PROJECT DEVELOPMENT & ENVIRONMENT STUDY

SR 997 / SW 177th AVENUE / KROME AVENUE
FROM SW 296th STREET TO SW 136th STREET

FM NO.: 249614-4-22-01
ETDM No. 7800

Wetland Evaluation Report

Florida Department of Transportation, District Six
1000 NW 111th Avenue, Miami, Florida 33172

September 2013

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1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) is evaluating roadway and safety improvement alternatives along an approximate 10-mile segment of SR 997/SW 177th Avenue/Krome Avenue (Krome Avenue) from SW 296th Street/Avocado Drive to SW 136th Street/Howard Drive. The Krome Avenue project corridor is located in the southern portion of unincorporated Miami-Dade County, Florida (See ***Figure 1-1*** – Location Map). Krome Avenue is part of the State Highway System and the Strategic Intermodal System (SIS), and it is also considered a major regional connector in South Florida.

A Project Development and Environment (PD&E) Study was initiated as part of the planning process. The objective of the PD&E Study is to provide documented environmental and engineering analyses that will assist the FDOT and the Federal Highway Administration (FHWA) in reaching a decision on the type, conceptual design, and location of the necessary improvements along the Krome Avenue corridor. This PD&E Study also complies with the requirements of the National Environmental Policy Act and other Federal laws to qualify the proposed improvements for federal funding.

As part of the Krome Avenue (South) PD&E Study, a wetland evaluation study was conducted in accordance with Volume 2, Chapter 18 (dated April 22, 2013) of the FDOT *PD&E Manual*. Potential wetland and surface water impacts in the areas within and surrounding the project corridor were assessed for the project alternatives, including the No-Build Alternative. The information within this report is also intended to provide the technical support for the findings presented in the project's *Preliminary Engineering Report* and the *Draft Environmental Impact Statement*.

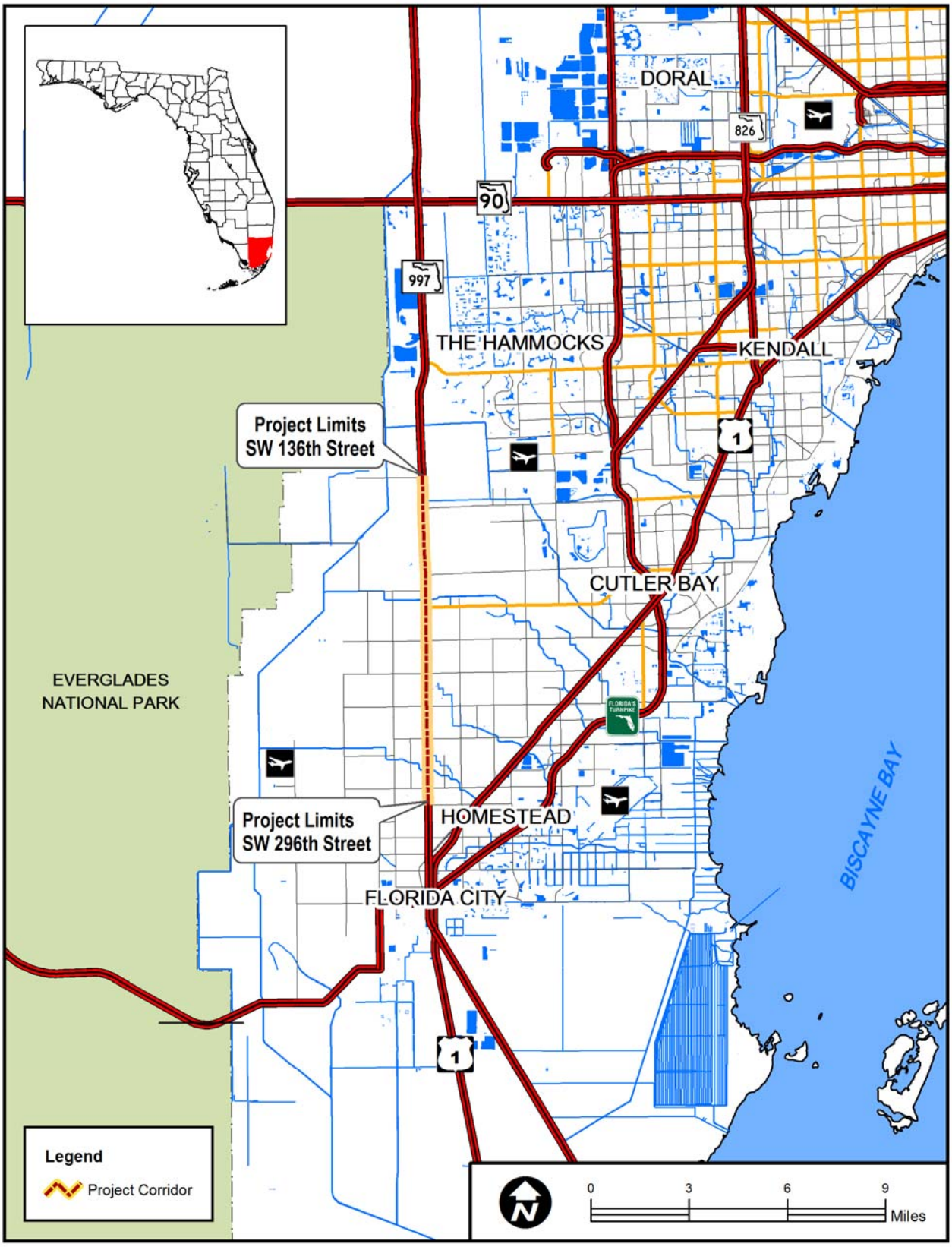

Figure 1-1 – Project Location Map

2.0 PROJECT DESCRIPTION

The FDOT is conducting a PD&E Study for the roadway improvements of Krome Avenue from SW 296th Street to SW 136th Street. The project limits run in a north-south orientation for approximately ten miles. The section of Krome Avenue from the intersection of SW 136th Street to the intersection of SR-25/US 27/Okeechobee Road in Miami-Dade County was the subject of another PD&E Study completed in 2006 that extended approximately 23 miles to the north.

Krome Avenue is a major north-south rural/urban principal arterial that extends from SR-5/US 1 to SR-25/US 27/Okeechobee Road in Miami-Dade County. The Krome Avenue corridor has been the subject of extensive study and discussion for the past two decades. It has documented safety deficiencies. It provides regional connectivity from as far south as the Florida Keys to Broward County and points north. Further, it is one of only three evacuation routes serving the Florida Keys and southern Miami-Dade County. The need for improvements on this corridor is based on a combination of safety, physical, and functional deficiencies within the corridor plus overall capacity needs (reference the *Preliminary Engineering Report* prepared for this project for details). The primary objective of the project is to address safety deficiencies along this section of the Krome Avenue corridor. The secondary objectives of the project are to provide additional capacity to accommodate anticipated future area travel demand and to address other design deficiencies along the roadway. Additional secondary objectives include maintaining the effectiveness of the corridor as an emergency evacuation route and improving regional connectivity. The existing typical section within the study limits (Krome Avenue from SW 296th Street to SW 136th Street) varies slightly, consisting primarily of two undivided lanes, with intermittent paved shoulders and soil/grass swales.

The focus of this PD&E Study is to develop and analyze improvement alternatives that would address the deficiencies along this portion of the roadway network in Miami-Dade County. A corridor analysis was conducted followed by the development of alternatives along the recommended corridor. These alternatives include the No-Build Alternative, a Transportation System Management (TSM) Alternative, and several Build Alternatives. All alternatives provide safety and operational enhancements, under rural and suburban conditions (see below and reference the *Preliminary Engineering Report* prepared for this project for additional details).

2.1 Existing Conditions

The section of Krome Avenue from SW 296th Street [Mile Post (MP) 3.827] to SW 272nd Street/Epmore Drive (MP 5.342) is classified as an Urban Principal Arterial and from SW 272nd Street to SW 136th Street (MP 13.985) is classified as a Rural Principal Arterial. The existing speed limit is posted at 45 MPH along the study corridor. The access management classification within the study limits is Class 2 Restrictive. Also, the Krome Avenue corridor is part of the SIS and is an important north/south arterial within Miami-Dade County.

The existing typical section of Krome Avenue from SW 296th Street/Avocado Drive to SW 136th Street/Howard Drive varies slightly, consisting primarily of two undivided 12-foot-wide travel lanes (less than 12 feet at some locations), with five-foot-wide paved shoulders (less than five feet at some locations) and soil/grass swales. The existing right-of-way varies from 35 feet to 200 feet (see ***Figure 2-1***).

No designated pedestrian facilities currently exist along Krome Avenue or any of the adjacent side streets within the study corridor. No designated bicycle facilities exist within the study limits. There are no crosswalks and/or pedestrian pushbuttons provided at the signalized intersections within the study limits.

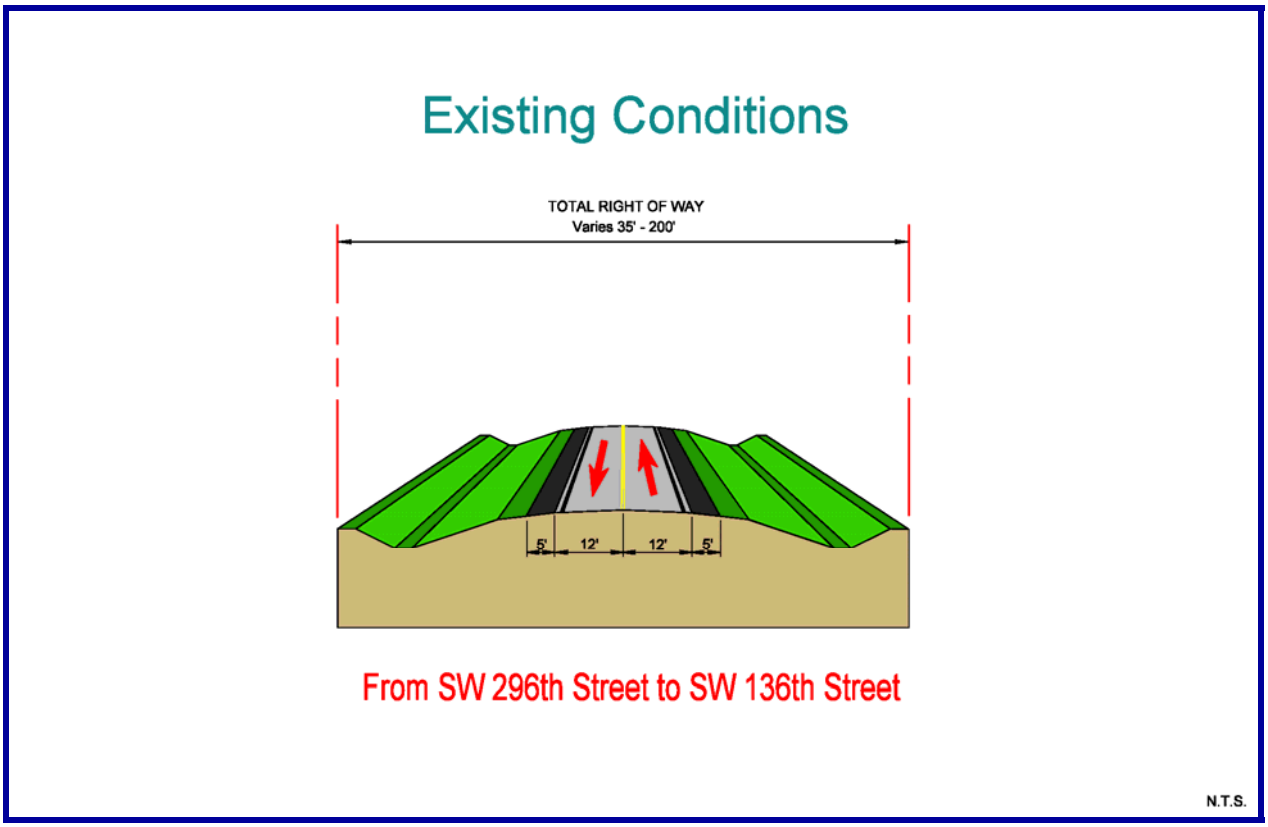

Figure 2-1 – Existing Two-Lane Rural Typical Roadway Section

2.2 Land Use

The proposed project corridor traverses a farming and residential community. The agricultural land uses include numerous agricultural fields and herbaceous, ornamental, and fruit tree nurseries. The agricultural fields include seasonal "self-pick" fields with fruit/vegetable stands. There are many nurseries found scattered along much of the southern stretch of Krome Avenue; most are open to the public with direct access onto Krome Avenue. A Land Use map is provided as ***Figure 2-2***.

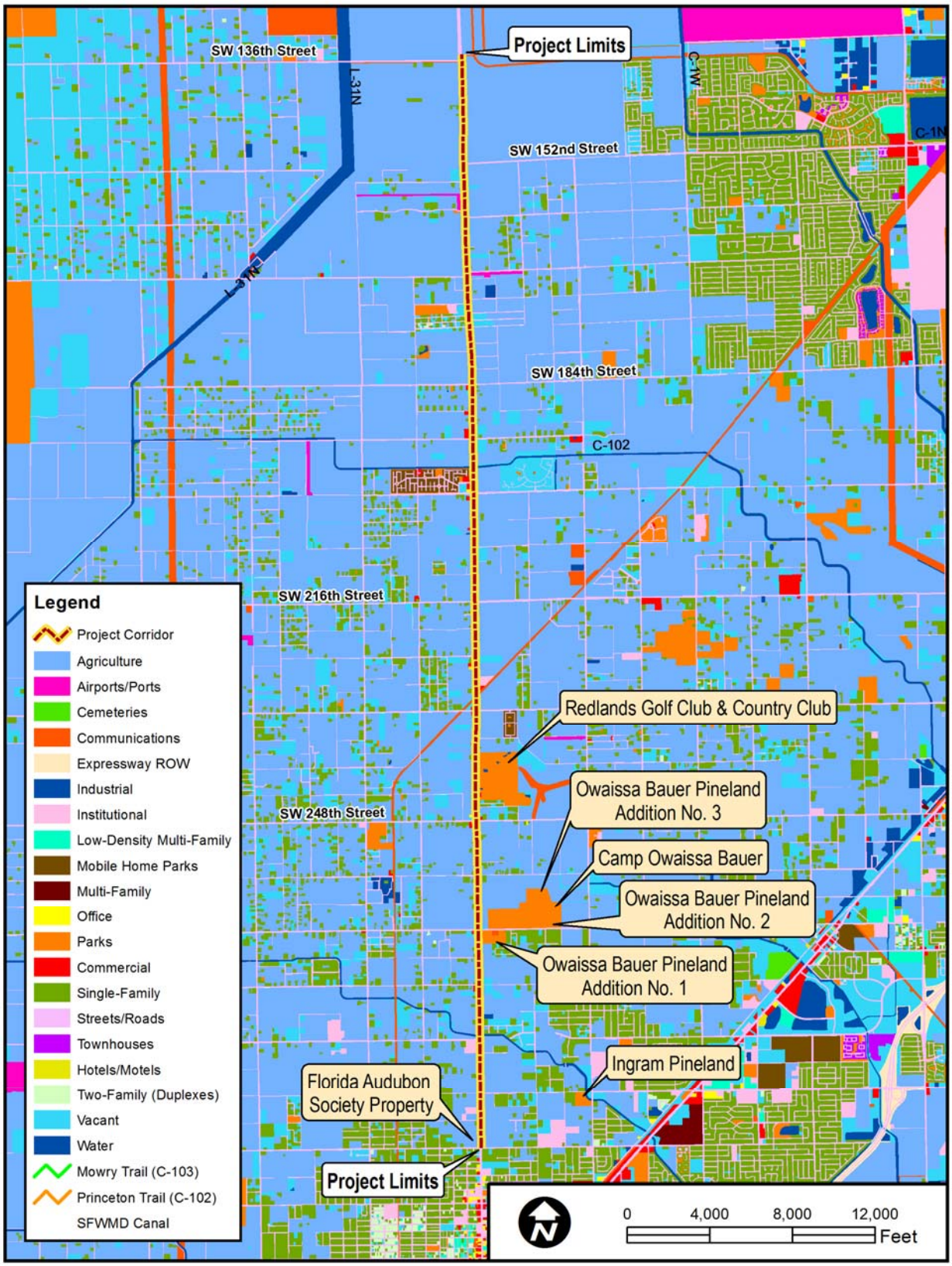

Figure 2-2 – Land Use Map

From SW 296th Street to SW 288th Street, residential estate densities of 1 to 2.5 dwelling units per acre occur on both sides of the corridor. From SW 288th Street to SW 272nd Street, residential estates occur only on the east side of Krome Avenue, while agricultural land use occurs on the west side. North of SW 272nd Street, agriculture dominates land use along Krome Avenue, with the exception of some intersections that are designated business and office land uses. The intersections on Krome Avenue that contain the office and business land uses are found at intersections of SW 272nd Street, SW 248th Street, SW 232nd Street, and SW 200th Street on the corridor.

There are nine gas stations on the corridor. Along this southern portion of the Krome corridor, between SW 288th Street and SW 184th Street, three establishments were found to have active horse hitching posts, which show evidence of the historically preserved rural character of Krome Avenue. Other land uses include an airplane glider facility on SW 168th Street and Krome Avenue, three churches, and one religious school found along the corridor.

The Dade County Archipelago Florida Forever Project helps fund the public acquisition of for conservation privately owned subtropical pinelands and hardwood hammocks that remain in Miami-Dade County. These sites, including the Miami Rockridge Pinelands (including Ingram Pineland) and the Owaissa Bauer Pinelands (including the Owaissa Bauer Pineland Preserve Addition No. 1, 2 and 3 sites) are administered through the Miami-Dade County Department of Environmental Resources Management's (DERM) [DERM is now known as Miami-Dade County Department of Regulatory and Economic Resources, Environmental Monitoring and Restoration Division (DRER EMRD) and will be referred to as such throughout this document], Environmentally Endangered Lands (EEL) Program. One of these ecologically significant sites, the Owaissa Bauer Pineland Preserve Addition No. 1, exists along the project corridor in the southeast quadrant of the intersection of Krome Avenue and SW 264th Street. The Owaissa Bauer Pineland Preserve Addition No. 2 and 3 sites are located along SW 264th Street approximately 700 feet east (south of SW 264th Street) and 3,300 feet northeast (north of SW 264th Street) of the intersection of Krome Avenue and SW 264th Street, respectively. Additionally, the Miami Rockridge Pinelands are located along the south side of SW 288th Street approximately 5,000 feet east of the Krome Avenue Project corridor. Camp Owaissa Bauer (including the Everglades Archery Range) is located along the north side of SW 264th Street approximately 600 feet east of the Krome Avenue project corridor. This camp is administered through the Miami-Dade County Parks, Recreation and Open Spaces Department (MDPROS).

Two unimproved SFWMD canal maintenance access roads bisect Krome Avenue within the study corridor. One of the maintenance access roads runs parallel to the SFWMD C-102/Princeton Canal, which crosses Krome Avenue at approximately SW 196th Street, while the other maintenance access road runs parallel to the SFWMD C-103/Mowry Canal, which crosses Krome Avenue just north of SW 280th Street. These roads are currently mowed/maintained by the SFWMD for maintenance access to the adjacent canals. The Miami-Dade Open Space Master Plan Vision Map (dated November 11, 2009) shows both of these maintenance access roads, as potential future "greenways" on the Miami-Dade Open Space Master Plan Vision Map. However, the SFWMD, the owner of these canal maintenance access roads, has no plans at this time for development of these maintenance roads for trail use. The Redlands Golf and Country Club is located adjacent to the eastern Krome Avenue right-of-way,

approximately 950 feet north of SW 248th Street. The Florida Audubon Society privately owns a two-acre property, which is located on the west side of the southern end of the Krome Avenue study corridor just north of SW 296th Street. This site is not designated or classified as a park by federal, state, or local agencies; however, this privately-owned unmarked parcel is recognized by the Florida Audubon Society, the land owner, as a bird watching location. The site contains planted rockland and coastal upland hammock species used to attract birds and butterflies to the area for viewing.

2.3 Stormwater Management

In accordance with the FDOT *PD&E Manual*, Part 2, Chapter 20 – Water Quality (dated February 25, 2004), a Water Quality Impact Evaluation has been conducted for this project. A Water Quality Impact Evaluation Checklist has been prepared and a copy is provided in ***Appendix A***.

The existing stormwater management system along the Krome Avenue corridor is inadequate, consisting of direct offsite discharge via overland flow from the embankment. A few intermittent roadside dirt swales/depressional areas exist; however, no formal water quality facilities occur along the corridor. There are also a few isolated systems constructed by off-site developments which are typically found at the larger intersections along the project corridor. The existing soil infiltration rates range from good to excellent allowing these systems to be able to retain the contributing runoff onsite without any overflow. However, since stormwater treatment or peak attenuation is not provided throughout the corridor, Miami-Dade County and SFWMD water quality/quantity treatment standards are not being met. Proposed improvements within the Krome Avenue corridor need to address water quality and water quantity for pre-treatment of runoff, thereby improving overall regional water quality.

The proposed project should utilize an on-site retention system of applicable design (5-year storm event for 2-lane roadway, 10-year storm event for 4-lane roadway, etc.,) as first priority for stormwater treatment/storage per DRER EMRD's Advance Notification (AN) response dated March 31, 2004 (***Appendix B***). According to DRER EMRD, an onsite retention system combined with emergency overflow outfall may be used as an alternative provided that the first inch of runoff is treated prior to overflow.

Section 3.2.2.8 of Chapter 40E-4 Florida Administrative Code (F.A.C.) states that alterations to existing public roadways will be required to treat a volume equal to those specified in Section 3.2.2.2 and the contributing area according to the following options:

- For off-line and on-line treatment systems, including wet detention, which provide storage of the treatment volume off-line from the primary conveyance path of the flood discharges, the area of new pavement must be treated.
- For all other on-line treatment systems, including wet detention, the entire directly connected impervious area contributing to the system, including both on and off-site areas must be treated. Directly connected impervious areas consist of both new and existing pavement which is connected to the treatment system by pavement or pipe and convey untreated stormwater runoff.

- For on-line and off-line percolation systems, the treatment volume is calculated by applying 0.5 inches of runoff over the limits of the right-of-way.

For the Krome Avenue study corridor, the stormwater management system was divided into 53 drainage basins. Each of these drainage basins would consist of roadside swales and French drain systems underneath the swales. All of the drainage systems will be self-contained, able to retain the contributing runoff with no offsite discharge.

All of the drainage basins serving the southbound lanes of Krome Avenue will utilize the median swale and the roadside swale located along the outside of the southbound travel lanes. All of the drainage systems serving the northbound lanes will only utilize the roadside swale located along the outside of the northbound lanes. The proposed swales alone are sufficient to be able to retain the required water quality treatment volume per the SFWMD's regulatory criteria. However, French drains will need to be added to the proposed swales in order to provide for flood protection of the proposed roadway corridor, be able to recover the stormwater runoff within 24 hours following a storm event, and be able to retain the runoff from the 25 year and 100 year storms; thus, ensuring that the pre-development offsite discharge rates are not exceeded.

The impact of the preferred alternative on surface water quality will be limited to potential adverse effects of erosion/turbidity during construction. These construction impacts are considered temporary and will be minimized by strict adherence to temporary erosion control features as provided in the FDOT's latest edition of *Standard Specifications for Road and Bridge Construction* and the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) permit requirements. Therefore, no mitigation for water quality impacts will be needed. It is anticipated that water quality within the proposed project area will improve due to the proposed stormwater treatment features. The proposed stormwater facility design will include, at a minimum, the water quantity requirements as required by SFWMD in Rule 40D-4, FAC. Please refer to the *Preliminary Engineering Report* for further details.

Miami-Dade County is underlain by the Biscayne Aquifer system, the sole source of potable water for most of southeastern Florida. All necessary precautions and best management practices pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer (the Biscayne Aquifer). The AN response from the EPA (dated June 30, 2004) also concluded that the project will have no adverse impacts to the sole source aquifer if all necessary best management practices are employed (***Appendix B***).

2.4 Floodplains

Pursuant to Presidential Executive Order 11988, entitled "Floodplain Management," USDOT Order 5650.2, and Chapter 23, CFR 650A, and in accordance with the FDOT *PD&E Manual*, Part 2, Chapter 24 – Floodplains (dated January 7, 2008), the project alternatives were analyzed for potential floodplain impacts

According to the revised 2012 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Community Panels 12086C0440L, 12086C0580L, 12086C0590L and 12086C0726L), most of the study corridor falls intermittently within Zones AH and X with the exception of a small portion just south of the northern project terminus (east side) that falls within Zone 0.2 pct Annual Chance Flood Hazard. Four FIRM panels illustrate the flood hazard potential along the study corridor. Zone AH is a special flood hazard area inundated by a 100-year flood event, with flood depths of one to three feet and characterized by areas of ponding. The base flood elevations have been determined. A base flood elevation of nine feet exists on the west side of Krome Avenue, and a base flood elevation of ten feet exists on the east side of Krome Avenue. Areas along the study corridor have also been designated as Zone X, which is an area determined to be outside of the 100-year floodplains, areas of 100-year sheet flow flooding where average depths are less than one foot, areas of 100-year stream flooding where the contributing drainage area is less than one square mile, or areas protected from the 100-year flood by levees. Areas designated as Zone 0.2 pct Annual Chance Flood Hazard are characterized as areas inundated by 0.2% annual chance flooding. No base flood elevations or depths are shown in the data collected within this zone for the study corridor.

The entire project length is outside of those areas identified as being affected by any projected sea level rise of up to five feet over the next 100 years. The FEMA 100-year Base Flood Elevation varies throughout the length of the project from Elevation 8.00 NGVD to Elevation 9.00 NGVD. At the same time, the Design High Water that is to be used for Base Clearance purposes will vary from Elevation 4.00 NGVD to Elevation 6.00 NGVD. During the design phase, however, it will be coordinated with FDOT, SFWMD, and DRER personnel as to what the actual Design High Water should be for Base Clearance purposes used to establish the minimum roadway edge of pavement elevation. Future changes to the watershed within the project vicinity as it relates to the Everglades Restoration Project, climate change, and/or urbanization of the surrounding areas may require the use of a higher Design High Water Elevation than would normally be used. Such was the case for the adjacent sections of Krome Avenue located to the north of the subject project, where a higher Design High Water elevation was used in order to account for future changes to the surrounding watershed area. This higher Design High Water elevation, which was used to establish the minimum roadway edge of pavement elevation, resulted in this section of Krome Avenue being higher than the FEMA 100-year Base Flood Elevation. These considerations and discussions are factors that will be taken into consideration during the design phase of the project. At any rate, the FDOT requirement for base clearance of Krome Avenue is a minimum of three feet from the Design High Water Elevation to the minimum bottom of roadway base elevation. In addition, the preliminary estimated roadway base thickness is approximately one foot. As a result, the minimum roadway edge of pavement elevation for this section of Krome Avenue will vary from Elevation 8.00 NGVD to Elevation 10.00 NGVD. This means that the minimum edge of pavement elevation is

anticipated to vary from one foot below the FEMA 100-year Base Flood Elevation to one foot above the FEMA 100-year Base Flood Elevation. While it may not be possible to be able to maintain the roadway at or above the FEMA 100-year Base Flood Elevation for the entire length of the project corridor, it is a significant improvement over the existing conditions because the proposed roadway profile will elevate Krome Avenue over the existing footprint. The proposed improvements will result in a significantly improved evacuation route.

The FEMA, in implementing the National Flood Insurance Program (NFIP), established a system of building guidelines. All local and State building ordinances are based upon these guidelines. This project will comply with all applicable federal, state and local ordinances relating to floodplains. In accordance with the FDOT's latest edition of *Standard Specifications for Road and Bridge Construction*, all best management practices will be utilized during the construction phase of the project for erosion control and water quality considerations. The project alternatives are not expected to cause changes in flood stage and flood limits. Any minor changes, if any, resulting from this project will not result in any adverse impacts on the natural and beneficial floodplain values or any changes in flood risk or damage.

It has been determined, through consultation with federal, state and local water resource and floodplain management agencies that there is no regulatory floodway involvement on the proposed project and that the project will not support base floodplain development that is incompatible with existing floodplain management programs.

A map showing the FEMA FIRM Zones and associated FEMA 100-year Base Flood Elevations is provided as ***Figure 2-3***.

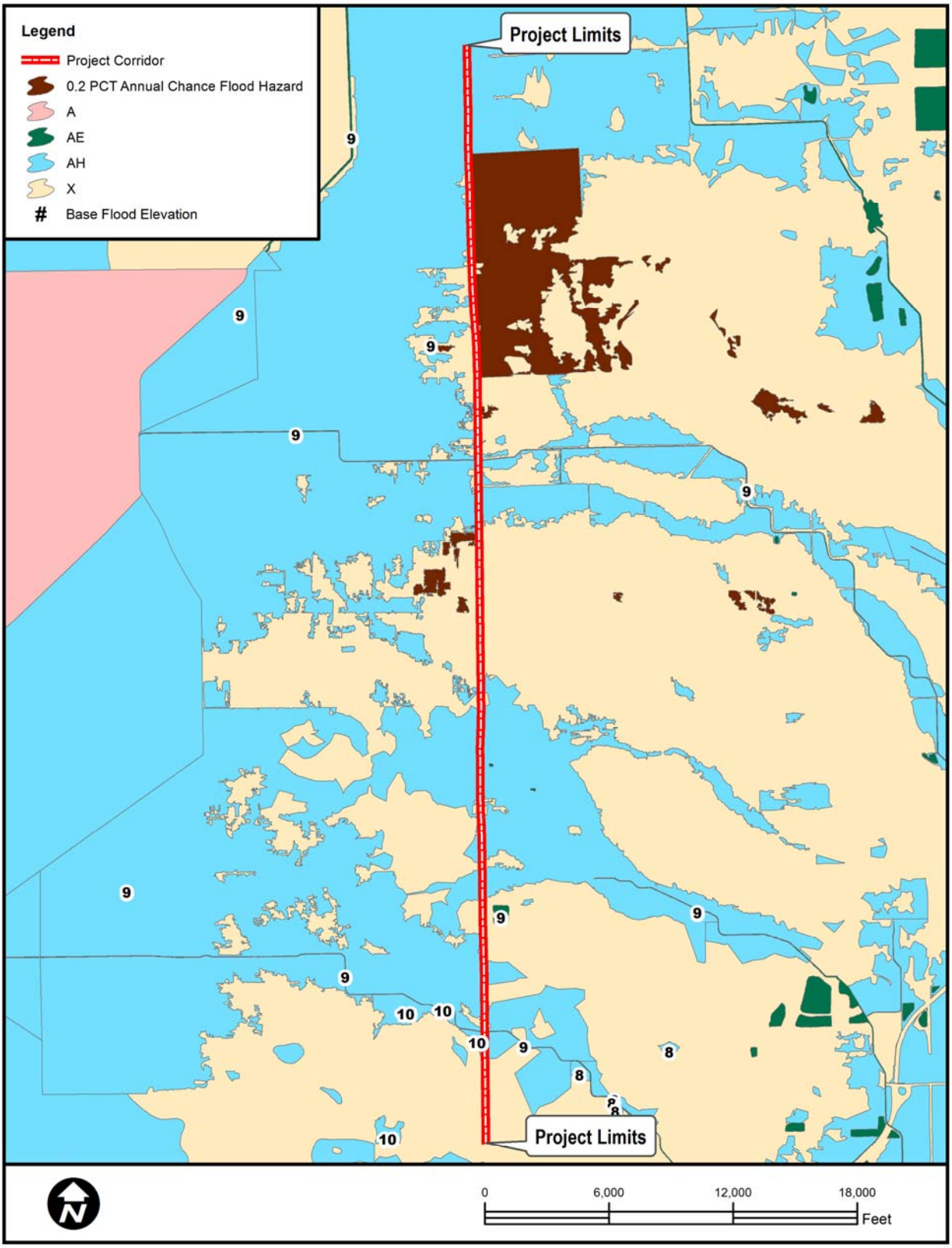

Figure 2-3 – FEMA FIRM Zones and FEMA 100-year Base Flood Elevations

2.5 Alternate Corridors

Alternate corridors were evaluated in the *Corridor Analysis Report*, a companion document to the PD&E Study. The report identified and evaluated corridor alternates in the area surrounding the Krome Avenue facility to determine reasonable corridor alternative solutions to problems associated with deficient safety elements on the existing corridor facility. Factors relating to the design and location of the facility as well as information and issues relevant to the project decision were considered including socioeconomic, environmental, and engineering issues as well as the following alignment controls which may influence corridor location:

- Available right-of-way through which an improvement providing acceptable service could be routed.
- Cultural features including public and private development.
- Natural features which could be impacted by the project.
- Preservation of the rural character of lands outside the designated urban growth area.
- Logical termini giving consideration to directness, length, and service.

Each corridor alternate was analyzed and evaluated to a point of rejection or selection as a viable corridor. Three alternate corridor locations were considered in addition to the existing Krome Avenue corridor within the PD&E study limits as part of this analysis. The alternates consisted of parallel corridors to the Krome Avenue corridor. The analysis examined each of the corridors over the same approximate ten-mile project length from SW 296th Street/Avocado Drive to SW 136th Street/Howard Drive. The following are the alternate corridors that were selected for evaluation (see ***Figure 2-4***):

- Alternate Corridor #1: SW 187th Avenue/Redland Road
- Alternate Corridor #2: SW 182nd Avenue/Roberts Road
- Alternate Corridor #3: SW 177th Avenue/Krome Avenue (existing)
- Alternate Corridor #4: SW 167th Avenue/Tennessee Road

Based on an evaluation of the corridor alternates, it was determined that Alternate Corridor #3 (Krome Avenue) is the most viable corridor for the improvement project. As a result, the existing SR 997/SW 177th Avenue/Krome Avenue corridor was selected and recommended for further consideration. Please reference the *Corridor Analysis Report* and the *Preliminary Engineering Report* for this PD&E Study for details of the alternate corridor analysis.

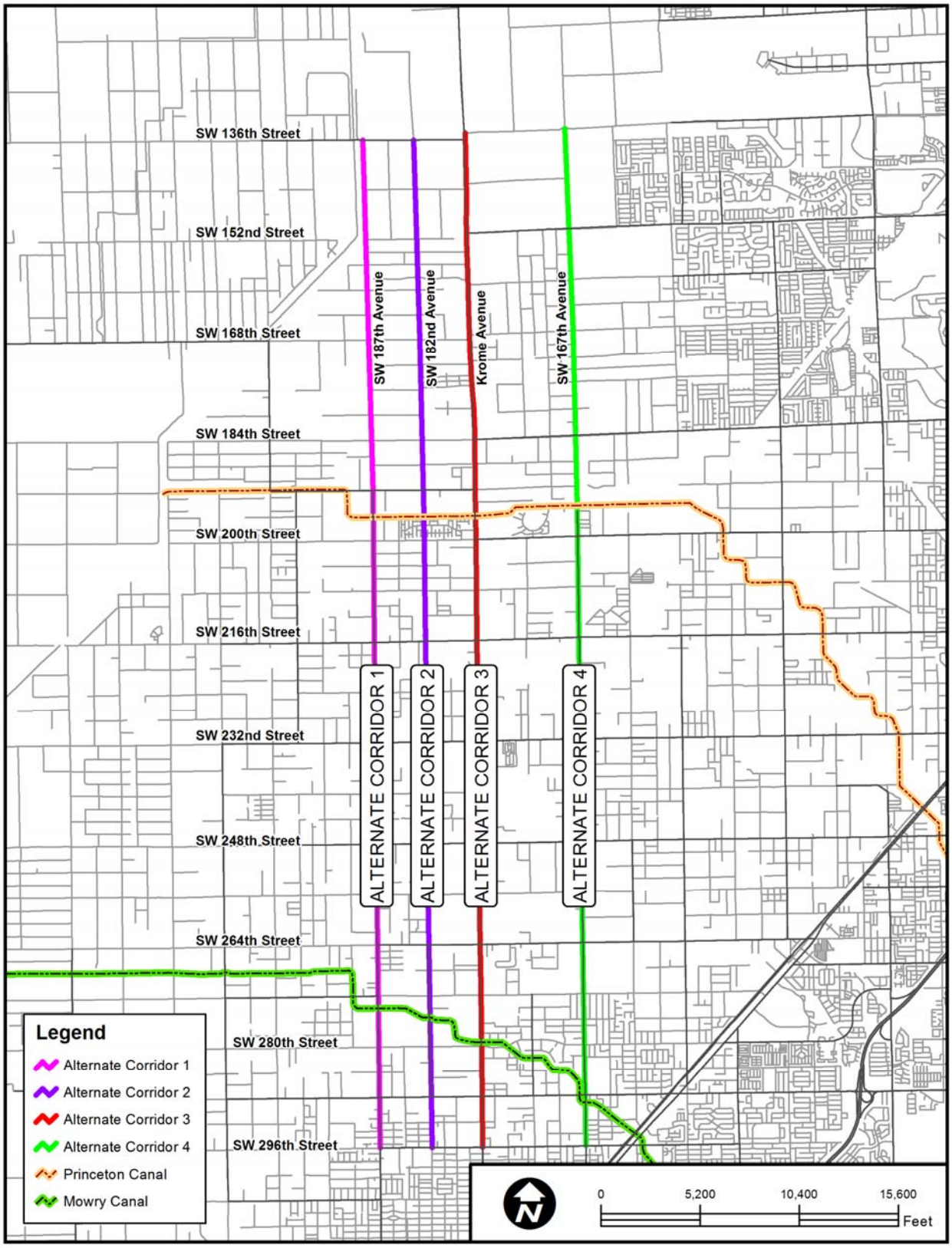

Figure 2-4 – Alternate Corridors

2.6 Project Alternatives

The No-Build Alternative, a TSM Alternative, the Action Plan Alternative, and several build alternatives were developed and analyzed for the Krome Avenue corridor between SW 296th Street to SW 136th Street as part of this PD&E Study. The development and evaluation of the build alternatives were based on established design controls for the various elements of a roadway such as lane width, median width, shoulder width, design speed, horizontal alignment, vertical alignment, drainage considerations, and intersecting roads. However, only five build alternatives were determined to be viable for this study and carried forward for further analysis. Each of the five build alternatives as well as the No-Build Alternative, TSM Alternative, and the Action Plan Alternative is summarized below. Additional details as well as the analysis for the determination of viable alternatives are provided in the *Preliminary Engineering Report*, a companion document to the PD&E Study.

2.6.1 No-Build Alternative

The No-Build Alternative assumes that no improvements would be implemented within the corridor. With this alternative, the existing roadway would be maintained "as is," with a two-lane, undivided typical section (see ***Figure 2-1***, above). The lack of grass median and adequate shoulders, the substandard drainage and water quality treatment facilities, the non-optimized traffic operations, and the existing safety deficiencies would be retained. This alternative is considered viable during the public hearing and final selection phase to serve as a comparison to the proposed study alternatives.

The No-Build Alternative has a number of positive aspects, since it would not require expenditure of public funds for design, right-of-way acquisition, construction or utility relocation. Traffic would not be disrupted due to construction, thereby avoiding inconveniences to local residents and businesses. Also, there would be no direct or indirect impacts to the environment, the socio-economic characteristics, community cohesion, or system linkage of the area.

However, the No-Build Alternative fails to fulfill the needs of this project for the area. If no improvements are made, the safety deficiencies associated with this corridor will remain. A grass median, which is anticipated to reduce head-on and angle crashes between the intersections, will not be provided along the corridor within the study limits, with this alternative.

Under the No-Build Alternative, future roadway congestion during peak hours will increase. Krome Avenue, within the study limits, and its cross roads will experience congestion during peak hours and operate below the desirable traffic Level of Service (LOS), which is LOS D (reference the *Preliminary Engineering Report* for details of traffic LOS). If improvements are not constructed before the year 2040, Krome Avenue will operate at LOS E or F, and all signalized intersections will operate at LOS F. The congestion in the area may cause additional impacts to this roadway. Such impacts may include excessive delays in travel time, large reduction of average travel speeds, excess fuel consumption from idling vehicles, increased air pollutants (particularly hydrocarbons and carbon monoxide), and higher crash rates. Krome Avenue will become even less effective as an evacuation route for the area.

Furthermore, the design deficiencies along the corridor within the study limits will not be addressed by the No-Build Alternative. Left side clear recovery area, which is anticipated to reduce centerline cross over head-on crashes, will not be provided. No stormwater treatment or peak attenuation will be provided. No median separation will be provided, so access management requirements that will limit conflict points and enhance safety will continue to be unmet.

The No-Build Alternative will not be consistent with area growth management and transportation plans which designate Krome Avenue within the study limits as a four-lane roadway. The No-Build Alternative will not accommodate the social and economic demands of a growing future Miami-Dade County. Lastly, the No-Build Alternative will maintain the existing typical section, which does not provide for either pedestrian or bicycle continuous access along Krome Avenue within the study limits.

2.6.2 Transportation System Management (TSM) Alternative

This alternative involves selectively upgrading deficient roadway areas with improved signage, turn lanes, pavement markings, and traffic signals. TSM intersection improvements have already been constructed along portions of the study corridor. However, this alternative will not satisfy the additional safety, capacity, and traffic operations improvement needs along this section of roadway. Short-term safety improvement projects were implemented at the following ten intersections along Krome Avenue within the study limits between the years 2003 to 2007.

- SW 136th Street (2003-2004)
- SW 168th Street (2003-2004)
- SW 184th Street (2007)
- SW 192nd Street (2003-2004)
- SW 200th Street (2007)
- SW 216th Street (2007)
- SW 256th Street (2003-2004)
- SW 272nd Street (2003-2004)
- SW 288th Street (2007)
- SW 296th Street (2007)

These intersection improvements consisted of adding separate turn lanes or modifying pavement markings to delineate turn lanes. These improvements were anticipated to reduce crashes at the intersections with the exception of head-on and ran-off-the-road crashes. The TSM improvements did not substantially enhance the operation of the signalized intersections or safety issues associated with this corridor and did not include system-wide drainage improvements. The *Corridor Analysis Report* documents that the safety ratios have remained at or above twice the statewide average subsequent to these improvements. The congestion along Krome Avenue is caused by a lack of through-lane capacity and high turning volumes. Long-term improvements are necessary to mitigate the existing safety deficiencies, increase capacity to accommodate future travel demand, improve access management, and provide stormwater management. Therefore, further consideration of this alternative was eliminated from the analysis.

2.6.3 Action Plan Alternative

The Krome Avenue Action Plan was developed in 1997 and approved by the Miami-Dade Metropolitan Planning Organization in 1999. The primary purpose of the plan was to identify and evaluate alternatives for transportation improvements other than additional general use lanes and restrictive medians along Krome Avenue. The limits of the Action Plan were from SR-5/US 1 to SR 25/US 27. The plan considered improvements to accommodate present and future traffic conditions within the corridor. The proposed improvements were primarily oriented toward access management, intersection improvements, multi-modal improvements, resurfacing, drainage improvements, and pedestrian/bicycle and equestrian facilities.

The goal of the Krome Avenue Action Plan was to develop corridor modifications to improve safety and future LOS along the corridor. The main focus of the Action Plan was to develop the immediately needed improvements and to address future mobility along Krome Avenue. Long-term improvement alternatives included safety enhancements, intersection modifications, traffic signal modifications, access management, and shoulder enhancements.

In the Action Plan, a two lane undivided typical section (see ***Figure 2-5***) with roadway improvements was recommended for implementation for Krome Avenue north of SW 296th Street /Avocado Drive. This typical section would consist of the following elements:

- One 12-foot (12’) wide travel lane in each direction
- Two-foot (2’) wide center painted buffer median
- Two eight-foot (8’) wide outside shoulders [five-foot (5’) paved and three-foot (3’) unpaved]
- Roadside swales width varies throughout the project depending on existing right-of-way
- Eight-foot (8’) wide bike path parallel to the southbound travel lanes
- Eight-foot (8’) wide equestrian path parallel to the northbound travel lanes
- Design Speed of 45 MPH (reconstruction criteria).
- Recoverable Terrain (Clear Zone) of 18 feet (18’) from the edge of pavement (minimum)
- Border Width varies from the shoulder point throughout the project depending on existing right-of-way [eight feet (8’) minimum].
- The total width of this typical section is 62 feet (62’) minimum

The border width is measured from the shoulder point to the right-of-way line. The border width accommodates roadside components such as signing, drainage features, guardrail, fencing and clear zone, the construction and maintenance of the facility, and permitted public utilities.

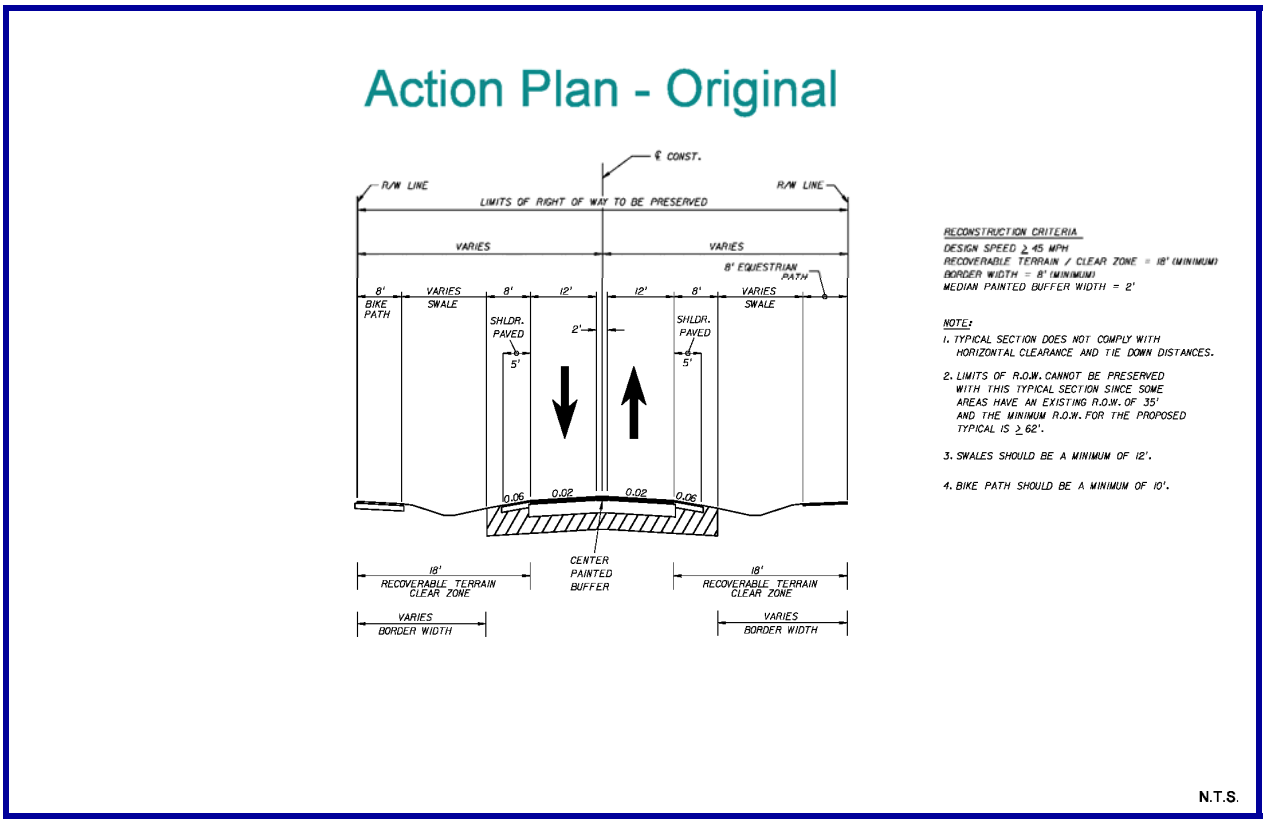

Figure 2-5 – Action Plan (Original) Proposed Typical Roadway Section

The Action Plan Alternative typical section does not comply with horizontal clearance distance criteria and does not meet design criteria to tie to and harmonize with the existing ground. Right-of-way acquisition is required for this typical section since some areas have an existing right-of-way of 35 feet and the minimum right-of-way for the proposed typical section is 62 feet.

The Krome Avenue Action Plan's original typical section was amended by the PD&E Study project team in order to comply with FDOT criteria for reconstruction of a facility. The updated typical section was used during this study as a comparison with the proposed study alternatives (see ***Figure 2-6***). This "modified" typical section would consist of the following elements:

- One 12-foot (12') wide travel lane in each direction
- Two-foot (2') wide center painted buffer median
- Two eight-foot (8') wide outside shoulders [five-foot (5') paved and three-foot (3') unpaved]
- Roadside swales width varies throughout the project depending on existing right-of-way
- Eight-foot (8') wide bike path parallel to the southbound travel lanes
- Eight-foot (8') wide equestrian path parallel to the northbound travel lanes
- Eight-foot (8') wide grass horizontal clearance between the bike path and the right-of-way line (includes harmonization areas)
- Nine-foot (9') wide grass horizontal clearance between the equestrian path and the right-of-way line (includes harmonization areas)

- Design Speed of 45 MPH (reconstruction criteria)
- Recoverable Terrain (Clear Zone) of 18 feet (18') from the edge of pavement (minimum)
- Border Width varies from the shoulder point throughout the project depending on existing right-of-way [eight feet (8') minimum]
- Total typical section width of 78 feet (78') minimum

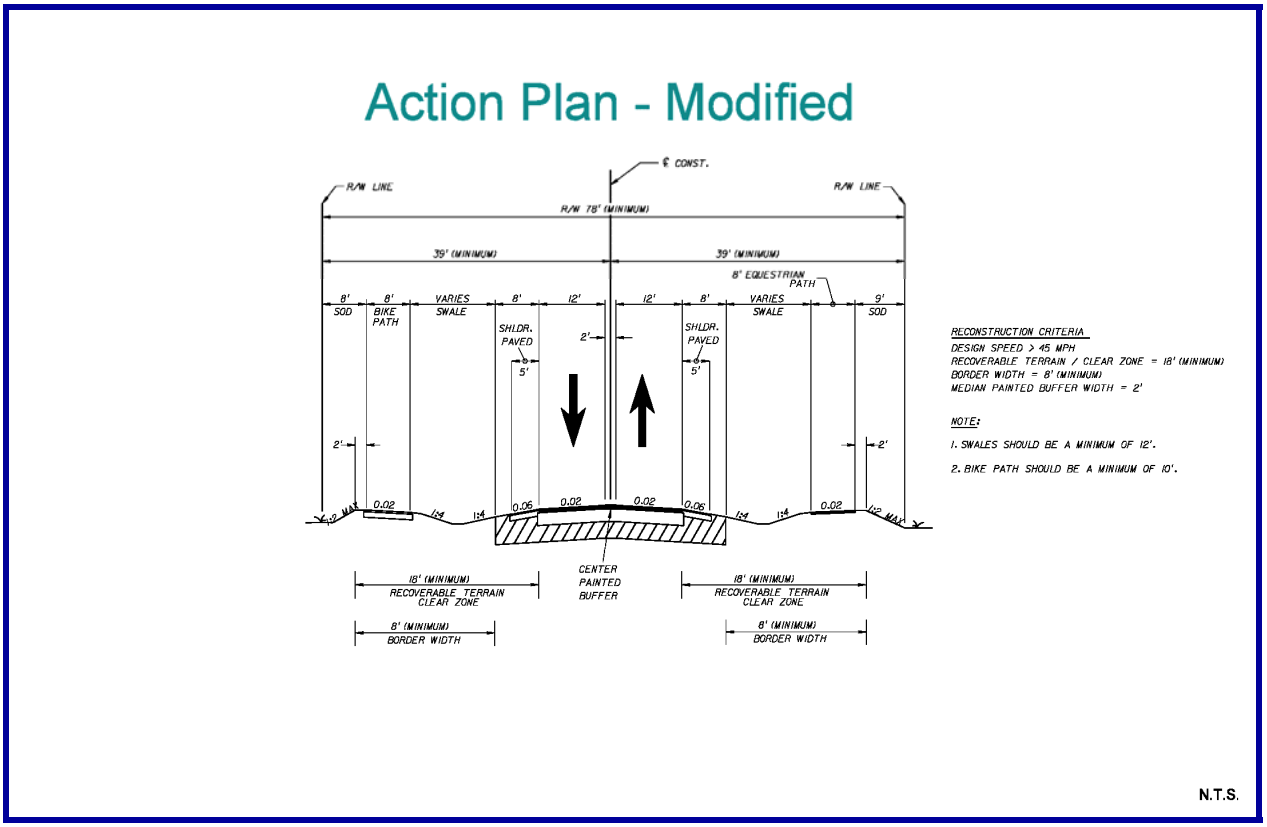

Figure 2-6 – Action Plan (Modified) Proposed Typical Roadway Section

The Action Plan "original" and "modified" alternatives both fail to fulfill the needs of this project for the area. With each of these alternatives, the safety deficiencies associated with this corridor will remain. A grass median, which is anticipated to reduce head-on and angle crashes between the intersections, will not be provided along the corridor within the study limits with either of these alternatives.

Under the "original" or the "modified" Action Plan alternatives, future roadway congestion during peak hours will increase. The congestion in the area may cause additional impacts to this roadway. Such impacts may include excessive delays in travel time, large reduction of average travel speeds, excess fuel consumption from idling vehicles, increased air pollutants, and higher crash rates. In addition, Krome Avenue will become even less effective as an evacuation route for the area with the Action Plan alternatives.

Furthermore, the design deficiencies along the corridor within the study limits will not be addressed by either the "original" or the "modified" Action Plan alternative. Adequate left side

clear recovery area, which is anticipated to reduce centerline cross over head-on crashes, will not be provided. No median separation will be provided, so access management requirements that will limit conflict points and enhance safety will continue to be unmet.

The Action Plan alternatives, "original" and "modified," will not be consistent with area growth management and transportation plans which designate Krome Avenue within the study limits as a four-lane roadway. Neither Alternative will accommodate the social and economic demands of a growing future Miami-Dade County. Therefore, both the "original" and the "modified" Action Plan alternatives were eliminated from further consideration.

2.6.4 Proposed Build Alternatives

As discussed in the previous sections, the No-Build, TSM, and Action Plan alternatives will not provide adequate traffic safety or capacity improvements to the corridor; therefore, additional study alternatives have been developed to enhance safety, increase capacity, and improve traffic operations along the Krome Avenue corridor. Several Build Alternative typical sections were considered; however, only five build alternatives were determined to be viable for this study and carried forward for further analysis (reference the *Preliminary Engineering Report* for details). These five build alternatives discussed below.

Alternative 1 – Two-Lane Divided Rural Roadway

This alternative (see ***Figure 2-7***) would consist of the following elements:

- One 12-foot (12') wide travel lane in each direction
- Forty-foot (40') wide depressed grass median, which includes eight-foot (8') wide inside shoulders (two-foot (2') paved and six-foot (6') unpaved)
- Two 12-foot (12') wide outside shoulders (five-foot (5') paved and seven-foot (7') unpaved). The paved shoulder will include bicycle pavement markings
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes.
- Ten-foot (10') wide roadside swale parallel to the southbound travel lanes
- Twenty-two-foot (22') wide roadside swale parallel to the northbound travel lanes
- Eight-foot (8') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line
- Eight-foot (8') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line
- Design Speed of 65 MPH
- Recoverable Terrain (Clear Zone) of 36 feet (36') from the edge of pavement
- Border Width of 30 feet (30') from the outside shoulder point
- Total typical section width of 148 feet (148')
- This typical section will require a design variation for border width

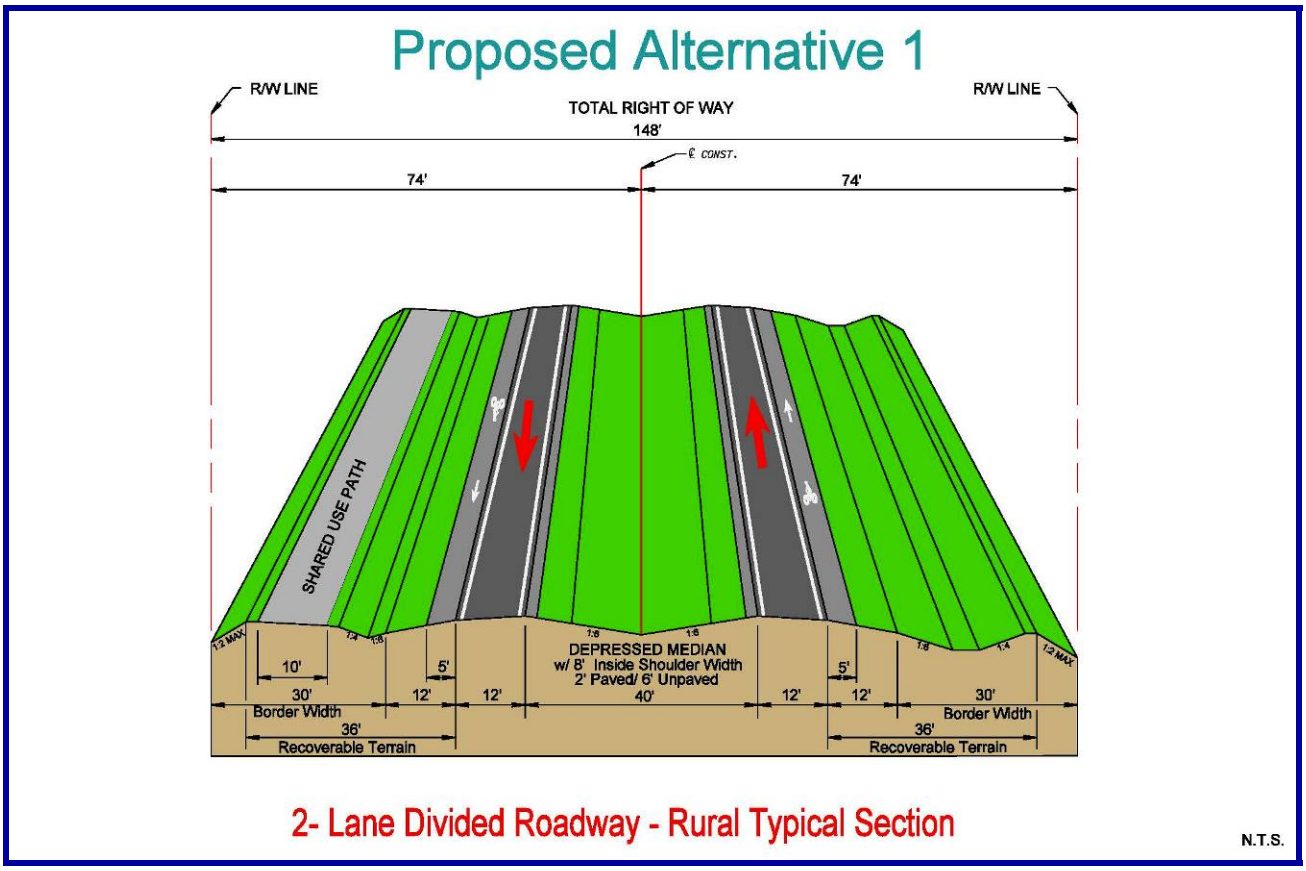

Figure 2-7 – Alternative 1 Proposed Typical Roadway Section (Rural)

Alternative 2 – Two-Lane Divided Rural Roadway with Passing Zones

This alternative (see ***Figure 2-8***) would consist of the following elements:

- Alternative 2 is the same as Alternative 1 with the addition of one 12-foot (12') wide passing lane
- Total typical section width of 160 feet (160')
- This typical section calls for a minimum of one passing zone segment area throughout the length of the project between SW 168th Street and SW 136th Street. Each passing zone segment would consist of one passing lane per direction alternatively
- This typical section will require a design variation for border width

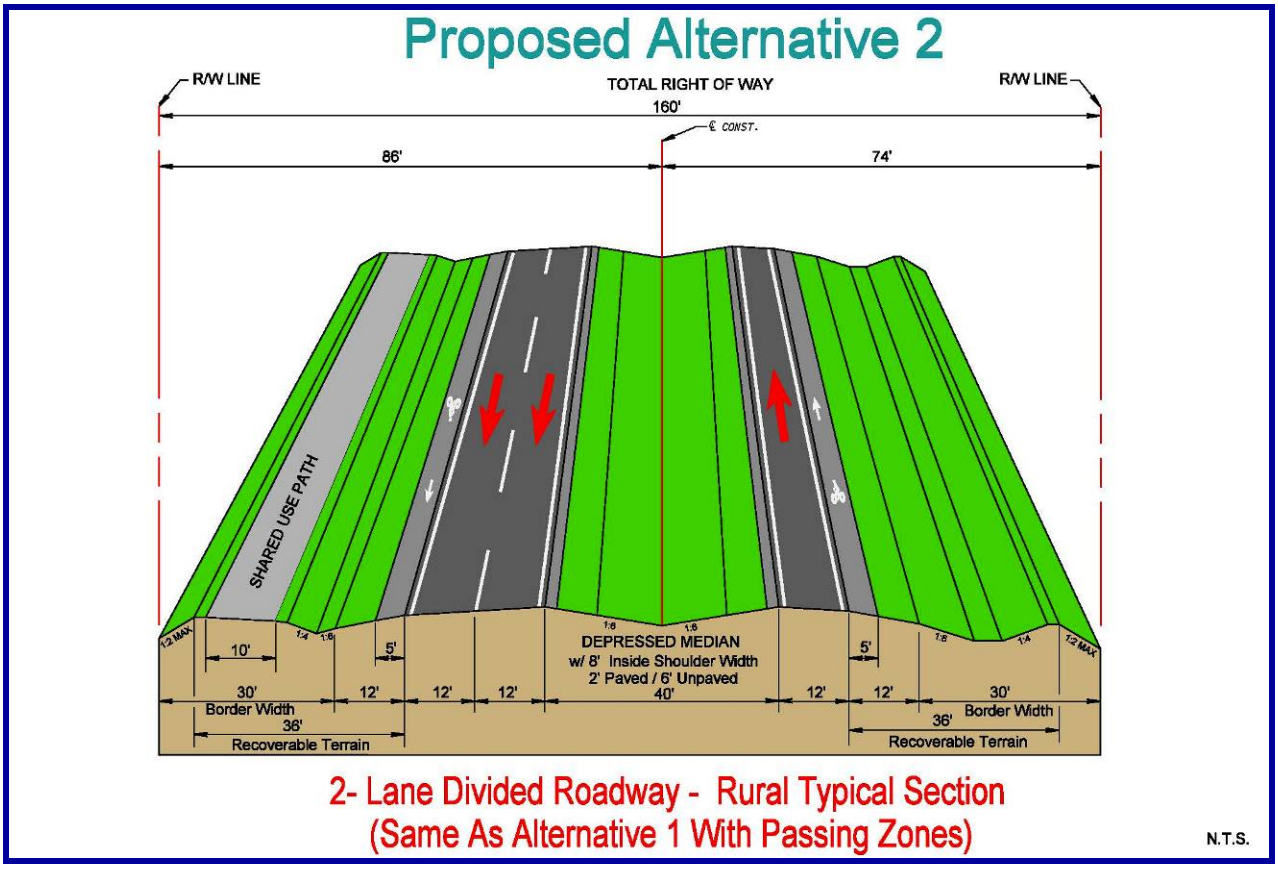

Figure 2-8 – Alternative 2 Proposed Typical Roadway Section (Rural)

Alternative 3 – Four-Lane Divided Rural Roadway

This alternative (see ***Figure 2-9***) would consist of the following elements:

- Two 12-foot (12') wide travel lanes in each direction
- Fifty-four-foot (54') wide depressed grass median, which includes eight-foot (8') wide inside shoulders [four-foot (4') paved and four-foot (4') unpaved]
- Two 12-foot (12') wide outside shoulders [five-foot (5') paved and seven-foot (7') unpaved]. The paved shoulder will include bicycle pavement markings
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes
- Twelve-foot (12') wide roadside swale parallel to the southbound travel lanes
- Twenty-four foot (24') wide roadside swale parallel to the northbound travel lanes
- Sixteen-foot (16') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line
- Sixteen-foot (16') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line
- Design Speed of 65 MPH
- Recoverable Terrain (Clear Zone) of 36 feet (36') from the edge of pavement
- Border Width of 40 feet (40') from the outside shoulder point
- Total typical section width of 206 feet (206')
- This typical section is fully in compliance with the Florida Intrastate Highway System facility design criteria[1]

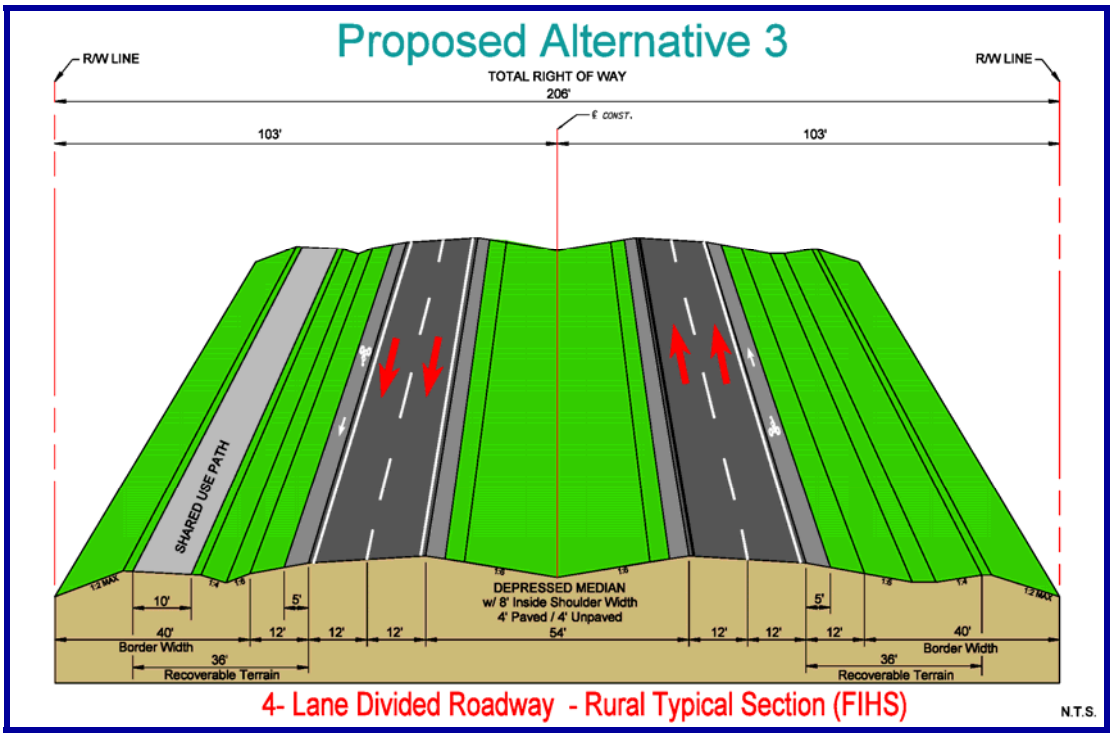

Figure 2-9 – Alternative 3 Proposed Typical Roadway Section (Rural)

[1] Since the time of alternative development for this project, the Florida Intrastate Highway System sunset in 2012 and was replaced with the SIS.

Alternative 4 – Four-Lane Divided Rural Roadway

This alternative (see ***Figure 2-10***) would consist of the following elements:

- Two 12-foot (12') wide travel lanes in each direction
- Forty-foot (40') wide depressed grass median, which includes eight-foot (8') wide inside shoulders [two-foot (2') paved and six-foot (6') unpaved]
- Two 12-foot (12') wide outside shoulders [five-foot (5') paved and seven-foot (7') unpaved]. The paved shoulder will include bicycle pavement markings.
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes
- Ten-foot (10') wide roadside swale parallel to the southbound travel lanes
- Twenty-two-foot (22') wide roadside swale parallel to the northbound travel lanes
- Eight-foot (8') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line
- Eight-foot (8') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line
- Design Speed of 65 MPH
- Recoverable Terrain (Clear Zone) of 36 feet (36') from the edge of pavement
- Border Width of 30 feet (30') from the outside shoulder point
- Total typical section width of 172 feet (172').
- This typical section will require a design variation for border width

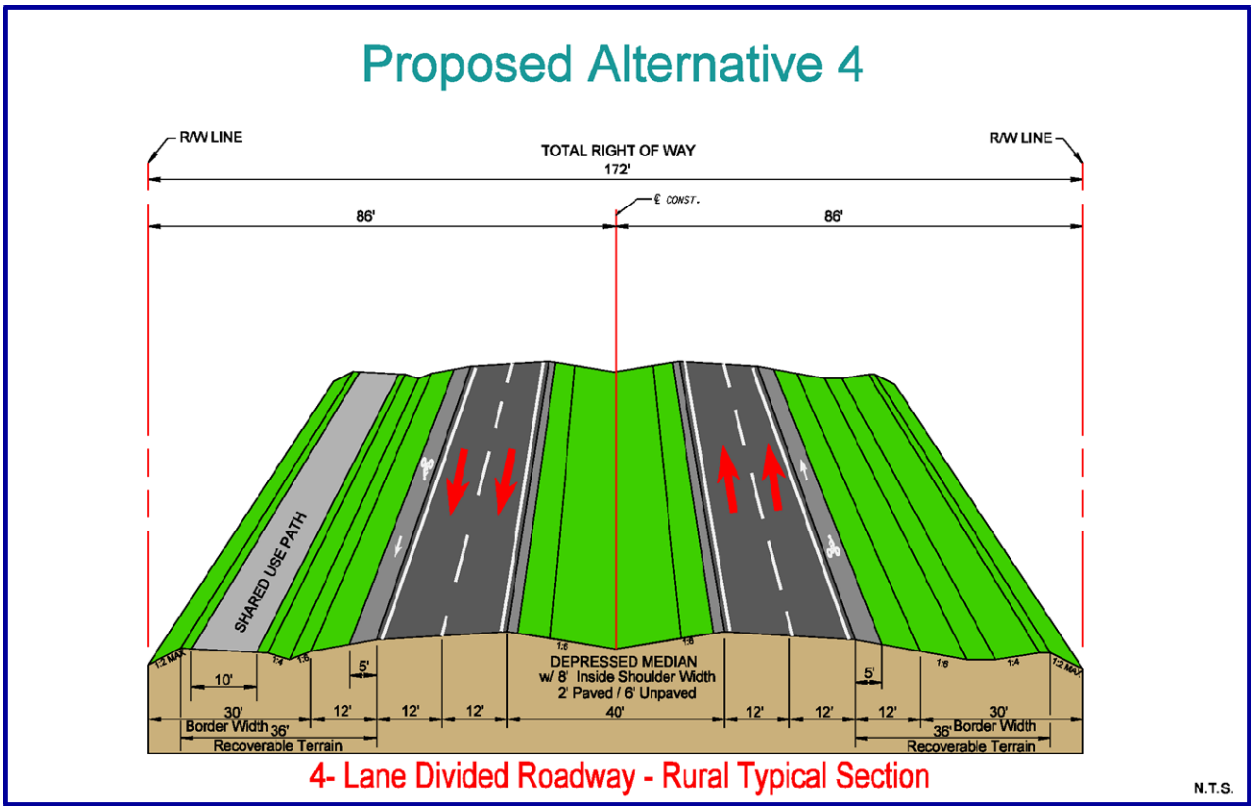

Figure 2-10 – Alternative 4 Proposed Typical Roadway Section (Rural)

Alternative 5 – Four-Lane Divided Rural/Suburban Roadway

This alternative would consist of two distinct typical sections, a suburban section from SW 296th Street to 272nd Street and a rural section from SW 272nd Street to SW 136th Street:

The suburban section would consist of the following elements (see ***Figure 2-11***):

- Two 12-foot (12') wide travel lanes in each direction
- Thirty-foot (30') wide raised median, which includes 18 feet (18') of grass curb and gutter and four feet (4') wide paved inside shoulders
- Two eight-foot (8') wide outside shoulders [five-foot (5') paved and three-foot (3') unpaved]. The paved shoulder will include bicycle pavement markings.
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes
- Ten-foot (10') wide roadside swale parallel to the southbound travel lanes
- Twenty-foot (20') wide roadside swale parallel to the northbound travel lanes
- Seven-foot (7') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line
- Seven-foot (7') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line
- Design Speed of 55 MPH
- Recoverable Terrain (Clear Zone) of 30 feet (30') from the outside edge of travel lane
- Border Width of 35 feet (35') from the outside edge of travel lane to the right-of-way line
- Total typical section width of 148 feet (148')

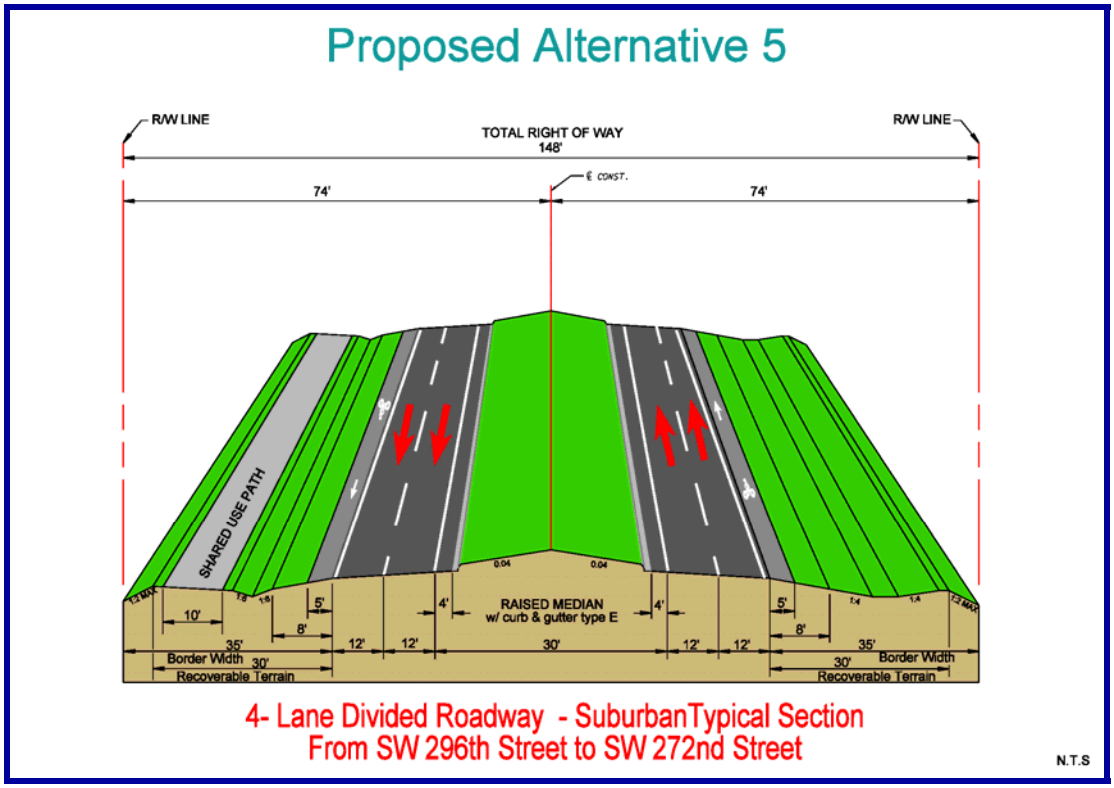

Figure 2-11 – Alternative 5 Proposed Typical Roadway Section (Suburban)

The rural section would consist of the following elements (see ***Figure 2-12***):

- Two twelve-foot (12') wide travel lanes in each direction
- Forty-foot (40') wide depressed grass median, which includes eight-foot (8') wide inside shoulders [two-foot (2') paved and six-foot (6') unpaved]
- Two twelve-foot (12') wide outside shoulders [five-foot (5') paved and seven-foot (7') unpaved] (the paved shoulder will include bicycle pavement markings)
- Ten-foot (10') wide two-way shared use path parallel to the southbound travel lanes
- Ten-foot (10') wide roadside swale parallel to the southbound travel lanes
- Twenty-two-foot (22') wide roadside swale parallel to the northbound travel lanes
- Seven-foot (7') wide grass horizontal clearance/harmonization between the shared use path and the right-of-way line
- Five-foot (5') wide grass harmonization area between the swale parallel to the northbound travel lanes and the right-of-way line
- Design Speed of 65 MPH
- Recoverable Terrain (Clear Zone) of 36 feet (36') from the outside edge of travel lane
- Border Width of 27 feet (27') from the outside shoulder point to the right-of-way line
- Total typical section width of 166 feet (166')
- This typical section will require a design variation for border width

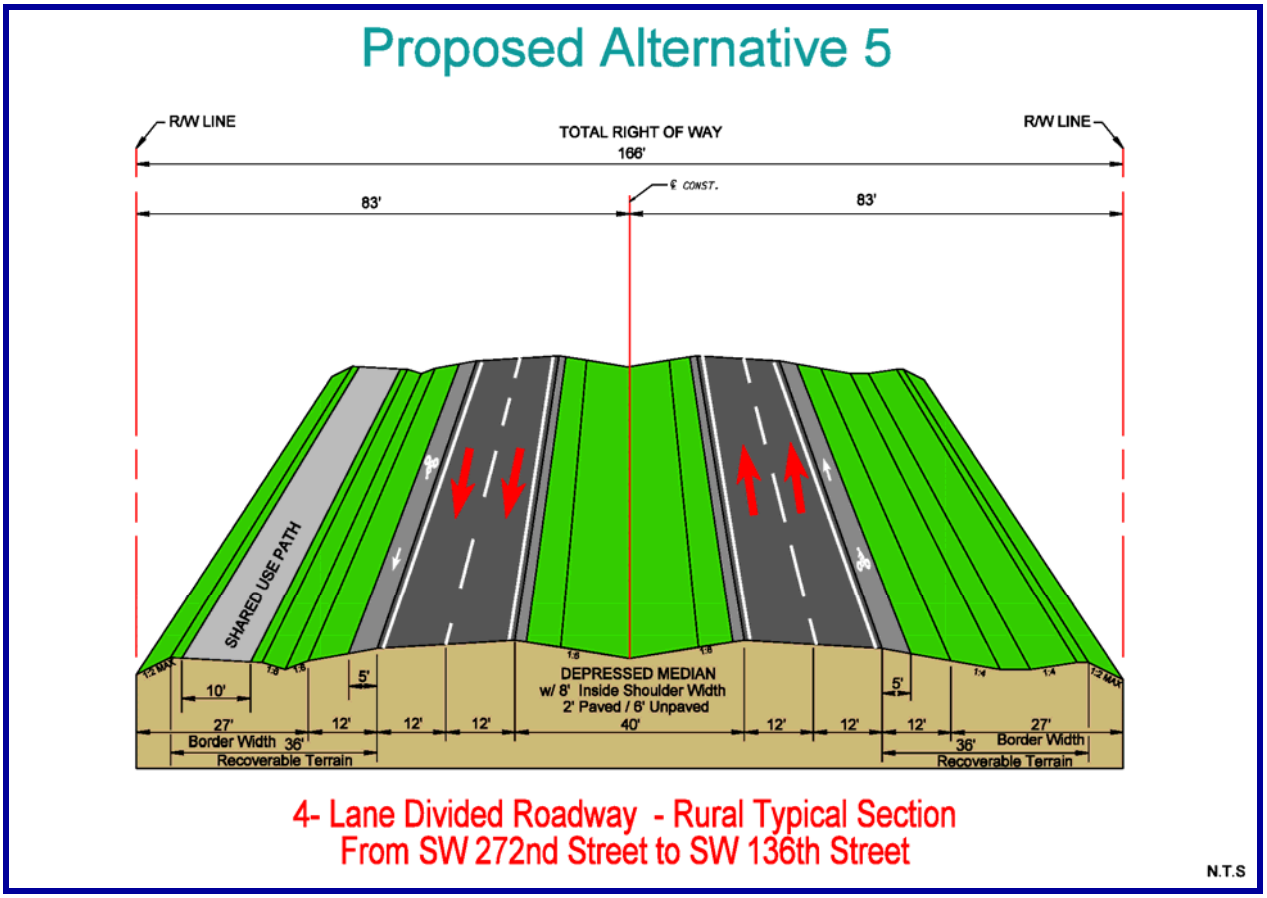

Figure 2-12 – Alternative 5 Proposed Typical Roadway Section (Rural)

3.0 EXISTING CONDITIONS

The Krome Avenue project corridor was reviewed to identify, map and assess wetland and surface water communities that are located within or adjacent to the Krome Avenue study area. The study area consisted of the roadway corridor within the existing FDOT right-of-way limits and a review of adjacent lands within a distance of 100 feet east and west of the existing roadway right-of-way.

Pursuant to Presidential Executive Order 11990 entitled "Protection of Wetlands," the United States Department of Transportation (USDOT) has developed a policy (USDOT Order 5660.1A), Preservation of the Nation's Wetlands (dated August 24, 1978), which requires all federally funded highway projects to protect wetlands to the fullest extent possible. In accordance with this policy, the project has been evaluated to determine alternatives that would involve or avoid wetland impacts, impacts the project would have on wetland functions and values, and mitigative measures that can be taken to minimize impacts.

3.1 Methodology

In order to determine preliminary locations and boundaries of the existing wetland and surface water communities within the study area, available site-specific data was collected and reviewed. Published site-specific data reviewed included the following:

- U.S. Department of Agriculture (USDA), Soil Conservation Service - Natural Resource Conservation Service (NRCS), Interactive Web-Soil Survey of the project area (2013) and 1996 Soil Survey of Miami-Dade County, Florida.
- U.S. Geological Survey (USGS), 7.5-Minute Series Topographic Quadrangle maps, Goulds Quadrangle (1999) and Homestead Quadrangle (1988).
- FDOT, Florida Land Use, Cover, and Forms Classification System (FLUCFCS), 3rd edition (1999)
- U.S. Fish and Wildlife Service (USFWS) Classification of Wetlands and Deepwater Habitats of the United States (1979).
- 2001/2004/2006/2011 Aerial Photographs of the Project Area at 1 inch = 100 feet, 1 inch = 300 feet, and 1 inch = 1000 feet scales.
- Miami-Dade County GIS data (2008/2009/2010/2011)

Using the above referenced information, the approximate locations and boundaries of wetland and surface water communities in the project area were determined and mapped in GIS on aerial photography for verification in the field.

Project biologists familiar with Florida wetland community types conducted field investigations of the study area from in May and June, 2004, with follow-up field reviews conducted in September and December, 2010. The purpose of the field investigations was to locate and delineate wetland and surface water boundaries of the areas identified during the in-house data review as well as areas not previously identified. The extent of jurisdictional wetlands and/or surface waters for the Krome Avenue study area were determined using the approaches outlined in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual, Technical Report Y-87-1, January 1987; the 2010 Regional Supplement to the Corps of Engineers Wetland

Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0); and Chapter 62-340 F.A.C., "Delineation of the Landward Extent of Wetlands and Surface Waters" During the field investigation, attention was given to identifying plant species composition for each wetland/surface water area delineated as well as its adjacent upland habitats. Exotic plant infestations, shifts in historical communities, and any other disturbances were noted. Wildlife observations and signs of wildlife usage at each wetland/surface water and adjacent upland habitat were also noted.

Following delineation activities, each identified wetland/surface water community was classified using the FLUCFCS Manual (FDOT, 1999) and the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979). No vegetated wetlands jurisdictional to federal or state regulatory agencies were observed within the project study area; as suchno wetland functional assessments are required for the proposed project.

As part of the AN and Efficient Transportation Decision Making (ETDM) process, comments were solicited from the SFWMD, the FDEP, the USACE and other federal and state agencies relating to wetland/surface water resources and environmental permitting issues with respect to the Krome Avenue project. To date, AN and ETDM responses have been received from the U.S. Environmental Protection Agency (EPA), the FDEP, the SFWMD, the USACE, the National Oceanographic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), and the USFWS. All of the comments received have been addressed herein. Also, on March 8, 2005, the extent of the surface water areas was field-verified independently by the SFWMD and a letter was received on April 18, 2005 verifying the extent of jurisdictional surface water areas along the project corridor. The USACE advised that they are aware of the surface water areas within the study area and will investigate the site in further detail following receipt of a Section 404 Department of the Army Dredge/Fill Permit application. USACE staff informally concurred with the SFWMD determination via verbal communication in 2005. Copies of relevant agency correspondence have been included in ***Appendix B***.

3.2 Existing Wetland / Surface Water Communities

The portion of Krome Avenue within the study area was constructed over the western reaches of the Atlantic Coastal Ridge formation, a slightly elevated, oolitic limestone are characterized by high infiltration rates and a relative low water table. Therefore, any existing depressional roadside areas located along Krome Avenue do not retain stormwater runoff long enough to allow for the development of hydrology and soil conditions conducive to support hydrophytic vegetation. Historically, the Atlantic Coastal Ridge was crossed by numerous sloughs, or transverse glades that connected the Everglades to Florida Bay during certain times of the year (Hoffmeister 1974, Long & Lakela 1976). These transverse glades would be the areas where jurisdictional wetlands would most likely occur within the Atlantic Coastal Ridge physiographic region. However, an extensive network of canals and levees was constructed across Southeast Florida in connection with the Central and Southern Florida Flood Control Project between 1950 to 1975 (Vogel). Most of these canals were constructed within the preexisting natural features including the sloughs. Construction of the canals within the finger glades increased drainage resulting in the elimination of the associated wetlands. Wetland surveys of the project study area were conducted by project biologists in 2004 and 2010. No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the United States, as defined by Section 404 of

the Clean Water Act, were observed within or adjacent to the project study area. This includes natural wetland communities as well as swales or other manmade stormwater features. In addition, per coordination with the SFWMD, the project corridor does not contain wetlands as defined by Chapter 62-340 Florida Administrative Code (see ***Appendix B*** for the SFWMD's letter dated April 18, 2005). Therefore, no impacts (direct or indirect) to jurisdictional wetlands are anticipated as a result of this project.

However, three areas identified as surface waters consisting of two community types were identified within the study corridor. These areas consist of an inundated rock mining pit (borrow pit) (SW-1) excavated in Miami oolite rock located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMD's C-102/Princeton canal (SW-2) which crosses Krome Avenue at approximately SW 196th Street; and the SFWMD's C-103/Mowry canal (SW-3) which crosses Krome Avenue just north of SW 280th Street. These areas, identified herein as SW-1, SW-2 and SW-3, respectively, are likely to be considered Surface Waters of the State and impacts are likely to be minimal. The existing conditions vary in terms of habitat value, quality, level of intrusion by exotic/invasive (undesirable) species and degree of geographical isolation. No public uses (i.e., recreational, scientific, cultural, public water supply system, etc.) were apparent for the rock mining pit (SW-1), which is located on private land. The canals (SW-2 and SW-3), operated and maintained by the SFWMD. These canals could also potentially be utilized for limited fishing and/or small boating activities. In regards to edge relationships, the boundaries of all three surface water areas are man-made; therefore, there are no areas that exhibit natural ecotones. For the most part, agricultural and residential land uses abut these surface water areas within the project limits. Also, regarding integrity (defined as a complete or unimpaired state), the affected surface water areas along the project corridor have no significant integrity since they are all man-made features, which are continuously impacted by the adjacent land use activities and regional hydrologic alterations contributing to the lack of bio-diversity within these areas. These areas provide moderate to low habitat value for resident and migratory wildlife species. The three surface waters identified within the study corridor are described in detail below.

Table 3-1 lists each identified surface water area by type and classification. Photographs with brief descriptions of each surface water area are provided in ***Appendix C***. The locations and approximate boundaries of the surface water areas identified within the study area are shown in ***Figures 3-1, 3-2,*** and ***3-3*** and on aerial photographs (with labeled cross streets) in ***Appendix D***. A comprehensive listing of the plant taxa observed within each surface water area is provided in ***Appendix E***. The three surface waters identified within the study corridor are described in detail below.

Figure 3-1 – Surface Water Location Map

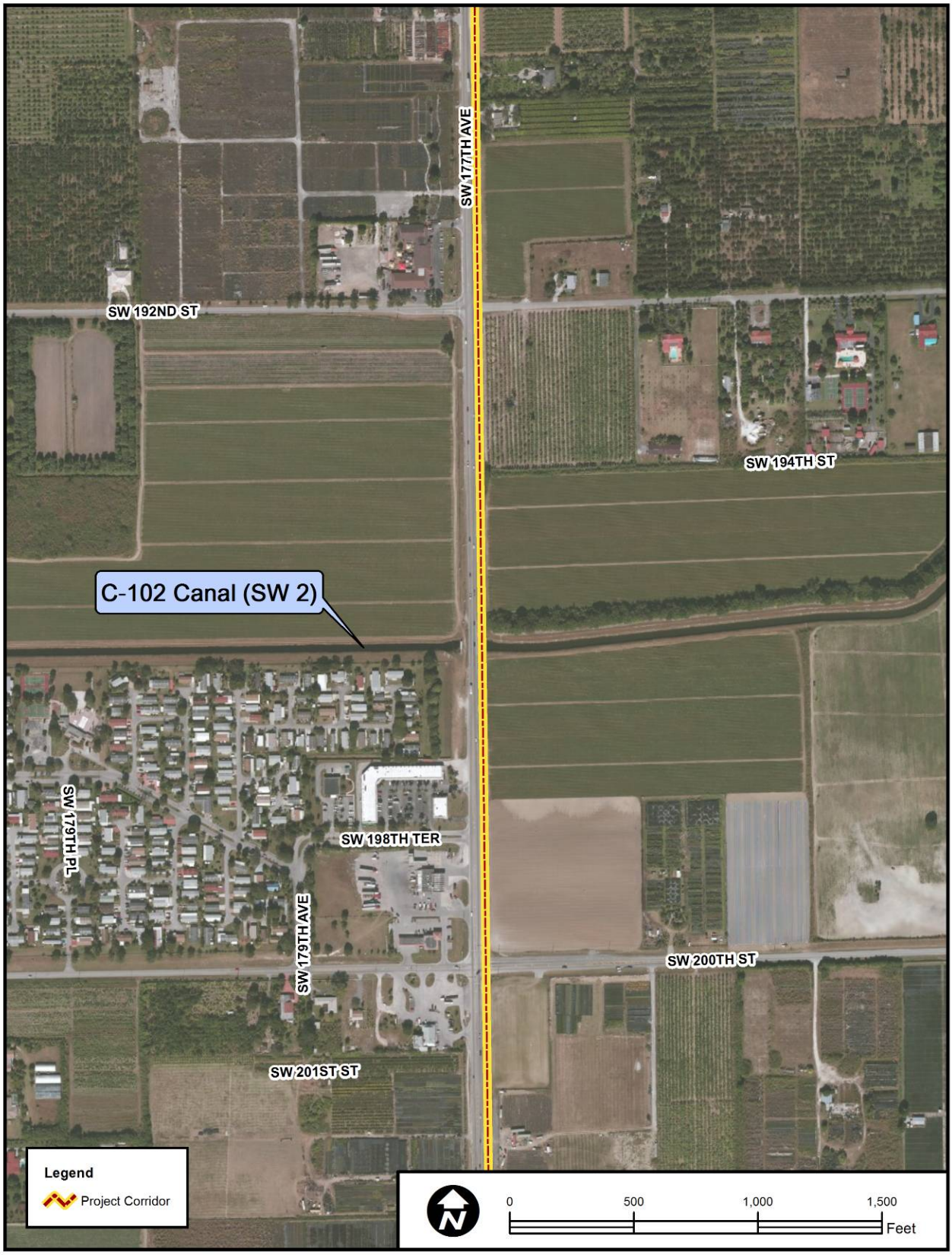

Figure 3-2 – Surface Water Location Map

Figure 3-3 – Surface Water Location Map

Table 3-1 – Surface Water Type and Descriptions

Surface Water ID	Surface Water Type	Surface Water Size	FLUCFCS Code*	FLUCFCS Description	USFWS Code**	USFWS Description
SW-1	Former Borrow Pit	0.66 acres	742	Borrow Areas/ Lakes < 10 acres	PUBHx	Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
SW-2 (C-102)	Canal	N/A	510	Streams and Waterways	R2UBHx	Rock Rubble Bottom, Permanently Flooded, Excavated
SW-3 (C-103)	Canal	N/A	510	Streams and Waterways	R2UBHx	Rock Rubble Bottom, Permanently Flooded, Excavated

* FLUCFCS = From the FLUCFCS (FDOT, 1999)
** USFWS = From the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979).

Former Borrow Pit (SW-1)
FLUCFCS – 742 (Borrow Areas)
USFWS – PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)

This surface water community (SW-1) consists of an apparent former borrow pit located on the west side of Krome Avenue, approximately 1,000 feet north of SW 208th Street or adjacent to the north of the SW 206th Street corridor (SW 206th Street does not yet exist in this area). The permanently inundated former borrow pit, excavated in Miami oolite rock, is rectangular in shape with high, steep side slopes. This feature is approximately 100 feet in width and approximately 290 feet in length with approximately 60 feet of the eastern portion situated within the project corridor. Agricultural land utilized for row crops borders this surface water feature to the south. Land utilized by an ornamental plant nursery borders the former borrow pit to the north and west. No surface water connections to nearby wetlands or other surface water areas exist; therefore, SW-1 can be considered as an isolated feature. The steep side slopes are densely vegetated with non-indigenous plant species that protrude over the water's edge such as Brazilian pepper (*Schinus terebinthifolius*), Australian pine (*Casuarina equisetifolia*), Brazilian jasmine (*Jasminum fluminense*), elephantgrass (*Pennisetum purpureum*), Noyau vine (*Merremia dissecta*), and Santa Maria feverfew (*Parthenium hysterophorus*). Other important components of the vegetation cover of the steep-sided slopes include possum grape (*Cissus incisa)*, muscadine (*Vitis rotundifolia*), and Virginia creeper (*Parthenocissus quinquefolia*).

No submergent or emergent hydrophytic vegetation was observed within the borrow pit with the exception of an individual giant leather fern (*Acrostichum danaeifolium*) observed at the water's edge along the eastern shoreline. Use of the site by wildlife was evidenced by the observation of a large number of cattle egrets (*Bubulcus ibis*) loafing in the vegetation overhanging the borrow pit, two green herons (*Butorides virescens*) observed foraging, several basking red-eared sliders (*Trachemys scripta elegans*), and several apparent unidentified tilapia nest depressions. This system is typical of abandoned limerock mining pits in the area.

Canals (SW-2 and SW-3)
FLUCFCS – 510 (Streams & Waterways)
USFWS – R2UBHx (Rock Rubble Bottom, Permanently Flooded, Excavated)

The C-102/Princeton canal (SW-2) and the C-103/Mowry canal (SW-3) are permanently-inundated drainageways with steep side slopes excavated in Miami oolite rock. In the vicinity of the project, both canals are located in areas primarily utilized for agricultural purposes with limited amount of low-density residential usage. Both canals, operated and maintained by the SFWMD, function to drain flood waters, recharge groundwater, and maintain fresh groundwater head elevation adequate to inhibit saltwater intrusion with eventual discharge to Biscayne Bay to the southeast through several downstream water control structures. Note that the portion of these waterways within the project study area are not categorized as Outstanding Florida Waters (OFW) since the project location lies upstream of the SFWMD's salinity control structures [S-21A (C-102) and S-20F (C-103)].

Vegetation on the upland canal banks, which are regularly mowed by the SFWMD, includes weedy ruderal herbaceous species typical of regularly mowed non-wetland areas in south Miami-Dade County. The steep side slopes of both canals in the vicinity of the proposed project offer little or no littoral habitat for the establishment of emergent hydrophytic vegetation. Submergent vegetation in the C-102/Princeton canal is dominated by Carolina fanwort (*Cabomba caroliniana*). Torpedo grass (*Panicum repens*) was also observed in the C-102/Princeton canal extending a short distance waterward from the shoreline around the culverts on the east side of Krome Avenue. Submergent vegetation in the C-103/Mowry canal is dominated by hydrilla (*Hydrilla verticillata*), Indian swampweed (*Hygrophila polysperma*), and creeping primrosewillow (*Ludwigia repens*). Both man-made canal systems provide moderate to low habitat value for resident and migratory wildlife species. Wildlife use was evidenced by observations of a foraging great blue heron (*Ardea herodias*) and two green herons, several basking red-eared sliders, and several unidentified exotic fish species in the canals. A dead, approximate six-foot alligator, wrapped in rope, was also observed within the C-102/Princeton canal on the east side of Krome Avenue during the field survey conducted on May 20, 2004.

4.0 ENVIRONMENTAL CONSEQUENCES

Pursuant to Presidential Executive Order 11990 entitled "Protection of Wetlands," the USDOT has developed a policy (USDOT Order 5660.1A), Preservation of the Nation's Wetlands (dated August 24, 1978), which requires all federally funded highway projects to protect wetlands to the fullest extent possible. In accordance with this policy, the project has been evaluated to determine alternatives that would involve or avoid wetland impacts, and impacts the project would have on wetland functions and values. If wetland impacts were determined to be unavoidable, the evaluation included a determination of mitigative measures to compensate for impacts to wetlands.

4.1 Impact Analysis

The proposed alternatives for the Krome Avenue PD&E project were evaluated for potential impacts to wetlands and surface waters. As mentioned in Section 3.0, above, wetland surveys of the project study area were conducted by project biologists in 2004 and 2010. No areas with characteristics indicative of jurisdictional vegetated wetlands or waters of the United States, as defined by Section 404 of the Clean Water Act, were observed within or adjacent to the project study area. This includes natural wetland communities as well as swales or other manmade stormwater features. Therefore, no impacts (direct or indirect) to jurisdictional wetlands are anticipated as a result implementation of the No Build Alternative, TSM Alternative, Action Plan Alternative or any of the Krome Avenue build alternatives.

Three areas characterized as surface waters consisting of two community types were identified and assessed. These areas consist of an inundated rock mining pit (borrow pit) (SW-1) excavated in Miami oolite rock located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMD's C-102/Princeton canal (SW-2) which crosses Krome Avenue at approximately SW 196th Street; and the SFWMD's C-103/Mowry canal (SW-3) which crosses Krome Avenue just north of SW 280th Street. Impacts to these surface water areas were quantified for each of the build alternatives described in Section 2.0 of this report. Direct impacts associated with each build alternative are depicted in ***Table 4-1***. Direct impact estimates are based on the aerial extent of the surface water areas within the proposed construction limits for each proposed build alternative.

Table 4-1 – Direct Surface Water Impacts

Surface Water ID	FLUCFCS	Description	Direct Surface Water Impacts (ft^2)	Direct Surface Water Impacts (acres)
Alternative 1				
SW-1	742	Former Borrow Pit	0	0
SW-2	510	C-102 Canal	2,975	0.07
SW-3	510	C-103 Canal	3,180	0.07
Alternative 1 Totals			**6,155**	**0.14**
Alternative 2				
SW-1	742	Former Borrow Pit	0	0
SW-2	510	C-102 Canal	2,975	0.07
SW-3	510	C-103 Canal	3,180	0.07
Alternative 2 Totals			**6,155**	**0.14**
Alternative 3				
SW-1	742	Former Borrow Pit	2,250	0.05
SW-2	510	C-102 Canal	6,100	0.14
SW-3	510	C-103 Canal	6,520	0.15
Alternative 3 Totals			**14,870**	**0.34**
Alternative 4				
SW-1	742	Former Borrow Pit	900	0.02
SW-2	510	C-102 Canal	4,400	0.1
SW-3	510	C-103 Canal	3,900	0.09
Alternative 4 Totals			**9,200**	**0.21**
Alternative 5				
SW-1	742	Former Borrow Pit	1,647	0.04
SW-2	510	C-102 Canal	2,274	0.05
SW-3	510	C-103 Canal	2,659	0.06
Alternative 5 Totals			**6,580**	**0.15**

Alternative 1 would directly impact approximately 0.14 acres of surface waters; Alternative 2 would directly impact approximately 0.14 acres of surface waters; Alternative 3 would directly impact approximately 0.34 acres of surface waters; Alternative 4 would directly impact approximately 0.21 acres of surface waters; and Alternative 5 would directly impact approximately 0.15 acres of surface waters. Since the waterways will remain virtually intact following the proposed construction activities and no loss in functional value of the surface waters is anticipated to occur, the proposed direct impacts is expected to be minimal. Surface water impact acreages will be further refined as detailed construction plans are developed during the final design phase of the project.

4.2 Indirect Impacts

Indirect impacts are to be expected for those surface waters that will be directly impacted because a suitable upland buffer does not exist between the remaining portion of the surface water and the proposed improvement. However, indirect impacts to the existing surface water areas along Krome Avenue are anticipated to be minimal due to the implementation of appropriate measures such as sedimentation and erosion control best management practices in accordance with the latest edition of FDOT's *Standard Specifications for Road and Bridge Construction* and, per Section 4.2.7 of the SFWMD's Basis of Review for Environmental Resource Permit Applications. All best management practices associated with roadway construction projects will be properly implemented and maintained throughout all construction activities to avoid/minimize the potential for short-term impacts relating to water quality and wildlife. Although the build alternatives propose additional lanes to accommodate existing and future traffic demands, the additional traffic is not expected to have any significant adverse effect on the functions of the surface water areas.

4.3 Cumulative Impacts

The proposed project is located within the C-1 West, C-102 West, BD-C103 and the L-31 NS watersheds. From a regional perspective these watersheds contain approximately 989 acres of surface waters. The surface waters are comprised of 331 acres of streams and waterways including mostly primary and secondary canals, and 658 acres of reservoirs (lakes, borrow pits, etc.). Based on the estimated impacts associated for each build alternative, the percent of impact will not exceed 0.087% for streams and waterways and 0.0076% for reservoirs. Therefore, surface water impacts on a cumulative or regional scale are considered to be minor or negligible. Keep in mind that although the project includes direct impacts to the C-102 and C-103 canals, the waterways will still exist at these locations and the functional value of the waterways will not be altered since the design flow volume of each canal will be retained (impacts are limited to bridge and culvert widening activities).

4.4 Elimination and Reduction (Avoidance and Minimization) of Impacts

As surface water areas exist adjacent to or within close proximity of the existing roadway corridor, the complete avoidance of surface water impacts is neither practicable nor compatible with any safety or operational improvements, and there is significant demand to justify the need for the proposed improvements along this corridor.

All factors relating to the design and location of the facility, as well as information and issues relevant to the project decision making process were considered, including socio-economic, environmental and engineering issues. The following alignment controls which may influence corridor location were considered:

- Available physical envelope through which an improvement providing acceptable service could be routed;
- Cultural features, including public and private development;
- Natural features (wetlands, protected wildlife, surface waters, etc.) which could be impacted by the project; and
- Logical termini, giving consideration to directness, length, and service.

Each proposed alternative was analyzed and evaluated to a point of rejection or selection as a viable alternative. The impacts of each corridor alignment alternate were identified and expressed in a form suitable for comparison to other corridor alternates, through the use of an evaluation matrix (reference the *Corridor Analysis Report* for this project). Based on the results of the evaluation of alternatives process, it was determined that the existing SR 997/Krome Avenue corridor (Alternate Corridor #3) is the most viable corridor for the improvement project. As a result, this corridor (Krome Avenue) was selected and recommended for further consideration since this corridor best meets the needs for the project and minimizes impacts to wetlands and/or surface waters to the greatest extent practicable, while maintaining safe and sound engineering practices, when compared to the alternative corridors evaluated.

This proposed alignment alternative was further refined by consideration of the proposed roadway profile and associated typical section in order to reduce proposed impacts to wetlands and/or surface waters as much as possible while meeting the safety and transportation needs of the project. In addition, further efforts to reduce impacts will be implemented as detailed construction plans are developed during the permitting and final design phase of the project including the use of BMPs in accordance with the latest edition of FDOT's *Standard Specifications for Road and Bridge Construction*.

4.5 Conceptual Mitigation

Although the project limits have been refined to reduce impacts to the identified surface water areas to the greatest extent practicable, unavoidable impacts to these areas are anticipated to occur. However, no mitigation is required for impacts to the identified surface water areas because no net loss in functional values will result from the proposed improvements and no indirect or cumulative impacts are anticipated to occur. In addition, in relation to wetlands, no mitigation would be required because no direct impacts to wetlands would occur as a result of this project and no indirect or cumulative impacts are anticipated downstream of the proposed project.

5.0 PERMITTING AND REVIEW AGENCIES

Agency coordination for this project occurred through the ETDM Planning and Program Screening, the AN process, and individual conversations with staff at the USACE, SFWMD, USFWS, FDEP, Florida Fish and Wildlife Conservation Commission (FFWCC), to discuss project specific information. The ETDM review began on May 22, 2006 with all agency comments received by July 6, 2006. The Summary Degree of Effect was determined to be Minimal. A summary of the wetland/surface water-related comments received from the resource agencies charged with commenting on project specific effects to natural habitats is provided in ***Table 5-1*** with excerpts from the compete ETDM Summary Report enclosed in ***Appendix B***.

Table 5-1 – Summary of ETAT Natural Resources Comments

Agency	Issue	Degree of Effect	Comments
USFWS	Wetlands	Minimal	Wetlands provide important habitat for fish and wildlife and impacts should be avoided to the greatest extent possible.
USACE	Wetlands	Minimal	Impacts to tributaries (canals) probable but minimal.
USEPA	Wetlands	Moderate	Proposed project may impact wetlands. Impact to wetlands should be minimized. Unavoidable impacts must be fully mitigated.
FDEP	Wetlands	Moderate	There are wetlands present throughout the corridor, including the northern portion, which will require an Environmental Resource Permit. Wetlands should not be displaced by the installation of stormwater conveyance and treatment swales; compensatory treatment in uplands is the preferred alternative.
FFWCC	Indirect and Cumulative Effects	Moderate	Land uses within adjacent to the project area consist of urban and agricultural. Small but productive and important blocks or dry prairie, freshwater marsh and wet prairie, upland hardwood hammock, open water, shrub swamp and pinelands are found within the project area. Depending on the chosen Alternative, indirect and cumulative impacts on listed species and habitat resources could be moderate.

A site assessment with the SFWMD was conducted on March 8, 2005. The purpose of this site investigation was to assess the habitats within the study area, verify the limits of wetland/surface waters, and to discuss potential direct, indirect, and cumulative impacts. During the field site assessment, the SFWMD informally agreed to the limits of surface water habitats which may be impacted as a result of the proposed project. The USACE advised that they are aware of the surface water areas along the study corridor and will investigate the site in further detail following receipt of a Section 404 Department of the Army Dredge/Fill Permit application (USACE staff informally concurred with the SFWMD determination via verbal communication in 2005).

Both the USACE and SFWMD regulate impacts to wetlands/surface waters within the project area. Other agencies, including the EPA, NMFS, USFWS, FDEP and FFWCC, typically review and comment on permit applications. A list of the environmental-related permits that are anticipated to be required for this project, regardless of the alternative selected, is provided in ***Table 5-2*** below.

Table 5-2 – Anticipated Permits

Permit Type	Issuing Agency
Environmental Resource Permit (ERP)	SFWMD
Right-of-Way Occupancy Permit	SFWMD
Water Use Permit (Construction Dewatering)	SFWMD
Section 404 Dredge and Fill Permit	USACE
Section 408 Review and Approval	USACE
National Pollutant Discharge Elimination System (NPDES)	FDEP

The SFWMD requires an ERP when construction of any project results in the modification or creation of a water management system or results in impacts to wetlands or surface waters of the State. It is also anticipated that modifications to the existing SFWMD Right-of-Way Occupancy Permits previously issued to the FDOT would be required for any proposed work along Krome Avenue within the SFWMD's right-of-way of the C-102/Princeton Canal and the C-103/Mowry Canal per Chapter 40E-6, F.A.C. The SFWMD requested that access/openings are available on all four quadrants of the all canals under their jurisdiction. These access points should be 20 feet wide to allow access to maintenance equipment access and room to maneuver. Also, any swales in these areas should be built with a maximum side slope of 10:1 ratio to facilitate access with maintenance equipment (i.e., large cranes) *(*refer to ***Appendix B*** for meeting minutes with the SFWMD Right-of-Way representatives). If it is determined that construction dewatering will be required and if the necessary dewatering activities exceed the SFWMD's threshold for a No Notice Short-Term Dewatering Water Use Permit per Chapter 40E-2, F.A.C., a Water Use Permit for dewatering will also be required from the SFWMD.

With the USACE, a Section 404 Dredge and Fill Permit will be required. The permit will require compliance with the 404(b)(1) guidelines, including verification that all impacts have first been eliminated to the greatest extent possible, that unavoidable impacts have been reduced to the greatest extent possible, and lastly that unavoidable impacts have been mitigated in the form of wetlands creation, restoration, and/or enhancement, if applicable. Additionally, all work within the limits of the SFWMD canals will require Section 408 approval by the USACE prior to issuance of the Section 404 Permit since the canals were originally constructed by the USACE as part of the Central and Southern Florida Flood Control Project. This additional review process should be initiated as early in the permitting process as possible in order to avoid a delay with the issuance of the USACE permit (expect 3-4 months for this additional review).

Under the FDEP's delegated authority to administer the NPDES program, construction sites that will result in greater than one acre of disturbance must file for and obtain either coverage under an appropriate generic permit or an individual permit for point source discharges of stormwater to waters of the United States. A major component of the NPDES permit is the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the site and discusses good engineering practices (i.e., best management practices) that will be used to reduce the pollutants.

No significant adverse issues have been identified by the regulatory and/or commenting agencies during the preparation of this WER as to applying for and acquiring the necessary environmental/stormwater management permits for this proposed project. Copies of agency correspondence to date have been provided in ***Appendix B***.

6.0 REFERENCES

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APPENDIX A

Water Quality Impact Evaluation

WQIE CHECK LIST

Project Name:	State Road (SR) 997/Krome Avenue/SW 177th Avenue Project Development & Environment (PD&E) Study from SW 296th Street to SW 136th Street.
County:	Miami-Dade
FIN (Financial Number):	249614-4-22-01
Federal Aid Project No.	N/A
Short Project Description:	The FDOT is evaluating roadway and safety improvement alternatives along a 10-mile segment of SR 997/SW 177th Avenue (Krome Avenue) from SW 296th Street (Avocado Drive) to SW 136th Street (Howard Drive). The project corridor is located in South Miami-Dade County, Florida. Krome Avenue is part of the Florida Intrastate Highway System (FIHS) and the Strategic Intermodal System (SIS). Project objectives include the following: Implement the necessary safety improvements; improve roadway conditions; increase capacity to mitigate existing traffic congestion and to accommodate future traffic demand; improve drainage by providing the necessary stormwater treatment; improve access management; improve bicycle/pedestrian access and continuity; incorporate landscaping and aesthetic treatments; and maintain an adequate level of service for traffic during construction.

PART 1: DETERMINATION OF WQIE SCOPE

Does project increase impermeable surface area? ☒ Yes ☐ No

Does project alter the drainage system? ☒ Yes ☐ No

If the answer to both questions is no, complete the WQIE by checking Box A in Part 4.

Do environmental regulatory requirements apply? ☒ Yes ☐ No

If no, proceed to Part 4 and check Box B.

PART 2: PROJECT CHARACTERISTICS

20-year design ADT: 58,000 vehicles/day (Year 2030)

Expected speed limit: 45 miles/hour (posted)

Drainage area: 211.01 acres; 43.03 % Impervious; 56.97 % Pervious

Land Use: 90% Agricultural; 3% Residential; 5% Commercial; 1% Institutional; 1% Conservation.

Potential Large Sources of Pollution (identify): Exxon Krome located at 19900 SW 177 Avenue, Farm Store #156 located 24791 SW 177 Avenue, Barreto Yaz Group located at 24800 SW 177 Avenue, Krome Station located at 27200 SW 177 Avenue (see CSER for details).

Groundwater Receptor (Name of Aquifer or N/A): Surficial Aquifer System

Designated Well Head Protection Area: ☐ Yes ☒ No Name: N/A

Sole Source Aquifer: ☒ Yes ☐ No Name: Biscayne Aquifer

Groundwater Recharge Mechanism: Local Precipitation Only

(Notify District Drainage Engineer if Karst Conditions Expected)

Surface Water Receptor (Name or N/A): C-102 and C-103

Classification: ☐ I ☐ II ☒ III ☐ IV ☐ V

Special Designation (check all that apply):

☐ ONRW ☐ OFW ☐ Aquatic Preserve ☐ Wild & Scenic River

☐ Special Water ☐ SWIM Area ☐ Local Comp Plan ☐ MS4 Area

☐ Other (specify): _____

Conceptual Storm Water Conveyances & System (check all that apply):

☒ Swales ☐ Curb and Gutter ☐ Scuppers ☒ Pipe ☒ French Drains

☐ Retention/Detention Ponds ☐ Other:

PART 3: ENVIRONMENTAL REGULATORY REQUIREMENTS

Regulatory Agency (check all that apply)	Reference Citation for Regulatory Criteria	Most Stringent Criteria (check all that apply)
USEPA ☐	N/A	☐
FDEP ☒	Section 402 of the Clean Water Act (NPDES Program)	☒
SFWMD ☒	Chapter 40E-40, F.A.C. and ERP Basis of Review	☒
USACE ☒	Section 404 of the Clean Water Act	☒

Proceed to Part 4 and Check Box C.

PART 4: WQIE DOCUMENTATION

A. ☐ Water quality is not an issue

B. ☐ No regulatory requirements apply to water quality issues.
(Document by checking the "none" box for water quality in Section 6.C.3 of the Environmental Determination Form or Section 5.C.3 of the SEIR.)

C. ☒ Regulatory requirements apply to water quality issues. Water quality issues will be mitigated through compliance with the quantity design requirements placed by the South Florida Water Management District, an authorized regulatory agency.

Evaluator Name (print):

Julio Boucle, P.E.

Office:

URS Corporation Southern – Miami, Florida

Signature: _____ Date: 6-20-07

APPENDIX B

Agency Correspondence and
Relevant Sections of the
Efficient Transportation Decision Making
Programming Screen Summary Report

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045 • TDD (561) 697-2574
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

CON 24-06
Environmental Resource Regulation
Pre-Application No. 040802-24

April 18, 2005

Ms. Alice N. Bravo, P.E.
Florida Department of Transportation
1000 Northwest 111th Avenue
Miami, FL 33172-5800

Subject: **Krome Avenue "South", from SW 296th Street/Avocado Drive to SW 136th Street/Howard Drive, Miami-Dade County, S19,30,31/T55S/R39E, S6,7,18,19,30,31/T56S/R39E, S6/T57S/R39E**

Dear Ms. Bravo:

The District offers the following in response to your request for a determination of wetland boundaries and other surface waters located within the subject property. A review of the submitted information and District records was conducted and a site visit was conducted on March 8, 2005. Based on this information, this 100+-acre site does not contain wetlands as defined by Chapter 62-340 Florida Administrative Code (FAC). Three areas defined as "other surface waters (OSW)" were encountered along the corridor. From the northern project limits the first OSW area encountered is the C-102 Canal (Attachment C-3) which is a District-maintained canal. The next OSW encountered is a borrow pit, also located on Attachment C-3. The third OSW encountered is the C-103 Canal which is also a District-maintained canal and is identified on Attachments C-6 and C-7.

This correspondence is an informal pre-application wetland determination pursuant to Chapter 373, Florida Statutes. It does not bind the District, its agents or employees, nor does it convey any legal rights, expressed or implied. Persons obtaining this informal pre-application wetland determination are not entitled to rely upon it for purposes of compliance with provision of law or District rules. A binding wetland determination may be obtained by petitioning the South Florida Water Management District for a wetland declaratory statement pursuant to FAC Rule 62-340 or by applying for an Environmental Resource permit.

Please be advised that although this site may not contain lands jurisdictional under State rules (Rule 62-340, FAC), there may be wetlands and/or other waters of the United States present under federal rules. Dredging or filling in such areas may require a Department of Army (DA) permit. Receipt of a state or local government permit does not obviate the need to obtain a DA permit prior to commencing work. For more information about the DA Regulatory Program, you may access the Corps' website at: http://www.saj.usace.army.mil/permit/index.html. You may also contact the local Corps regulatory office for additional information, at 561-472-3504.

A file has been set up at the West Palm Beach office with pre-application materials. If you have any further questions, please contact me at (561) 682-6956.

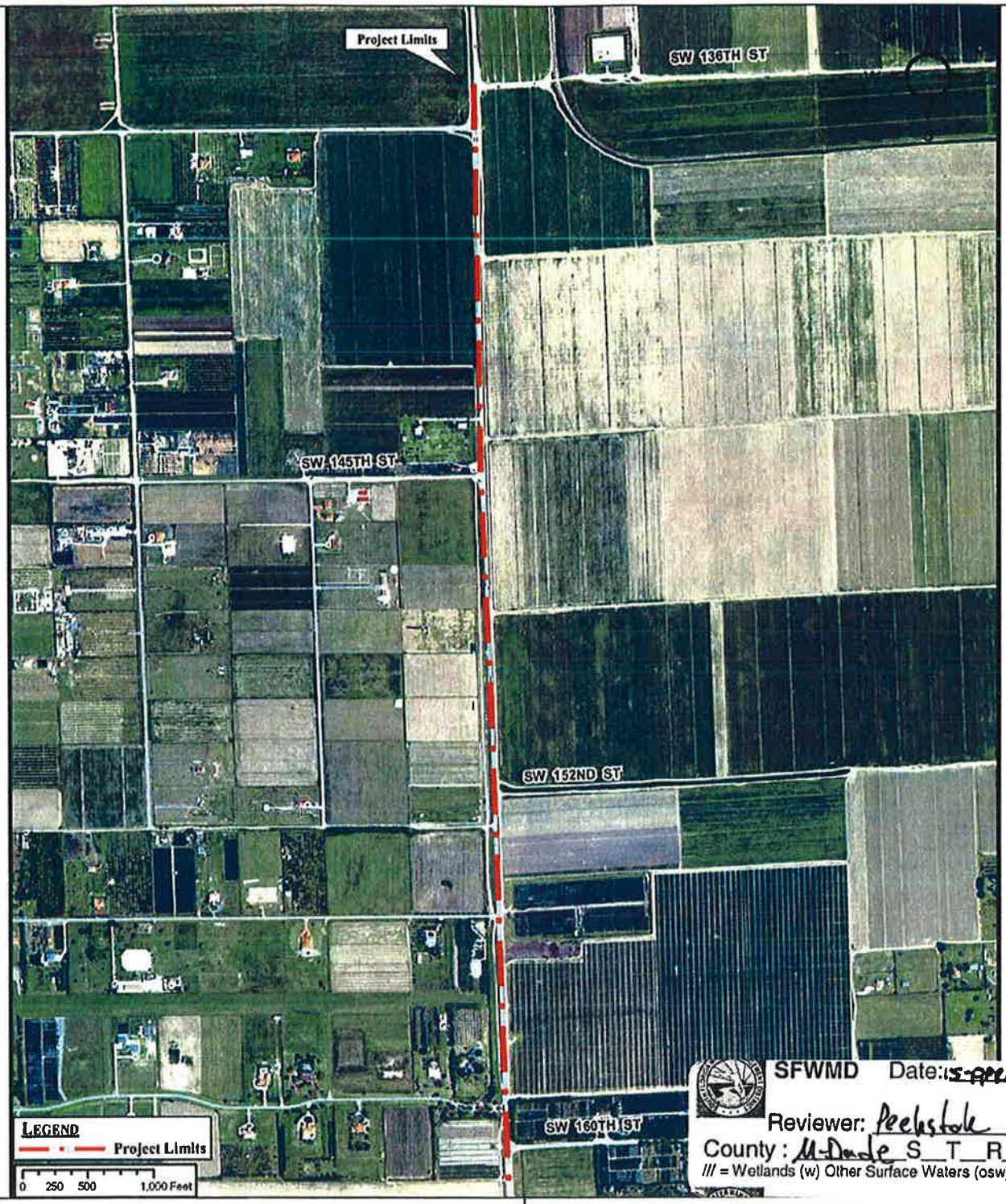
Sincerely,

Ronald M. Peekstok
Lead Environmental Analyst

Natural Resources Management Division

Attachment

Cc: USACOE – Miami Office: (with aerial)
Miami-Dade DERM (with aerial)



SFWMD Date: 15-APR-05

Reviewer: Peckstok

County : M-Dade S__T__R__

/// = Wetlands (w) Other Surface Waters (osw)

Source: FDOT

Project: Krome Ave South PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

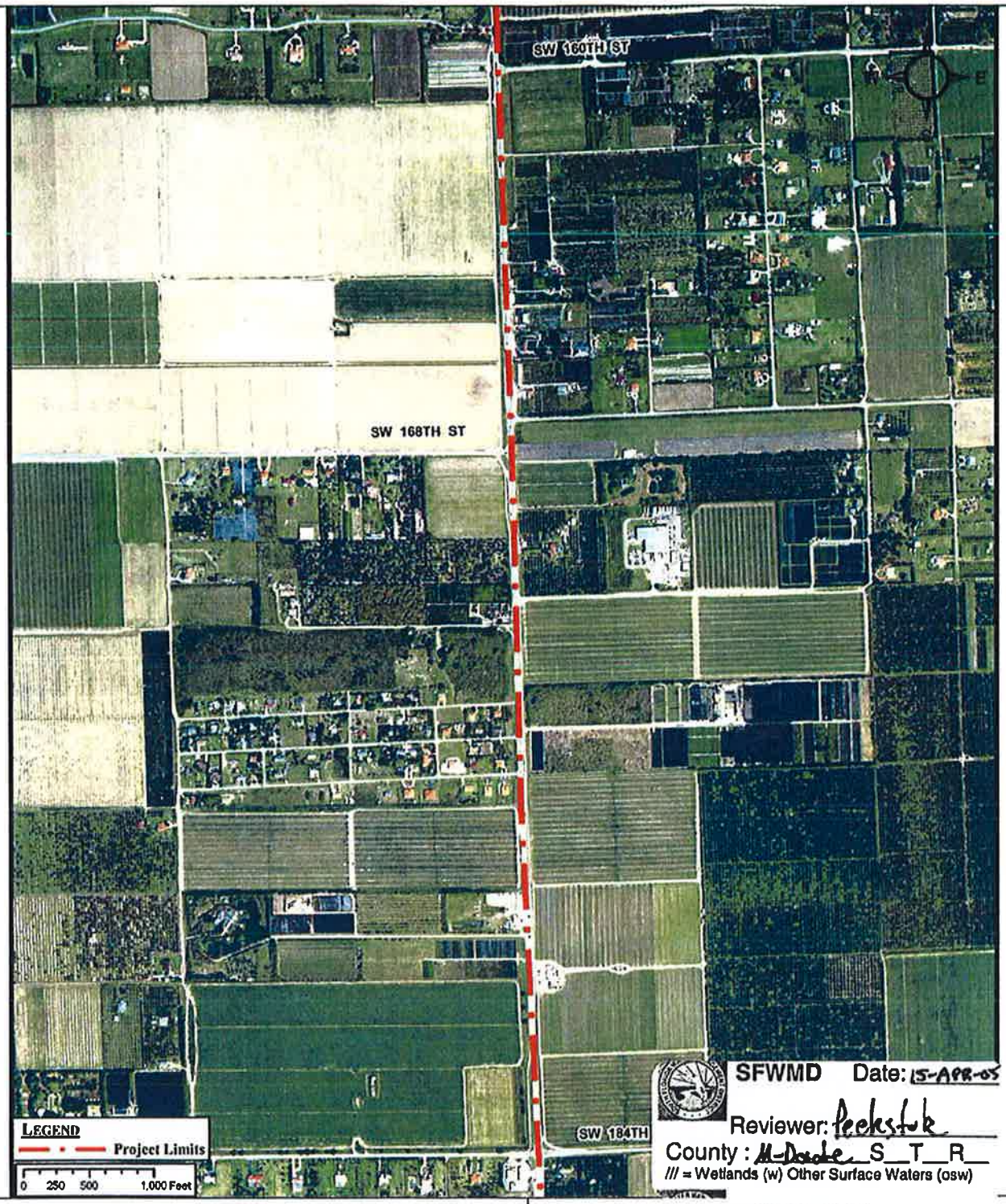
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Attachment C-1



Source: FDOT

Project: Krome Ave South PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

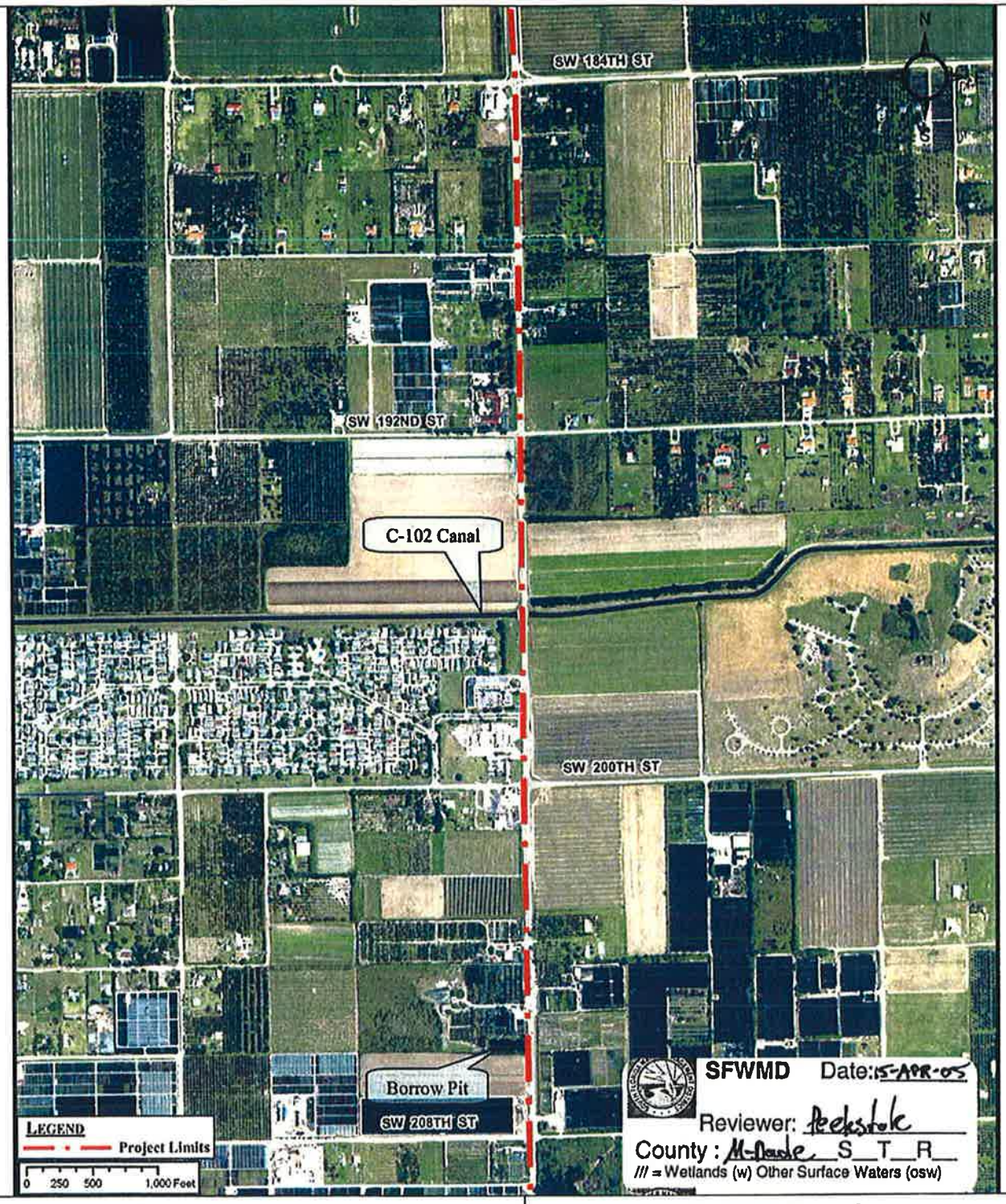
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Attachment C-2

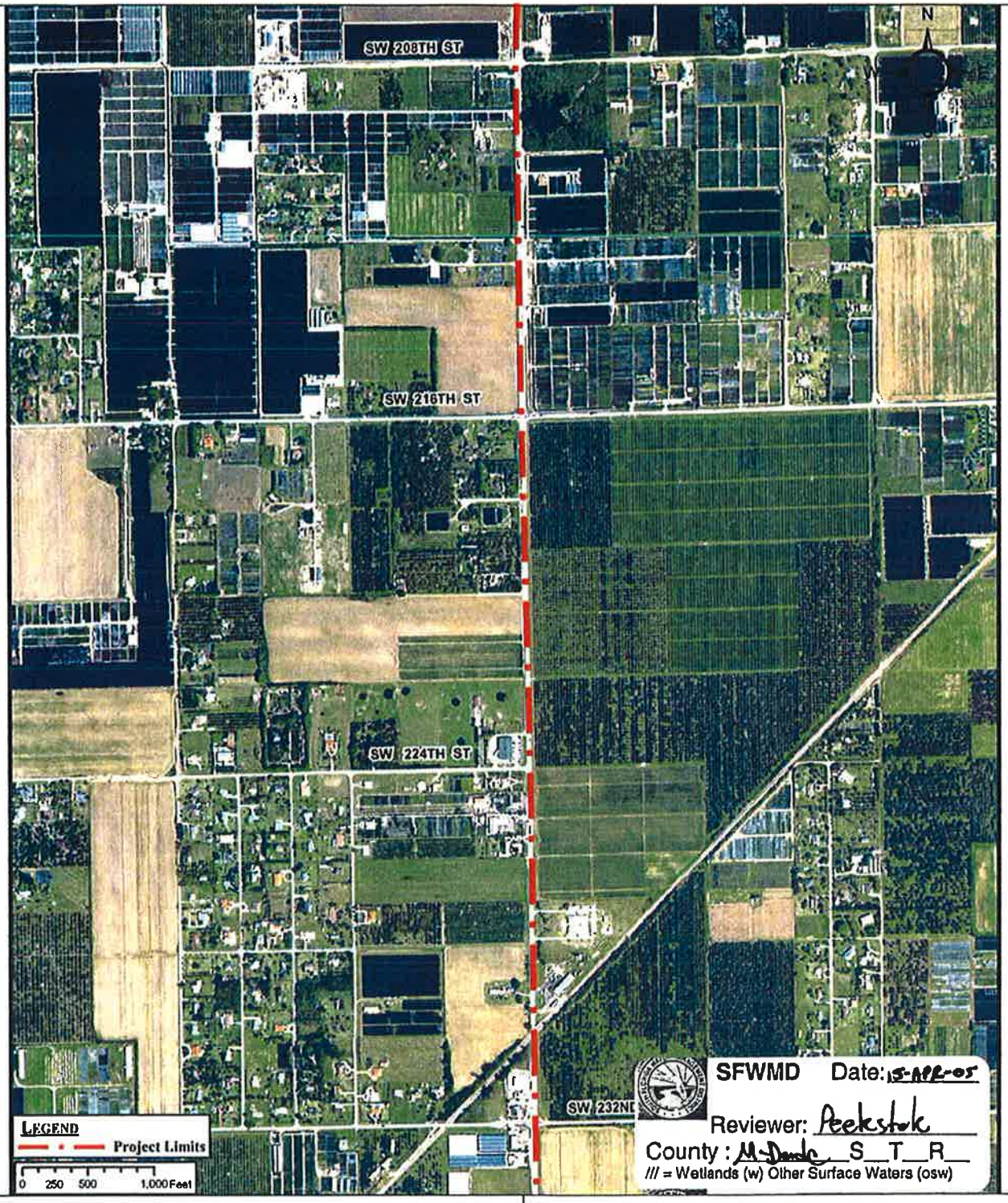


Source: FDOT
Project: Krome Ave South PD&E Study
Location: Miami-Dade County, Florida
Proj. No.: 249614-4-22-01
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL MGMT. OFFICE

Attachment C-3



Source: FDOT

Project: Krome Ave South PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

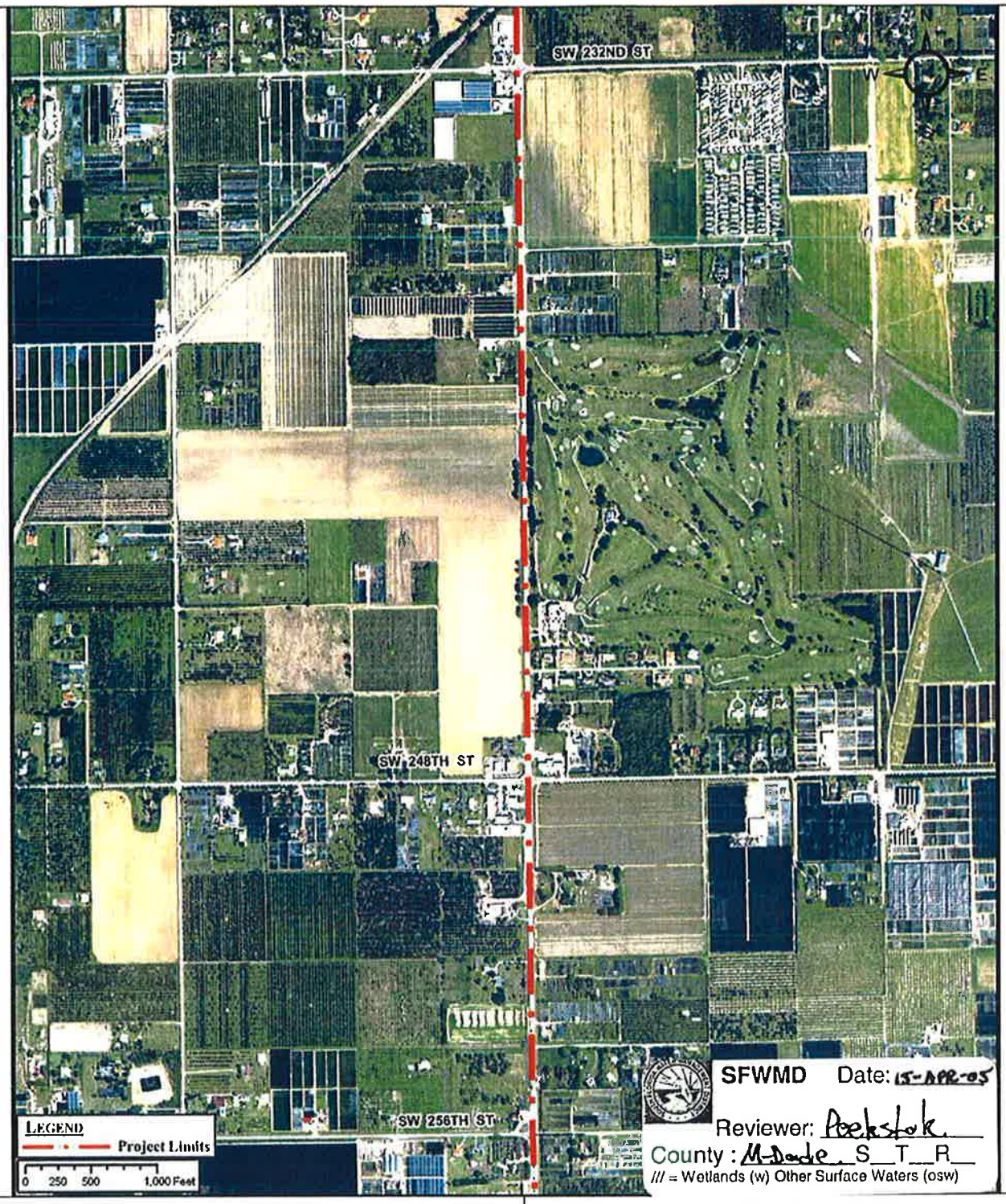
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Attachment C-4



Source: FDOT

Project: Krome Ave South PD&E Study

Location: Miami-Dade County, Florida

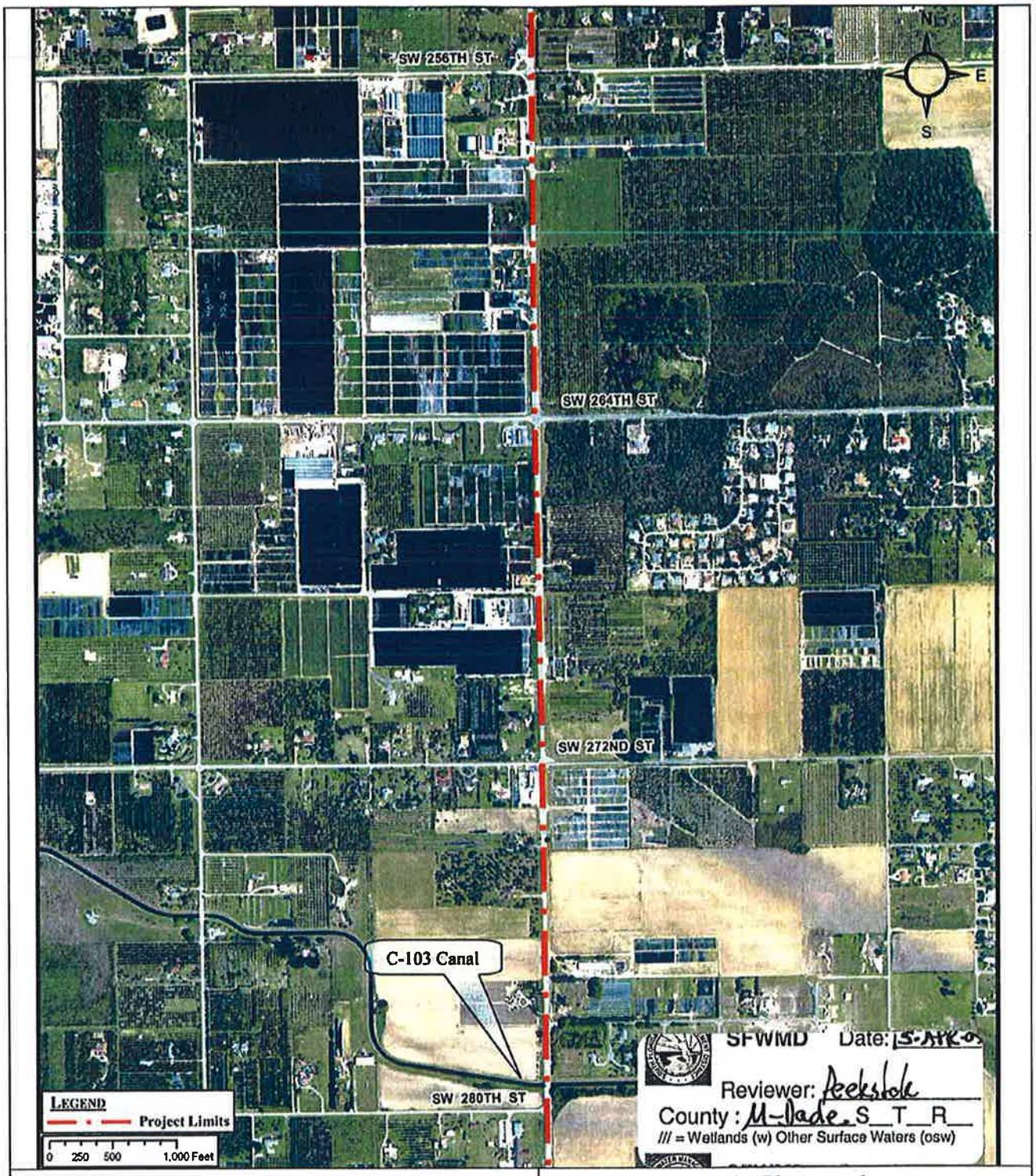
Proj. No.: 249614-4-22-01

Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL MGMT. OFFICE

Attachment C-5



Source: FDOT

Project: Krome Ave South PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

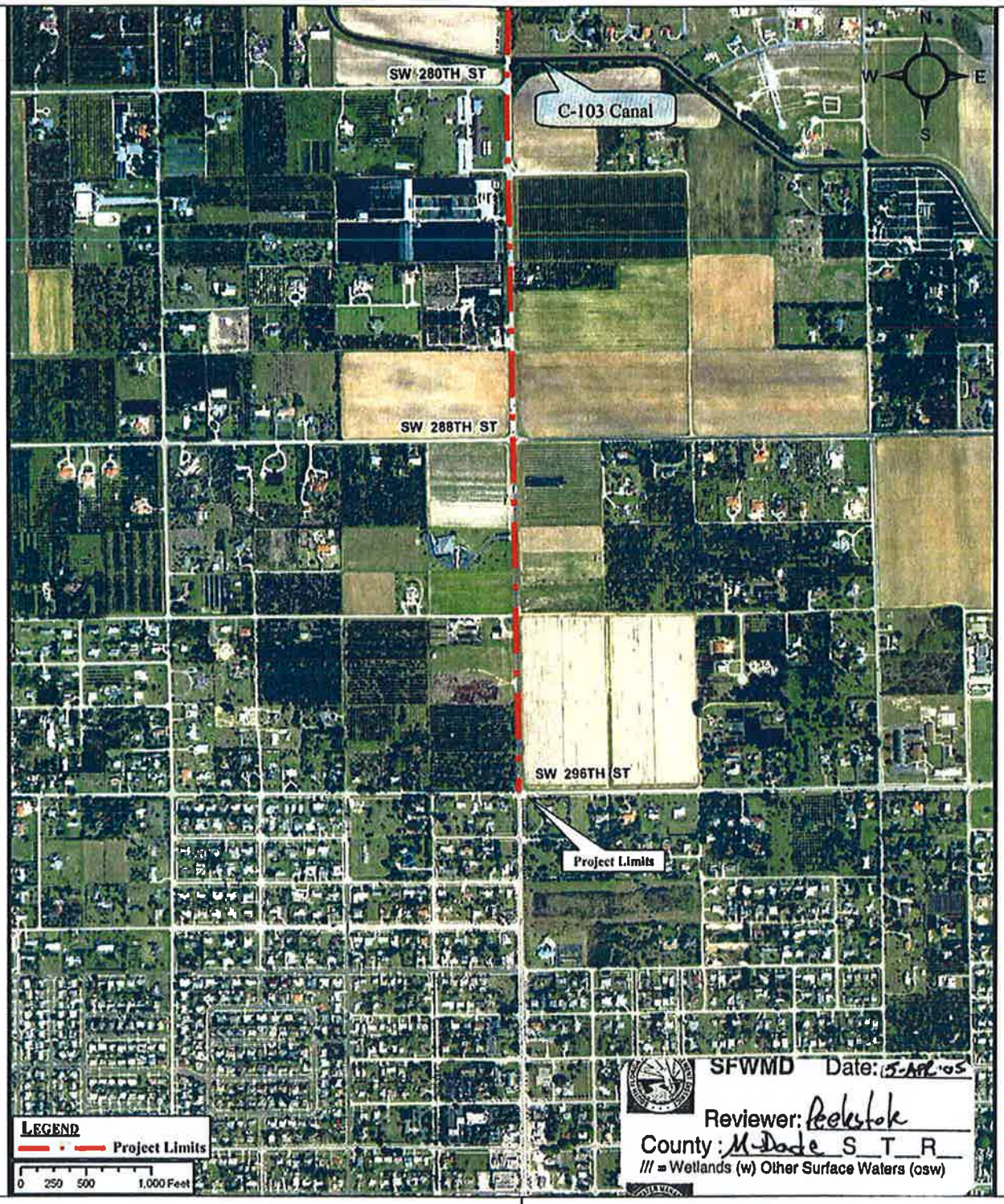
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Attachment C-6



Source: FDOT
Project: Krome Ave South PD&E Study
Location: Miami-Dade County, Florida
Proj. No.: 249614-4-22-01
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL MGMT. OFFICE

Attachment C-7

MIAMI-DADE

MEMORANDUM

DERM

Krome-S.
23a

TO: Mark Woerner, Chief
Metropolitan Planning Section
Department of Planning and Zoning

DATE: March 31, 2004

SUBJECT: Advance Notification
FDOT Advanced Notification
Roadway Improvements to S.R. 997
SW 177th Avenue from SW 296th
Street to SW 136th Street

FROM: Alyce M. Robertson, Assistant Director
Environmental Resources Management

DERM has reviewed the information submitted concerning the subject proposal and offers the following comments:

Water and Sewer:
The proposed road construction is located within the Miami-Dade Water and Sewer Department (MDWASD) water and sewer franchised service area, and the City of Homestead Public Utilities water and sewer franchised service area. The Florida Department of Transportation (FDOT) is advised to contact said utilities in order to coordinate any water or sewer work that may be required during the construction phase. Additionally, timetables concerning new water or sewer line installations should also be obtained. No industrial wastewater pre-treatment (IWP), or sewage treatment plants (DWO) facilities are found in the proximity of this project.

However, the following potable water supply (PWO) facilities are found along the project corridor. These facilities have drinking water supply wells located on the respective parcels. In order to conform to applicable Chapter 24 restrictions, storm water disposal facilities and other potential sources of contamination need to be located at least 100-foot horizontal distance from these wells.

FOLIO	PWO #	FACILITY_NAME	Address			
3069060000191	105	KAMALA TROPICAL GARDENS	19100		KROME	AVE
3069180000560	139	O K FEED STORE	22801	SW	177	AVE
3069190000180	142	REDLANDS DIST. GOLF	24451	SW	177	AVE
3068240000521	163	FARM CREDIT OF SOUTH FLA., ACA	24700	SW	177	AVE
3078010000010	166	REDLAND CHRISTIAN ACADEMY	17700	SW	280	ST
3068130000370	193	GROVE INN	22540	SW	177	AVE
3068120000021	194	COFFEY'S COUNTRY STORE	20090	SW	177	AVE
3068360000442	189	COUNTRY STORE*	27200	SW	177	AVE
3068250000090	209	FRUIT CONCESSION STAND*	2500	SW	177	AVE
3068010000017	228	TOM THUMB	18400	SW	177	AVE
3068360000020	243	SUNOCO GAS STATION	26400	SW	177	AVE

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3068130000290 254	REDLAND TAVERN INC	17701	SW	232	ST
3068240000011 261	TOM THUMB FOOD STORES #122	23200	SW	177	AVE
3059300001500 272	TANA FRUTERIA	16751	SW	177	AVE
3069180000262 273	REDLAND CHURCH OF THE NAZARENE	22755	SW	177	AVE
3068240000522 277	GEC KROME LLC DBA CITGO GAS STATION	24790	SW	177	AVE
3078010000590 278	FIRST BAPTIST CHURCH OF HOMESTEAD	29050	SW	177	AVE
3068130000083 283	ROBBIE'S FEED & SUPPLY, INC	22390	SW	177	AVE
3058240000020 350	GUS NURSERY, CORP.*	14300	SW	177	AVE
3068240000031 356	EL MAMEYAL	23680	SW	KROME	AVE

Also the following grease operating permits (GDO) facilities are found along S. R. 997, S. W. 177th Avenue, from S. W. 296th Street to S. W. 136th Street

FOLIO	PWO #	FACILITY_NAME	Address			
3068010020050	4896	LA TAPATIA RESTAURANT	19766	SW	177	AVE
3068010020050	6221	AGABE SUPERMARKET	19770	SW	177	AVE
3068010020050	1529	NEW REDLAND PIZZERIA	19760	SW	177	AVE
3068010020050	4226	SUB PUB	19750	SW	177	AVE
306813000071	5483	NO PERMIT REQUIRED – SEPTIC SYSTEM	23150	SW	177	AVE

Stormwater Management:

The project requires an Environmental Resource Permit to be issued by the SFWMD for the construction of surface water management system. If this system is designed with an emergency overflow into the C-103 and C-102 canals, or any adjacent surface water body, a Class II Permit will be required.

An on-site retention system of applicable design storm (5-year for 2-lane roadway, 10-year for 4-lane roadway, or higher) shall be utilized as first priority for the disposal of stormwater runoff.

An on-site retention system combined with emergency overflow outfall may be used as an alternative, provided that the first inch of runoff from the applicable design storm is treated prior to overflow.

Drainage exfiltration trench shall not be located in within 100 feet of private potable water wells or in contaminated areas. The FDOT is advised to conduct an environmental site assessment for possible soil contamination due to agricultural use. If contamination is found, a Class VI permit maybe required for the construction of any proposed drainage system.

A Class V Permit issued by the DERM shall be required for any temporary dewatering work during construction of the proposed road.

Drainage inlets shall be equipped with pollution control baffles prior to disposal to groundwater or surface water.

The applicant is advised that permits from the Army Corps of Engineers (305-526-7181), the Florida Department of Environmental Protection (561-681-6600) and the South Florida Water Management District (1-800-432-2045) may be required for the proposed project. It is the applicant's responsibility to contact these agencies.

Hazardous Waste:
The following is a list of all the DERM permitted sites along the project corridor. The items in bold type and italics are properties with active or historic contamination issues.

Permit	Permit #	Name	Address			
AW	210	EVERGLADES GOLF COURSE/NEPTON OF				
UT	3676	CORNEJO ANTONIO PROPERTY	17820	SW	175	ST
AW	146	CEPEDA FARM				
IW5	10722	D & N AUTO PARTS	15515	SW	177	AVE
AW	95	J.C. TROPICAL FOODS, INC.	17425	SW	172	ST
UT	6077	J.C. TROPICAL FOODS, INC.	17425	SW	172	ST
UT	4973	TOM THUMB	18400	SW	177	AVE
IW5	10859	TIRE EL PELON, INC.	19160	SW	177	AVE
UT	198	EXXON KROME	19900	SW	177	AVE
IW5	7781	KROME ANIMAL HOSPITAL, INC.	19744-46	SW	177	AVE
IW5	12220	KROME DENTAL GROUP CORP.	19762	SW	177	AVE
IW5	12221	KROME MEDICAL CENTER, INC.	19762	SW	177	AVE
IW5	12952	MAGDALENO FERNANDEZ & ROSARIO REYES	22541	SW	179	AVE
AW	140	FRANCISCO VEGA				
UT	6245	SILVER GAS INC.	23150	SW	177	AVE
IW5	2521	CARLOS AUTO PARTS, CORP.	23208	SW	177	AVE
UT	1605	TOM THUMB FOOD STORES, INC	23200	SW	177	AVE
UT	6286	PE KROME INC.	24790	SW	177	AVE
UT	2623	GROVE SERVICES, INC.	25100	SW	177	AVE
IW5	2247	GROVE SERVICES, INC.	25100	SW	177	AVE
UT	771	BARRETO YAZ CORP.	24800	SW	177	AVE
IW5	4486	REDLAND ANIMAL HOSPITAL, INC.	24840	SW	177	AVE
UT	5624	TWIN OIL	26400	SW	177	AVE
AW	62	FIRST FOLIAGE L.C.	17800	SW	268	ST
UT	6275	FIRST FOLIAGE L.C.	17800	SW	268	ST
UT	359	COUNTRY STORE	27200	SW	177	AVE
IW5	10494	COUNTRY STORE	27200	SW	177	AVE
UT	2495	BOTANICAL GARDENS NURSERY	19100		KROME	AVE
UT	350	FARM STORE #156	24791	SW	177	AVE
UT	5110	JACOB & THOMPSON INC.	17695	SW	272	ST
AW	92	B & D FARMS	27655	SW	177	AVE
UT	6061	B & D FARMS	27655	SW	177	AVE
UT	1836	FAR AWAY JOE'S SOUTH	17701	SW	282	ST
UT	3652	B & D FARMS	28350	SW	177	AVE
SW	1114	MANFRED RETREAT	17300	SW	177	AVE
SW	1455	WILLOW RUN FARMS	29220	SW	177	AVE

Wetlands and Tree Preservation:
Portions of this project will impact jurisdictional freshwater wetlands, including wetlands within or adjacent to the Pennsuco Wetland Basin. This wetland basin is designated as "Environmental Protection Sub area C" (Dade-Broward Levee Basin) in Miami-Dade County's Comprehensive Development Master Plan. The Master Plan states that all land use and site alteration proposals within this wetland area will be closely evaluated on a case-by-case basis by federal, State, regional and County agencies. Any proposed impacts to wetlands within or adjacent to the Pennsuco Wetland Basin must be thoroughly evaluated to ensure that there are no long-term environmental effects associated with this project.

Staff from the DERM Wetland and Forest Resources Section has participated in a pre-application meeting with federal and State regulatory agencies and consultants for the Florida Department of Transportation to discuss the proposed impacts to wetland and tree resources. DERM will continue to participate in interagency meetings throughout this permitting process to address, at a minimum, where the wetland and tree resources are located, how to minimize the impacts to the these resources, what is appropriate biological mitigation for unavoidable impacts to these resources and what can be done to minimize the effects of this project on adjacent wetland areas.

Air Quality Preservation:
Fugitive dust emissions should be minimized during all construction phases.

In summary, the above information is offered concerning DERM requirements. It is recommended that actual design development be closely coordinated through this office to insure compliance with all applicable Code requirements.

Krome 5 23a

MIAMI-DADE COUNTY, FLORIDA

MIAMI-DADE

DEPARTMENT OF PLANNING AND ZONING

MAIN OFFICE
111 NW 1 STREET, SUITE 1210
MIAMI, FLORIDA 33128
(305) 375-2800

PERMITTING AND INSPECTION OFFICE
11805 S.W. 26 Street
MIAMI, FLORIDA 33175

- IMPACT FEE SECTION (786) 315-2670 • SUITE 145
- ZONING INSPECTION SECTION (786) 315-2660 • SUITE 223
- ZONING PERMIT SECTION (786) 315-2666 • SUITE 106
- ZONING PLANS PROCESSING SECTION (786) 315-2650 • SUITE 113

April 21, 2004

Alice N. Bravo, P.E.
District Environmental Management Engineer
Florida Department of Transportation
District Environmental Management Office
1000 N.W. 111th Avenue, Room 6103
Miami, Florida, 33172

Re: Advance Notification - SR 997/Krome Avenue/SW 177 Avenue (South) from SW 296 Street to SW 136 Street
Financial Management Number: 249614-4-21-01
Federal Aid Project Number: Not Assigned
County: Miami Dade

Dear Ms. Bravo:

In accordance with this department's responsibility for review, evaluation and coordination of proposals that implement local plans, staff of Miami-Dade County has reviewed the Advance Notification for the above-referenced project, and offer the following comments.

The subject roadway segment, Krome Avenue from SW 136 Street to SW 296 Street, is a two-lane, 10.24-mile roadway segment located in western Miami-Dade County outside the Adopted 2005 Urban Development Boundary (UDB). It provides regional connectivity and serves as an alternate hurricane evacuation route to US 1 and the Homestead Extension of the Florida Turnpike (HEFT). Krome Avenue is maintained by the Florida Department of Transportation (FDOT) and functionally classified as a Rural Principal Arterial and designated as part of the Florida Intrastate Highway System (FIHS). The subject project proposes to develop and analyze alternatives including a no build alternative, a Transportation System Management (TSM) alternative, and several build alternatives consisting of two, three and four-lane typical sections. All alternatives will look at preserving the rural character of the corridor while providing safety and operational enhancements.

Land uses along the corridor are primarily Agriculture, but also include Business and Office at the intersections of Krome Avenue and SW 200, 232, 248 and 272 Streets and Estate Density Residential (1 to 2.5 Dwelling units per gross acre) on the southern end of the corridor.

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The Krome Avenue corridor has been the subject of several applications to amend the County's Comprehensive Development Master Plan (CDMP), proposing the widening of the road from two to four lanes. In the mid-1980's the FDOT District VI office began a Project Development and Environmental (PD&E) Study to evaluate the widening of Krome Avenue from two to four lanes. The widening of Krome Avenue was identified in FDOT's 1988 Strategic Transportation Plan (October, 1987), with construction planned for the 1999-2008-time period. In April 1988, staff of Dade County Planning Department issued its Proposed Traffic Circulation Element of the draft 2000 and 2010 CDMP Update, which included the widening of Krome Avenue from SR 836 to US 1. The Board of County Commissioners (BCC) adopted the CDMP Update with changes in December 1988, but retained Krome Avenue as two-lane facility.

In April 1990, the County's Planning Department filed Application No. 32 to amend the CDMP to provide consistency with a pending Metropolitan Planning Organization (MPO) 2010 Long Range Transportation Plan (LRTP) Update. The proposed change was the widening of Krome Avenue for its full length from US 27 to US 1. Again, the BCC retained Krome Avenue as two-lane roadway. In April 1993, the County's Planning Advisory Board (PAB) filed Application No. 7 to amend the CDMP, proposing to revise the "Planned Year 2010 Roadway Network" map of the Traffic Circulation Element to re-designate Krome Avenue between US 27 and SW 296 Street and from SW 328 Street to US 1, from two to four lanes, and to re-designate Krome Avenue from Minor Roadway to Major Roadway in the Land Use Plan map. The application was withdrawn by the PAB at its final hearing.

In May 1994, FDOT filed Application No. 12 to amend the CDMP, proposing widening of Krome Avenue within the same limits as the above referenced 1993 CDMP Application No. 7. The BCC denied the transmittal of this application to the Florida Department of Community Affairs (DCA), which effectively maintained the two-lane designation in the CDMP. Then in February 1997, FDOT initiated the Krome Avenue Action Plan to determine ultimate improvements for the corridor to address mobility and safety.

In October 1999, the Department of Planning and Zoning (DP&Z) filed Application No. 6 to amend the CDMP Traffic Circulation Subelement to change the designation of Krome Avenue from SW 328 Street to US 1 from two-lane (Minor Roadway) to four-lane (Major Roadway), and from SW 296 Street to SW 328 Street from four-lanes (Major Roadway) to two-lanes (Minor Roadway) on the Land Use Plan map. In October 2000, the BCC adopted Application No. 6. Adoption of the Application maintained consistency with the recommendations of the MPO adopted Krome Avenue Plan.

On February 28, 2002, DP&Z filed Application No. 16 to amend the CDMP as part of the October 2001 Amendment Cycle pursuant to instruction by the County Commission Resolution No. R-199-02 (adopted February 26, 2002). The amendment application requested change of the designation of Krome Avenue, between US 27 and SW 328 Street, from Minor Roadway (two lanes) to Major Roadway (3 or more lanes) on the 2005 and 2010 Land Use Plan map, and change from two to four lanes in Figure 1, Planned Year 2015 Roadway Network, in the Traffic

Circulation Subelement of the CDMP. On October 10, 2002, the BCC approved the designation of Krome Avenue as a four-lane facility between US 27 and SW 296 Street with changes as recommended by DP&Z. Ordinance No. 02-198 passed and adopted by the Board of County Commissioners on October 10, 2002 adopted Application No. 16 with changes as recommended by the DP&Z in the Revised Recommendations Report and modified by the Corrected Errata and Supplement to the Revised Recommendations Report. One of the changes was the inclusion of a new policy, Policy 4E, in the Traffic Circulation Subelement. This new policy includes the following text:

> Notwithstanding the designation of Krome Avenue as a Major Roadway on the CDMP Land Use Plan Map or as four-lane roadway in the Traffic Circulation Subelement, no construction associated with the four-laning, or other capacity improvement, of Krome Avenue outside the Urban Development Boundary shall occur until FDOT has prepared, and the Board of County Commissioners has adopted a detailed binding access control plan for Krome Avenue corridor. This plan should emphasize access to properties fronting Krome Avenue primarily through alternative street locations.

The motion to adopt Application No. 16 also included the following items, not originally in the application:

- To request the FDOT to submit a plan for expedited funding and construction;
- To provide a specific time frame for that expediting;
- To request FDOT to include a median; and
- To ask both FDOT and the County Manager to present to the Commission a plan for increased safety on Krome Avenue to take effect at the most immediate time possible.

However, it should be pointed out that the designation of Krome Avenue as a four-lane facility between US 27 and SW 296 Street is not yet in effect because the approved amendment to the CDMP and DCA's compliance action have been challenged by affected parties. Final action on the appeal is still pending.

The Transportation Plan for the year 2025 of the Metropolitan Planning Organization (MPO) for the Miami Urbanized Area lists Krome Avenue from US 1 to SW 8 Street as a priority III project for access management, safety and trail. As a priority III project improvements will be completed between the year 2015 and 2020. The project is also included in the 2004 Transportation Improvement Program (TIP) with preliminary design and engineering scheduled in FY 2004.

The MPO's Bicycle Facilities Plan and South Dade Greenways Network Plan include on-road accommodation of bikes as well as paved and unpaved trails parallel to the road within the Krome Avenue corridor. These concepts were more fully developed and included in the FDOT Krome Avenue Action Plan.

The Miami-Dade Transit (MDT), Miami-Dade County Aviation, and the Park and Recreation (P&RD) Departments upon review of the subject project have determined that the project would not conflict with any MDT plans, have a negative impact on the operations of the Kendall-Tamiami Executive and Homestead General Aviation airports, or impact any properties within P&RD's jurisdiction.

Finally, the Miami-Dade County Department of Environmental Resources Management (DERM) found the proposed project to be located within the Miami-Dade Water and Sewer Department (WASAD) water jurisdiction, and the City of Homestead Public Utilities water and sewer franchised service area. The FDOT is advised to contact said utilities in order to coordinate any water work that may be required during the construction phase. Additionally, timetables concerning new water or sewer line installations should also be obtained. No industrial wastewater pre-treatment (IWP), or sewage treatment plants (DWO) facilities are found in the proximity of this project.

Several potable water supply (PWO) facilities are located along the project corridor. These facilities have drinking water supply wells. In order to conform to applicable Chapter 24 restrictions, storm water disposal facilities and other potential sources of contamination need to be located at least 100-foot horizontal distance from these wells.

The project would require an Environmental Resource Permit to be issued by the South Florida Water Management District (SFWMD) for the construction of surface water management system. If this system is designed with an emergency overflow into the C-103 and C-102 canals, or any adjacent surface water body, a Class II Permit will be required. Also, an on-site retention system of applicable design storm (5-year for 2-lane roadway, 10-year for 4-lane roadway, or higher) shall be utilized as first priority for the disposal of stormwater runoff. An on-site retention system combined with emergency overflow outfall may be used as an alternative, provided that the first inch of runoff from the applicable design storm is treated prior to overflow. Drainage exfiltration trench shall not be located in within 100 feet of private potable water wells or in contaminated areas. The FDOT is advised to conduct an environmental site assessment for possible soil contamination due to agricultural use. If contamination is found, a Class VI permit maybe required for the construction of any proposed drainage system.

Staff from the DERM Wetland and Forest Resources Section has participated in a pre-application meeting with federal and State regulatory agencies and consultants for the Florida Department of Transportation to discuss the proposed impacts to wetland and tree resources. DERM will continue to participate in interagency meetings throughout this permitting process to address, at a minimum, where the wetland and tree resources are located, how to minimize the impacts to the these resources, what is appropriate biological mitigation for unavoidable impacts to these resources and what can be done to minimize the effects of this project on adjacent wetland areas.

Enclosed for your information and consideration are copies of all the specific comments made by the Miami-Dade County Departments. Should you have questions regarding these specific comments or requests, please contact the appropriate department directly.

Sincerely,

for Diane O'Quinn Williams
Director

Enclosures

cc: Jeffrey R. Bunting, Chief of Aircraft Noise & Environmental Planning, Miami-Dade County Aviation Department
Alyce M. Robertson, Assistant Director, Department of Environmental Resources Management
Enrique Cuellar, Public Hearing Coordinator, Department of Environmental Resources Management

Mario Garcia, Chief, Office of Public Transportation Management
W. Howard Gregg, Assistant Director, Park and Recreation Department
Randy Koper, Park and Recreation Department
David Henderson, Metropolitan Planning Organization
Gaspar Miranda, Chief, Highway Division, Miami-Dade County Public Works Department
Bob Cincotta, Engineer, Highway Division, Public Works Department

DOQW:SB:MRW:NS:SK

Krome 5
23a

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

May 4, 2004

Ms. Alice N. Bravo, P.E.
District Environmental Management Engineer
Florida Department of Transportation
1000 N.W. 111th Avenue, Room 6103
Miami, Florida 33172

RE: Department of Transportation, Advance Notification, SR 977/Krome Avenue/SW 177th Avenue South, From SW 296th Street/Avocado Drive to SW 136th Street, Miami-Dade County, Florida

SAI #: FL200403085571C

Dear Ms. Bravo:

The Florida State Clearinghouse, pursuant to Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated the review of the above-referenced advance notification.

The Department of Environmental Protection (DEP) recommends that the entire corridor be evaluated for potential impacts to wetlands, and specific project components of the Comprehensive Everglades Restoration Plan (CERP). This portion of the Krome Avenue project, when coupled with the northern portion of the project, has the potential to impact both wetlands and areas that are in agricultural production. DEP also recommends precautions for managing potentially contaminated areas within the project area. Please see the enclosed memorandum from DEP for additional concerns and recommendations.

The South Florida Water Management District (SFWMD) indicates that the proposed project "build" alternatives will require an environmental resource permit. The SFWMD will require documentation of efforts that were taken to avoid or minimize wetland impacts and mitigation will be required for unavoidable impacts. The SFWMD also discusses potential impacts to CERP projects that are underway within the District and recommends additional coordination between the responsible agencies. Please see the enclosed comments from the SFWMD for additional concerns and recommendations.

The South Florida Regional Planning Council (SFRPC) indicates that the project should be consistent with the goals, policies and land development regulations of the local governments

From S. AN DEP [illegible]

having jurisdiction within the project area. It is recommended that the applicant coordinate with all local governments that will be affected by the project. The SFRPC has summarized the goals and policies from its Strategic Regional Policy Plan that apply to this project. Please see the attached comments from the SFRPC and specific recommendations for complying with regulatory requirements.

Based on the information contained in the advance notification and the enclosed state agency comments, the state has determined that, at this stage, the allocation of federal funds for the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). However, the applicant is required to address the concerns identified by the reviewing agencies. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. If you have any questions regarding this letter, please contact Mr. Bob Hall at 850/245-2163.

Sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/rwh

Enclosures

cc: Mr. John Outland, DEP, MS 45
Mr. Tim Gray, DEP, West Palm Beach
Mr. Jim Golden, SFWMD
Ms. Christina Miskis, SFRPC

Florida
Department of Environmental Protection
"More Protection, Less Process"

Categories

Project Information	
Project:	FL200403085571C
Comments Due:	April 04, 2004
Letter Due:	May 04, 2004
Description:	DEPARTMENT OF TRANSPORTATION - ADVANCE NOTIFICATION - SR 977/KROME AVENUE/SW 177 AVENUE SOUTH, FROM SW 296TH STREET/AVOCADO DRIVE TO SW 136TH STREET - FINANCIAL MANAGEMENT NO.: 249614-4-21-01 - MIAMI-DADE COUNTY, FLORIDA.
Keywords:	DOT - SR 977/KROME AVENUE/SW 177 AVENUE (SOUTH) - MIAMI-DADE CO.
CFDA #:	20.205

Agency Comments:

SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL

Council staff notes that the project must be consistent with the goals and policies of the Miami-Dade County comprehensive development master plan and its corresponding land development regulations, and recommends that impacts to natural systems be minimized to the greatest extent feasible. The proposed road improvement program is generally consistent with the goals and policies of the Strategic Regional Policy Plan for South Florida.

MIAMI-DADE -

ENVIRONMENTAL POLICY UNIT - OFFICE OF POLICY AND BUDGET, ENVIRONMENTAL POLICY UNIT

No Comment

COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS

Released Without Comment

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

No Comment

STATE - FLORIDA DEPARTMENT OF STATE

No Comment

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP recommends that the entire Krome Avenue corridor be evaluated to determine total impacts to wetlands and agricultural areas as well as CERP project components. Memo provided.

SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Letter faxed/mailed on 4/9/04

For more information please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the Clearinghouse Home Page to query other projects.

Memorandum

Florida Department of
Environmental Protection

TO: Florida State Clearinghouse

FROM: Robert W. Hall, Environmental Specialist
Office of Intergovernmental Programs

DATE: May 5, 2004

PROJECT: Department of Transportation, Advance Notification, SR 977/Krome Avenue/SW 177 Avenue South, From SW 296th Street/Avocado Drive to SW 136th Street, Miami-Dade County, Florida

SAI #: FL200403085571C

The Department has reviewed the above-referenced project and offers the following comments.

General

The advanced notification addresses the Krome Avenue South segment of larger Krome Avenue widening project. According to the notification this segment crosses rural agricultural and low density residential land uses. Future environmental documentation for this project should assess the direct and indirect impacts to agricultural lands as it can be expected that such roadway widening will induce the conversion of agricultural lands to higher intensity uses. Drainage and stormwater treatment will also be an issue in this segment as it crosses flood prone areas.

The north segment of the project, from SR 94 to U.S. 27, traverses remnant Everglades marsh associated with Northeast Shark River Slough and Water Conservation Area 3B. Wetlands to the east are also being acquired as part of the Comprehensive Everglades Restoration Plan/East Coast Buffer/Water Preserve Area.

The northern segment should be evaluated for a design that improves hydrological connections to adjacent wetlands and to avoid wetland filling. Options to evaluate should include elevation or larger culverts and wildlife underpasses to enhance sheet flow and wildlife movement. In addition, treatment of stormwater runoff will be a concern given the adjacent wetlands and proximity to WCA 3B and Everglades National Park.

The Department recommends that future environmental assessments evaluate the total project impact at logical termini rather than by segmented analysis.

Waste Cleanup Concerns:

1. Section 3 J of the report states that a Contamination Screening Evaluation similar to Phase I and Phase II Audits would to be performed along the project rights-of-way in considering the

proximity to potential petroleum and hazardous material handling facilities. The document states that there are at least 40 known (and possibly more) sources of groundwater and soil contamination within the corridor right-of-way. If the screening evaluations utilize reasonably current file data, or establish new data points to identify potential soil and groundwater contamination areas, the data will be acceptable for use in the Screening Evaluations. Copies of the screening evaluations should be supplied to the Department's Southeast District office, Waste Cleanup Section.

2. The Contamination Screening Evaluations should outline specific procedures that would be followed by the applicant in the event that drums, wastes, tanks or potentially contaminated soils are encountered during construction. Special attention should be made in the screening evaluation to agricultural lands where pesticide mixing, loading and application areas may have an affect on the proposed project, including storm water retention and treatment areas.

3. In the event contamination is detected during construction, the Department needs to be notified. FDOT may need to address the problem through additional assessment and remediation activities. The applicant should note that Section 3.J. outlines the FDOT requirements for "Special Provisions for Unidentified Areas of Contamination" in the project's construction contract documents. Specific actions would be required by the contractor in the event that any hazardous material or suspected contamination issues arise.

4. Groundwater monitoring wells and water production wells are likely to be present at or near project corridors. Pursuant to Chapter 62-532, Florida Administrative Code, arrangements need to be made to properly abandon or replace any wells that may be destroyed or damaged during construction.

5. Depending on the findings of the Contamination Screening Evaluations and the proximity to known contaminated sites, projects involving "dewatering" should be discouraged, since there is a potential to spread contamination to previously uncontaminated areas and affect contamination receptors, site workers and the public. Dewatering projects would require permits from the South Florida Water Management District, Water Use Section and coordination with the Miami-Dade Department of Environmental Resources Management.

6. Any land clearing or construction debris must be characterized for proper disposal. Potentially hazardous materials must be properly managed in accordance with Chapter 62-730, F.A.C. In addition, any solid wastes or other non-hazardous debris must be managed in accordance with Chapter 62-701, F.A.C.

7. Staging areas, with controlled access, should be planned in order to safely store raw material paints, adhesives, fuels, solvents, lubricating oils, etc. that will be used during construction. All containers need to be properly labeled. The project managers should consider developing written

construction Contingency Plans in the event of a natural disaster, spill, fire or environmental release of hazardous materials stored or handled for the project construction.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045 • TDD (561) 697-2574
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

GOV 04-40

April 9, 2004

Ms. Alice N. Bravo, P.E.
District Environmental Management Engineer
Florida Department of Transportation
1000 N.W. 111th Avenue, Room 6103
Miami, FL 33172

Subject: Krome Avenue From S.W. 296th Street to S.W. 136th Street Advance Notification [FM#: 249614-4-21-01] [SAI#: FL200403085571C]

Dear Ms. Bravo:

In response to your request, South Florida Water Management District (SFWMD) staff has reviewed the Advance Notification for the above subject project which is located in Florida Department of Transportation (FDOT) District 6. According to the Fact Sheet, the purpose of the proposed project is to develop and analyze various alternatives, including a no build alternative, a Transportation System Management (TSM) alternative, and several build alternatives consisting of two, three and four-lane typical sections. All alternatives will look at preserving the rural character of the corridor while providing safety and operational enhancements.

The following comments should be considered in the design, construction, and permitting of this project:

General Comments

(1) The proposed roadway improvements will require an Environmental Resource Permit (ERP) for any "build" alternative, pursuant to Rules 40E-1, 40E-4, 40E-40, 40E-41, and 40E-400, F.A.C.

(2) The proposed roadway improvements must meet the SFWMD's water quality and water quantity criteria as specified in the Basis of Review for Environmental Resource Permit Applications.

(3) To the extent possible, any wetland impacts due to location, design, and construction techniques should be minimized. Please note that information documenting that any proposed wetland impacts are unavoidable will be required at the time of permit application, as well as information on the alternatives considered to reduce the proposed impacts. Mitigation will be required for any unavoidable wetland impacts.

(4) A Water Use Permit may be required for any dewatering activities associated with the proposed roadway improvements, pursuant to Rule 40E-2, F.A.C. Please contact the SFWMD's Water Use Division at (561) 682-6926, prior to the initiation of any dewatering activities and subsequent to the completion of the Contamination Screening Evaluation Report, to schedule a pre-application conference to discuss the details of the proposed dewatering activities.

Please note that, if the proposed roadway improvements include dewatering activities within contamination areas or if the dewatering activities have the potential to result in the induced movement of the contamination plume, a pre-application meeting involving SFWMD Water Use staff and the appropriate staff from the Florida Department of Environmental Protection should be scheduled to discuss management of dewatering effluent, including the design of appropriate containment/treatment methods.

Project-Specific Comments

(5) Any proposed work within the SFWMD's C-102 or C-103 Canal rights-of-way will require a Right Of Way Occupancy Permit. If the proposed roadway project involves any modifications to the existing bridge structures, a modification to Right Of Way Occupancy Permits No. 9120 (C-102) and 3179 (C-103) will be required. Please note that any proposed bridge work must meet the SFWMD's bridge crossing criteria, as contained in the Criteria Manual for Use of Works of the District, Permit Information Manual Volume V.

(6) For the last several years, SFWMD and FDOT District 6 staff have met periodically to review the status of CERP (Comprehensive Everglades Restoration Plan) and other SFWMD projects in Miami-Dade County relative to current and potential FDOT District 6 projects in the vicinity of the CERP/SFWMD projects and to identify specific areas where future coordination is needed. During our discussions, we have identified specific areas where CERP/SFWMD project design assumptions should be factored into the FDOT planning and design evaluation processes, discussed opportunities for future shared and/or complimentary uses, and identified those areas where we feel it most important to preserve as much flexibility as possible due to future project plan formulation and design processes.

This segment of Krome Avenue is located south of the S-338 structure (which is located at the intersection of the SFWMD's C-1W Canal and Krome Avenue) and approximately five miles east of the C-111 and L-31W Projects that are under construction and/or planned as part of the Modified Water Deliveries projects. However, the southernmost portion of this segment of Krome Avenue falls within

the northern portion of the general project boundaries of the C-111 Spreader Canal project.

In previous discussions with FDOT staff, the SFWMD staff noted that the final location of the C-111 Spreader Canal and Stormwater Treatment Area may require consideration of potential upstream flood control impacts on Homestead/Florida City during the design process for any proposed road improvements in this area. At this time, it is not known if this is a factor that will need to be considered in the design process, but it is an issue that will require future coordination during our respective planning and design processes.

Should any of the above require additional clarification, please give me a call at (561) 682-6862.

Sincerely,

James J. Golden, AICP
Senior Planner
Environmental Resource Regulation

/jjg

c: Lauren Milligan, DEP

BH

South
Florida
Regional
Planning
Council

RECEIVED

APR 0 9 2004

OIP/OLGA

April 6, 2004

Ms. Lauren Milligan
Clearinghouse Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, FL 32399-3000

RE: SFRPC #04-0323, SAI #FL 200403085571C, Request for comments on the Advance Notification for SR977/Krome Avenues/SW 177 Avenue South, from SW 296th Street/Avocado Drive to SW 136th Street, Florida Department of Transportation, Miami-Dade.

Dear Ms. Milligan:

We have reviewed the above-referenced Advanced Notification and have the following comments:

- The project must be consistent with the goals and policies of the Miami-Dade County comprehensive development master plan and its corresponding land development regulations. It is important for the permit grantor to coordinate its permit with the local government granting permits for development at the subject site.

- Staff recommends that 1) impacts to the natural systems be minimized to the greatest extent feasible and 2) the permit grantor determine the extent of sensitive wildlife, marine life, and vegetative communities in the vicinity of the project and require protection and or mitigation of disturbed habitat. This will assist in reducing the cumulative impacts to native plants and animals, wetlands and deep-water habitat and fisheries that the goals and policies of the *Strategic Regional Policy Plan for South Florida* (SRPP) seek to protect.

- The project is located over the Biscayne Aquifer, natural resource of regional significance designated in the SRPP. The goals and policies of the SRPP, in particular those indicated below, should be observed when making decisions regarding this project:

Strategic Regional Goal

3.2 Develop a more efficient and sustainable allocation of the water resources of the region.

Regional Policies

3.2.5 Ensure that the recharge potential of the property is not reduced as a result of a proposed modification in the existing uses by incorporation of open space, pervious areas, and impervious areas in ratios which are based upon analysis of on-site recharge needs.

3440 Hollywood Boulevard, Suite 140, Hollywood, Florida 33021
Broward (954) 985-4416, State (800) 985-4416
SunCom 473-4416, FAX (954) 985-4417, Sun Com FAX 473-4417
email: sfadmin@sfrpc.com, website: www.sfrpc.com

3.2.6 When reviewing proposed projects and through the implementation of the SRPP, discourage water management and proposed development projects that alter the natural wet and dry cycles of Natural Resources of Regional Significance or suitable adjacent buffer areas or cause functional disruption of wetlands or aquifer recharge areas.

3.2.9 Require all inappropriate inputs into Natural Resources of Regional Significance to be eliminated through such means as; redirection of offending outfalls, suitable treatment improvements or retrofitting options.

3.2.10 The discharge of freshwater to Natural Resources of Regional Significance and suitable adjacent natural buffer areas shall be designed to imitate the natural discharges in quality and quantity as well as in spatial and temporal distribution.

3.2.11 Existing stormwater outfalls that do not meet or improve upon existing water quality or quantity criteria or standard, or cause negative impacts to Natural Resources of Regional Significance or suitable adjacent natural buffer areas shall be modified to meet or exceed the existing water quality or quantity criteria or standard. The modification shall be the responsibility of the outfall operator, permittee or applicant.

Strategic Regional Goal

3.4 Improve the protection of upland habitat areas and maximize the interrelationships between the wetland and upland components of the natural system.

Regional Policies

3.4.8 Remove invasive exotics from all Natural Resources of Regional Significance and associated buffer areas. Require the continued regular and periodic maintenance of areas that have had invasive exotics removed.

3.4.9 Required maintenance shall insure that re-establishment of the invasive exotic does not occur.

In addition;

- Council staff finds that the proposed road improvement program is generally consistent with the goals and policies of the *Strategic Regional Policy Plan for South Florida (SRPP)* in that it addresses the importance of improving transportation infrastructure to support the region's economic development. In doing so, the proposed project will further our goals for a more livable, sustainable, and competitive region.

- Council staff generally agrees that the proposed project is particularly compatible with the *Strategic Regional Plan for South Florida's* (SRPP) goals and policies listed below:

Strategic Regional Goal

4.1 Achieve a competitive and diversified regional economy, including lower unemployment rate and higher per capita income than the state and national average for Dade, Broward and Monroe Counties through the achievement of cutting edge human resources, economic development infrastructure and other resources to ensure a sustainable regional community.

Regional Policies

4.1.10 Coordinate and develop a totally integrated, multi-modal regional transportation system whereby heavy and light rail transit, people movers, Tri-Rail Commuter Service trolleys, express and local bus service and other transit related travel play a more active role in the movement of people. When modernizing or creating new transportation system utilize land use/transportation strategies to reduce congestion and allow for sustainable growth in the Region.

4.1.13 Ensure that the conditions of transportation affecting trade opportunities in the region with respect to land, air, ground and shipping are addressed.

4.1.28 Encourage the investment in the land and infrastructure needed for sustainable economic growth. Investments should include land for highway and mass transit corridors, stations and public-private joint venture development opportunities.

Strategic Regional Goal

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety.

Regional Policies

5.1.2 Use multimodal transportation corridors and public transit service to link major regional activity centers.

5.1.9 Consider regionally significant roadways and implement mitigation strategies during the Development of Regional Impact (DRI) review to meet the requirements of Transportation Uniform Standard Rule 9J-2.045, F.A.C.

5.1.12 Support the provision of a dedicated source of funding for public transit.

5.1.13 Expand use of mass transit, commuter rail, and alternative transportation modes, and increase their role as major components in the overall regional transportation system.

5.1.24 Improve regional air quality and reduce negative impacts to other natural resources by connecting development with multimodal transportation systems.

5.1.27 Establish a coordinated system for the transportation disadvantaged, including the elderly, in all counties of the region and assure coordination of service delivery between the transportation disadvantaged and public transit system.

Thank you for the opportunity to comment. Please do not hesitate to call should you have any questions or comments.

Sincerely,

Carlos Andres Gonzalez
Senior Planner

CAG/kal

Cc: Alice N. Bravo, P.E., Environmental Manager, FDOT-District 4

SUBJECT - SR 997/Krome Avenue/SW 177th Avenue (south) from SW 296th Street to SW 136th Street (FM # 249614-4) Project Development and Environment (PD&E) Study

Field meeting with the South Florida Water Management District Right-of-Way Department (SFWMD) to discuss impacts, treatment and minimization efforts for the Krome Avenue South PD&E Study Canals.

DATE & TIME
Tuesday, November 06, 2007
10:30 AM

LOCATION
C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street and C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street

ATTENDEES
Beverly Miller, SFWMD
Louie de Leon, SFWMD
Jim Barnes, SFWMD
June Stubbs, SFWMD
Ryan Solis-Rios, The Corradino Group
Keith Stannard, URS
Julio Boucle, URS

MEETING SUMMARY
The purpose of this field meeting was to discuss the potential impacts from this PD&E Study to the SFWMD's right-of-way for Canal C-102 and Canal C-103 with respect to dredge/fill impacts, water flow and maintenance access.

Canal C-102 crosses underneath Krome Avenue through two culverts, and Canal C-103 crosses underneath Krome Avenue via a bridge crossing (Bridge No. 870161).

Copies of the bridge typical section (Alternative 4) and plan view sheets with the proposed horizontal alignment in the areas of Canals C-102 and C-103 were distributed to meeting participants.

The project team discussed the objectives of this study and elicited comments from the SFWMD representatives in order to consider and include the needs of the agency with respect to both canal crossings. The following is a summary of the meeting:

- R. Solis explained the Krome South PD&E study and its background, including the need for

improvements due to safety and future roadway capacity,

- The existing right-of-way limits in and around the canals were discussed,
- J. Boucle noted that the FDOT would like to preserve the project area in its rural state. Therefore, no curb and gutter is proposed and drainage will be handled with a combination of roadside swales and french drains;
- J. Boucle stated that the FDOT bridge maintenance section has concurred with the proposed bridge replacement and opening between the twin structures over Canal C-103;
- SFWMD discussed several requirements they would like to see implemented as part of the study: These include the following;
    - Access / openings to all four quadrants of the intersection of Krome Avenue and the canals should be 20 feet wide to allow access to maintenance equipment;
    - The swale slope should be built at a 10:1 ratio to facilitate access with maintenance equipment (i.e., large cranes);
    - The 10:1 slope will be extended approximately 120 feet in each direction (longitudinally), and the same treatment should be considered for the dividing median in the area of the C-102 and C-103 Canals;
    - Water flow is not anticipated to be an issue at the C-102 canal with extending the culverts; however, head loss/flow calculations should be conducted during the final design phase to make sure that no adverse impacts will occur (a waiver can be applied for if the culvert extensions result in a decrease in water flow)
- The SFWMD (Beverly Miller) advised that she will provide URS with the low member elevation minimum requirements and design cross section for each canal;
- The project team will prepare typical sections and detail plan sheets for the roadway in the general area of the two canals for submittal to the SFWMD in order to receive written approval from the Right-of-Way Department;
- Coordination between the FDOT and the SFWMD should continue once the project moves into the final design phase;
- The field meeting was adjourned at 11:30 AM.

#7800 SR 997/Krome Avenue/SW 177th Ave (South)

District: District 6
County: Miami-Dade
Planning Organization: FDOT District 6
Plan ID: 249614-4
Phase: Project Development
From: SW 296th Street
To: SW 136th Street
Financial Management No.: Not Available
Federal Involvement: No federal involvement has been identified.

Contact Information: Vilma Croft Vilma.Croft@dot.state.fl.us
Project Web Site: http://WWW.KromeSouth.com
Snapshot Data From: Programming Screen Summary Report Re-published on 09/20/2010 by Megan McKinney

Issues and Categories are reflective of what was in place at the time of the screening event.

	Natural											Cultural			Community						
	Air Quality	Coastal and Marine	Contaminated Sites	Farmlands	Floodplains	Infrastructure	Navigation	Special Designations	Water Quality and Quantity	Wetlands	Wildlife and Habitat	Historic and Archaeological Sites	Recreation Areas	Section 4(f) Potential	Aesthetics	Economic	Land Use	Mobility	Relocation	Social	Secondary and Cumulative Effects
Alternative #1 From: SW 296th Street To: SW 136th Street *Re-Published: 09/20/2010 Reviewed from 05/22/2006 to 07/06/2006)*	0	N/A	3	2	0	2	N/A	3	2	2	2	2	3	2	2	0	2	1	2	2	2

Alternative #1

Alternative Description

Name	From	To	Type	Status	Total Length	Cost	Modes	SIS
Alternative was not named.	SW 296th Street	SW 136th Street	Widening	Work Program	10.131 mi.		Roadway	Y

Segment Description(s)

Segment No.	Name	Beginning Location	Ending Location	Length (mi.)	Roadway Id	BMP	EMP
Unnamed Segment	Unnamed Segment	SW 296th Street	SW 136th Street	10.131	Digitized		

Jurisdiction and Class

Segment No.	Jurisdiction	Urban Service Area	Functional Class
Unnamed Segment	FDOT	In/Out	RURAL: Principal Arterial - Other

Base Conditions

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment	2004	19600	2	Lanes Undivided

Interim Plan

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment				

Needs Plan

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment	2030			

Cost Feasible Plan

Segment No.	Year	AADT	Lanes	Config
Unnamed Segment	2030			

Funding Sources

No funding sources found.

Project Effects Overview for Alternative #1

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Air Quality	2 Minimal	US Environmental Protection Agency	07/20/2006
Contaminated Sites	3 Moderate	US Environmental Protection Agency	07/20/2006
Contaminated Sites	3 Moderate	FL Department of Environmental Protection	07/06/2006
Water Quality and Quantity	3 Moderate	US Environmental Protection Agency	07/20/2006
Water Quality and Quantity	3 Moderate	FL Department of Environmental Protection	07/06/2006
Wetlands	3 Moderate	US Environmental Protection Agency	07/20/2006
Wetlands	3 Moderate	FL Department of Environmental Protection	07/06/2006
Wetlands	0 None	National Marine Fisheries Service	06/27/2006
Wetlands	2 Minimal	US Army Corps of Engineers	06/14/2006
Wetlands	2 Minimal	US Fish and Wildlife Service	05/25/2006

None found. **FDOT District 6 Feedback to FL Department of Environmental Protection's Review (09/13/2007):** All of these issues are being addressed in the CSER for the project. If necessary, additional contamination assessments will be conducted during the final design phase of the project.

The FDOT will adhere to all current federal, state and local government ordinances, permits, best management practices, planning, design, construction, operation, maintenance, monitoring requirements and engineering recommendations to protect the above and below ground environmental integrity of the roadway corridor and its general vicinity. Potential impacts during construction (including waste handling and disposal) will be minimized through adherence to all state and local regulations and to the latest edition of the FDOT Standard Specifications for Road and Bridge Construction.

Farmlands

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 08/07/2007 by FDOT District 6

Comments:
The study corridor traverses rural farming and low-density residential communities. The rural land uses include row crop agricultural fields, fruit tree orchards, herbaceous ornamental fields, and woody ornamental and fruit tree nurseries. Farming is also actively practiced within existing FDOT roadway right-of-way and directly adjacent to the Krome Avenue roadway corridor. Those areas currently farmed within the existing FDOT roadway right-of-way are considered to be designated as transportation land use and not agricultural land use.

FDOT is currently coordinating the evaluation of farmland conversion impacts associated with the project with the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS).
None found

Floodplains

Project Effects

Coordinator Summary Degree of Effect: 0 *None* assigned 08/07/2007 by FDOT District 6

Comments:
Floodplains are known to occur within the project boundaries. The Krome Avenue corridor lies within Zone AH (base flood elevation is determined to be 7-8 feet) and Zone X (base flood elevation determined to be 1-3 feet).

Miami-Dade County has no designated regulatory floodways. It is anticipated that the stormwater management system will be improved by the proposed action. Based on the project scope, no impact to floodplains is anticipated.
None found

Infrastructure

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
Several franchised utility companies and governmental utility departments have facilities within the project area, including electric power lines, water and sewer lines, cable TV lines, gas lines, and telephone lines.

Within the project limits, there is one railroad crossing (FDOT Crossing Number 631137L). This is an active crossing and there is no abandonment plan for this crossing. There are no fixed schedules for freight and passenger train operations along this crossing, demand based freight trains use this rail segment.

Utility pole relocations may occur as a result of the project. The FDOT will coordinate with utility owners to insure that minimal utility/railroad impacts occur from this project.
None found

Navigation

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 08/07/2007 by FDOT District 6

Comments:
No navigable waterways exist within the project limits; therefore, no impacts will occur.
None found

Special Designations

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 09/25/2007 by FDOT District 6

Comments:
A privately owned parcel, known as Mary Krome Park, is located at the southern terminus of the roadway corridor at SW 296th Street on the west side of Krome Avenue. This privately owned and maintained parcel consists of artificially planted rockland and coastal hammock species and has no special designations applied to it.

A second parcel, the Owaissa Bauer Addition No. 1, is located south of SW 264th Street on the east side of Krome Avenue. This parcel is maintained as an Environmentally Endangered Lands (EEL) Program natural preserve protected and managed by Miami-Dade County. Coordination is being conducted with the Miami-Dade County DERM EEL Program and the Miami-Dade County Parks and Recreation Departments Natural Areas Management Program (NAM), which assists in the management of the parcel, to discuss avoidance and minimization of impacts to this parcel. EEL/NAM representatives are currently evaluating each alternative and coordination is on-going. The results of these coordination efforts will be included in the Endangered Species Biological Assessment (ESBA) for this project, which will be available in electronic format online via the FDOT Environmental Screening Tool (EST).
None found

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
Miami-Dade County is underlain by the Biscayne Aquifer system, the sole source of potable water for most of southeastern Florida. All necessary precautions and best management practices (BMPs) pertaining to construction will be followed to prevent adverse impacts to the underlying sole source aquifer. The Advance Notification response from the USEPA (dated June 30, 2004) concluded that the project should have no significant negative impacts to the sole source aquifer, if BMPs are employed.

Both agencies recommended a study to evaluate the existing and future stormwater runoff conditions and effects. The FDEP also stressed the importance of treating stormwater runoff. Three areas identified as surface waters were identified within the study corridor. These areas include: an inundated rock mining pit plus the South Florida Water Management Districts (SFWMDs) C-102/Princeton and C-103/Mowry canals. Water quality impacts to these surface water areas resulting from potential upland erosion and sedimentation during construction activities will be controlled in accordance with the latest edition of FDOT's Standard Specifications for Road and Bridge Construction and through the use of Best Management Practices, including temporary erosion control measures to ensure compliance with Federal and State water quality standards. Furthermore, stormwater runoff will be treated prior to discharge per State and local stormwater management criteria and every effort will be made to maximize storage and treatment of stormwater. The project's stormwater facility design will include, at a minimum, the water quantity and quality requirements as required by Chapter 24, Section 24-58 of the Miami-Dade County Code. The Miami-Dade County requirements meet or exceed the State of Florida water quality and water quantity requirements. The proposed stormwater management system will be permitted through the SFWMD and will meet all required criteria for storage and treatment. Therefore, it is anticipated that water quality within the proposed project area may improve due to the proposed stormwater treatment features.

Degree of Effect: 3 *Moderate* assigned 07/20/2006 by Maher Budeir, US Environmental Protection Agency

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Ground water, wetlands and surface water in the buffer zone.
Comments on Effects to Resources:
Impact to surface water must be minimized by careful and thorough treatment of the surface water runoff. Several canals and ditches exist in the area. Impact on surface water runoff is likely to impact wetlands and groundwater in the area. A complete hydrology study should be perform to define the qualitative and quantitative impact on the groundwater - surface water interaction.
Additional Comments (optional):
None found.

Degree of Effect: 3 *Moderate* assigned 07/06/2006 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Stormwater runoff from the road surface may alter adjacent wetlands and surface waters through increased pollutant loading. Natural resource impacts within and adjacent to the proposed road right-of-way will likely include alteration of the existing surface water hydrology and natural drainage patterns, and reduction in flood attenuation capacity of area creeks, ditches, and sloughs as a result of increased impervious surface within the watershed. Every effort should be made to maximize the treatment of stormwater runoff from the proposed road project to prevent ground and surface water contamination. Stormwater treatment should be designed to maintain the natural pre-development hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands.
Comments on Effects to Resources:
We recommend that the study include an evaluation of existing stormwater treatment adequacy and details on the future stormwater treatment facilities. Retro-fitting of stormwater conveyance systems would help reduce impacts to water quality. Increased stormwater runoff carrying oils, greases, metals, sediment, and other pollutants from the increased impervious surface would be of significant concern.

Additional Comments (optional):
None found.

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
No areas with characteristics indicative of jurisdictional vegetated wetlands were identified within the project corridor; therefore, no impacts to jurisdictional vegetated wetlands are anticipated as a result of this project.

Three areas identified as surface waters were identified within the study corridor. These areas include an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street.

Nationwide authorization from the U.S. Army Corps of Engineers (USACE) will be applied for during the final design phase of the project for impacts to surface waters.

These issues will be addressed in the Wetland Evaluation Report (WER) for the project.

Degree of Effect: 3 *Moderate* assigned 07/20/2006 by Maher Budeir, US Environmental Protection Agency

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
Wetlands
Comments on Effects to Resources:
Based on ETDM analysis, wetlands may be impacted with the proposed project. Impact to wetlands must be minimized. Unavoidable impact must be fully mitigated.
Additional Comments (optional):
None found.

Degree of Effect: 3 *Moderate* assigned 07/06/2006 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects

Identified Resources and Level of Importance:
The National Wetlands Inventory GIS report indicates that there are 81.07 acres of palustrine wetlands within 500 feet of the project area.
Comments on Effects to Resources:
The project will require an environmental resource permit (ERP) from the South Florida Water Management District. The ERP applicant will be required to eliminate or reduce the proposed wetland resource impacts of the roadway widening project to the greatest extent practicable:
- Minimization should emphasize avoidance-oriented corridor alignments, wetland fill reductions via pile bridging and steep/vertically retained side slopes, and median width reductions within safety limits.
- Wetlands should not be displaced by the installation of stormwater conveyance and treatment swales; compensatory treatment in adjacent uplands is the preferred alternative.
- After avoidance and minimization have been exhausted, mitigation must be proposed to offset the adverse impacts of the project to existing wetland functions and values. Significant attention is given to forested wetland systems, which are difficult to mitigate.
- The cumulative impacts of concurrent and future road improvement projects in the vicinity of the subject project should also be addressed.
Additional Comments (optional):
None found. **FDOT District 6 Feedback to FL Department of Environmental Protection's Review (08/08/2007):** Note that the 81.07 acres of palustrine wetlands identified through the GIS report are located entirely outside of the project limits and will not be impacted as a result of this project. Three areas identified as surface waters were identified within the study corridor. These areas include an inundated rock mining pit located on the west side of Krome Avenue approximately 1,000 feet north of SW 208th Street; the SFWMDs C-102/Princeton canal which crosses Krome Avenue at approximately SW 196th Street; and the SFWMDs C-103/Mowry canal which crosses Krome Avenue just north of SW 280th Street.

An Environmental Resources Permit will be applied for and obtained, prior to construction, for impacts to the three surface water areas and for the new stormwater management system. Alternatives will consider minimization of impacts to surface waters, while enhancing the safety and drainage needs of the facility. Because no jurisdictional wetland resources will be impacted as a result of this project, no mitigation is proposed. Also, any loss in functional values from unavoidable impacts to the existing rock mining pit and canal features (all with an almost non-existent littoral zone and sparsely vegetated side slopes) will be compensated with the construction of the new stormwater system which will include swale/dry retention areas conducive to the growth of hydrophytic vegetation. The proposed drainage system will have a net positive effect on the quality of water entering receiving waters and wetlands.

Degree of Effect: 0 *None* assigned 06/27/2006 by Madelyn T Martinez, National Marine Fisheries Service

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
NONE
Comments on Effects to Resources:
NONE
Additional Comments (optional):
Based on the project location, information provided in the ETDM website, discussions with other agencies, and GIS-analysis on wetlands, and a site visit on June 18, 2006, NOAAs National Marine Fisheries Service concludes the proposed work would not directly impact areas that support NOAA trust resources. We have no comments or recommendations to provide pursuant to the essential fish habitat (EFH) requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) P.L. 104-297. Further consultation on this matter is not necessary unless future modifications are proposed and you believe that the proposed action may result in adverse impacts to EFH.

Degree of Effect: 2 *Minimal* assigned 06/14/2006 by Robert Kirby, US Army Corps of Engineers

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
None found.
Comments on Effects to Resources:
Impacts to tributaries (canals) probable but should be minimal and qualify for a NW 14
Additional Comments (optional):
None found.

Degree of Effect: 2 *Minimal* assigned 05/25/2006 by John Wrublik, US Fish and Wildlife Service

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:
Wetlands
Comments on Effects to Resources:
Wetlands provide important habitat for fish and wildlife. If wetlands are found within the project area, we recommend that these valuable resources be avoided to the greatest extent practicable. If impacts to wetlands are unavoidable, we recommend the FDOT provide mitigation that fully compensates for the loss of wetland resources.
Additional Comments (optional):
None found.

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 09/25/2007 by FDOT District 6

Comments:
The majority of the corridor consists of land altered by human activities such as landscaped residential and commercial developments with maintained turf grass and ornamental shrubs and trees, agricultural lands (row crops and nurseries for landscape ornamental plants), and ruderal sites (roadsides, vacant lots, abandoned agricultural lands, and railroad rights-of-way). A protected ecologically significant pine rockland community known as Owaissa Bauer Addition No. 1 is located adjacent to the roadway corridor, and a privately owned parcel, known as Mary Krome Park, consists of artificially planted rockland and coastal hammock species and is located at the southern terminus of the roadway corridor. In addition, three areas recognized as surface waters were identified within the study corridor. These areas include an inundated rock mining pit, the SFWMD's C-102/Priceton canal, and the SFWMD's C-103/Mowry canal.

Federally and state listed wildlife species that may potentially occur along the project corridor will be evaluated in the Endangered Species Biological Assessment (ESBA).

Issues raised by FWS and FFWCC will be addressed in the ESBA report for the project. Impacts to protected species are expected to be minimal. Coordination is being conducted with USFWS, FFWCC, FDACS, Miami-Dade County DERM EEL Program, and the Miami-Dade County Park and Recreation Department Natural Areas Management Program (NAM) to discuss avoidance/minimization efforts and potential mitigation.

Degree of Effect: 3 *Moderate* assigned 07/11/2006 by Scott Sanders, FL Fish and Wildlife Conservation Commission

Coordination Document: *The "Coordination Document" option was not available at the time of the review.*

Direct Effects
Identified Resources and Level of Importance:

APPENDIX C

U.S. Environmental Protection Agency Sole Source Aquifer Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

June 30, 2004

Ms. Alice N. Bravo, P.E.
District Environmental Management Engineer
Florida Department of Transportation, Room 6103
1000 Northwest 11th Avenue
Miami, FL 33172-5800

Subj: Sole Source Aquifer Review Determination for SR 997/Krome Ave./ SW 177 Ave (South) from SW 296th SW 136th Street

Dear Ms. Bravo:

The U.S. Environmental Protection Agency (EPA), Region 4 has received your request to review the above-referenced proposed project and have reviewed it pursuant to Section 1424(e) of the Safe Drinking Water Act. Regulatory groups within the EPA Region 4 Office responsible for administering other programs may, at their own discretion and under separate cover, provide additional comments.

The above referenced project has been determined to lie within the actual or streamflow ~~and recharge source zone boundaries of the Biscayne Sole Source Aquifer (SSA) system.~~ This system has been designated by EPA as a Sole Source since *it is the sole or principal water source for the area* which, if contaminated, would create a significant hazard to public health. For this reason, EPA, Region 4 has reviewed your projects for impacts to the sole source aquifer system.

After review of the information provided for this project, it is my understanding that all necessary precautions, permits, best management practices (BMPs), zoning and city ordinances pertaining to construction activities will be followed to prevent adverse impacts to the aquifer. Please contact our office when a determination has been made as to whether the projects are located near any above or below ground chemical storage tanks, sanitary landfills, or waste dumps. Also indicate if any previous groundwater contamination has occurred from the above listed property. For those projects which are located in wetlands or coastal and flood zones, you will need to contact EPA's Wetlands Section at the above address to ensure that all BMPs are followed for their program. We also request that the FL Department of Environmental Quality be contacted to determine if a Wellhead or Source Water Protection Plan exists for the listed construction/rehabilitation areas. If a plan does exist, please request a copy to ensure that the projects are in line with the groundwater protection activities within the protection area.

After reviewing the information provided in the documents submitted to our office, it is my conclusion that if all mentioned precautions are adhered to that the project should not have a significant negative impact to the aquifer. Please contact our office if any project changes are made.

I have enclosed an informational sheet detailing data that should be submitted as part of the request package.

Thank you for your concern with the environmental impacts of the project on the aquifer. If you have any questions or concerns in regards to this or other matters, please do not hesitate to contact me by telephone at 404/562-9472 or by email at hill.lois@epa.gov.

Sincerely,

Lois E. Hill

Lois E. Hill, Environmental Engineer
Region 4 Sole Source Aquifer Coordinator
Ground Water/Drinking Water Branch

Enclosure

MINIMAL ELEMENTS OF A SOLE SOURCE AQUIFER REVIEW REQUEST

SPONSORING AGENCY: The federal agency providing the funding for the project.

CONTACT: Person to call regarding the project.

NAME OF PROJECT: Title of the project.

ADDRESS: Address of the contact person or location of the project.

COUNTY: County where the project will take place.

TOTAL FUNDING AMOUNT:
FEDERAL SHARE: The Federal Share amount.
OTHER: Other state/Federal agencies share.

PROJECT NEED/PURPOSE/SCOPE: The need, potential benefits and adverse effects of the proposed project should be stated clearly. Project impacts and impact mitigation are evaluated in the context of project need.

WATER QUALITY BEST MANAGEMENT PRACTICES (BMPs): Should be used to reduce erosion during construction. Typical BMPs include the use of stacked hay bales, silt fences, mulching and reseeding, and appropriate buffer zone along water bodies. The document should include an erosion control plan or reference the State erosion control regulations and a commitment to compliance. Compliance should include both BMP application and maintenance

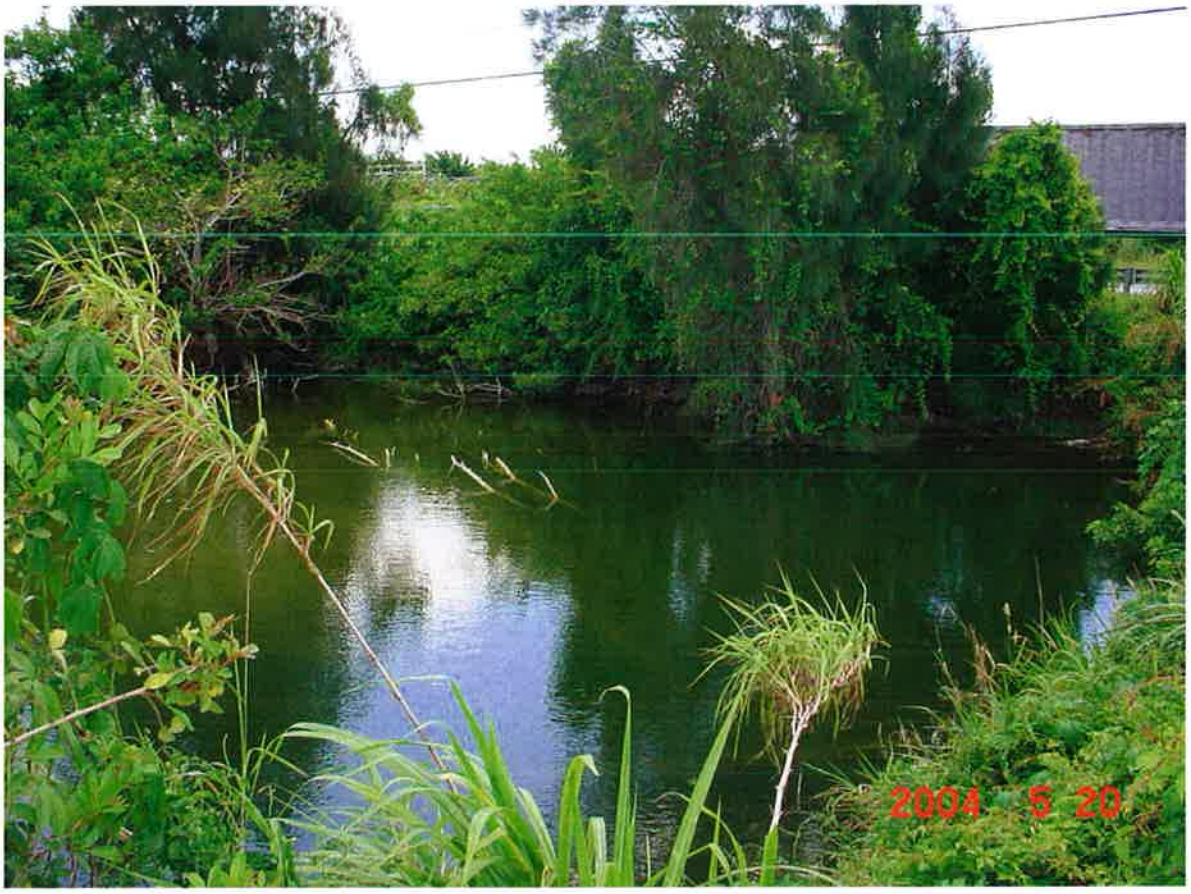
~~The document should discuss any proposed crossings of water bodies. In general, crossings~~ should be minimized. Unavoidable crossings should be strategically placed to reduce harm to the aquifer.

CUMULATIVE IMPACTS: The SSA document should estimate cumulate impacts associated with the proposed project. Cumulative impacts include the additive effects of a given parameter for all contributing projects in the area, as well as the cumulative impact of all parameters for all projects in the area. The document should define what cumulative impacts would result from implementation of the proposed project. Existing or future projects (federal and non-federal projects) with attendant pollutants should also be considered.

Case exist where the proposed project is the primary or a significant contributor to the cumulative impacts of an area; however, there could also be cases where the proposed project has minimal impacts but the cumulative impacts would nevertheless be great due to the existing impacts in the area. As such, even EAs with minimal impacts should at least address cumulative impacts for the project area.

APPENDIX D

Wetland Photographs



Borrow Pit SW-1

FLUCFCS	**742 (Borrow Areas) / 524 (Lakes < 10 acres)**
USFWS	**PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)**

SW-1: This surface water is an apparent former borrow pit located on the west side of Krome Avenue north of SW 280th Street. The apparently permanently inundated former borrow pit, excavated in Miami oolite rock, is rectangular in shape with high, steep side slopes. SW-1 is approximately 100 feet in width and approximately 290 feet in length with approximately 60 feet of the eastern portion situated within the project corridor. The steep side slopes are densely vegetated with non-indigenous plant species that hang over the water such a Brazilian pepper (*Schinus terebinthifolius*), Australian pine (*Casuarina equisetifolia*), Brazilian jasmine (*Jasminum fluminense*), elephantgrass (*Pennisetum purpureum*), Noyau vine (*Merremia dissecta*), and Santa Maria feverfew (*Parthenium hysterophorus*). Other important components include possum grape (*Cissus verticillata*), muscadine (*Vitis rotundifolia*), and Virginia creeper (*Parthenocissus quinquefolia*). No submergent or emergent hydrophytic vegetation was observed within the borrow pit with the exception of an individual giant leather fern observed along the eastern shoreline. Use of the site by wildlife was evidenced by the observation of a large number of cattle egrets loafing in the vegetation overhanging the surface of the borrow pit, two green herons observed foraging, several basking painted turtles, and several apparent cichlid nest depressions.

C-102 Canal

FLUCFCS	**510 (Streams & Waterways)**
USFWS	**R2UBHx (Rock Rubble Bottom, Permanently Flooded , Excavated)**

C-102 (Princeton) Canal: C-102 Canal is an permanently-inundated drainageway with steep side slopes excavated in Miami oolite rock. This canal functions to drain flood waters from the C-102 basin, recharge water to the basin for irrigation and drinking water purposes, and maintain fresh groundwater head elevation adequate to inhibit saltwater intrusion. C-102 Canal originates west of Krome Avenue at L-31N Canal, a major north/south canal in the South Dade Conveyance System, and eventually discharges to Biscayne Bay to the southeast. This canal is operated and maintained by the South Florida Water Management District (SFWMD). A gated culvert, Control Structure S-194, is located on the west side of Krome Avenue. Within the project study corridor, the width of the canal is approximately 30 to 45 feet with a depth of approximately four to six feet. The steep side slopes of the canal in the vicinity of the project offer little or no littoral habitat for the establishment of emergent hydrophytic vegetation. Vegetation observed along the upland banks include weedy ruderal herbaceous species typical of regularly mowed non-wetland areas in south Miami-Dade County. Submergent vegetation in the canal is dominated by Carolina fanwort (*Cabomba caroliniana*). Torpedo grass (*Panicum repens*) was observed extending a short distance waterward from the shoreline around the culverts on the east side of Krome Avenue.

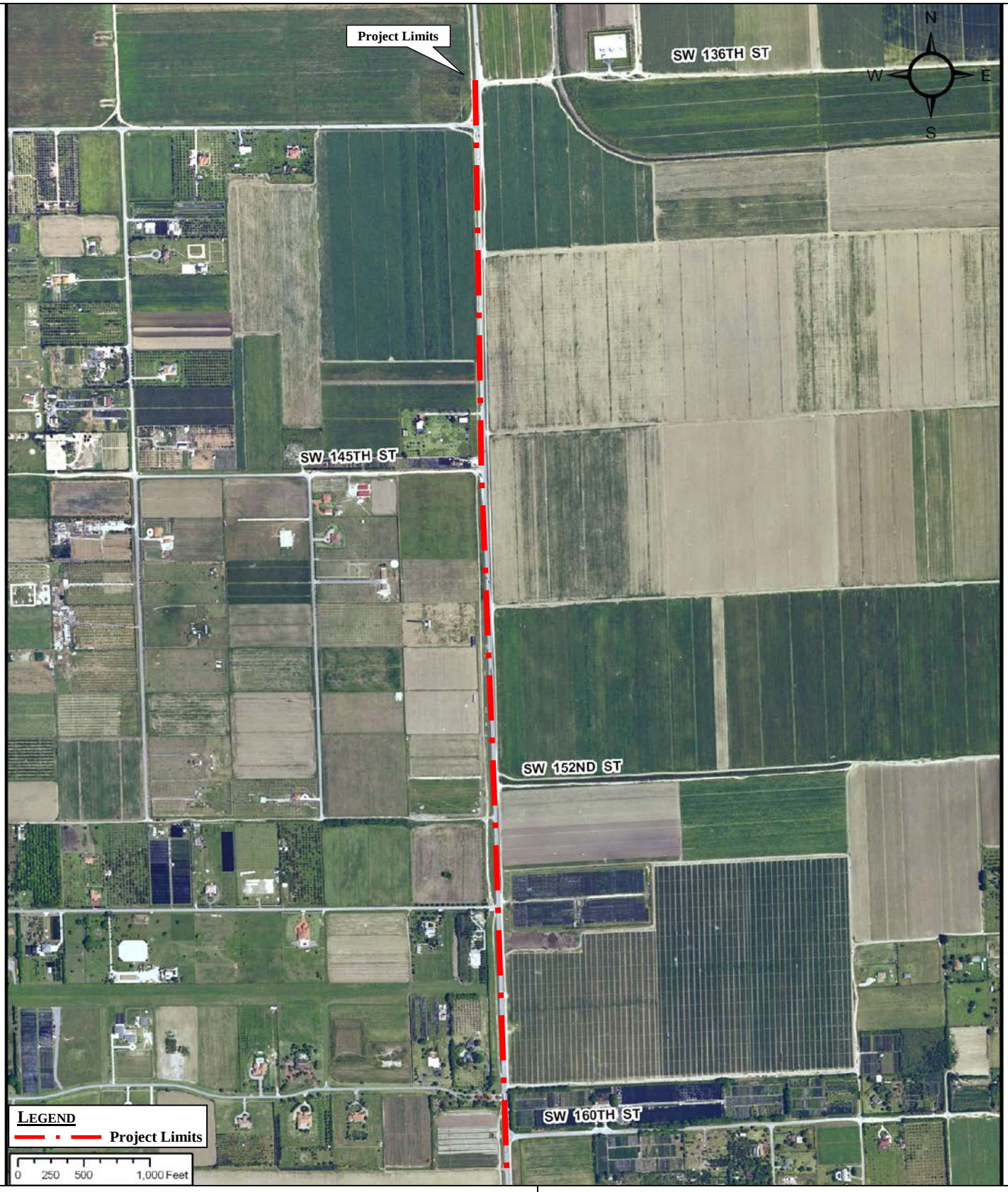
C-103 Canal

FLUCFCS	**510 (Streams & Waterways)**
USFWS	**R2UBHx (Rock Rubble Bottom, Permanently Flooded , Excavated)**

<u>C-103 (Mowry) Canal:</u> C-103 Canal is also a permanently-inundated drainageway with steep side slopes excavated in Miami oolite rock. C-103 Canal, which originates at L-31N Canal, functions to drain flood waters, recharge groundwater, and maintain fresh groundwater head elevation adequate to inhibit saltwater intrusion. C-102 Canal originates west of Krome Avenue at L-31N Canal and eventually discharges to Biscayne Bay to the southeast. This canal is operated and maintained by the SFWMD. Within the project study corridor, the width of the canal is approximately 25 to 30 with a depth of approximately four to six feet. The steep side slopes of the canal in the vicinity of the project offer little or no littoral habitat for the establishment of emergent hydrophytic vegetation. Vegetation observed along the upland banks include weedy ruderal herbaceous species typical of regularly mowed non-wetland areas in south Miami-Dade County. Submergent vegetation in the canal is dominated by hydrilla (*Hydrilla verticillata*), Indian swampweed (*Hygrophila polysperma*), and creeping primrosewillow (*Ludwigia repens*).

APPENDIX E

Aerial Photographs



Source: FDOT

Project: Krome Avenue PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

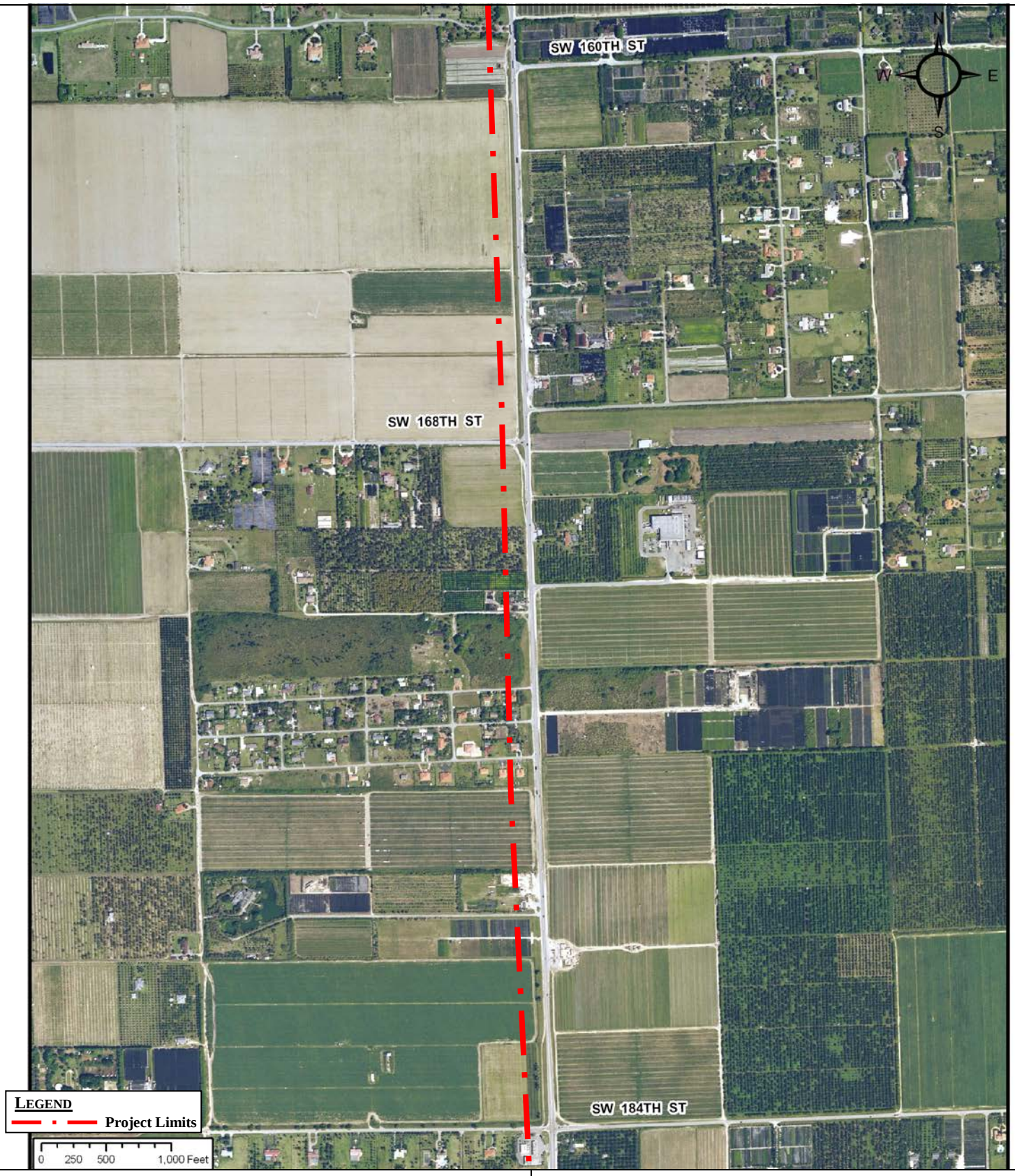
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Appendix E-1



Source: FDOT

Project: Krome Avenue PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

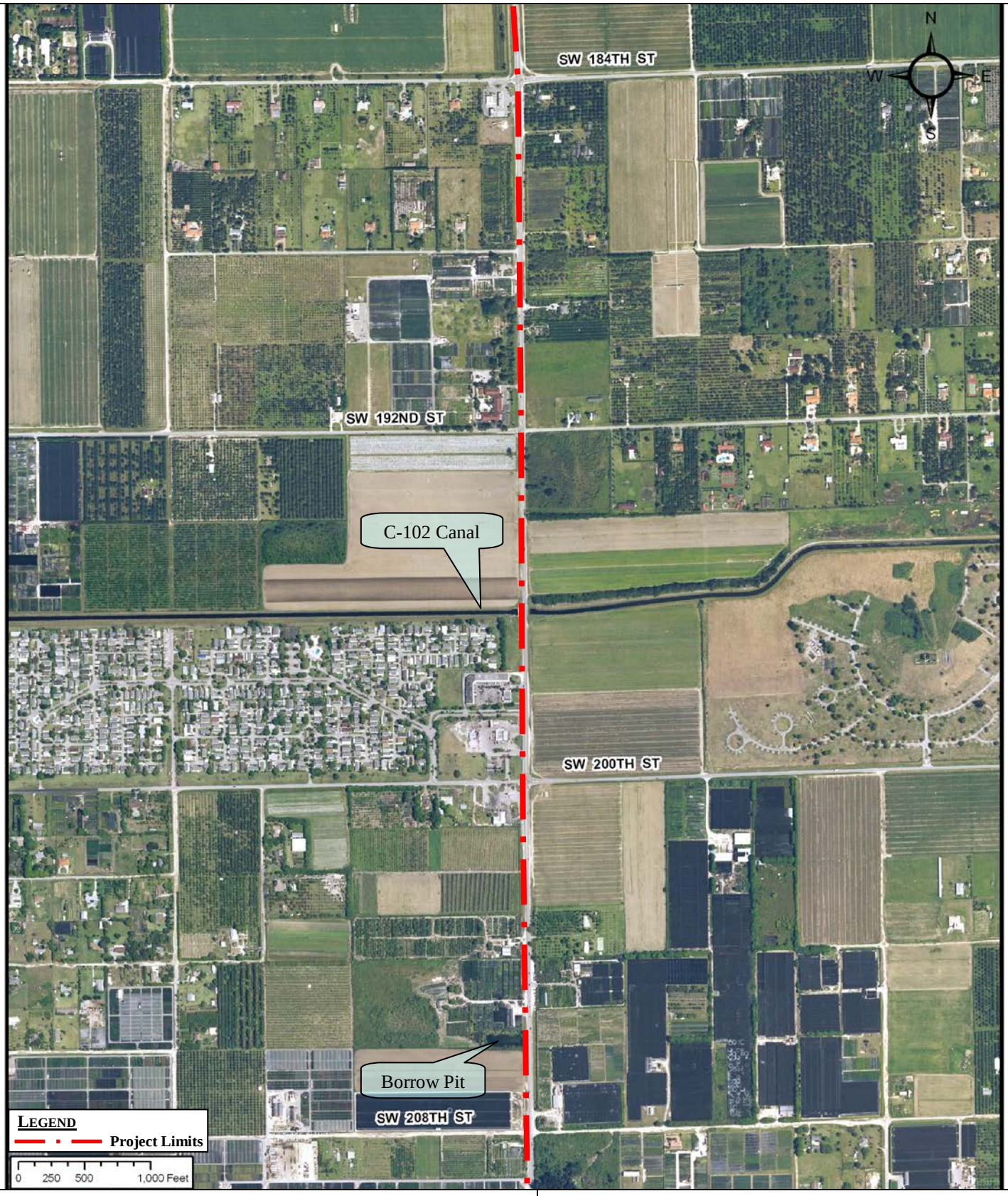
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Appendix E·2



Source: FDOT

Project: Krome Avenue PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

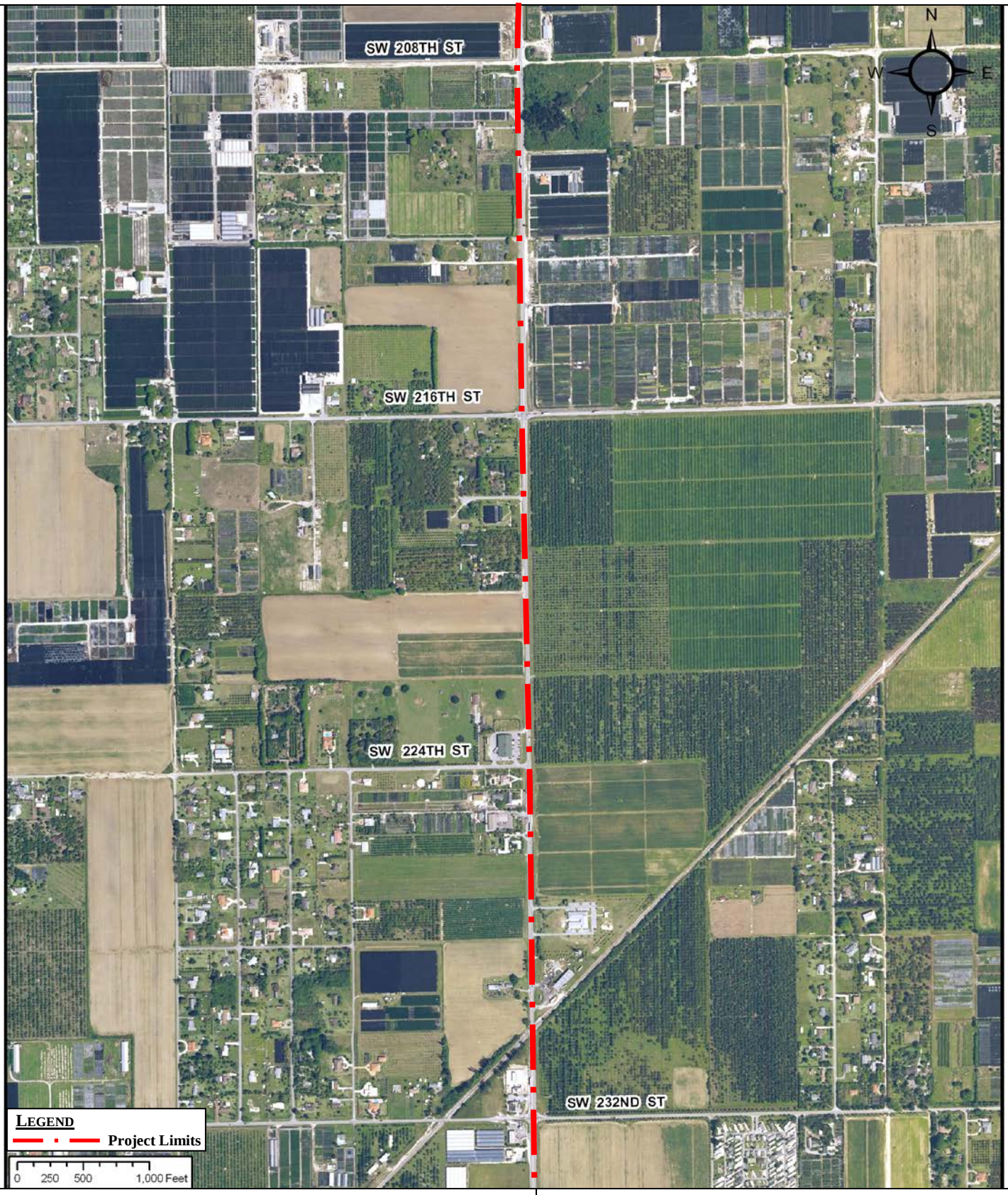
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Appendix E-3



Source: FDOT

Project: Krome Avenue PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

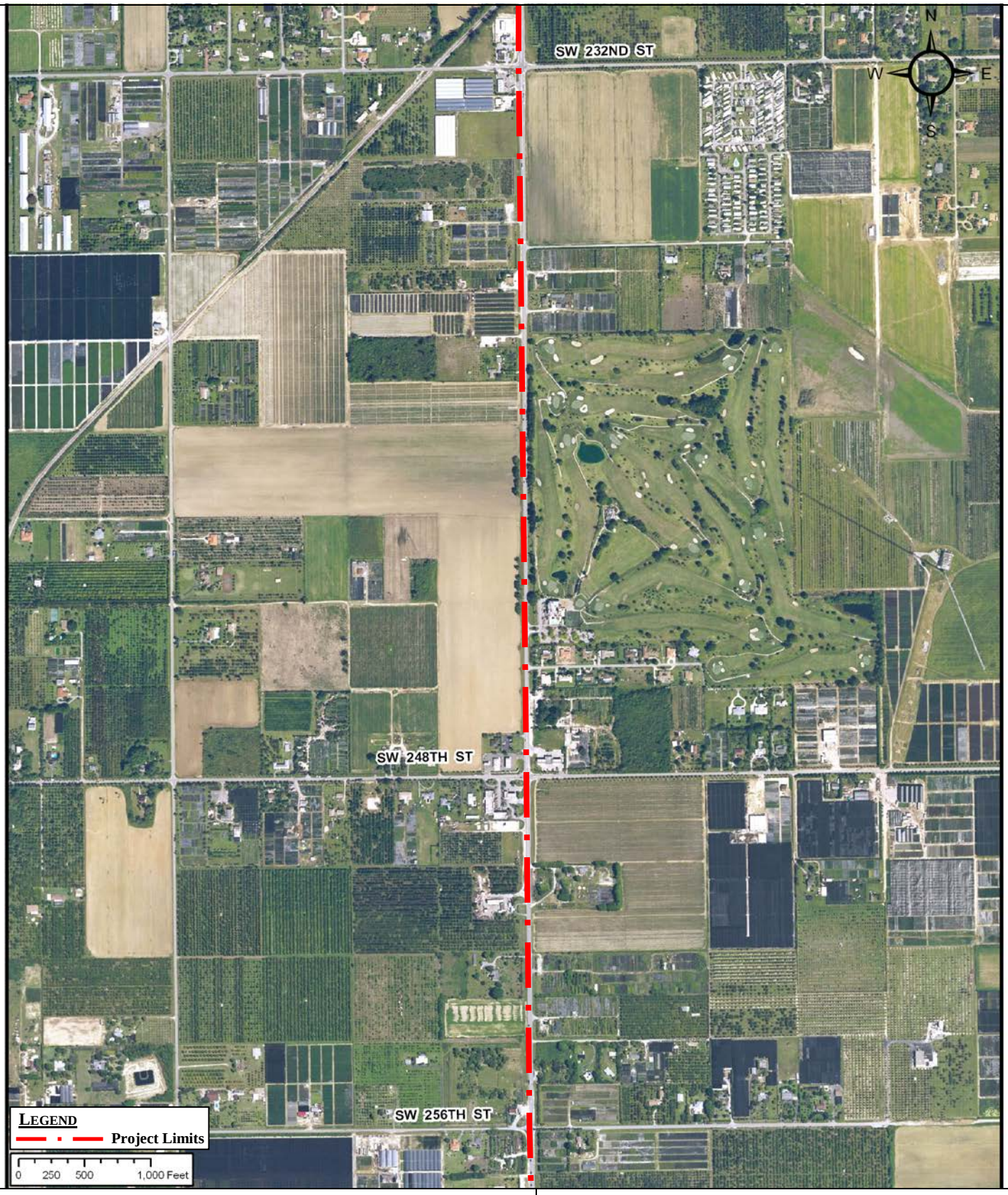
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Appendix E-4



Source: FDOT

Project: Krome Avenue PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

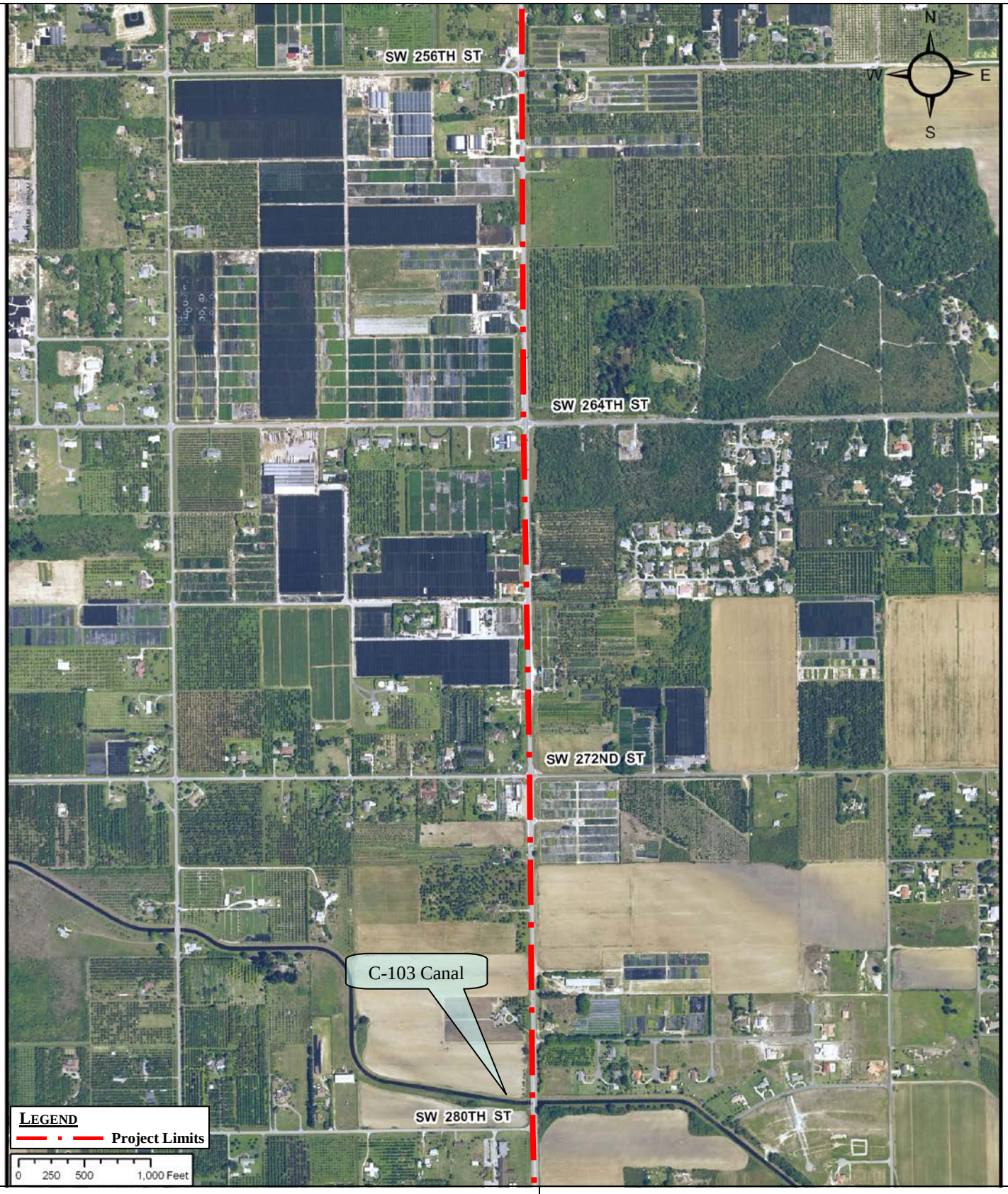
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Appendix E-5



Source: FDOT

Project: Krome Avenue PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

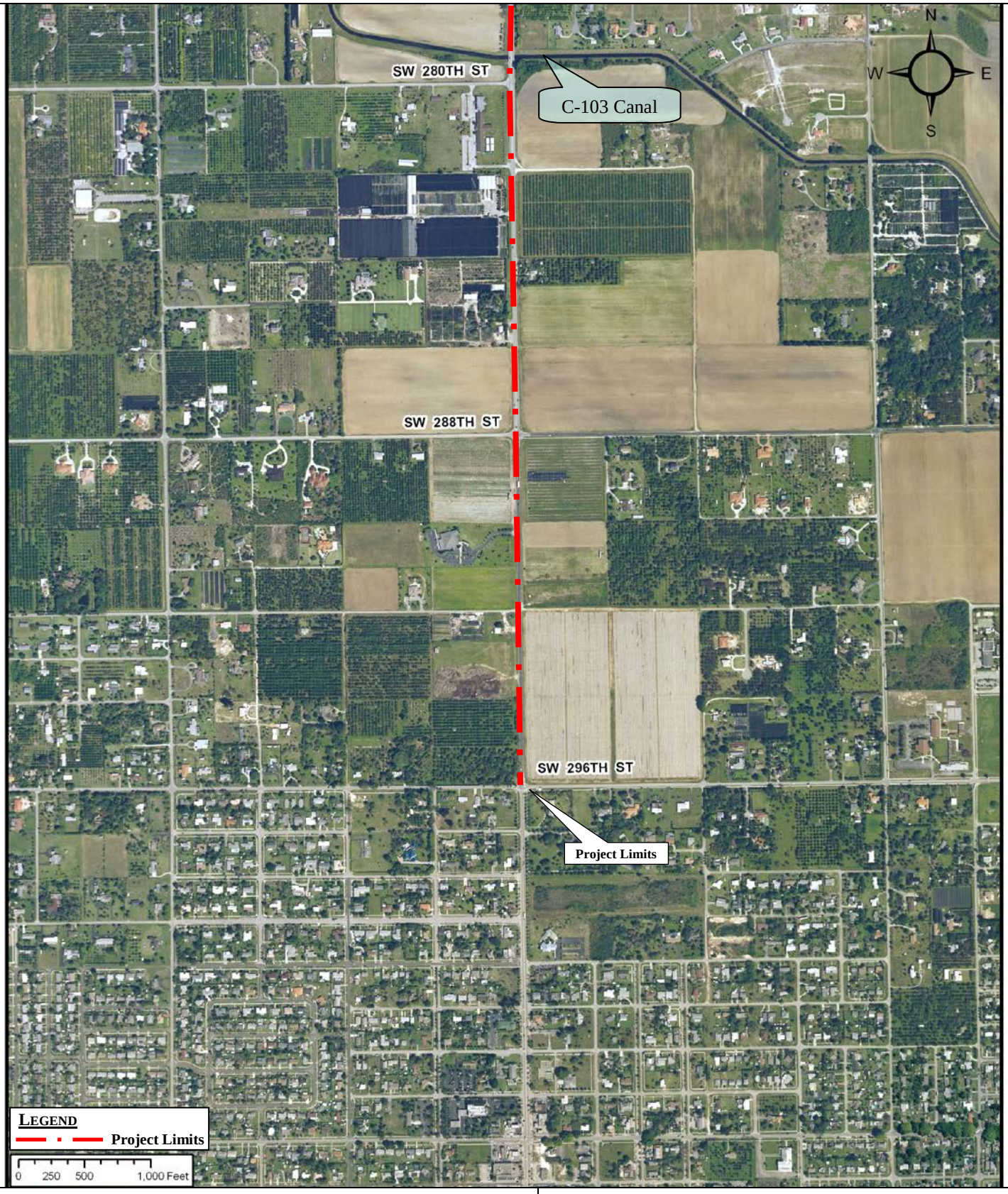
Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Appendix E-6



Source: FDOT

Project: Krome Avenue PD&E Study

Location: Miami-Dade County, Florida

Proj. No.: 249614-4-22-01

Scale: 1 in = 1,000 ft

Aerial Photograph

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL MGMT. OFFICE

Appendix E-7

APPENDIX F

Observed Plant Taxa

APPENDIX F

Surface Water 1 Plant Taxa[1]

Scientific Name	Vernacular Name	Federal / State Wetland Indicator Status
Acrostichum danaeifolium	giant leather fern[2]	OBL / OBL
Casuarina equisetifolia	Australian pine	FACU / FAC
Cissus verticillata	possum grape	—
Jasminum fluminense	Brazilian jasmine	—
Merremia dissecta	Noyau vine	FACU /
Parthenocissus quinquefolia	Virginia creeper	FAC /
Parthenium hysterophorus	Santa Maria feverfew	—
Pennisetum purpureum	elephantgrass	/ FAC
Schinus terebinthifolius	Brazilian pepper	FAC / FAC
Vitis rotundifolia	muscadine	FAC /

[1] No emergent or submergent vegetation observed, species listed consists of dense vegetation overhanging the water from the steep side slopes of the borrow pit.
[2] One individual of leather fern observed on shoreline.

C-102 Canal Plant Taxa[1]

Scientific Name	Vernacular Name	Federal / State Wetland Indicator Status
Cabomba caroliniana	Carolina fanwort	OBL /
Panicum repens	torpedo grass	FACW- / FACW

[1] Vegetation on the steep side slopes of the canal consists of regularly mowed upland and transitional herbaceous species typical of ruderal situations.

C-103 Canal Plant Taxa[1]

Scientific Name	Vernacular Name	Federal / State Wetland Indicator Status
Hydrilla verticillata	hydrilla	OBL /
Hygrophila polysperma	Indian swampweed	OBL / OBL
Ludwigia repens	creeping primrosewillow	OBL / OBL

[1] Vegetation on the steep side slopes of the canal consists of regularly mowed upland and transitional herbaceous species typical of ruderal situations.