No Action Alternative. The Preferred Alternative is in full compliance with the Act.

#### **4.18.3 Fish and Wildlife Coordination Act of 1958, as amended**

The Preferred Alternative has been coordinated with U.S. Fish and Wildlife Service and Florida Fish and Wildlife Conservation Commission through circulation of this EA. In response to the requirements of this Act, the Corps has, and will continue to maintain, continuous coordination with Federal and state wildlife agencies. The Preferred Alternative is in full compliance with the Act.

#### **4.18.4 National Historic Preservation Act of 1966**

The Preferred Alternative is in compliance with Section 106 of the National Historic Preservation Act, as amended (PL 89-665). As part of the requirements and consultation process contained within the National Historic Preservation Act implementing regulations of 36 CFR 800, this project is also in compliance through ongoing consultation with the Archaeological and Historic Preservation Act, as amended (PL 93-29), Archeological Resources Protection Act (PL96-95), American Indian Religious Freedom Act (PL 95-341), Native American Graves Protection and Repatriation Act (PL 101-601), Executive Order 11593, 13007, and 13175, the Presidential Memo of 1994 on Government to Government Relations, and appropriate Florida Statutes.

#### **4.18.5 Clean Water Act of 1972**

Implementation of Alternative C, the Preferred Alternative, is expected to result in approximately 37 acres of wetland impact as a result of construction related to the new seepage levee, tieback levee, excavation of the existing canal, and the extension of the canal through the River Acres subdivision. Wetland impacts will be offset by the restoration of oxbows and restored wetland floodplain communities in other portions of the restored river channel associated with implementation of the KRR Project. The KRR Project is anticipated to significantly improve approximately 63,000 acres of wetlands within the Kissimmee River watershed.

The Corps conducted a Section 404(b) (1) analysis as part of the FDEP ERP application. The FDEP provided an ERP dated March 22, 2006. The ERP (File Number 47-0182163-002) constitutes certification of compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341. The Preferred Alternative is in full compliance with the Act.

**4.18.6 Clean Air Act of 1972**

The Preferred Alternative is in compliance with Sections 309 and 176 of the Clean Air Act, known as the General Conformity Rule. The Preferred Alternative will not cause or contribute to violations of the National Ambient Air Quality Standards. The Preferred Alternative is in full compliance with the Act.

**4.18.7 Coastal Zone Management Act of 1972**

The FDEP provided an ERP March 22, 2006. The ERP (File Number 47-0182163-002) constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act.

**4.18.8 Farmland Protection Policy Act of 1981**

The Preferred Alternative will not result in any effects to prime or unique farmland. The Preferred Alternative is in full compliance with the Act.

**4.18.9 Wild and Scenic River Act of 1968**

No designated Wild and Scenic River reaches would be affected by project related activities. This Act is not applicable.

**4.18.10 Marine Mammal Protection Act of 1972**

No marine mammals would be harmed, harassed, injured, or killed as a result of the Preferred Alternative. Therefore, the Preferred Alternative is in compliance with this Act.

**4.18.11 Estuary Protection Act of 1968**

No designated estuary would be affected by the Preferred Alternative. This Act is not applicable.

**4.18.12 Federal Water Project Recreation Act of 1965, as amended**

Recreation, and fish and wildlife enhancement, have been given full consideration in the Preferred Alternative.

**4.18.13 Fishery Conservation and Management Act of 1976**

No fisheries, or other areas under the purview of National Marine Fisheries Service, would be affected by this action. The Preferred Alternative is in compliance with the Act.

**4.18.14 Submerged Lands Act of 1953**

Implementation of the Preferred Alternative requires a proprietary authorization, as the activity is located on sovereign submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund, pursuant to Article X, Section 11 of the Florida Constitution, and Sections 253.002 and 253.77, F.S. The activity is not exempt from the need to obtain a proprietary

authorization. The FDEP has the responsibility to review and take final action on this request for proprietary authorization in accordance with Section 18-21.0051, and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C. In addition to the above, this proprietary authorization has been reviewed in accordance with Chapter 253 and Chapter 18-21, Section 62-343.075, F.A.C.

As staff to the Board of Trustees, the FDEP reviewed the activity described above, and determined that the activity is within the boundaries described in Lease No. 4099 to the South Florida Water Management District, to restore the Kissimmee River in cooperation with the U.S. Army Corps of Engineers. Proprietary Authorization included within the 2006 FDEP ERP Permit (File Number: 47-0182163-002). The Preferred Alternative is in compliance with the Act.

#### **4.18.15 Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990**

There are no designated coastal barrier resources in the project area that would be affected by the Preferred Alternative. These Acts are not applicable.

#### **4.18.16 Resource Conservation and Recovery Act (RCRA), As Amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984, Comprehensive Environmental Response Compensation and Liability Act (CERCLA), Toxic Substances Control Act (TSCA) of 1976**

Due to the need for excavation, Alternative C, the Preferred Alternative, could potentially result in the discovery of HTRW. HTRW surveys have been conducted as part of the KRR Project environmental assessment and environmental impact statements prepared in compliance with NEPA as required. The Preferred Alternative has a very low risk for increased mobilization of existing HTRW where it might exist within the study area. The Preferred Alternative is in compliance with these Acts.

#### **4.18.17 Rivers and Harbors Act of 1899**

The Preferred Alternative would not obstruct the navigable waters of the United States. The Preferred Alternative is in full compliance.

#### **4.18.18 Safe Drinking Water Act of 1974, As Amended**

The Preferred Alternative would not impact safe drinking water standards. The Preferred Alternative is in full compliance.

#### **4.18.19 Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646)**

Acquisition of real estate is not required for the Preferred Alternative. The Preferred Alternative is in compliance with this Act.

**4.18.20 Anadromous Fish Conservation Act**

Anadromous fish species would not be affected. The Preferred Alternative is in compliance with the Act.

**4.18.21 Migratory Bird Treaty Act and Migratory Bird Conservation Act**

Migratory and resident bird species have been observed within the project area and are likely to use available habitat for foraging, nesting, and breeding. The Preferred Alternative is not expected to destroy migratory birds, their active nests, their eggs, or their hatchlings. The Preferred Alternative will not pursue, hunt, take, capture, kill, or sell migratory birds. The Preferred Alternative is in compliance with these Acts.

**4.18.22 Marine Protection, Research and Sanctuaries Act**

The Marine Protection, Research and Sanctuaries Act does not apply to the Preferred Alternative. Ocean disposal of dredge material is not proposed as part of the Preferred Alternative.

**4.18.23 Magnuson-Stevens Fishery Conservation and Management Act**

No Essential Fish Habitat would be impacted by this action. Therefore, the Preferred Alternative is in compliance with this Act.

**4.18.24 E.O. 11990, Protection of Wetlands**

Implementation of Alternative C, the Preferred Alternative, is expected to result in approximately 37 acres of wetland impact as a result of construction related to the new seepage levee, tieback levee, excavation of the existing canal, and the extension of the canal through the River Acres subdivision. Wetland impacts will be offset by restoration of oxbows and restored wetland floodplain communities in other portions of the restored river channel associated with implementation of the KRR Project. The KRR Project is anticipated to significantly improve approximately 63,000 acres of wetlands within the Kissimmee River watershed. The Preferred Alternative is in compliance with the goals of this Executive Order (E.O.).

**4.18.25 E.O. 11988, Floodplain Management**

This E.O. instructs Federal agencies to avoid development in floodplains to the maximum extent possible. The 1991 KRR Report identified land interests necessary to achieve the project's restoration objectives. The extent of land needed to achieve the identified objectives was based upon three factors: environmental restoration, flood control operations, and induced flooding. From these considerations, it was determined that in order to achieve full project benefits, acquisition in fee up to the 5-year flood for restoration and flood control, and acquisition in standard flowage easements between the 5-year floodplain and, substantially, the 100-year floodplain for assumed mitigation of induced flooding. This subdivision was built post-channelization of the Kissimmee River and approximately 101 lots lie within the 100-year floodplain and will be impacted to various degrees by KRR Project implementation. Since the

River Acres subdivision lies within the area specified for standard flowage easement acquisition, this subdivision was slated to be acquired for assumed mitigation of induced flooding.

However, early on it was apparent that homeowners within the River Acres subdivision were unwilling sellers. Thus to avoid a lengthy and costly condemnation process and to meet the spirit of the language included in the 1991 KRR Report and 1992 KRR Chief's Report, the Corps and nonfederal sponsor (SFWMD) sought an engineering solution in lieu of acquisition within the affected areas of the River Acres subdivision. The Preferred Alternative involves flood mitigation in lieu of acquisition to provide preexisting levels of flood protection to the River Acres subdivision. This action will not induce additional development within the project area. This action is consistent with the intent of this E.O. and is in compliance.

#### **4.18.26 E.O. 12898, Environmental Justice**

E.O. 12899 provides that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority or low income populations. The Preferred Alternative would not result in disproportionately high and adverse human health or environmental effects on minority populations or low-income populations. The Preferred Alternative is in compliance with this E.O.

#### **4.18.27 E.O. 13089, Coral Reef Protection**

No coral reefs would be impacted by the Preferred Alternative. This E.O. does not apply.

#### **4.18.28 E.O. 13112, Invasive Species**

The Preferred Alternative would have no significant impact on invasive species. Measures to minimize spread of invasive species was included within the KRR Project construction specifications. The Preferred Alternative is in compliance with the goals of this E.O.

#### **4.18.29 E.O. 13045, Protection of Children**

E.O. 13045, requires each Federal agency to “identify and assess environmental risk and safety risks [that] may disproportionately affect children” and ensure that its “policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This action has no environmental safety risks that may disproportionately affect children. The Preferred Alternative is in compliance.

#### **4.18.30 E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds**

Migratory and resident bird species have been observed within the project area and are likely to use available habitat for foraging, nesting, and breeding. The Preferred Alternative is not expected to destroy migratory birds, their active nests, their eggs, or their hatchlings. The Preferred Alternative is in compliance with the goals of this E.O.

#### **4.18.31 Corps, Jacksonville District Burial Resources Agreement with the Seminole Tribe of Florida**

The Corps, Jacksonville District maintains a Trust Agreement with the Seminole Tribe of Florida regarding proposed actions that may adversely affect American Indian burial resources. This agreement was entered by both parties pursuant to the Corps' Trust Responsibility, as outlined in the November 1, 2012 Chief of Engineers Memorandum, "Tribal Consultation Policy." The Burial Resources Agreement establishes a framework that serves as the basis for consultation regarding the presence of burial resources within the Jacksonville District's area of action and jurisdiction for the Civil Works Program, and sets forth procedures that ensure culturally sensitive treatment of burial resources pursuant to the Corps' Trust Responsibility. As there are no burial resources located within the River Acres subdivision, this agreement does not apply.

**5.0 LIST OF PREPARERS****TABLE 5-1: TABLE OF PREPARERS**

Name	Organization	Role in EA
Tiphannie Jinks	Corps	Project Manager
Gina Ralph	Corps	Biologist
Russell Weeks	Corps	Hydrologist/Engineer
Jim Riley	Corps	Water Quality
Robin Moore	Corps	Archeologist
Rebecca Onchaga	Corps	Technical Editor

## **6.0 PUBLIC INVOLVEMENT**

### **6.1 AGENCY COORDINATION**

The Corps is in continuous coordination with other Federal and state agencies, tribal representatives, and members of the general public. This extensive coordination is a result of the magnitude of Corps efforts underway to implement water management and restoration strategies in Florida. All agency coordination letters related to the Preferred Alternative are included in **Appendix B**.

### **6.2 LIST OF RECIPIENTS**

A notice of availability for the EA and Finding of No Significant Impact (FONSI) was mailed to Federal and state agencies, tribal representatives, and members of the general public. A complete mailing list is available upon request. The EA and Proposed FONSI was also posted on the Corps' internet website at the following address:

<http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironmentalDocuments.aspx#>

## 7.0 REFERENCES

USACE. *Kissimmee River Restoration Project General Reevaluation Report*, U.S. Army Corps of Engineers, Jacksonville District, May 2015. Note: This document has not yet been approved.