CONTAMINATION SCREENING EVALUATION REPORT

SR 9 / I-95 AT SR 80 / SOUTHERN BOULEVARD PROJECT DEVELOPMENT & ENVIRONMENT STUDY

(SR 80 MP 19.1 to 20.4 and I-95 MP 24.3 to 25.3)

ETDM No.: 14183/ FAP No.: TBD
Financial Project ID: 435516-1-22-02
Palm Beach County

Prepared For:
FDOT District Four
3400 W. Commercial Blvd.
Ft. Lauderdale, FL 33309

May 2017

CONTAMINATION SCREENING EVALUATION REPORT

SR 9 / I-95 AT SR 80 / SOUTHERN BOULEVARD PROJECT DEVELOPMENT & ENVIRONMENT STUDY

(SR 80 MP 19.1 to 20.4 and I-95 MP 24.3 to 25.3)

ETDM No.: 14183/ FAP No.: TBD
Financial Project ID: 435516-1-22-02
Palm Beach County

Prepared For:
FDOT District Four
3400 W. Commercial Blvd.
Ft. Lauderdale, FL 33309

Prepared by:
RS&H, Inc.
10748 Deerwood Park Blvd South
Jacksonville, FL 32256

May 2017

Executive Summary

The Florida Department of Transportation (FDOT), District 4, is considering improvements to the state road (SR) 9 / I-95 interchange at SR 80 / Southern Boulevard in Palm Beach County, Florida (project corridor). As part of the engineering process, this Contamination Screening Evaluation Report (CSER) was prepared in accordance with Part 2, Chapter 22 "Contamination Impacts" of the FDOT Project Development & Environment Manual, revised September 1, 2016. The objectives of this contamination screening evaluation (Level I Assessment) are to identify and evaluate potential contamination sources that can impact proposed project schedule and costs.

The preliminary evaluation included reviewing an environmental database and aerial imagery, performing a visual reconnaissance of the project corridor and surrounding area, obtaining pertinent environmental records from state and local agencies, and assigning potential contamination ratings for each source within and adjacent to the project corridor.

Available records reported many sources associated with hazardous waste management, petroleum storage systems/spills, cleaning or dry cleaning activities, and environmental contamination within a 500 foot radius of the project corridor. An evaluation of site characteristics for these sources and associated environmental information (e.g. undocumented or documented soil, groundwater, and/or hazardous material impacts), identified 27 sources/facilities with a risk rating distribution as follows: 8 – High, 9 – Medium, 9 – Low, and 1 - No. Based on these risk ratings, construction activities may encounter soil or groundwater contamination which can potentially impact worker health, the environment, and construction schedule and costs if these sites are not addressed in the design.

A Level II Assessment is recommended for 11 sources/facilities that have the potential to adversely impact the project if identified environmental concerns are not further investigated. The Level II Assessment should include the advancement of environmental soil borings and discrete groundwater sampling at specific locations within the project corridor that require subsurface construction (i.e. soil excavation and/or dewatering activities) near sources identified as having potential contamination. The Level II Assessment should

include the collection and analysis of soil and groundwater samples for the appropriate analytical group parameters.

Knowing the extent of impacted media at these areas of concern during the design phase can expedite handling, disposal and/or treatment requirements, as well as protecting worker safety during construction. It can also identify locations within the project corridor where certain construction methods may exacerbate contaminant plumes and identify measures to mitigate those effects.

Contamination Screening Evaluation Report
SR 9 / I-95 at SR 80 / Southern Boulevard PD&E Study

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ELECTRONIC DOCUMENTATION

Environmental Data Resources, Inc. DatatMap™ Corridor Study

Historical Aerial Photographs

Regulatory Documents

List of Acronyms

2020 COR ACTION	2020 Corrective Action Program
ACRES	Assessment, Cleanup, and Redevelopment Exchange System
AFFF	Aqueous Film Fighting Foam
APLUS	Aerial Photo Look-Up System
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
ATRP	Abandoned Tank Restoration Program
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAR	Contamination Assessment Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS sites designated "No Further Remedial Action Planned"
CESQG	Conditionally Exempt Small Quantity Generator
CINEMA	Countywide Information Network for Electronic Media Access
COAL ASH DOE	Steam-Electric Plan Operation Data
CoC	Constituents of Concern
CONSENT	Superfund (CERCLA) Consent Decrees Database
CORRACTS	Corrective Action Reports
CSER	Contamination Screening Evaluation Report
CTL	Cleanup Target Level
D4	Florida Department of Transportation District 4
DCIC	District Contamination Impact Coordinator
DOD	Department of Defense
DOE	Department of Energy
DOT OPS	Department of Transportation, Office of Pipeline Safety
DRF	Discharge Reporting Form
DSSP	Drycleaning Solvent Surveillance Program
DTW	Depth to Water
EDI	Early Detection Incentive
EDR	Environmental Data Resources
EDR MGP	EDR Proprietary Manufactured Gas Plant Database

EDR US Hist Auto	Database of EDR Proprietary Historic Gas Stations
EDR US Hist Cleaner	Database of EDR Proprietary Historic Dry Cleaners
ERM	Environmental Resource Management
ERNS	Emergency Response Notification System
ETAT	Environmental Technical Advisory Team
ETDM	Efficient Transportation Decision Making
FBLS	Feet below Land Surface
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FINDS	Facility Index System
FLUCFCS	Florida Land Use, Cover, and Forms Classification System
FL DEDB	Database of delineated areas of ethylene dibromide (EDB) groundwater contamination in Florida
FL DWM CONTAM	Florida listing of active or known sites that includes sites that need cleanup
FL FF TANKS	Site investigation section sites
FL RGA HWS	EDR database of Recovered Government Archive State Hazardous Waste Facilities
FL RGA LF	EDR database of Recovered Government Archive Solid Waste Facilities
FL RGA LUST	EDR database of Recovered Government Archive LUST
FL SHWS	Florida's State Hazardous Waste Sites
FL SITE INV SITES	A listing of site investigation section sites
FL SWF/LF	Florida Solid Waste Facilities/Landfills
FL SWRCY	Florida Recycling Centers Database
FL UIC	Florida Underground Injection Wells Database
FPLRIP	Florida Petroleum Liability and Restoration Insurance Program
FTTS	Federal Insecticide, Fungicide and Rodenticide Act / Toxic Substances Control Act Tracking System
FUDS	Formerly Used Defense Sites
GCTL	Groundwater Cleanup Target Level
GIS	Geographic Information System
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
HMIRS	Hazardous Materials Information Reporting System
HSWA	Hazardous and Solid Waste Amendments

ICIS	Integrated Compliance Information System
ID	Identification
LAST	Leaking Aboveground Storage Tanks
LDCA	Location and Design Concept Acceptance
LOS	Level of Service
LSAR	Limited Site Assessment Report
LSSI	Low Score Site Initiative
LUCIS	Land Use Control Information System
LUST	Leaking Underground Storage Tank
LWDD	Lake Worth Drainage District
MLTS	Material Licensing Tracking System
MSE	Mechanically Stabilized Earth
MW	Monitoring Well
NADC	Natural Attenuation Default Criteria
NAI	No Additional Investigation
NEPA	National Environmental Policy Act
NFA	No Further Action
NFAP	No Further Action Proposal
NFRAP	No Further Remedial Action Planned
NPL	National Priority List
NPL LIENS	Federal Superfund Liens
NRCS	National Resources Conservation Service
NSGIC	National States Geographic Information Council
OCP	Organochlorine Pesticides
OCULUS	FDEP Document Management System
ODI	Open Dump Inventory
OVA	Organic Vapor Analysis
PADS	Polychlorinated biphenyl Activity Database System
PAH	Polynuclear Aromatic Hydrocarbons
PARM	Post Active Remediation Monitoring
PCB	Polychlorinated Biphenyl
PCB TRANSFORMER	Polychlorinated Biphenyl transformer registrations database
PD&E	Project Development and Environment
PFC	Perfluorochemicals
PRP	Potentially Responsible Parties

PWS	Public Water Supply
RAATS	Resource Conservation and Recovery Act Administrative Action Tracking System
RADINFO	Radiation Information Database
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RCRA NonGen / NLR	RCRA - Non Generators database
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generators database
RCRA-LQG	RCRA - Large Quantity Generators database
RCRA-SQG	RCRA - Small Quantity Generators database
RCRA-TSDF	RCRA - Treatment, Storage, and Disposal Facilities database
RMP	Risk Management Plans
ROD	Record of Decision
SCRD	State Coalition for Remediation of Drycleaners
SCTL	Soil Cleanup Target Level
SERPM	Southeast Regional Planning Model
SFWMD	South Florida Water Management District
SIS	Strategic Intermodal System
SQG	Small Quantity Generator
SR	State Road
SRCO	Site Rehabilitation Completion Order
SSTS	Section 7 Tracking System
SUPER	State Underground Petroleum Environmental Response
SVOC	Semi-volatile Organic Compounds
TCAR	Tank Closure Assessment Report
TRIS	Toxic Chemical Release Inventory System
TRPH	Total Recoverable Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage, and Disposal Facilities
UMTRA	Database of Uranium Mill Tailing Sites
US AIRS	Aerometric Information Retrieval System
US BROWNFIELDS	Database of brownfield sites
US CDL	Database of Clandestine Drug Lab locations
US ENG CONTROLS	Database of sites with engineering controls in place
US FIN ASSUR	Financial Assurance Information database

US HIST CDL	National Clandestine Laboratory Register
US INST CONTROLS	Database of sites with institutional controls in place
US MINES	Database of mine identification numbers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VCP	Voluntary Cleanup Sites
VCP	Voluntary Cleanup Priority
VOC	Volatile Organic Compounds

1.0 Introduction

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for interchange improvements located at SR-9 / I-95 and SR-80 / Southern Boulevard in Palm Beach County, Florida. The alternatives developed in this PD&E and the associated social, economic, and environmental analyses were evaluated according to the requirements of the National Environmental Policy Act (NEPA) and FDOT's PD&E Manual, Part 1, Chapter 5 in order to receive Location and Design Concept Acceptance (LDCA). The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016, and executed by the Federal Highway Administration (FHWA) and FDOT.

This CSER was prepared in accordance with Part 2, Chapter 22 "Contamination Impacts" of the FDOT PD&E Manual, revised September 1, 2016. The objectives of this evaluation are to identify and evaluate potential contamination impacts that may exist within or adjacent to the limits of the proposed right-of-way and to provide recommendations relative to the identified present/past use of properties that may require further assessment, remediation, special handling, or that may have a potential for liability. Addressing contamination in soil, groundwater, surface water, and structures early in the project development process can reduce potential risks, impacts, and costs to FDOT. This report presents the findings of the contamination screening evaluation for the proposed improvements.

1.1 Project Description

This interchange was one of seventeen interchanges studied as part of the I-95 Interchange Master Plan that reexamined the 2003 I-95 Interchange Master Plan Study and the SR 9 / I-95 mainline project. That project added a High Occupancy Vehicle (HOV) lane and auxiliary lanes from south of Linton Boulevard to north of PGA Boulevard in Palm Beach County and also included minor improvements to eight interchanges. Overall, the I-95 Interchange Master Plan recommended new short-term and long-term improvements to interchanges based on changes in traffic volumes and updated design standards. The SR 9 / I-95 at SR 80 / Southern Boulevard interchange is located between the Forest Hill Boulevard interchange

(1.45 miles to the south), and the Belvedere Road interchange (1.01 miles to the north), and in proximity to multiple municipalities including the City of West Palm Beach, Town of Cloud Lake, Town of Glen Ridge, and unincorporated Palm Beach County. Figure 1-1 depicts the project location.

This interchange project proposes to improve interchange operations to address traffic spillback onto SR 9 / I-95, reduce congestion, and increase safety. This project will also be developed with consideration to the potential extension of the I-95 Express Lanes through this interchange area. Based upon the traffic operations analysis conducted for the interchange and adjacent signalized intersections (as documented in the I-95 (SR-9) Interchange at Southern Boulevard (SR-80) in Palm Beach County Interchange Concept Development Report), the following preliminary short-term and long-term improvements have been identified for this interchange:

2020 Opening Year (Short-Term) Recommended Improvements:

- Add an additional eastbound right-turn lane (dual) on the SR 80 / Southern Boulevard bridge at the SR 9 / I-95 southbound on-ramp.
- Add an additional right-turn lane (dual) on the SR 9 / I-95 northbound off-ramp.

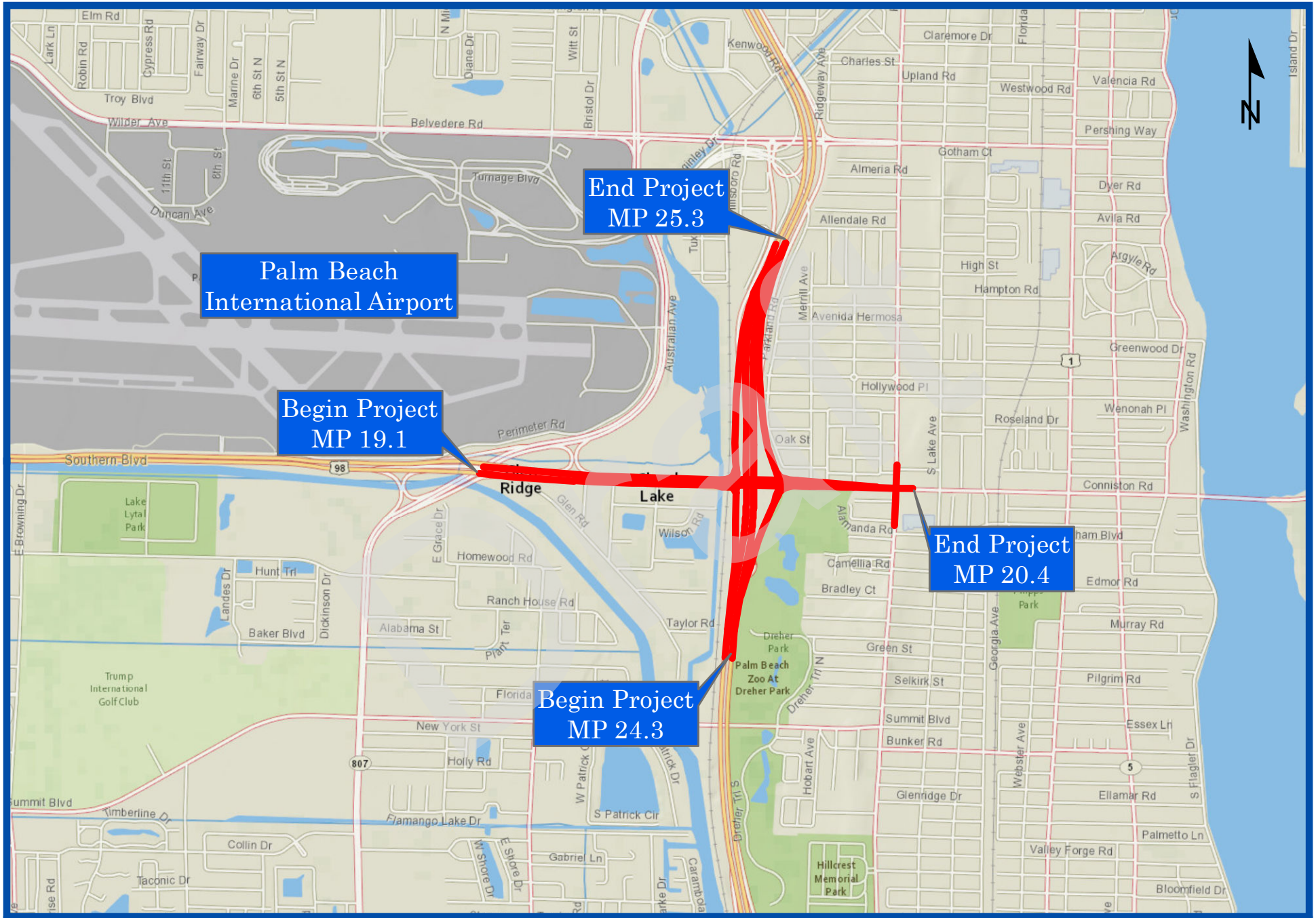
2040 Design Year (Long-Term) Recommended Improvements:

- Add an eastbound-to-northbound single lane flyover ramp to access the SR 9 / I-95 northbound on-ramp.
- Add a westbound-to-southbound single lane flyover ramp to access the SR 9 / I-95 southbound on-ramp.
- Realign the SR 9 / I-95 northbound off-ramp approach to SR 80 / Southern Boulevard and add an additional left-turn lane (quadruple) and right-turn lane (triple).
- Add two additional right-turn lanes (triple) to the SR 9 / I-95 southbound off-ramp.
- Add an additional eastbound and westbound left-turn lane (dual) on SR 80 / Southern Boulevard at Parker Avenue.
- Add an additional northbound left-turn lane (dual) on Parker Avenue at SR 80 / Southern Boulevard.
- Add an exclusive southbound right-turn lane on Parker Avenue at SR 80 / Southern Boulevard.

This project will evaluate the improvements listed above, as well as, the No-Build and two additional Build alternatives for the interchange.

SR 9 / I-95 is currently a ten-lane, divided interstate freeway from north of the Congress Avenue interchange to north of the PGA Boulevard interchange providing four general purpose lanes and one HOV lane in each direction. Auxiliary lanes are also provided in both the northbound and southbound directions on various segments throughout the corridor. The existing right-of-way varies as it approaches the interchange, but the typical right-of-way ranges from approximately 300 to 600 feet. As part of the Strategic Intermodal System (SIS) and one of two major expressways (Florida's Turnpike being the other) that connect the major employment centers and residential areas of Miami-Dade, Broward and Palm Beach Counties, SR 9 / I-95 serves an important role in facilitating the north-south movement of traffic in Southeast Florida.

Under the jurisdiction of the FDOT, SR 80 / Southern Boulevard is an eight-lane divided, urban principal arterial designated as an SIS facility west of SR 9 / I-95, and a four-lane divided, urban principle arterial east of SR 9 / I-95. This east-west facility currently bridges over the South Florida Rail Corridor (SFRC) / CSX Railroad and SR 9 / I-95. SR 80 / Southern Boulevard at the SR 9 / I-95 interchange is a typical diamond configuration and has dual left-turn lanes and a single right-turn lane in both the eastbound and westbound directions to access the SR 9 / I-95 on-ramps. The existing right-of-way varies from approximately 135 feet east of SR 9 / I-95 to 180 feet west of SR 9 / I-95. Sidewalks and designated bicycle lanes are provided along both sides of SR 80 / Southern Boulevard within the area of influence.



FDOT	**SR 9/I-95 at SR 80/Southern Boulevard Interchange** **Project Development and Environment Study** **Financial Project ID: 435516-1-22-02, ETDM No: 14183**	**Figure 1-1** **Project Location Map**	**Page No.** **1-4**

1.2 Project Purpose

The purpose of the project is to enhance overall traffic operations at the existing interchange of SR 9 / I-95 and SR 80 / Southern Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year). Conditions along SR 80 / Southern Boulevard are anticipated to deteriorate below acceptable LOS standards if no improvements occur by 2040; the interchange will have insufficient capacity to accommodate the projected travel demand.

1.3 Project Need

The need for the project is based on the need to improve operational capacity, improve overall traffic operations in order to accommodate future growth and development, improve safety conditions, and enhance emergency evacuation and response times.

This project is anticipated to improve traffic operations at the SR 9 / I-95 and SR 80 / Southern Boulevard interchange and study area roadways / intersections by implementing operational and capacity improvements to meet the future travel demand projected as a result of Palm Beach County population and employment growth.

Based upon the traffic operations analysis conducted for the SR 9 / I-95 at Southern Boulevard (SR-80) interchange and adjacent signalized intersections (documented in the I-95 (SR-9) Interchange at Southern Boulevard (SR-80) in Palm Beach County Interchange Concept Development Report), the existing AM and PM peak hour traffic conditions for the four study intersections along SR 80 / Southern Boulevard range from LOS A to D in the AM peak hour, and from LOS B to D in the PM peak hour. Without interchange improvements, the future year (2040) AM peak LOS will decline and range from B to F. PM peak hour LOS will range from C to F. Although all of the intersections along SR 80 / Southern Boulevard operate at LOS D or better under existing conditions, a noteworthy point is that several of the individual through and turning movements at the intersections (which include the SR 9 / I-95 on / off ramp approaches) operate at LOS F during both the AM and PM peak periods. Without the proposed improvements, the intersections are projected to experience excessive delays and queuing, and operate below acceptable LOS standards by the 2040 Design Year.

Commercial retail / office, hotel and residential land uses are located adjacent to the interchange. Residential, hotel and commercial office uses are located along SR 80 / Southern Boulevard west of SR 9 / I-95. Predominantly residential and industrial uses are located to the west of Gem Lake Drive, while residential and commercial uses are located to the east of SR 9 / I-95. According to the Future Land Use Maps for Palm Beach County, the project area is to remain relatively unchanged.

Population within the vicinity of the interchange is anticipated to increase by approximately 12% from 2005 to 2035 with the majority of the growth occurring southeast of the SR 9 / I-95 at SR 80 / Southern Boulevard interchange. Employment is expected to increase by approximately 784% from 2005 to 2035 with major increases in the areas located northeast and southwest of the interchange. These projections are based on data derived from the enhanced Southeast Regional Planning Model (SERPM) version 6.5, Managed Lanes Model (upgraded to include specific subarea improvements for the I-95 Interchange Master Plan). As such, the proposed improvements will be critical in supporting growth within the vicinity of the interchange and the overall vision of Palm Beach County.

The I-95 (SR-9) Interchange at Southern Boulevard (SR-80) in Palm Beach County Interchange Concept Development Report included a safety analysis of the project area. The total number of crashes in the three-year period 2010 through 2012 was 119, with 31% of those being rear-end type crashes, the predominant type of incident. FDOT's high crash location reports, for the period 2010 through 2012, provide locations that have a higher crash rate as compared to crash rates for similar statewide roadways. Based on FDOT's 2011 high crash location report, the SR 9 / I-95 at SR 80 / Southern Boulevard interchange is considered a high crash location.

The proposed improvements are anticipated to provide additional through and turn lanes, as well as interchange ramp improvements, to help reduce conflict points and the potential occurrence of collisions at the interchange.

SR 9 / I-95 and SR 80 / Southern Boulevard serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management. Also designated by

Palm Beach County as evacuation facilities, SR 9 / I-95 and SR 80 / Southern Boulevard are critical in facilitating traffic flows during emergency evacuation periods as they connect other major arterials and highways of the state evacuation route network. This project is anticipated to improve emergency evacuation capabilities by enhancing connectivity and accessibility to SR 9 / I-95 and other major arterials designated on the state evacuation route network from the west and east, and increase the operational capacity of traffic that can be evacuated during an emergency event.

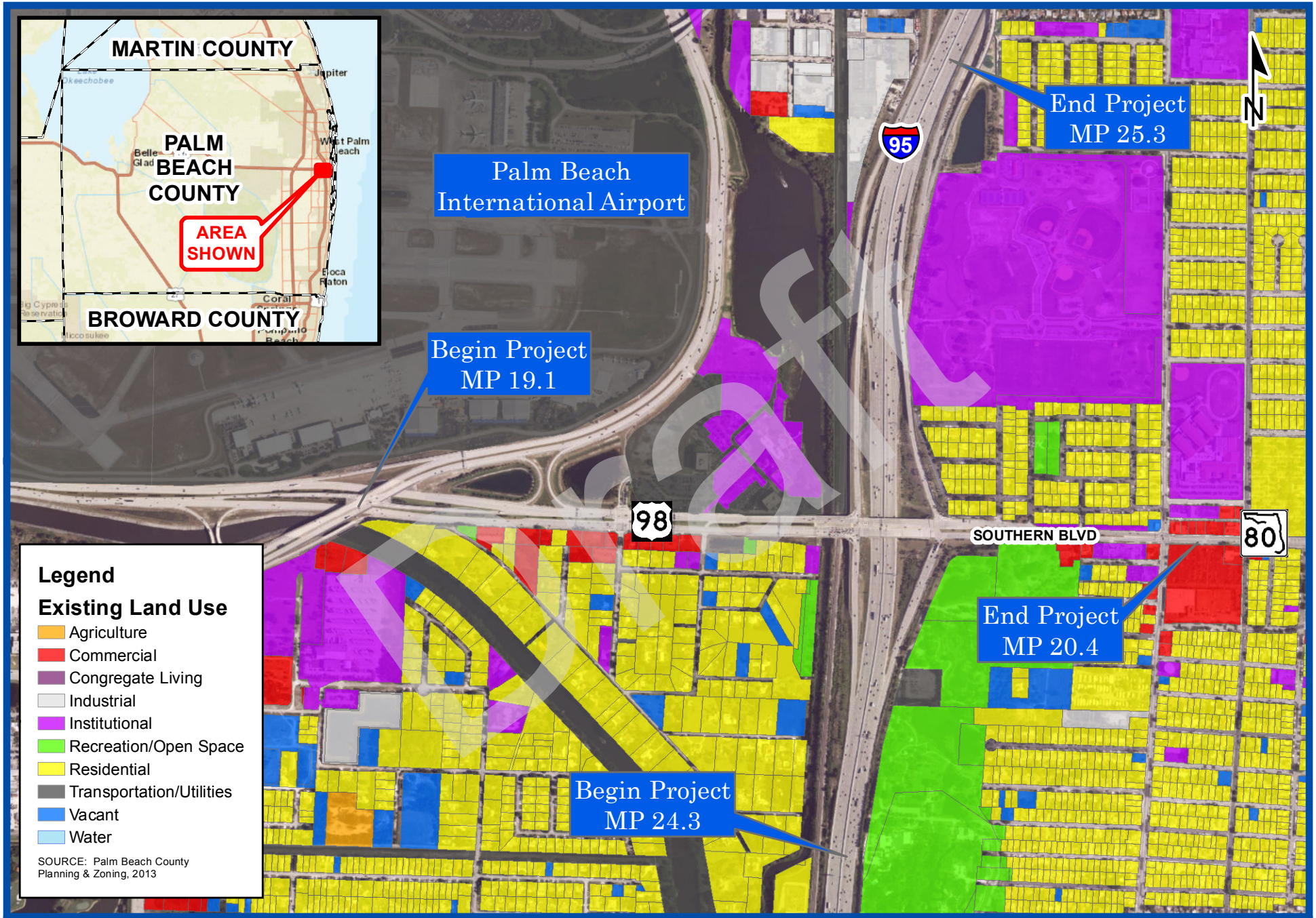
2.0 Land Use

2.1 Existing Land Use

The Existing Land Use Map of the I-95 at Southern Boulevard interchange study area is depicted on Figure 2-1. The interchange occurs within the City of West Palm Beach, the Towns of Cloud Lake and Glen Ridge (small incorporated communities, each with less than 300 persons), and unincorporated Palm Beach County. The interchange is located in an urbanized area primarily surrounded by residential uses to the northeast and southwest, with pockets of commercial uses located along SR 80 to the far west and east of I-95. The Palm Beach International Airport lies in the northwest quadrant of the interchange and recreational uses in the southeast (Dreher Park and the Palm Beach County Zoo) which are section 4(f) resources. The Vedado Historic District, a residential area, is also in close proximity to the interchange in the northeast quadrant of the interchange.

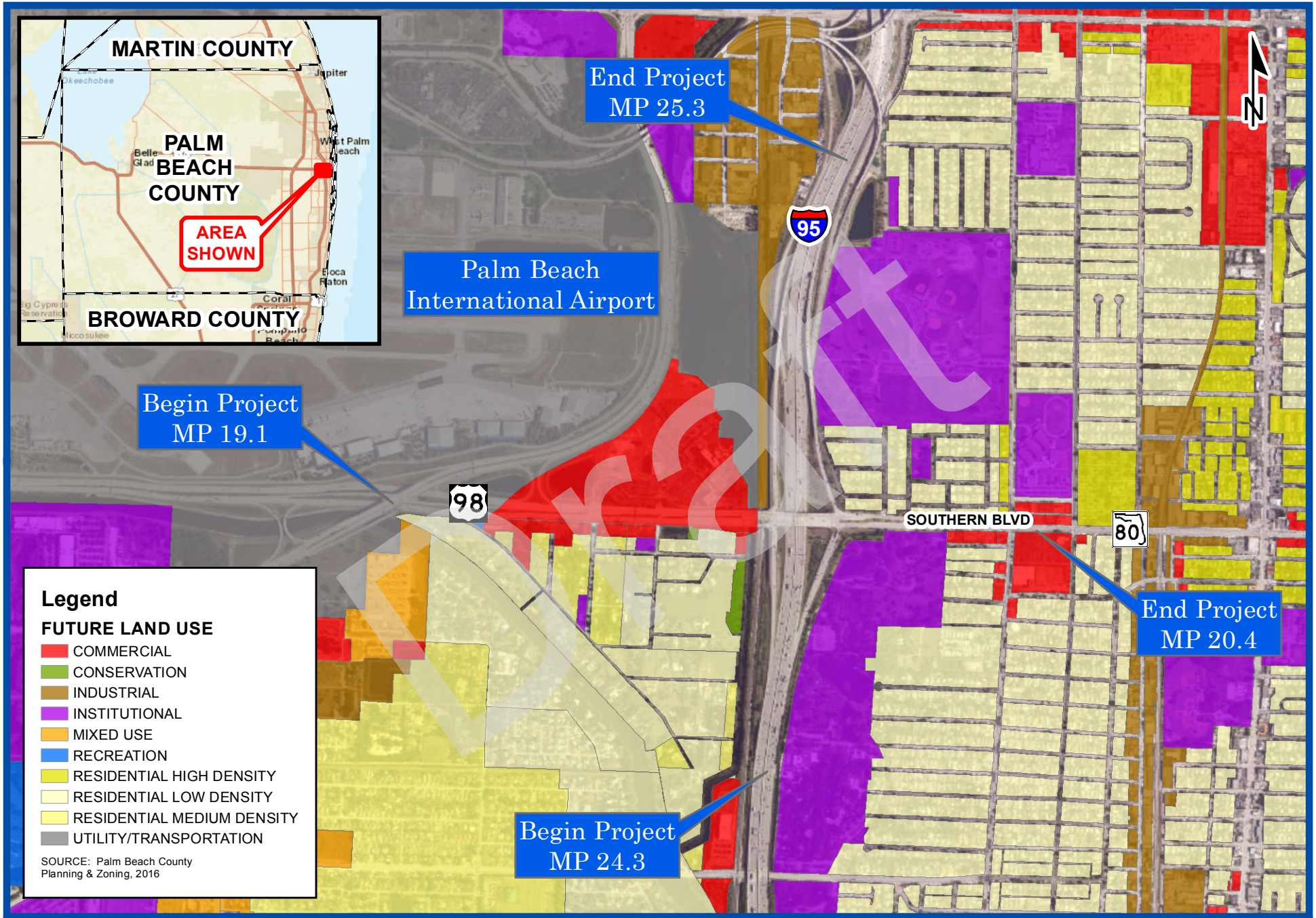
2.2 Future Land Use

Future land use is based on the Palm Beach County 2015 and 2025 Comprehensive Development Master Plan developed by the Palm Beach County Metropolitan Planning Organization. Because the study area is fully developed, significant future land use changes are not anticipated. The proposed project is expected to support increasing population and employment forecasts within the interchange area and surrounding region. Overall effects on the area's character resulting from the interchange improvement are anticipated to be minimal. Figure 2-2 illustrates the Future Land Use in the study area.



SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 2-1
Existing Land Use Map



FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 2-2
Future Land Use Map

3.0 Hydrological Features

3.1 Regional Physiography, Geology and Hydrogeology

The project study area is located at the I-95 Interchange at Southern Boulevard in Palm Beach County, Florida, between the Forest Hill Boulevard interchange (1.45 miles to the south), and the Belvedere Road interchange (1.01 miles to the north). The study area is located in the Atlantic Coastal Plain Physiographic Province and the coastal ridge and sandy flatlands physiographic subdivisions with the everglades to the west.

At the surface, Pamlico sand ranges from 2 to 10 feet in thickness. The Anastasia formation immediately underlies the surface sands. This formation is composed of sand, sandstone, limestone coquina and shell beds that underlie all of eastern Palm Beach County with a thickness ranging from 40 to 200 feet that increases moving eastward. The Caloosahatchee marl underlies the Anastasia formation. It is composed mainly of shelly sand, and sandy shell marl with minor amounts of limestone, and sandstone. The marly sands, sandy marl, and clay marl of the Tamiami, and upper Hawthorn Formations underlie the Caloosahatchee marl, and form a confining bed overlying the Floridan Aquifer. The upper part of the Hawthorn Formation is encountered at a depth of 400 feet near West Palm Beach, where it has a thickness of approximately 500 feet.

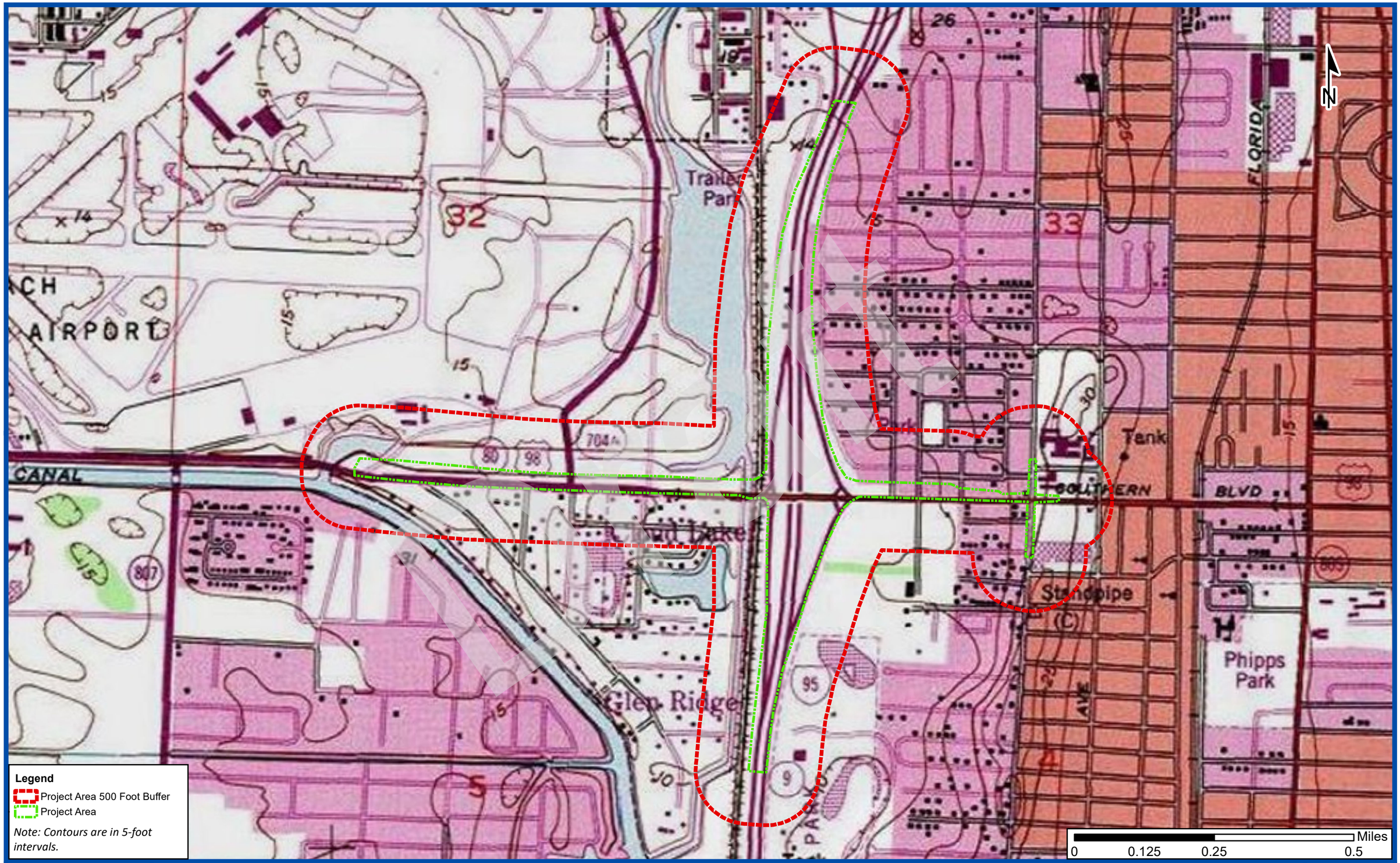
Hydrogeologic units underlying the area may be described as two aquifers separated by a confining layer. The Pamlico sand, Anastasia formation, and the Caloosahatchee marl composed of permeable, sand, limestone, and shell beds comprise the water-table aquifer. The base of the water table aquifer is approximately 250 feet in the vicinity of the study area. The confining beds that separate the water table and Floridan Aquifers consists of approximately 300 feet of marly sand, sandy marl, and clay marl of the Tamiami and Hawthorn formations. The Floridan Aquifer, approximately 550 feet beneath the area, is composed of limestone of the Hawthorn (lower part), Tampa, Suwannee, Ocala, and Avon Park Formations ranging in age from 30 to 60 million years.

The permeable surficial sediments along the alignment are conducive to the contamination of underlying hydrogeologic units. If contamination were present beneath a particular

property of interest the likelihood of soil contamination in the unsaturated zone would be elevated. Similarly the contamination of groundwater beneath this property would also be elevated. The likelihood for light non-aqueous phase liquids (i.e. petroleum products), or dissolved constituents to migrate from the area would largely be controlled by the permeability of sediments and the hydrogeologic gradient in the area. Dense non-aqueous phase liquids, commonly associated with chlorinated solvent losses, typically are influenced by permeability differentials in the subsurface such that pooling can occur on low permeability horizons located beneath the water table.

Figure 3-1 shows the topography of the study area, obtained from United States Geological Survey (USGS). Topography in the area is relatively level with the exception of the embankments supporting the I-95 at SR 80 interchange. Areas outside the corridor are also relatively level, having a slight downward slope toward the ocean and canals. The hydrogeologic gradient and associated groundwater flow direction would be primarily controlled by topography and the presence of surface water bodies exerting an influence on the potentiometric surface.

For the interchange, groundwater flow is generally toward the east and west away from I-95. The groundwater flow direction in the remaining study area is controlled by local topographic, drainage, and utility features.



SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 3-1
Topography Map
Source: USGS, 2015
(Palm Beach Quadrangle)

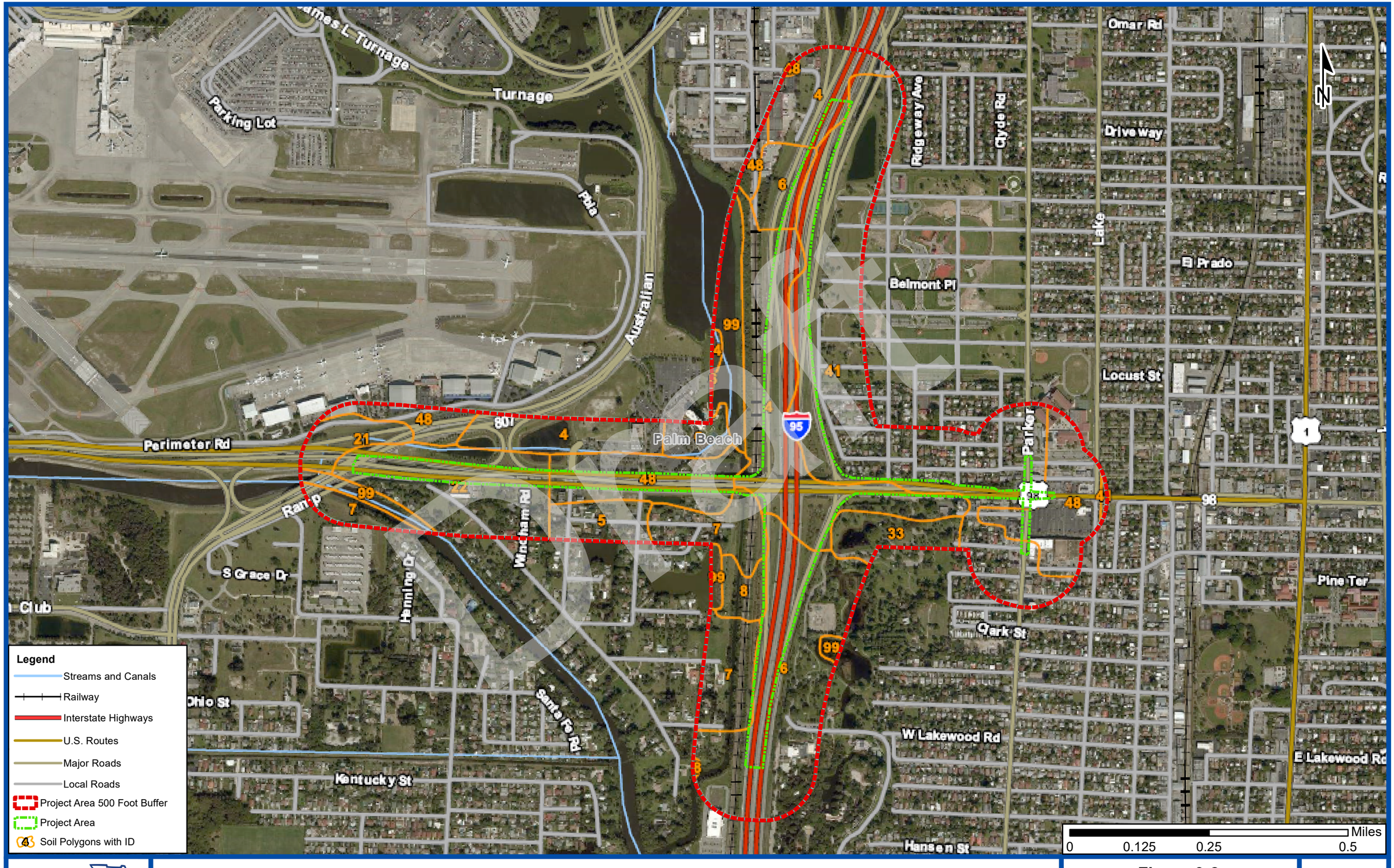
3.2 Soils

Groundwater flow and contaminant transport are highly dependent on underlying sediments. Based on the Natural Resources Conservation Service (NRCS) Soil Survey, soil types within 500 feet of proposed improvements are classified in Table 3-1 and shown in Figure 3-2. The primary soil types within the project area are St. Lucie-Paola-Urban Land Complex, Arents-Urban Land Complex, Basinger Fine Sand, and Urban Land. In addition, there are small areas of Myakka-Urban Land Complex, Basinger-Urban Land Complex, Pomello Fine Sand, Arents-Urban Land Complex (organic substratum), and Myakka Fine Sand.

St. Lucie-Paola-Urban Land Complex, Arents-Urban Land Complex, and Urban Land are all soil categories characterized by urban development, which have been placed as fill and/or altered by grading. Together, these make up approximately 60% of soils in the study area 500-foot buffer. Basinger Fine Sand, which makes up 17% of the study area 500-foot buffer, consists of poorly drained, sandy soils with the water table near the surface.

Table 3-1: Soils within 500 feet of Proposed Improvements

Soil Polygon ID	Soil Name	Slope	Drainage Class	Depth to Water Table (feet below land surface (fbls))	Acres in Project Area	% of Project Area
41	St. Lucie-Paola-Urban Land Complex	0-8%	Excessively Drained	Variable	97.6	25%
4	Arents-Urban Land Complex	0-5%	Somewhat Poorly Drained	2.49 fbls	75.0	19%
6	Basinger Fine Sand	0-2%	Poorly Drained	0.49–0.98 fbls	65.6	17%
48	Urban Land	0-2%	Variable	Variable	48.3	12%
22	Myakka-Urban Land Complex	0-2%	Poorly Drained	1.02 fbls	31.4	8%
7	Basinger-Urban Land Complex	0-2%	Poorly Drained	0.49 fbls	28.4	7%
33	Pomello Fine Sand	0-5%	Moderately Well Drained	2.76 fbls	9.5	2%
5	Arents-Urban Land Complex, organic substratum	0-2%	Somewhat Poorly Drained	2.49 fbls	8.1	2%
21	Myakka Fine Sand	0-2%	Poorly Drained	1.02 fbls	7.6	2%
8	Basinger and Myakka Sands, depressional	0-2%	Very Poorly Drained	0 fbls	5.3	1%
				Total Soils	376.8	95%
99				Water	17.9	5%
				Total Soils + Water	394.7	100%



SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 3-2
Soils Map
Source: National Cooperative Soil Survey

A description of each soil complex identified within the project corridor is provided below:

St. Lucie-Paola-Urban Land Complex (25% of study area 500-foot buffer) consists of St. Lucie sand and Urban land. About 50 to 70 percent of this complex is open land, such as lawns, vacant lots, and playgrounds. These areas are made up of nearly level to sloping, excessively drained St. Lucie soils. In places, these soils have been modified by cutting, grading, or shaping for urban development. About 30 to 50 percent of the complex is covered by streets, sidewalks, driveways, patios, buildings, and other structures. The rest of the complex is made up of Paola and Pomello soils.

Arents-Urban Land Complex (19% of study area 500-foot buffer) consists of nearly level, somewhat poorly drained, sandy soils and Urban Land. The soils formed in thick layers of sandy fill material that were placed over low, wet mineral soils to make areas suitable for urban use. This complex is about 60 to 75 percent Arents and 25 to 40 percent Urban Land. The soil material is generally rapidly permeable in all layers. The available water capacity is low or very low.

Basinger Fine Sand (17% of study area 500-foot buffer) consists of nearly level, poorly drained, deep, sandy soil in broad grassy sloughs. The water table is within 10 inches of the surface for 2 to 6 months in most years and within 10 to 30 inches for the rest of the year.

Urban Land (12% of study area 500-foot buffer) consists of areas that are 60 to more than 75 percent covered by streets, buildings, large parking lots, shopping centers, industrial parks, airports, and related facilities. Other areas, mostly lawns, parks, vacant lots, and playgrounds are generally altered to such an extent that the former soils cannot be easily recognized and are in tracts too small to be mapped separately.

Myakka-Urban Land Complex (8% of study area 500-foot buffer) consists of Myakka sand and Urban Land. About 25 to 50 percent of the complex is covered by streets, sidewalks, driveways, houses, and other structures. About 40 to 65 percent of the complex consists of open land, such as lawns, vacant lots, and playgrounds. These areas are made up mainly of nearly level, poorly drained Myakka sand, which has been modified in most places by

spreading about 12 inches of sandy fill material on the original surface. The percentage of urban area and open land varies. Most areas have been drained to some degree by a system of canals and ditches, and the water table generally is at a greater depth than is typical for Myakka soils. Following heavy rains, the water table may rise to within 10 inches of the surface for periods of up to one month.

Basinger-Urban Land Complex (7% of study area 500-foot buffer) consists of Basinger fine sand and Urban Land. About 50 to 70 percent of this complex is open land, such as lawns and vacant lots. These areas are made up of nearly level, poorly drained Basinger soils that have been modified in most places by spreading about 15 inches of fill material on the original surface. The original soil below the fill material is Basinger Fine Sand. About 20 to 40 percent of the acreage is covered by sidewalks, streets, driveways, buildings, and other structures.

Pomello Fine Sand (2% of study area 500-foot buffer) consists of nearly level to gently sloping, moderately well drained, deep sandy soil that has a dark, weakly cemented layer below a depth of 30 inches. This soil is on low ridges and knolls. Slopes range from 0 to 5 percent. Under natural conditions, the water table is within 24 to 40 inches for 1 to 4 months during wet periods and below 40 inches during the remainder of the year.

Arents-Urban Land Complex, organic substratum (2% of study area 500-foot buffer) consists of nearly level, somewhat poorly drained, sandy soils and Urban Land with a layer of marl or organic material below a depth of 20 inches. The soil material is rapidly permeable in all layers. The available water capacity is low or very low. The organic matter content and natural fertility are low in most places.

Myakka Fine Sand (2% of study area 500-foot buffer) is a nearly level, poorly drained, deep, sandy soil that has a dark colored layer, weakly cemented with organic matter, above a depth of 30 inches. It is in broad, flatwoods areas in the eastern part of the survey area. Under natural conditions the water table is within 10 inches of the surface for 2 to 4 months in most years. It is within a depth of 10 to 40 inches for 6 months or more in most years and recedes to below 40 inches during extended dry periods.

Basinger and Myakka Sands, depressional (1% of study area 500-foot buffer) are nearly level, very poorly drained, sandy soils in shallow depressions. The depressions are small to large isolated ponds or poorly defined narrow drainage ways that have many branches. Generally, Basinger soils make up about 45 percent of this complex. Both soils can occur separately or together. The water table is above the surface for 3 to 9 months or more in most years.

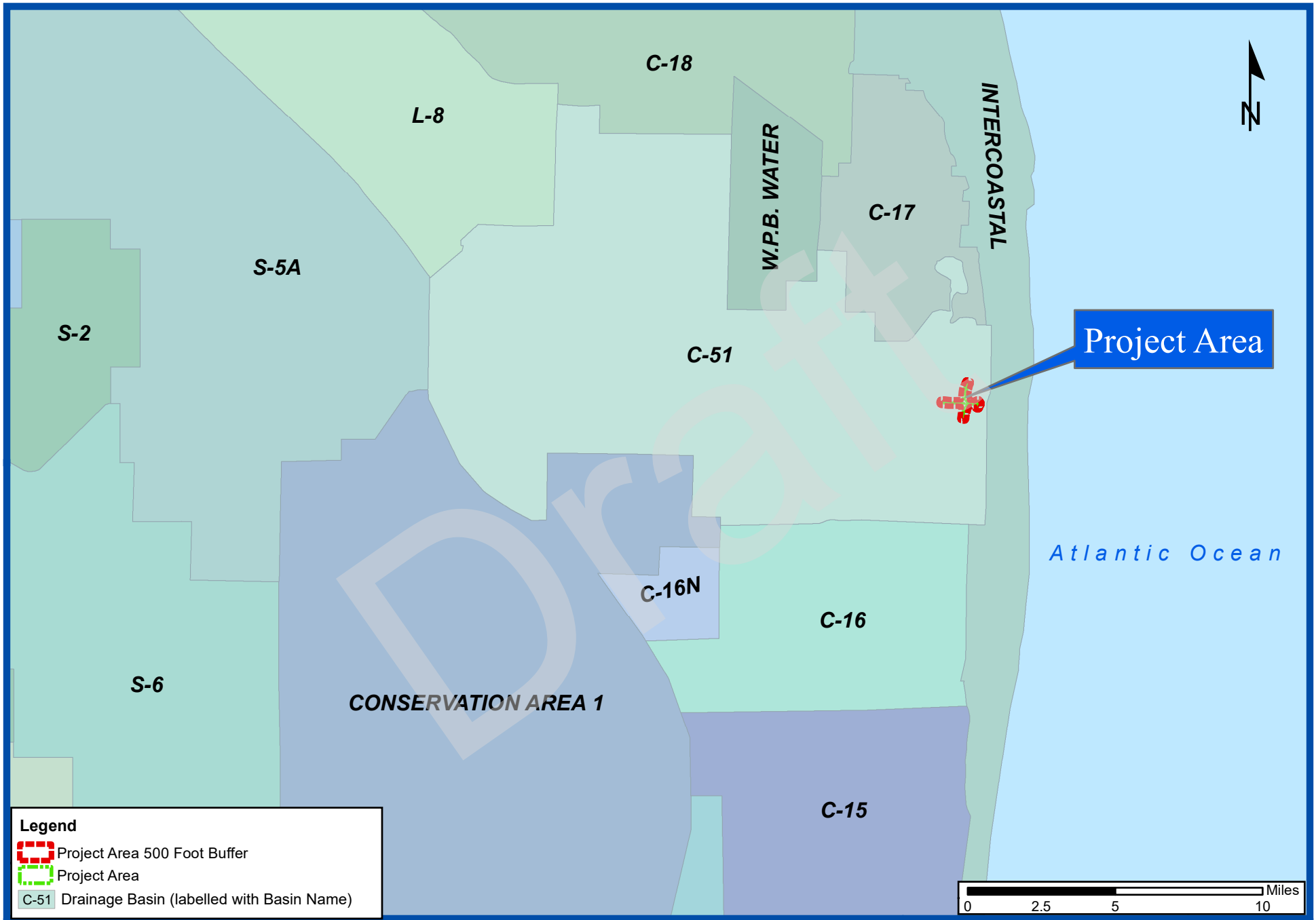
3.3 Drainage and Surface Waters

The project study area is located entirely in the C-51 regional drainage basin as shown in Figure 3-3. Figure 3-4 shows canals in the C-51 basin maintained by the South Florida Water Management District (SFWMD) and Lake Worth Drainage District (LWDD).

Existing drainage within the project limits is divided into four distinct systems based on existing collection and conveyance systems, interconnected stormwater management facilities, and outfalls. The collection systems consist of open drainage swales, grassed medians, and dry and wet retention ponds. Raised ditch bottom inlets and control structures provide water quality treatment within each system prior to discharge. Stormwater is conveyed between the management facilities via a series of closed pipes and ultimately outfalls into either the Stub Canal or the C-51 Canal.

Figure 3-5 shows surface water features in the vicinity of the project area. Five, small, man-made stormwater swales (Swale 5 through Swale 9) are present within the project's right-of-way, and are components of the highway's drainage system. The hydrology of these stormwater swales is dependent on rainfall, stormwater runoff, and groundwater. In addition, man-made surface waters (i.e., canals and retention ponds) are present. The Stub Canal and four man-made retention ponds (OSW-1 through OSW-4) are adjacent to the project's right-of-way. The Stub Canal runs north-south under the SR 80 overpass, west of I-95 and the railroad. Other surface waters adjacent, or in close proximity, to the corridor include Pine Lake, C-51 Canal, and retention ponds associated with commercial or residential developments west of the interchange, and within Dreher Park and Palm Beach Zoo to the southeast.

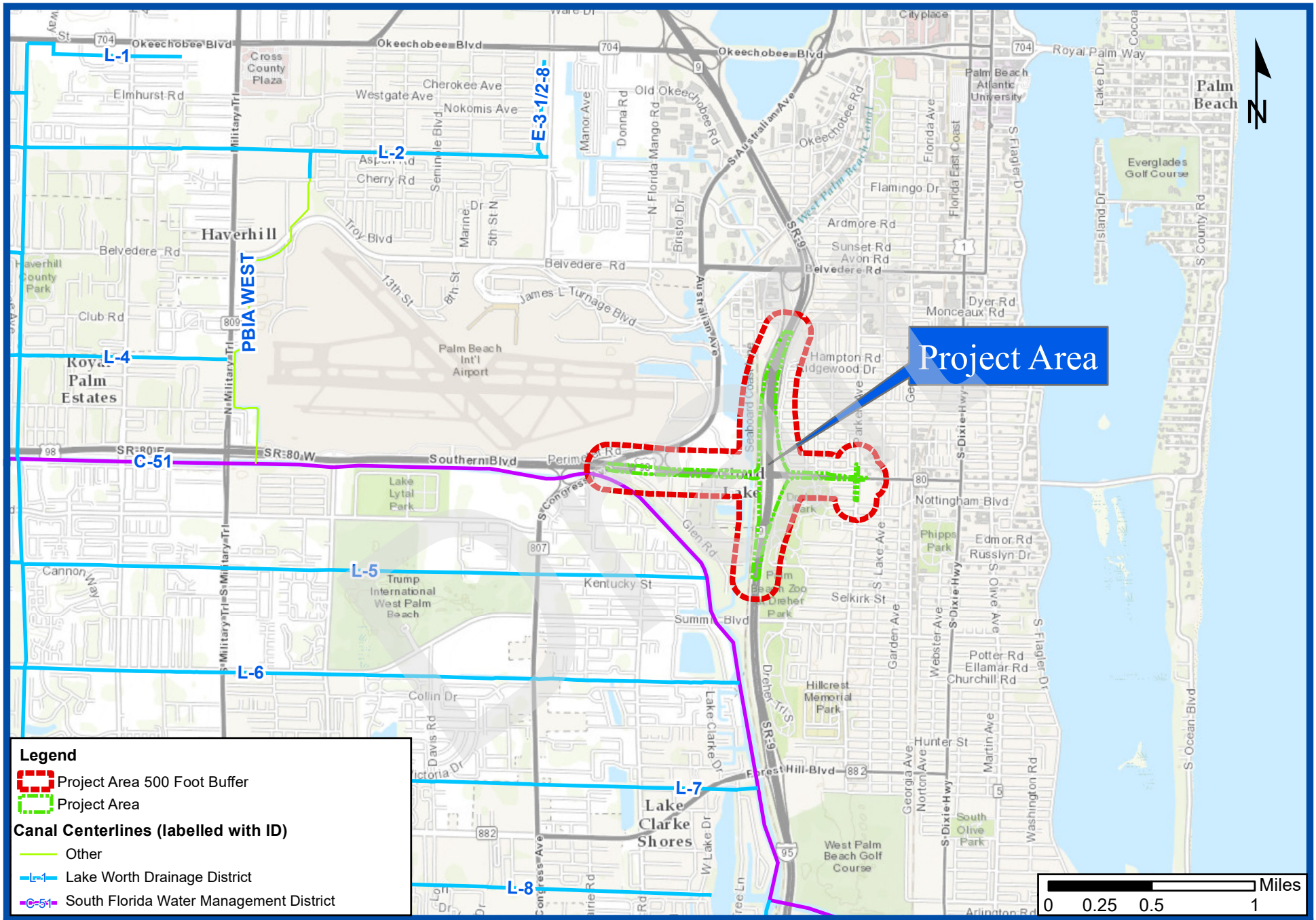
Drainage for the proposed project will not require new man-made systems. Existing systems will be modified to meet drainage needs of proposed improvements.



FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 3-3
Regional Drainage Basins Map
Source: FDEP, 1999



SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 3-4
Local Drainage Map
Source: Lake Worth Drainage District, 2017

FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 3-5
Surface Water Map

3.4 Potable Water Supplies

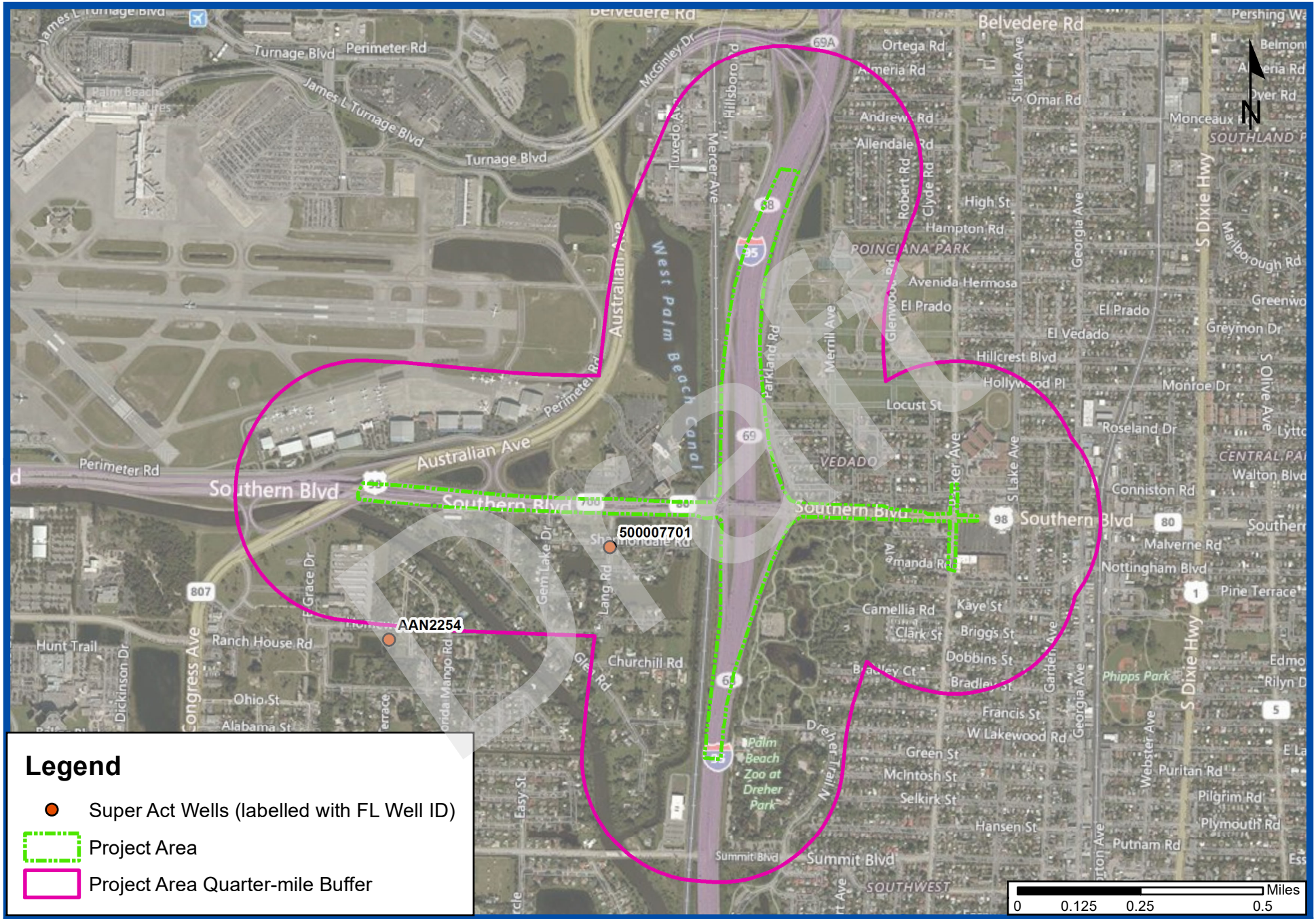
The proximity of the project corridor to public and private wellfields was investigated using FDEP's Map Direct Public Water Supply (PWS) Wells data and the National States Geographic Information Council's (NSGIC) GIS Inventory for State Underground Petroleum Environmental Response (SUPER) Act Program Risk Sources in Florida. The SUPER Act was enacted by Florida State Legislature in 1986 in order to conduct drinking water well sampling and investigation around known or suspected contaminated petroleum facilities.

The PWS data provides statewide coverage of PWS wells, excluding federally owned facilities. For this investigation, PWS wells are defined as municipal or community well fields of greater than 100,000 gallons per day permitted capacity. A search radius of one-half mile was used to identify PWS wells for analysis. No PWS wells are located within one-half mile of the project corridor. The nearest PWS well is located approximately one mile southwest of the project corridor.

The SUPER Act Risk Sources in Florida data provides statewide coverage of information, including well locations, associated with petroleum and dry cleaning facilities investigated as part of the SUPER Act and the Drycleaning Solvent Surveillance Program (DSSP). A search radius of one-half mile was used to identify public wells. A one-quarter mile search radius was used to identify private wells. No public SUPER Act wells are located within one-half mile of the project corridor. One private SUPER Act well is located within one-quarter mile of the project corridor. A second private SUPER Act well is located just outside the one-quarter mile buffer and is included for reference. These wells are detailed in Table 3-2 and shown on Figure 3-6.

Table 3-2: SUPER Act Wells within One-Half Mile of Proposed Improvements

FL Well ID	Address	Approximate Distance to Nearest Point of Project Corridor	Use
500007701	103 E Shannondale Drive West Palm Beach, FL 33406	338 feet	Private
AAN2254	2620 Homewood Drive West Palm Beach, FL 33406	1,450 feet	Private



SR 9/I-95 at SR 80/Southern Boulevard Interchange
Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No: 14183

Figure 3-6
Potable Water Supplies Map
Source: Florida Department of Health, 2014

4.0 Methodology

This report identifies and evaluates known or potential contamination problems, presents recommendations concerning these problems, and discusses possible impacts to the proposed project. Methodologies used to complete this evaluation are in general conformance with the assessment standards as specified in Part 2, Chapter 22 of the FDOT PD&E Manual, as practical. Hazardous materials surveys for asbestos containing materials and metal based coatings were not included in this evaluation.

Data collected from preliminary site reconnaissance, regulatory agency database information review, and subsequent historical land use research was used to identify critical areas for subsequent detailed review. The following buffer distances were used to complete the primary search for potential contamination sites:

- 1,000 feet for landfills and Superfund sites;
- 500 feet for contaminated sites;
- 500 feet for historical research;
- 500 feet for site reconnaissance; and
- Adjacency for permitted facilities without documented violations or contamination (e.g. registered storage tanks or Resource Conservation and Recovery Act (RCRA)-regulated).

The buffer distances detailed above were selected after consultation with FDOT District 4's (D4) District Contamination Impact Coordinator (DCIC). The 500-feet screening distance extends from the outer limits of the project area along the I-95 corridor and SR-80, including part of Parker Avenue where it intersects with SR-80. The 500-feet distance was selected to include potential offsite drainage ponds and to identify contamination sources that may be of concern when dewatering within the project limits.

4.1 Data Collection

4.1.1 Environmental Database

As part of this Contamination Screening Evaluation, a computerized database search was requested from Environmental Data Resources, Inc. (EDR). The database search included the entire project corridor and a maximum radius of one mile in accordance with the American Society for Testing and Materials (ASTM) standard E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

The results of the database search served as a basis for the environmental regulatory review included in a typical Level I Assessment as described in Part 2, Chapter 22 "Contamination Impacts" of the FDOT PD&E Manual. Table 4-1 summarizes the results of the database search. A description of each government database included in the search is provided in Appendix A. An electronic version of the EDR Corridor Study Report is included with this publication in the associated zip file.

Table 4-1: Summary of Database Findings

Government Database	No. of Sites Found	Government Database	No. of Sites Found	Government Database	No. of Sites Found	Government Database	No. of Sites Found
Federal Records		**Federal Records (Cont'd)**		**Federal Records (Cont'd)**		**State & Local Records (Cont'd)**	
NPL	0	UMTRA	0	COAL ASH EPA	0	FL NPDES	1
Proposed NPL	0	ODI	0	2020 COR ACTION	0	FL AIRS	1
Delisted NPL	0	US MINES	0	PRP	0	FL TIER 2	3
NPL LIENS	0	TRIS	0			FL Cattle Dip Vats	0
CERCLIS	0	TSCA	0			FL SITE INV	1
CERC-NFRAP	0	FTTS	0	**State and Local Records**		FL FF TANKS	0
LIENS 2	0	HIST FTTS	0	FL SHWS	0	FL DWM	15
CORRACTS	0	SSTS	0	FL SWF/LF	13	FL CLEANUP	15
RCRA-TSDF	0	ICIS	0	FL UIC	0	FL RESP PARTY	4
RCRA-LQG	0	PADS	0	FL SWRCY	0		
RCRA-SQG	5	MLTS	0	FL LUST	36	**Tribal Records**	
RCRA-CESQG	22	RADINFO	0	FL TANKS	2	INDIAN RESERVE	0
RCRA NonGen /	14	FINDS	24	FL UST	53	INDIAN ODI	0
US ENG	0	RAATS	0	FL LAST	0	INDIAN LUST	0
US INST	0	RMP	0	FL AST	18	INDIAN UST	0
ERNS	1	COAL ASH DOE	0	FL FI SITES	1	INDIAN VCP	0
HMIRS	0	EPA WATCH	0	NY MANIFEST	1		
DOT OPS	0	US FIN ASSUR	0	FL SPILLS	3	**EDR Historical Databases**	
US CDL	0	PCB	0	FL ENG CONTROLS	0	EDR MGP	0
US	1	US HIST CDL	0	FL INST CONTROL	0	EDR US Hist Auto	20
DOD	0	SCRD	0	FL VCP	0	EDR US Hist	16
FUDS	1	FEMA UST	0	FL DRYCLEANERS	3	FL RGA HWS	0
LUCIS	0	FEDERAL	0	FL PRIORITY	3	FL RGA LF	0
CONSENT	0	LEAD SMELTERS	0	FL DEDB	0	FL RGA LUST	8
ROD	0	US AIRS	1	FL BROWNFIELDS	1		

Note: Sites may be listed in more than one database.

4.1.2 Search Engines and Other Database Resources

Specialized search engines such as FDEP's Document Management System (OCULUS), Informational Portal, and Map Direct, along with Palm Beach County's Countywide Information Network for Electronic Media Access (CINEMA) were used to identify regulated facilities within the study area. OCULUS is used by FDEP to store and organize regulatory documents. OCULUS was used in this analysis to obtain regulatory information regarding Storage Tanks, Hazardous Waste, Solid Waste, and Waste Cleanup. CINEMA is a database that provides information on Palm Beach County's environmental permits, licenses, and regulatory enforcement. Table B-1 in Appendix B provides documentation of identified facilities.

4.1.3 Historical Imagery Review

Available aerial photographs from 1964 to present were reviewed to identify previous and current land uses which may have the potential to adversely impact project implementation at the proposed interchange. Historical aerial photographs were obtained from the FDOT's Aerial Photo Look-Up System (APLUS) database and Google Earth Services. A minimum of one aerial photograph was reviewed per decade starting with the 1960's. When available, additional historical aerial photographs were reviewed within a decade.

4.1.4 Corridor Reconnaissance

A project corridor walk-through was performed for the purpose of observing signs of possible contamination sources such as odors, spills, stains, excavations, storage areas, drains, and the presence of stressed vegetation. The site visits included a visual inspection of properties of concern, within the buffer distances discussed above, for visible signs of potential contamination sources that could adversely impact the project corridor. Appendix C provides photographic documentation of the project corridor. Photo numbers were assigned to correspond to Site Numbers as listed in Table B-1 in Appendix B.

4.1.5 Field Methods

No additional soil and/or groundwater testing was performed as part of this investigation.

4.1.6 Interview with Local Agency Officials

On January 20, 2016, a meeting was conducted with John Tierney, Regulatory Specialist for the Palm Beach County Facilities Services Division, regarding potential contamination sources at Palm Beach International Airport. Mr. Tierney concurred with the evaluation team's initial research and did not identify additional potential contamination sources at the airport that could affect the project study area. A meeting was also conducted with a Palm Beach County Environmental Resources Management (ERM) representative on January 21, 2016. Mr. Steve Rial, P.G., concurred that the evaluation team's initial research had identified the pertinent potential contamination sources within the project study area.

In addition, the FDEP Southeast District was contacted on May 26, 2016, regarding the lack of information related to several identified contamination sources. Mr. Paul Wierzbicki, P.G., confirmed the FDEP Information Portal, OCULUS, and Map Direct websites contain all electronic documentation for regulated facilities and he could not provide facility-specific information beyond that found in the databases. Mr. Wierzbicki stated that a file review would have to be conducted to determine if additional (i.e. non-electronic) information existed for any facility. Data associated with petroleum-contaminated facilities, hazardous waste and landfill information, or other site investigation data identified by the review of regulatory agency database information did not require further clarification.

4.2 Potential Impact Determination

Thirty-five sites were evaluated within the proposed project area. Each site identified within the defined 500-foot screening area from the proposed improvements was evaluated for its potential impact and assigned a rating of High, Medium, Low, or No potential risk. Permitted sites without documented violations or contamination and not adjacent to the project corridor were eliminated from further evaluation reducing the total number of sites to 27 as documented in Table B-1 in Appendix B.

Sites were rated based on their characteristics, not their distance from the proposed improvements. Risk ratings were assigned in accordance with Part 2, Chapter 22, Section 2.2.3 of the FDOT PD&E Manual.

Details of the rating criteria for all risk levels are discussed below.

4.2.1 High Risk

Any site that has had a release that has not been resolved or is still under investigation/monitoring/cleanup is rated a High risk. Sites historically or currently operating as gas stations or drycleaning facilities that are not in a program and have never been assessed are also rated a High risk. A High risk rating indicates that after a review of all available information, there is a potential for contamination problems. In addition, further assessment may be required to determine the actual presence and/or levels of contamination and the need for remedial action.

4.2.2 Medium Risk

If a site had any previous releases, then it is a Medium risk even if there is documented cleanup and the site has been "finalized" [e.g. no further action (NFA) or site rehabilitation completion order (SRCO)]. While it appears the release/spill has been "addressed" there are many examples of rebound and / or missed or migrated contaminants for this type of site that preclude a Low risk rating. In addition, it can be difficult to determine why the release occurred (i.e. faulty equipment, poor procedures and practices, undertrained employees etc.) so the "risk" associated with the original release could still be present thereby earning at least a Medium risk for the property as a release/spill can occur at any time and might not be detected.

If an underground storage tank (UST) or aboveground storage tank (AST) was removed from a site, but there is no tank closure assessment report (TCAR) on file, then the site is rated a Medium risk.

4.2.3 Low Risk

A Low risk rating indicates that the former or current operation has a hazardous waste generator identification (ID) number, or deals with hazardous materials; however, based on all available information, there is no reason to believe there would be any involvement with contamination in relation to this project. A Low risk site can be any licensed facility that stores hazardous materials and/or potential contaminants and has never had a documented

release or violation for a release. If a licensed material "storer" had a minor, well documented violation in the past that was well manage, not repeated, and completely addressed and documented, this site would be a Low risk. This rating could also apply to a retail store that blends paint.

This is the lowest possible rating a gasoline station operating within current regulations can receive (i.e. in compliance with no violations). Some Low risk sites, such as gas stations in compliance, should be reevaluated during the final design phase. If a UST or AST was removed from a site, and there is a TCAR which documents that no soil or groundwater contamination was detected during removal, then the site can be rated a Low risk. Regardless of current regulatory status, if a site had any release in the past it is not a Low risk. Low risk sites must never have had any releases.

4.2.4 No Risk

A No risk rating indicates that after a review of all available information there is nothing to indicate contamination would be a problem. It is possible contaminants were handled on the property; however, all information indicates contamination problems should not be expected.

5.0 Alternative Alignments

The No-Build Alternative, as its name implies, retains the existing roadway and bridge characteristics. Under this scenario, the existing SR 80 corridor would not be improved and conditions would continue to deteriorate. The No-Build Alternative has certain advantages and disadvantages. The advantages of the No-Build Alternative include:

- No expenditure of public funds;
- No disruption or temporary impacts (air, noise, vibration, travel patterns) due to construction activities;
- No right-of-way acquisition; and
- Elimination of public concern regarding future lane configuration, noise, and aesthetic impacts.

The disadvantages of the No-Build Alternative include:

- Does not meet the projects purpose and need;
- Increased vehicular congestion and delay, which leads to increased travel costs and driver frustration;
- Increased safety concerns, particularly at the ramp intersections and Gem Lake Drive;
- Increased emergency response and evacuation time; and
- Decreased air quality and increased noise levels.

The following paragraphs summarize the various build alternatives evaluated as a part of this study. Originally, four build alternatives were considered: Alternatives 1, 2, 3, and 4. However, Alternative 2, which proposed dual flyovers at the third and fourth levels, was eliminated from further evaluation due to public opinion and Section 4(f) impacts at Dreher Park. The remaining build alternatives, 1, 3, and 4, have many similar elements that are listed below. The remaining paragraphs describe the unique features of the three proposed build alternatives. Figures presented in Appendix D illustrate each build.

Elements that are common and identical in each of the build alternatives include:

- Proposed signalization optimization at the ramp intersections and the downstream intersections east and west of the interchange (Gem Lake Drive and Parker Avenue);
- Gem Lake remains a signalized, full median opening;
- The directional median opening to access Lang Road via westbound Southern Boulevard is proposed to be closed due to proposed flyover ramps in the median of Southern Boulevard;
- The southbound I-95 exit ramp will provide three right turn lanes to westbound Southern Boulevard and two left turn lanes to eastbound Southern Boulevard; both of these movements will be signal controlled;
- The southbound I-95 entrance ramp will accommodate two eastbound right turn lanes and two westbound left turn lanes; both of these movements will be signal controlled;
- The northbound I-95 entrance ramp will retain the existing configuration of a single free-flow, right turn lane from westbound Southern Boulevard;
- The northbound I-95 exit ramp proposes to provide three at-grade, left turn lanes to westbound Southern Boulevard and two right turn lanes to the eastbound direction; these movements will be signal controlled;
- At the intersection with Parker Avenue, a dedicated, right turn lane will be added along eastbound Southern Boulevard, and the existing left turn lane storage will be increased. On the south leg of Parker Avenue, dual left turn lanes are proposed to westbound Southern Boulevard, along with one through lane and right turn lane;
- No right-of-way acquisition is proposed in the historic Vedado Hillcrest neighborhood, Dreher Park, or along Parker Avenue;
- In areas where alternatives are proposing reconstruction, seven-foot, buffered bike lanes are planned. Areas of resurfacing propose four-foot bike lanes where possible. The exception is along Parker Avenue, where sharrows are proposed due to right-of-way constraints and consistency with existing conditions. The implementation of green bike lane markings are also proposed where appropriate.

- As requested by the communities, special emphasis pavement markings have been proposed at pedestrian crossings at all cross walks.

5.1 Alternative 1: Northbound to Westbound Flyover

Alternative 1 consists of a single flyover ramp from northbound I-95 to westbound Southern Boulevard. The proposed single lane ramp exits I-95 from the east side of the highway, climbs to the third level, crosses over I-95, and turns to the west within the median of Southern Boulevard. The proposed flyover ramp by-passes the intersection of Lang Road, which is proposed to be closed due to the ramp structure, and over Gem Lake Drive, which will remain open. The ramp continues over the existing, at-grade slip ramp that provides access to southbound Australian / Congress Avenue. The proposed ramp profile ties into the existing profile east of Australian Boulevard on the north side of the Southern Boulevard median, merging into the existing westbound Southern Boulevard. Along eastbound Southern Boulevard, three at-grade left turn lanes are proposed to access the northbound I-95 entrance ramp. The southbound I-95 entrance and exit ramps, as well as the eastern portion of SR 80 and Parker Avenue, are proposed as listed above in the common elements.

Right-of-way acquisition is proposed for Alternative 1 west of I-95 along the north and south sides of the SR 80. On the south side, between Gem Lake Drive and Lang Road, an additional right-of-way width of 0 to 22 feet is required for the proposed improvements. Between Lang Road and I-95, 0 to 30 feet of right-of-way is required. On the north side of Southern Boulevard, approximately 0 to40 feet of additional right-of-way is required for the proposed improvements. Right-of-way in this area would be acquired from the County-owned parcel (currently accommodating County offices and parking) and largely consists of under-utilized parking areas.

5.2 Alternative 2: Northbound to Westbound Flyover (Fourth Level) & Eastbound to Northbound Flyover (Third Level)

Alternative 2, eliminated from further review, proposes dual flyovers at the interchange to accommodate the northbound I-95 to westbound SR 80, and eastbound SR 80 to northbound I-95 movements. As with Alternative 1, a northbound-westbound flyover exits northbound

I-95, climbs to the fourth level and ties into the existing profile east of Australian Avenue - similar to Alternative 1. The eastbound Southern Boulevard to northbound I-95 ramp develops east of the Gem Lake Drive intersection in the median of SR 80, climbs to the third level, and merges with the existing I-95 northbound ramp north of the interchange. This alternative was eliminated from further evaluation for various reasons, the most significant of those being public opinion of the fourth level flyover, and the Section 4(f) impacts to Dreher Park due to right-of-way acquisition that would have been required for the development of the fourth level ramp geometry.

5.3 Alternative 3: Eastbound to Northbound Flyover

Alternative 3 consists of a single flyover ramp from eastbound Southern Boulevard to northbound I-95. The proposed single lane ramp develops in the median area of Southern Boulevard, east of the Gem Lake Drive intersection. The ramp then ascends to the third level, crosses over I-95 while turning to the north, and connects with the existing entrance ramp, prior to the braided ramps to the north of the interchange. For vehicles east of the Gem Lake Drive area (i.e.; Town of Cloud Lake) or motorists not wishing to utilize the flyover, two at-grade left turn lanes are proposed to access the northbound I-95 entrance ramp at the existing entrance ramp location. The southbound I-95 entrance and exit ramps, the northbound I-95 exit ramp, and the eastern portion of SR 80, and Parker Avenue are proposed as listed in the common elements.

Right-of-way acquisition associated with Alternative 3 occurs on the west side of I-95 along the south side of Southern Boulevard between Gem Lake Drive and I-95. Proposed improvements will require approximately 12 to 40 feet of additional right-of-way.

5.4 Alternative 4: Northbound to Westbound Flyover (Third Level) & Eastbound to Northbound Flyover (Third Level)

Alternative 4 essentially combines Alternatives 1 and 3 to provide dual third level flyovers: one from northbound I-95 to westbound Southern Boulevard, similar to Alternative 1, and one from eastbound Southern Boulevard to northbound I-95, similar to Alternative 3. Both flyover ramps consist of a single lane and are at the third level (unlike Alternative 2), thereby

minimizing visual impacts, construction cost, and constructability issues. The method in which dual third level flyovers is accomplished is by shifting the Southern Boulevard alignment to the north and braiding the eastbound to northbound entrance under the elevated northbound to westbound ramp to begin its alignment (at-grade) at Gem Lake Drive. This entrance will essentially align beside the existing westbound slip ramp that provides access to southbound Congress Avenue.

The proposed northbound-to-westbound single lane flyover begins to develop on the east side of I-95 and ascends to the third level. The proposed ramp crosses I-95 and turns to the west along Southern Boulevard, by-passing the intersections of Lang Road and Gem Lake Drive. The ramp continues over the existing, at-grade slip ramp that accesses southbound Australian / Congress Avenue and the eastbound-to-northbound ramp entrance, eventually matching the existing profile east of Australian Boulevard and merging into the inside lane of westbound Southern Boulevard. Vehicles wishing to access the County property and the Towns of Glen Ridge and Cloud Lake will utilize the three at-grade, left turns proposed at the northbound I-95 exit ramp. Access to the Town Cloud Lake, formerly by way of Lang Road, would be via the intersection of Gem Lake Drive. Travelers could turn left into Gem Lake Drive, or a U-turn maneuver could be executed with eastbound access into Lang Road.

The second flyover proposed in Alternative 4 consists of a single lane flyover ramp from eastbound Southern Boulevard to northbound I-95. The proposed ramp braids under the northbound-to-westbound flyover and develops on the north side of the median of Southern Boulevard, east of the Gem Lake Drive intersection and ascends to the third level, crosses over I-95 while turning to the north and connects with the existing northbound I-95 entrance ramp. As described above with Alternative 3, vehicles east of the Gem Lake Drive area (i.e., Town of Cloud Lake) or motorists not wishing to utilize the flyover, two at-grade left turn lanes are proposed to access the northbound I-95 entrance ramp at the existing entrance ramp location. The southbound I-95 entrance and exit ramps, the northbound I-95 exit ramp and the eastern portion of SR 80 and Parker Avenue, are proposed as listed in the common elements.

Alternative 4 requires additional right-of-way along both the north and south sides of Southern Boulevard to the west of I-95. On the north side of SR 80, in the area of the County-owned parcel, approximately 0 to 56 feet of right-of-way would be required to accommodate the improvements. Right-of-way in this area consists of mostly underutilized parking areas for the County offices and existing hotel. On the south side of Southern Boulevard, between Gem Lake Drive and Lang Road, approximately 12 to 28 feet of additional right-of-way is needed. Parcels affected include one commercial property and three vacant parcels. Between Lang Road approximately 0 to 7 feet of right-of-way is required from two residential properties but would not result in relocations.

6.0 Project Impacts

Section 6 of the CSER provides a summary table of the historical imagery review, depicts the location of each potential contamination source within 500 feet of the project corridor, and provides a narrative discussion detailing sources of concern.

6.1 Historical Imagery Review

Aerial photographs from 1964 through 2016 are presented as Figures 6-1 through 6-7. A map grid has been superimposed on each photograph to orient the image in reference to the current project study area. The results of the historical imagery review are presented in tabular form as Table 6-1. Further detail is provided in the digital files, included with this publication, allowing electronic manipulation of each photograph.

To facilitate aerial photograph review, the interchange was sub-divided into four geographic quadrants: South (1), West (2), East (3), and North (4). The east and west quadrants include SR-80 while the north and south quadrants are centered on I-95 and the outer limits of the screening area. No new areas of contamination concern were identified, as a result of the aerial photograph review, within the limits of the defined 500-foot buffer distance from the proposed improvements. A brief summary of the historical imagery review for the interchange is presented below.

South (1)

In the 1964 aerial, I-95 has not yet been constructed. The eastern portion of the quadrant is residential. Undeveloped land adjacent to the future I-95 right of way will become Dreher Park north and south of Summit Blvd. To the west of the future right of way, the land is primarily undeveloped. Residential development is located adjacent to the canals with the exception of residential development in the northwest portion of the quadrant.

By 2016, I-95 traverses the center-west portion of the quadrant from north to south, with an overpass at Summit Boulevard. A retention pond has been developed at the southwest corner of the quadrant. The eastern portion of the quadrant continues to be characterized by residential development.

West (2)

In the 1964 aerial, I-95 is not yet present. The quadrant is already more than 75% developed, with some undeveloped land along the present-day I-95 corridor and in the southwest corner of the quadrant.

By 2016, the area is fully developed, with the exception of some undeveloped land in the southwest. The Australian Boulevard Overpass is constructed and operational. The Palm Beach County School District - East Transportation Facility development appears in the central part of the southwest quadrant.

East (3)

In the 1964 aerial, I-95 has not yet been constructed. Approximately 75% of the quadrant is developed with residential areas and schools. A large area of vacant land exists in the southwest portion of the quadrant that will become the Dreher Park.

By 2016, I-95 traverses the western edge of the quadrant from north to south. At the northwest of the quadrant, a residential neighborhood evident in the 1964 aerial has been redeveloped as the southern portion of Palm Beach Atlantic University's Athletic Campus. The residential area in the eastern portion of the quadrant now extends to the entire eastern border of Dreher Park South.

North (4)

In the 1964 aerial, I-95 is not yet present. The quadrant is characterized by airport development and landfill activities in its far western portion, bordered by canals on the east that separate it from an area of commercial development. East of the railroad the northeast and southeast portions of the quadrant are characterized by residential development, schools, and small retail establishments.

By 2016, I-95 traverses north to south, with access roads and overpasses in the northern parts of the quadrant leading towards the West Palm Beach Airport. In the central portion a storm water pond is present adjacent to I-95, and in the southeast portion, the western part

has been developed into a recreational park with several baseball fields. The eastern part of the quadrant is primarily residential development.

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 6-1
Historical Imagery: Feb 21, 1964
Source: FDOT APLUS

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

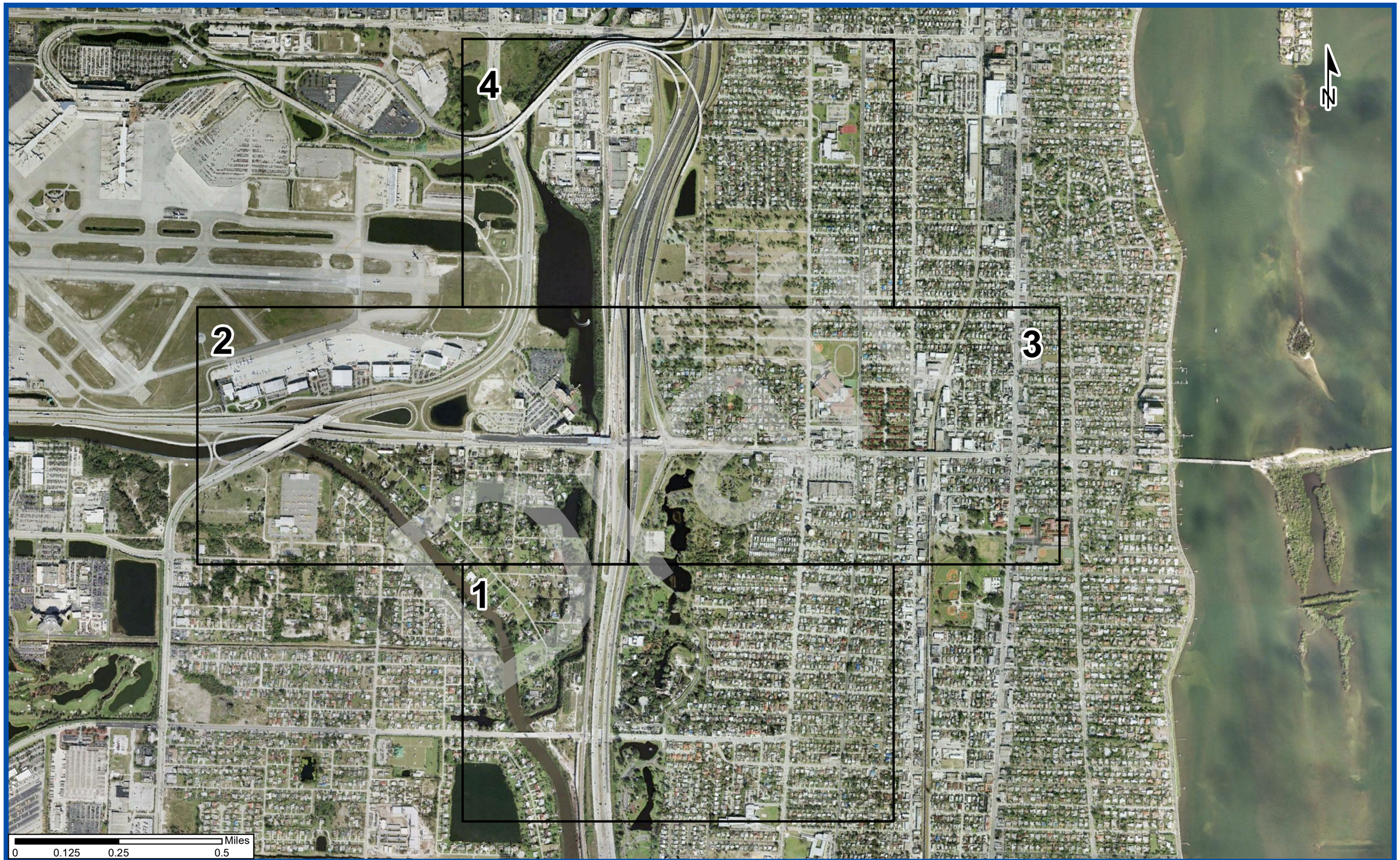
Figure 6-2
Historical Imagery: Apr 4, 1975
Source: FDOT APLUS

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 6-3
Historical Imagery: Apr 23, 1986
Source: FDOT APLUS

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

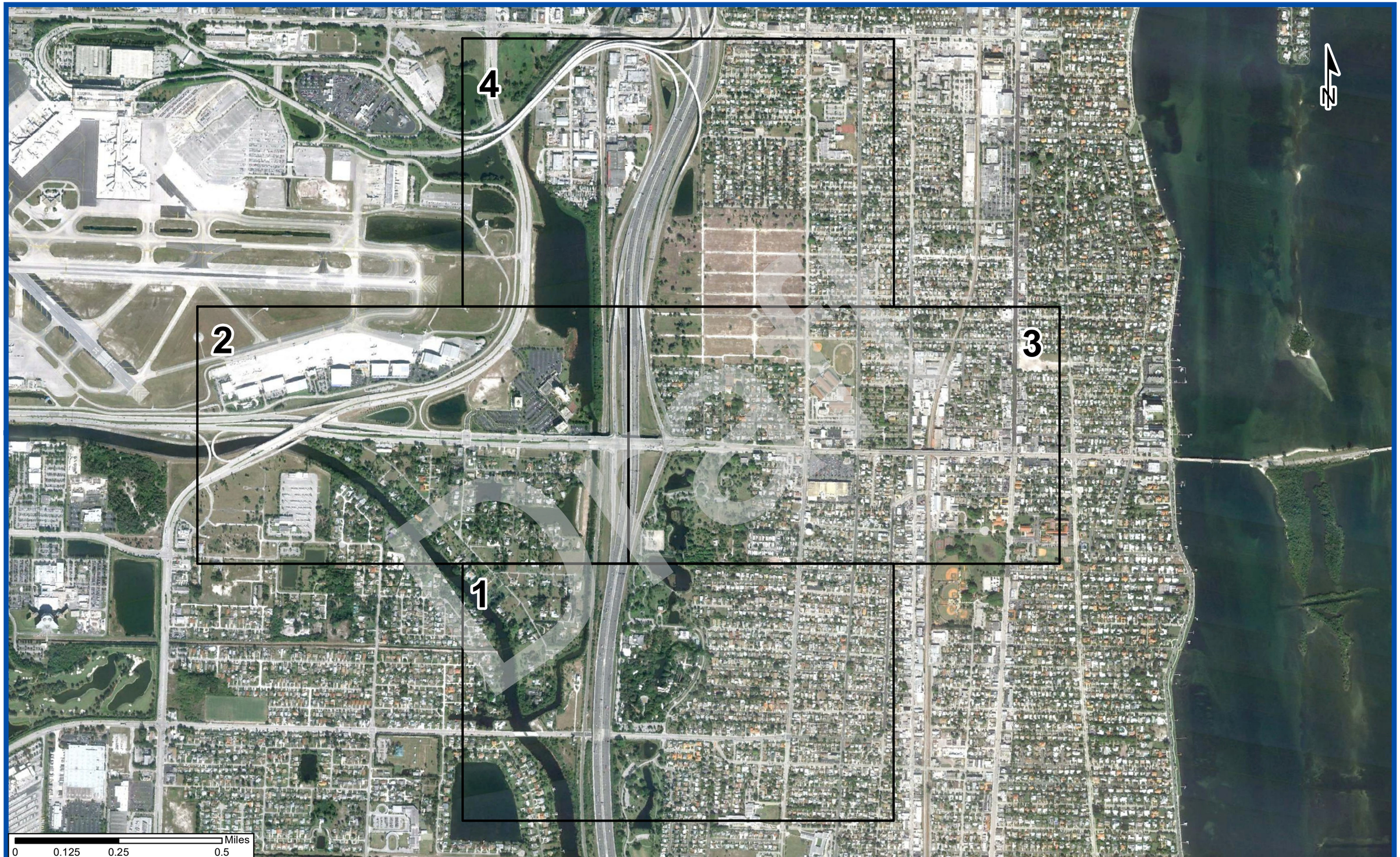
Figure 6-4
Historical Imagery: Jan 25, 1995
Source: FDOT APLUS



FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

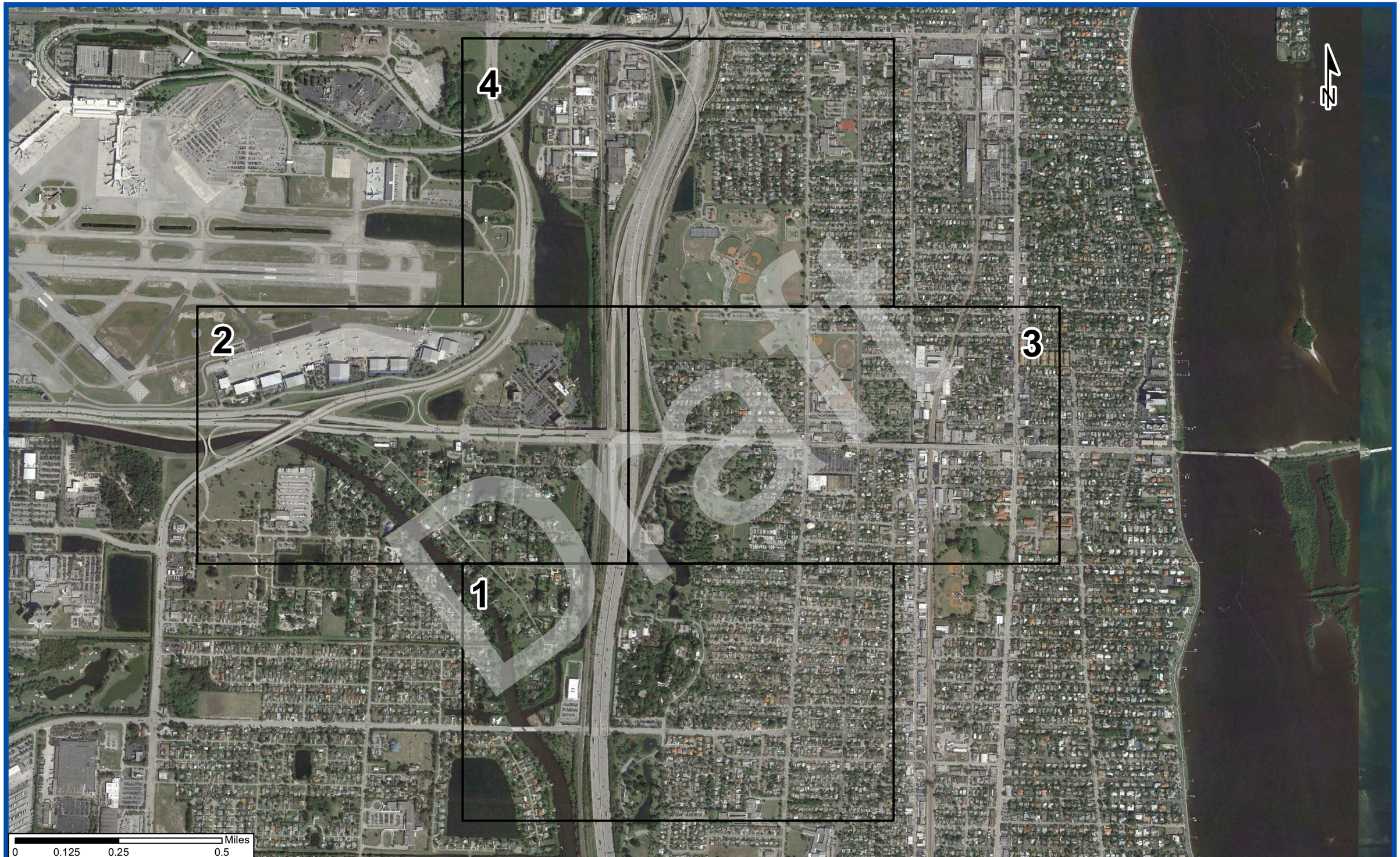
Figure 6-5
Historical Imagery: Jan 19, 2005
Source: FDOT APLUS



FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 6-6
Historical Imagery: Dec 2010
Source: FDOT APLUS



FDOT

SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study
Financial Project ID: 435516-1-22-02, ETDM No:14183

Figure 6-7
Historical Imagery: Feb 2016
Source: FDOT APLUS

Table 6-1
Historical Imagery Review

Quadrant	Year of Aerial Photograph						
	1964	1975	1986	1995	2005	2010	2016
1	I-95 is not yet present. Tenant structures (approximately 5) for the West Palm Beach Airfield are present in the northwest portion of the quadrant. These structures are hydraulically isolated from properties to the south and east by a canal system that divides the quadrant into thirds. The northeast (NE) portion of the quadrant consists of air field property. The NE portion is bordered by canals on the east and south sides. In addition, the railroad is present as is the Southern Boulevard Interchange over it. The southeast (SE) portion of the quadrant has been developed with single family residences, There is commercial development along the south edge of Southern Boulevard. The southwest (SW) portion of the quadrant includes an area of single family dwellings. Residential development with large lot sizes has occurred west of the canal. There is an area of undeveloped land in the southwest corner of the quadrant.	I-95 construction is occurring. A new tenant structure was added to the west of the airplane staging area located in the northwest portion of this quadrant. The canal located south and east of the tenant structures is being filled in. An access road has been constructed across the fill from Southern Boulevard to Australian Ave. In the far eastern portion of the quadrant construction of I-95 as well as the Southern Boulevard interchange can be seen. In the SE portion of the quadrant, development remains the same as in 1964. Similarly, development along the southern side of Southern Boulevard remains the same as in 1964. There have been no changes to development patterns in the SW portion of the quadrant.	In the northwestern portion new structures and a storm pond have been added. In the northeast, commercial development is occurring. In the far eastern portion of the quadrant I-95, as well as, the Southern Boulevard overpass are constructed and operational. In the southeast portion the residential and commercial development patterns remain relatively unchanged. Similarly, development patterns in the SW portion remain unchanged.	In the northwestern portion, new structures have been added on the west side of the airplane staging area. The roadway system in the northeast portion continues to be developed. Commercial development noted in 1986 remains relatively unchanged. In the southeast portion the residential and commercial development patterns remain relatively unchanged with the exception of a small commercial building in the west part of the southeast portion on the south side of Southern Blvd. Similarly development patterns in the southwest portion remain as they were in 1986 with the exception of the residential area where land clearing for the S. Congress Ave. expansion can be seen.	In the northwest portion new structures added at the airfield reflect the current development on airfield property. The Australian Boulevard Overpass is constructed and operational. Commercial development along the east bound lanes of Southern Boulevard (~ 1/8 mile west of I-95) have been removed. In the northeast portion additional parking appears west of the commercial development previously noted. In the southeast portion the residential and commercial development patterns remain relatively unchanged. The Palm Beach County School District - East Transportation Facility development appears in the central part of the southwest quadrant and residential development has been replaced by S. Congress Ave. improvements and open land. Other areas of the southwest portion remain unchanged.	The quadrant is relatively unchanged from the 2005 aerial photo.	The quadrant is relatively unchanged from the 2010 aerial.
2	I-95 is not yet present. The quadrant is characterized by airport development and landfill activities in its far western portion, bordered by canals on the east that separate it from an area of commercial development, referred to as the western portion-commercial development (WPCD), that borders the railroad located to the east. East of the railroad there is a commercial development which will be located west of I-95 when it is constructed beginning in 1975. This commercial area is also included in the WPCD. East of the railroad and the WPCD the northeast and southeast portions of the quadrant are characterized by residential development, schools and small retail establishments.	I-95 construction is occurring. In the western portion of the quadrant the Australian Ave. is extended north to Belvedere Rd. A portion of the southwest to northeast trending canal was filled in during construction. Small ponds in the central portion of the western portion of the quadrant adjacent to Australian Ave. are filled in. The commercial development in the WPCD including the area located east of the railroad is now located west of the I-95 construction area. Commercial development remains relatively unchanged. In the northeast and southeast portions, development patterns remain relatively unchanged with the exception of the construction of I-95 to the west. The vacant lot in the southeast corner of the quadrant portion has been developed into residential housing.	I-95 is constructed and operational. In the western portion, three storm water ponds are constructed west of the Australian Ave. in concurrence with the expansion of the West Palm Beach airport. The WPCD development remains relatively unchanged with the exception of land clearing on the southern end of this area. Development in the northeast and southeast portions remains relatively unchanged.	In the western portion two additional storm water ponds are present. In the WPCD, warehouse structures occupy the cleared area noted in 1986. Development in the northeast quadrant remains relatively unchanged. In the southeast portion more than half of the residential homes have been removed.	In the northern parts of the western and WPCD portions of the quadrant , access roads and overpasses from I-95 to the West Palm Beach airport have been constructed. Residential development remains relatively unchanged in the northeast portion of the quadrant. In the central portion a storm water pond is present adjacent to I-95 which replace a residential area.	The quadrant is relatively unchanged from the 2005 aerial photo.	In the southeast portion, the western part has been developed into a recreational park with several baseball fields. The remainder of the quadrant is relatively unchanged from the 2010 aerial photo.
3	I-95 has not yet been constructed. Approximately 75% of the quadrant is developed with residential areas and schools. A large area of vacant land exists in the southwest portion of the quadrant that will become the Dreher Park, a large regional park that extends from Forest Hill Blvd to Summit Blvd.	I-95 and the Southern Blvd interchange are under construction . Additional commercial development (i.e. warehouses) was constructed in the northeast quadrant since 1964. In the southwest portion of the quadrant the FPL electric substation can be seen adjacent to the I-95 north exit onto Southern Blvd. The remainder of the quadrant remains relatively unchanged.	I-95 and the Southern Blvd. interchange are constructed. The remainder of the quadrant remains relatively unchanged from 1975.	Three streets of residential housing in the upper part of the northwest portion of the quadrant has been removed. The remainder of the quadrant remains relatively unchanged from 1986.	The Conniston Middle School located in the upper central portion of the quadrant has been upgraded. The remainder of the quadrant remains relatively unchanged from 1995.	The quadrant remains relatively unchanged from 2005.	The residential area in the northwest portion of the quadrant, removed in the 1995 aerial photo, has been redeveloped into the southern end of Palm Beach Atlantic University's Athletic Campus. The remainder of the quadrant remains relatively unchanged from 2010.
4	I-95 is not yet present. The eastern portion of the quadrant is residential. The undeveloped land adjacent to the future I-95 right of way will become Dreher Park north and south of Summit Blvd. To the west of the future right of way the land is primarily undeveloped. Residential development is located adjacent to the canals with the exception of residential development in the northwest portion of the quadrant.	The I-95/Summit Blvd. overpasses are under construction. The residential area in the eastern portion of the quadrant remains unchanged. The undeveloped area south of Sumit Blvd. has been partially cleared and trees have been planted. West and adjacent to the I-95 right-of-way a canal has been constructed. In addition, residential development has increased in the undeveloped areas here and a pond has been constructed in the southwestern corner of the quadrant.	I-95 is constructed. The residential area in the eastern portion of the quadrant now extends to the entire eastern border of Dreher Park South which is now constructed. The remainder of the quadrant remains relatively unchanged from 1975 with the exception of additional residential development in the southwest portion of the quadrant west of I-95.	Development in the quadrant remains relatively unchanged from 1986.	Development occurred on a parcel of land west and adjacent to I-95, north of Summit Blvd. and east of the canal. The remainder of the quadrant is relatively unchanged from the 1995 aerial photo.	The quadrant is relatively unchanged from the 2005 aerial photo.	The Renaissance Charter School has been constructed on the parcel of land west and adjacent to I-95, north of Summit Hill Blvd. and east of the canal. The remainder of the quadrant is relatively unchanged from the 2010 aerial photo.

6.2 Potential Contamination Sources

Potential contamination sources along the project corridor were identified using a combination of data systems that include a computerized database search, environmental records, aerial photographs, and right-of-way survey maps, as well as a corridor reconnaissance performed in January 2016.

After a thorough review of records and information obtained from site reconnaissance, it was discovered that multiple database listings (e.g. sources with different names with an identical address) actually represented one source. In these situations, these sources were combined into a single potential contamination source using the best available descriptor to name the source (i.e. current business name, vacant lot, etc.).

One of the data systems (EDR DataMap™ Corridor Study) used to identify potential contamination sources found 28 unmapped sites. These sites, known as Orphan Sites, are unmapped due to poor or inadequate address information. Each Orphan Site was reviewed in an attempt to manually locate these potential contamination sources. In all, 18 Orphan Sites were successfully located and 10 could not be located. Orphan Sites within the 500-foot project screening area were not identified; the nearest Orphan Site was located approximately half a mile away from the screening area. Table B-1 in Appendix B lists potential contamination sources and includes contamination risk ratings, sampling recommendations, and regulatory review for each source identified within the 500-foot project study area.

6.3 Contamination Risk Rating

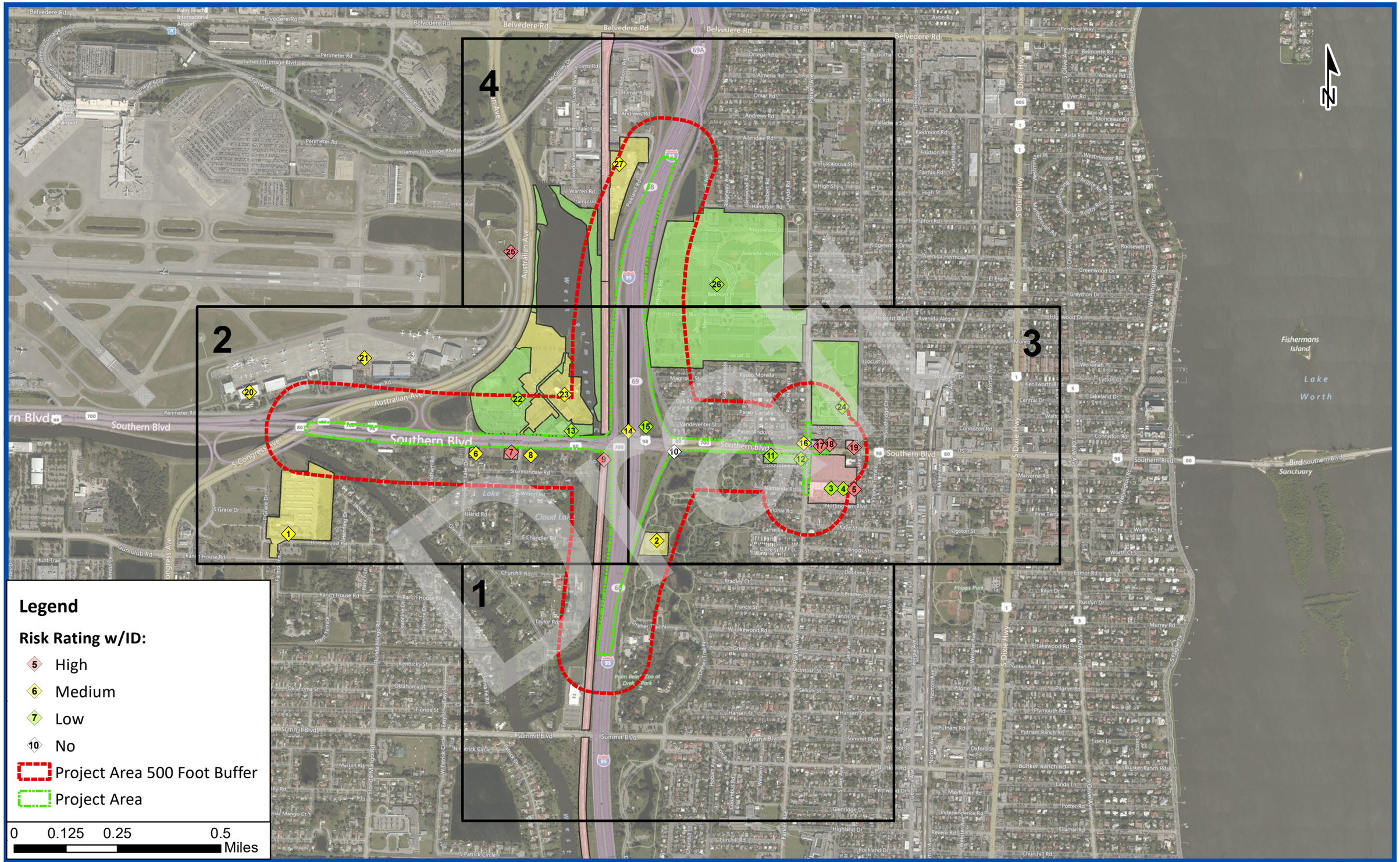
Interviews were conducted, available EDR information reviewed, and documents obtained from FDEP's OCULUS and Palm Beach County's CINEMA databases to determine the current regulatory status of each potential contamination source. Each source's history and regulatory status was evaluated (and in some cases the lack of available regulatory information was noted), and then each source was assigned a contamination risk rating in accordance with FDOT D4 criteria (reference Appendix B, Table B-1) relative to encountering impacted soil or groundwater. Table 6-2 provides a summary of the High, Medium, Low, and

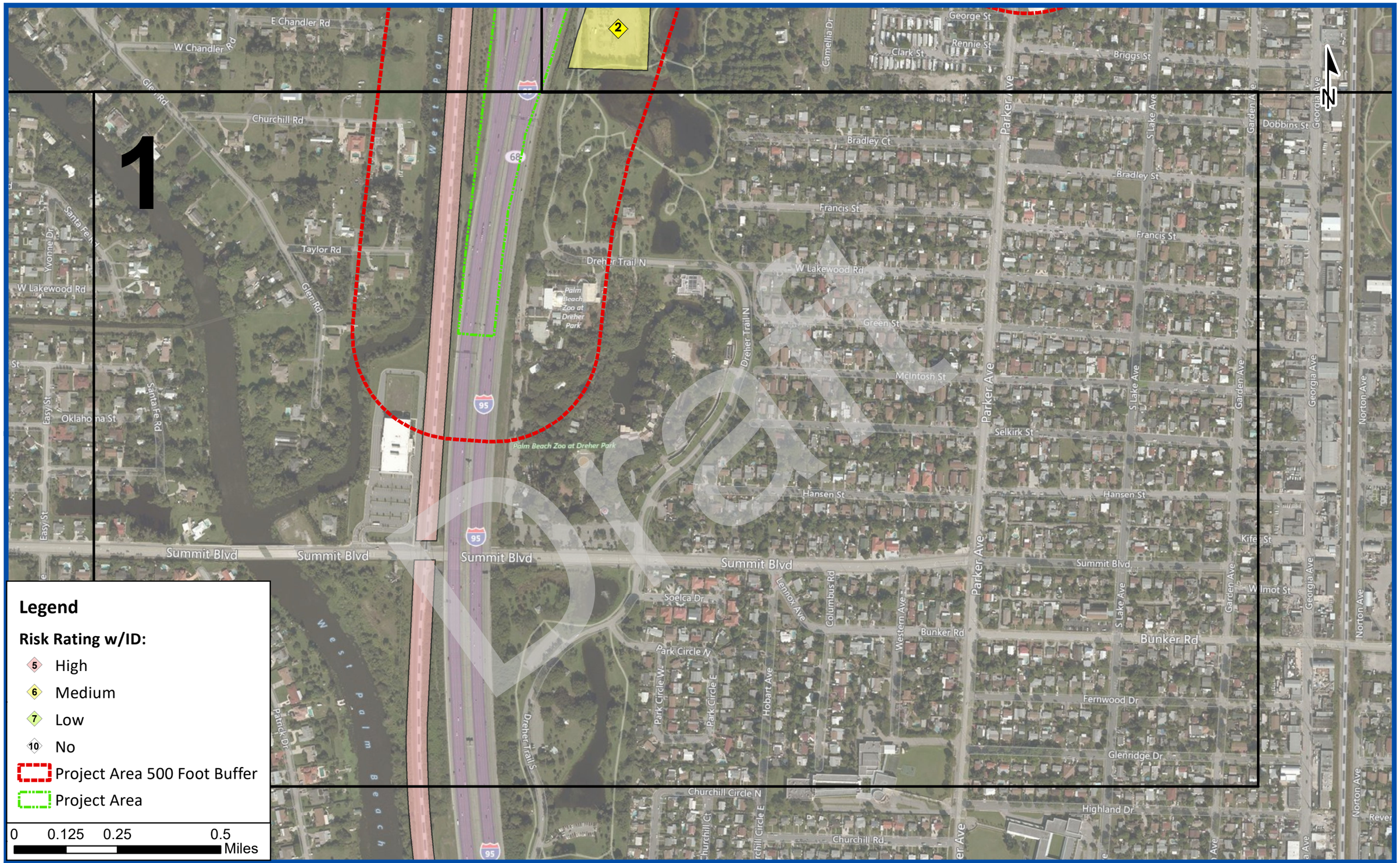
No risk ratings. An electronic version of the EDR Corridor Study Report and regulatory documents are included with this publication in the associated zip file.

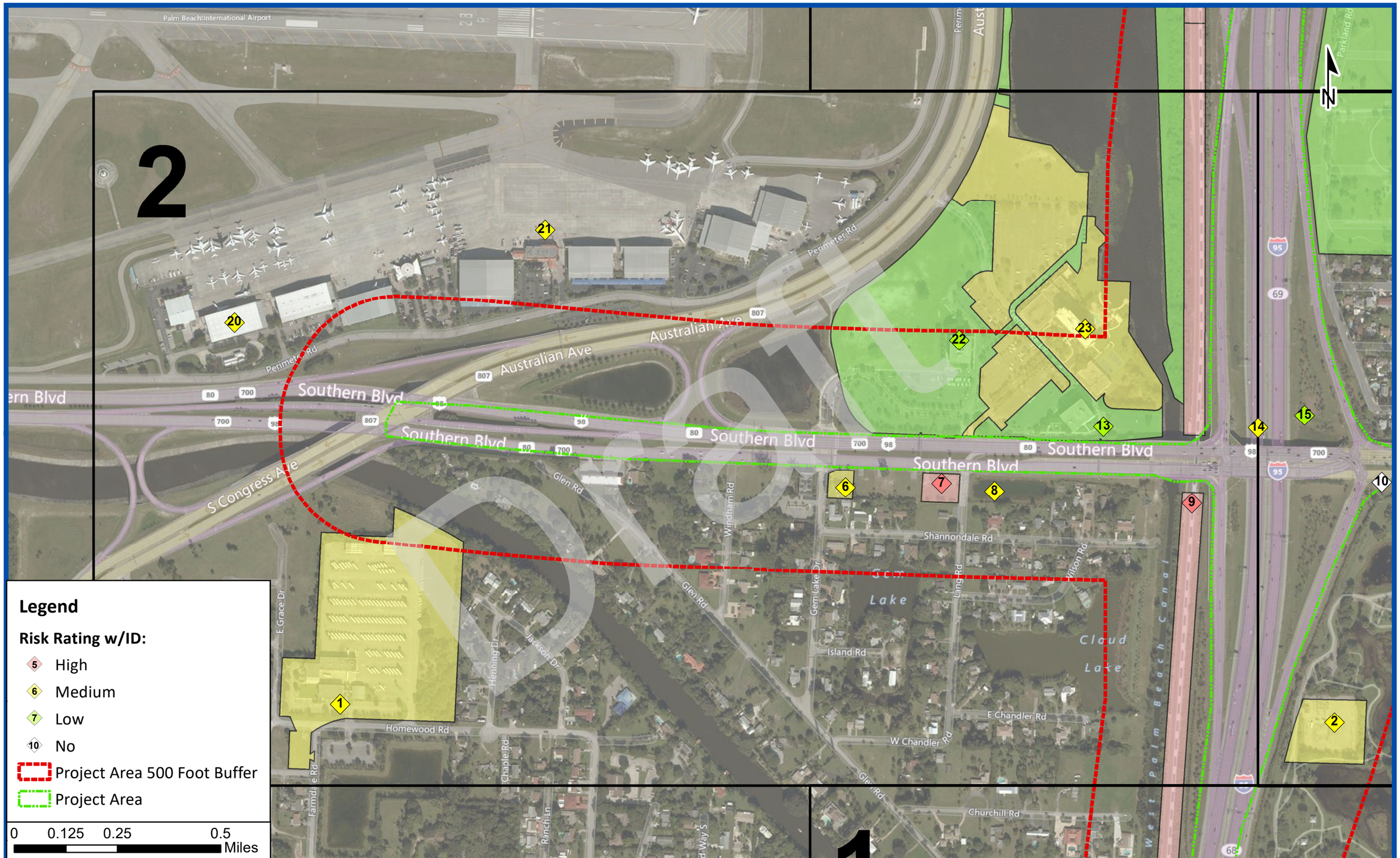
Table 6-2: Summary of Potential Contamination Sources Risk Ratings

Risk Rating	Number of Sites
High	8
Medium	9
Low	9
No	1
Total	**27**

The High, Medium, Low, and No risk rated sites are Sections 6.5 through 6.8. Figures 6-8 through 6-12 illustrate the location of potential contamination sources within the project study area.


4
2
3
1
Legend
Risk Rating w/ID:
5 High
6 Medium
7 Low
10 No
Project Area 500 Foot Buffer
Project Area
0 0.125 0.25 0.5
Miles
N
Belvedere Rd
Southern Blvd
Australian Ave
S Dixie Hwy
Fishermans Island
Lake Worth
Bird Sanctuary
Palm Beach International Airport
Palm Beach Zoo at Dreher Park
Phipps Park
Cloud Lake
Lake Osborne
Lake Worth Lagoon


1
2
E Chandler Rd
W Chandler Rd
Churchill Rd
Taylor Rd
Glen Rd
Santa Fe Rd
Yvonne Dr
W Lakewood Rd
Oklahoma St
Easy St
West Palm Beach
Dreher Trail N
Palm Beach Zoo at Dreher Park
Dreher Trail S
Camellia Dr
George St
Clark St
Rennie St
Briggs St
Parker Ave
S Lake Ave
Garden Ave
Georgia Ave
Dobbins St
Bradley Ct
Bradley St
Francis St
Green St
McIntosh St
Selkirk St
Hansen St
Norton Ave
Summit Blvd
Soelca Dr
Lennox Ave
Columbus Rd
Western Ave
Bunker Rd
Park Circle N
Park Circle W
Park Circle E
Hobart Ave
Fernwood Dr
Glenridge Dr
Churchill Circle N
Churchill Ct
Churchill Circle E
Churchill Rd
Highland Dr
Patrick Dr
Kife St
Wilmot St
Rever
95
68
N
Legend
Risk Rating w/ID:
5 High
6 Medium
7 Low
10 No
Project Area 500 Foot Buffer
Project Area
0 0.125 0.25 0.5 Miles


2
Palm Beach International Airport
Perimeter Rd
Australian Ave
Southern Blvd
S Congress Ave
Glen Rd
Windham Rd
Gem Lake Dr
Lang Rd
Wilson Rd
Shannondale Rd
Island Rd
E Chandler Rd
W Chandler Rd
Churchill Rd
Homewood Rd
E Grace Dr
Henning Dr
Jackson Dr
Chapel Rd
Ranch Ln
Farmdale Rd
West Palm Beach Canal
Parkland Rd
Lake
Cloud
Lake
N
Legend
Risk Rating w/ID:
5 High
6 Medium
7 Low
10 No
Project Area 500 Foot Buffer
Project Area
0 0.125 0.25 0.5
Miles

3

Legend

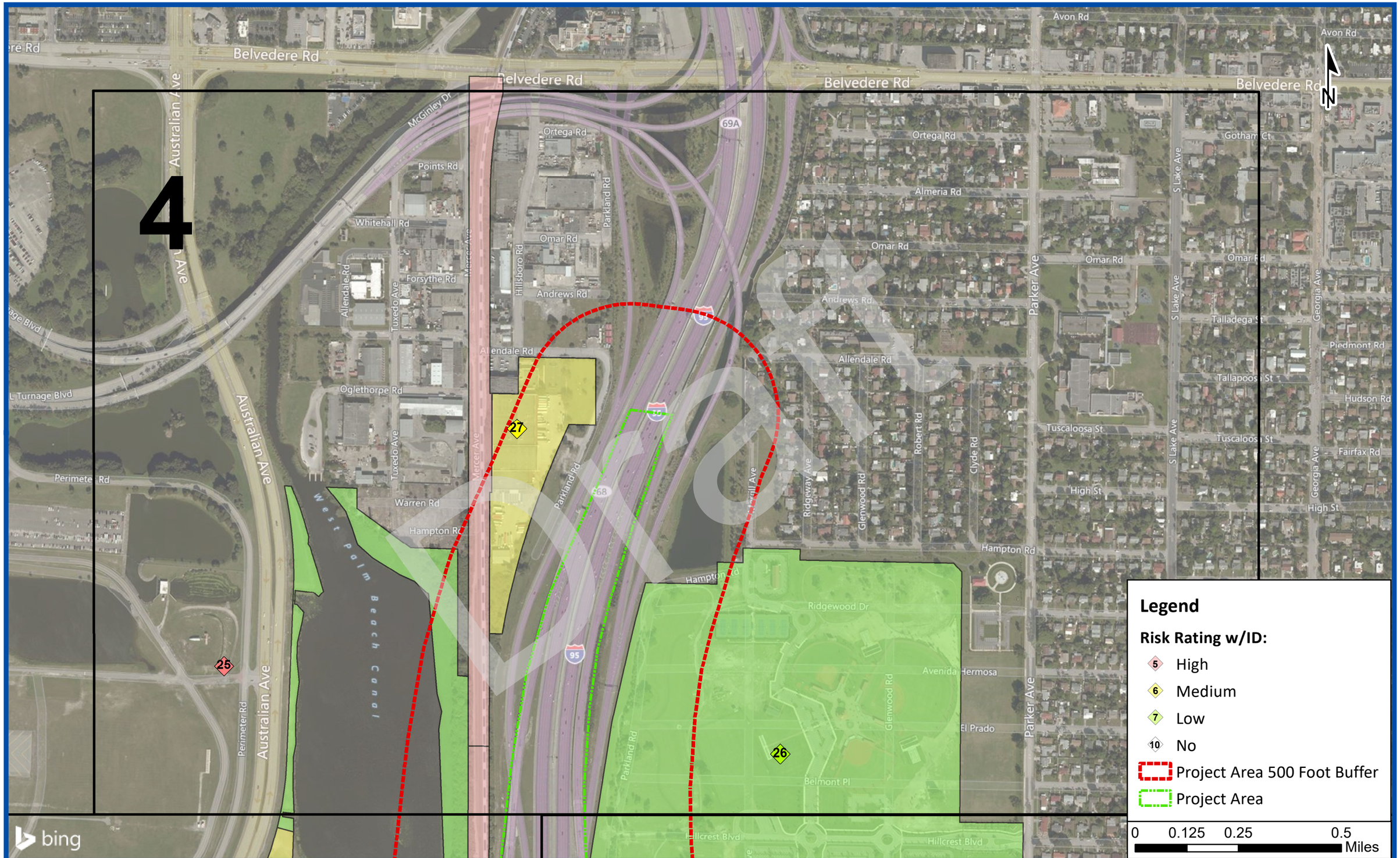
Risk Rating w/ID:

- 5 High
- 6 Medium
- 7 Low
- 10 No
- Project Area 500 Foot Buffer
- Project Area

0 0.125 0.25 0.5 Miles

bing

FDOT	**SR 9/I-95 at SR 80/Southern Boulevard Interchange Project Development and Environment Study** **Financial Project ID: 435516-1-22-02, ETDM No:14183**	**Figure 6-11** **Potential Contamination Sites** **Map Section 3**


4
Belvedere Rd
Australian Ave
McGinley Dr
Points Rd
Whitehall Rd
Forsythe Rd
Oglethorpe Rd
Perimeter Rd
Warren Rd
Hampton Rd
West Palm Beach Canal
Ortega Rd
Omar Rd
Andrews Rd
Allendale Rd
Hillsboro Rd
Parkland Rd
Mercer Ave
Tuxedo Ave
Allendale Rd
69A
95
27
25
26
Avon Rd
Almeria Rd
Parker Ave
S Lake Ave
Gotham Ct
Talladega St
Piedmont Rd
Tallapoosa St
Hudson Rd
Tuscaloosa St
Fairfax Rd
Georgia Ave
High St
Robert Rd
Clyde Rd
Ridgeway Ave
Glenwood Rd
Ridgewood Dr
Avenida Hermosa
El Prado
Belmont Pl
Hillcrest Blvd
N
bing
Legend
Risk Rating w/ID:
5 High
6 Medium
7 Low
10 No
Project Area 500 Foot Buffer
Project Area
0 0.125 0.25 0.5
Miles

6.4 Analysis of Potential Contamination Sources

This evaluation identified more than 27 non-residential facilities (sites) within the study area. Some sites occupy more than one address, some addresses have more than one site, and there are many inconsistencies in the business names and addresses used in the databases. Therefore, parcel boundaries are used to organize the data rather than addresses or business names. The use of parcel boundaries also facilitates the evaluation of potential contamination risks during right-of-way acquisition.

Sites were evaluated independently. If applicable, pathways for potential contamination migration were identified, and adjacent activities and conditions were addressed at the adjacent site. Former activities and conditions are described in each site narrative if known and applicable. Table B-1 lists all the potential contamination sites identified within the 500-foot screening area, arranged by site number (Site No.). Locations of the sites are shown on Figures 6-8 through 6-12. The parcel boundaries are color-coded by risk rating as noted in the legend. Site numbers were assigned geographically, starting in the south quadrant, then moving from west to east across a horizontal transect, and concluding in the north quadrant. As noted above, some sites contain multiple business names and addresses.

The following narratives summarize site activities, regulatory status (if any), and risk rating rational for identified potential contamination sources. In addition to each source's name, address, and facility IDs, the narratives include photo numbers, figure references, and distances to the project corridor.

6.5 High Risk Potential Sites

This section addresses all High Risk potential sites that are located within the 500-foot screening area.

Site No. 5 (High Risk)

Site Names:	Flamingo Laundromat; Former F & M Cleaners; Former One Hour Martinizing Cleaners; Former J's Launderama; Former Dannys Launderama; Former Norma's Laundromat
Site Address:	4209-4211 Lake Avenue West Palm Beach, FL 33405
Photo Nos.:	3-1, 5
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility IDs:	9600642, 9502485, FLD030749634, FLR000218321
Distance to Project:	Adjacent
Contamination Concern:	Dry Cleaning Solvents

This site is identified as High risk based on the potential for contamination on the property from historical dry cleaning operations. The site was formerly split into two retail units: dry cleaning businesses occupied 4211 and laundromats occupied 4209. The two spaces have been combined into a single retail unit, Flamingo Laundry.

One Hour Martinizing Cleaners / F&M Cleaners occupied the 4211 retail space from 1964 to 1994. F&M Cleaners registered as a hazardous waste generator in 1985. The 1985 application indicates halogenated solvent waste was generated on site. In 1996, the site was deemed eligible for state-administered cleanup under the Drycleaning Solvent Cleanup Program. This decision was based on tetrachloroethene detected in shallow groundwater from on-site monitoring wells. Groundwater flow in 1994 was toward the northeast.

Site No. 7 (High Risk)

Site Names:	Former Fen Tally Ho Cleaners; Former Tilton Cleaners
Site Address:	1406 Southern Boulevard West Palm Beach, FL 33406
Photo Nos.:	7-1, 7-2, 7-3, 7-4
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility ID:	None
Distance to Project:	Adjacent
Contamination Concern:	Hazardous Waste

This site is identified as High risk due to historical operations as a drycleaner and the lack of a documented site assessment.

EDR lists the site as a historical dry cleaners with a record in 1956 (Tilton Cleaners) and 1962 (Fen Tally Ho Cleaners). The property is currently cleared land. No additional records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

Site No. 9 (High Risk)

Site Name:	Tri-Rail Coastal Link
Site Address:	Railroad Corridor West Palm Beach, FL
Photo Nos.:	9-1, 9-2, 9-3
Figure Nos.:	6-8, 6-9, 6-10, 6-11, 6-12
FDEP/EPA Facility ID:	None
Distance to Project:	Adjacent
Contamination Concerns:	Petroleum, Hazardous Waste, Herbicides, Pesticides, Coal Ash, Polychlorinated Biphenyls (PCBs)

This site is identified as High risk based on the potential for contamination on the property from historical railway operations. The site does not have documented contamination but is presumed contaminated.

The site was identified during corridor reconnaissance. Reconnaissance personnel did not identify stressed vegetation, surface staining, monitoring wells, or other visual environmental concerns at the site. However, the operation of a rail system has a variety of potential sources that can contribute to environmental impacts along rail corridors. Typical sources include petroleum or chemical leaks from rail cars, leaking transformers, herbicides, railroad ties, and coal ash and cinder. No records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

Site No. 16 (High Risk)

Site Names:	Subway; Former Connell Brothers Gulf Service; Former Boulevard Service Station
Site Address:	901 Southern Boulevard West Palm Beach, FL 33405
Photo Nos.:	16-1, 16-2
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility ID:	9601382
Distance to Project:	Within Project Area
Contamination Concern:	Petroleum

This site is identified as High risk based on historical use as a gas station with reported petroleum releases/contamination.

EDR lists the site as a historical auto station with records in 1942 for Boulevard Service Station and 1947-1965 for Connell Brothers Gulf Service. Palm Beach County ERM records document an interview with a previous owner who indicated the site was a gas station from 1937 to 1973 and oil had been dumped on site.

Review of historical aerial photographs shows a structure on site with the footprint of a gas station in 1964. In 1975, the site had been cleared and remained cleared until 2014 when site improvements are visible. The 2016 aerial photograph shows a developed site with a single structure surrounded by a parking lot. The site currently operates as a fast food restaurant.

In August 1995 the vacant property was purchased by Raja Kahn. Kahn applied for the ATRP but was deemed ineligible. Records indicate the site had three gasoline USTs removed (install/removal dates and sizes unknown). No TCAR was available for review.

Site No. 17 (High Risk)

Site Names:	West Palm Gas Station; Kis Chevron; Former West Palm Chevron; Former Exxon No 45284; Former Southdale Union 76 Service Station; Former Malone's Pure Service Station; Former Airport Service Station
Site Address:	845-847 Southern Boulevard, West Palm Beach, FL 33405
Photo Nos.:	17-1, 17-2, 17-3, 17-4
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility ID:	8623181
Distance to Project:	Adjacent
Contamination Concern:	Petroleum

This site is identified as High risk based on historical use as a gas station with documented contamination. The site currently operates as a gas station.

EDR lists the site as a historical auto station with records in 1947-1956 for Airport Service Station, 1962-1965 for Malone's Pure Service Station, 1974-1989 for Southdale Union 76 Service Station, 1998-2009 for West Palm Chevron, and 2010-2012 for Kis Chevron.

In June 1966, four 4,000 gallon unleaded gasoline USTs, one 4,000 gallon vehicular diesel UST, one 550 gallon waste oil UST, and one 550 gallon leaded gas UST were installed at the site. Five of these UST's were removed from the site in September 1990; the removal dates of the remaining two USTs are unknown. A letter from September 1990 regarding tank closure indicates soil organic vapor analysis (OVA) readings over 50 ppm around tanks. A discharge reporting form (DRF) was submitted to FDEP based on the elevated soil OVA results. In October 1992, the site was deemed eligible for reimbursement under the FPLRIP for contamination cleanup related to the September 1990 reported discharge.

The site had three 10,000 gallon unleaded gasoline USTs, one 10,000 gallon vehicular diesel UST, and one 550 gallon waste oil UST installed in 1990 and removed in November/December 2009. No TCAR was developed due to previously documented contamination and the limited source removal activities being conducted at the time of tank removal. After tank removal, limited source removal was conducted with 176 tons of petroleum-impacted soils excavated and removed from site. No groundwater analysis was conducted.

During dispenser closure/upgrade in March 2007 petroleum impacted soils were removed around the northeast and northwest dispensers. No soil was removed around the southeast or southwest dispensers. Confirmation soil samples beneath each dispenser island yielded constituents of concern (CoCs) below soil cleanup target levels (SCTLs). No groundwater analysis was conducted.

The site currently has one 20,000 gallon multi-compartment UST installed in January 2010 for diesel and gasoline. A March 2015 inspection deemed the tank in compliance.

The site is currently part of the Low-Score Site Initiative (LSSI). A site visit was conducted in March 2016 and a proposal developed for site assessment activities to include 21 soil borings, four soil samples, and six monitoring wells. Sampling activities commenced in August 2016. Preliminary analytical results indicate all soil samples are below SCTLs, but groundwater samples from monitoring well (MW) number one remain above groundwater cleanup target levels (GCTLs) and natural attenuation default criteria (NADCs). FDEP's review of the LSSI Site Assessment report indicates further groundwater assessment is necessary.

Site No. 18 (High Risk)

Site Names:	La Familia Coin Laundry; Former Margie's Coin Laundry
Site Address:	823 Southern Boulevard West Palm Beach, FL 33405
Photo Nos.:	18-1, 18-2
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility ID:	None
Distance to Project:	Adjacent
Contamination Concern:	Hazardous Waste

This site is identified as High risk due to current and historical operations as a drycleaner and the lack of a documented site assessment.

EDR lists the site as a historical dry cleaners with records from 1974-1984. The property currently operates as a coin laundromat. Corridor reconnaissance personnel did not note monitoring wells at the site. No additional records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

Site No. 19 (High Risk)

Site Names:	Coastal Gas Station; Former Texaco #240211378; Former Direct Oil Company
Site Address:	805 Southern Boulevard, West Palm Beach, FL 33405
Photo Nos.:	19-1, 19-2, 19-3, 19-4, 19-5
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility IDs:	8514081; FLD984191395
Distance to Project:	234 feet
Contamination Concerns:	Petroleum, Hazardous Waste

This site is identified as High risk based on historical use as a gas station with documented contamination. EDR lists the site as a historical auto station with records in 1962-1989 for Direct Oil Co. and 1999-2012 for Texaco.

The site had two 10,152 gallon USTs (leaded and unleaded gasoline) and one 6,612 gallon unleaded gasoline UST installed in 1961 and removed in February 1990. Groundwater contamination was identified in December 1988 during compliance well tests and a DRF submitted to FDEP. The site was deemed eligible for the early detection incentive (EDI) program in September 1990 based on the 1988 discharge.

The site had three 10,000 gallon USTs (two unleaded gasoline; one diesel) installed in February 1990. During the 1990 tank replacement approximately 300 tons of petroleum-impacted soil was excavated. Contamination assessment activities were conducted in 1993 and 1994. The CA activities identified that the hydrocarbon plume was composed of kerosene/mixed product constituents and appeared to be migrating east-northeast following the general groundwater direction of the area. A monitoring only plan was approved in June 1994 since all hydrocarbon levels were within monitoring only levels. A SRCO was issued in October 1995.

A line and sump closure assessment conducted in September 2002 identified contaminated soil above SCTLs and a groundwater plume very near the location of the contaminated soil. This contamination was found in an area not previously assessed and is thought to be associated with the 1988 discharge. A February 2007 letter requested the SRCO be rescinded so the 2002 identified contamination would be eligible for EDI funding. FDEP denied the rescission request in March 2008.

The three 10,000 gallon USTs were removed in April 2014. The 2014 TCAR indicates no reportable level of contamination was detected in the soil or groundwater during tank removal activities. The 2014 TCAR also indicates groundwater depth at the site to be approximately 12.3 fbls.

The site currently operates as a gas station. The site has two 12,000 gallon unleaded gasoline USTs installed in April 2014. A January 2016 inspection deemed the tanks in compliance. Site notified as a small quantity generator (SQG) in April 1991 for benzene. This hazardous waste ID was closed in 2011 and changed to non-handler of hazardous waste. Site does not have documented violations or environmental contamination related to hazardous waste.

Site No. 25 (High Risk)

Site Name:	Palm Beach International Airport Dump #2
Site Address:	1/2 mi S of Belvedere Rd., 1/8 mi W of Australian Ave., S of airport entrance pond West Palm Beach, FL 33406
Photo Nos.:	25-1, 25-2
Figure Nos.:	6-8, 6-12
FDEP/EPA Facility IDs:	94324
Distance to Project:	236 feet
Contamination Concerns:	Soil: Polynuclear Aromatic Hydrocarbons (PAH), dioxin/furans, and arsenic Water: VOC, SVOC, OCP/ PCB, dioxin/furans, metals

This site is identified as High risk based on the presence of an unlined historical dump site.

The site is identified as Palm Beach County Solid Waste Authority site number 104. The dump is estimated to be 1-5 acres. The dump opened in the 1940's and closed in the 1960's and was designed for burial with no liner. It was used by the old military air base. All or part of former drainage canal was filled with waste. No groundwater monitoring is currently conducted at the site. No records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

6.6 Medium Risk Potential Sites

This section addresses all Medium Risk potential sites that are located within the 500-foot screening area.

Site No. 1 (Medium Risk)

Site Name:	Palm Beach County School District East Transportation Facility
Site Address:	2775 Homewood Road West Palm Beach, FL 33406
Photo Nos.:	1-1, 1-2
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility IDs:	9806154; FLR000123075
Distance to Project:	329 feet
Contamination Concerns:	Petroleum, Hazardous Waste

This site is identified as Medium risk based on the release of approximately 100 gallons of unleaded gasoline in September 2009. Although a SCRO was issued, the possibility of remaining contamination at the site cannot be ruled out.

The site had two ASTs and three USTs, which were deemed in compliance during a 2014 inspection. The site had two 1,000 gallon double walled ASTs for used oil and new motor oil installed in November 2003. These ASTs are located entirely within the building. A third 500 gallon AST Site is present at the fuel building. The site had three 15,000 gallon USTs, two for diesel and one for unleaded gasoline, installed in October 2003.

In September 2009, the site reported a discharge of approximately 100 gallons of unleaded gasoline released from a UST during tank loading. Approximately 93 tons of petroleum-impacted soil were removed during cleanup activities and properly disposed of off-site. Soil and groundwater analysis did not detect CoCs above CTLs. The site was issued a SRCO in July 2010.

The site submitted an incident notification form to Palm Beach County ERM in August 2013 after discovering a failure of a UST spill bucket on diesel tank #2. The spill bucket was replaced. Petroleum-impacted pea rock was excavated around the spill bucket and placed into eight drums for disposal. Soil analysis did not detect CoCs above SCTLS. In a November 2013 letter, Palm Beach County ERM agreed the Spill Bucket Replacement and Limited Closure Assessment report appeared to comply with requirements. The results provided do not support the presence of petroleum contamination above SCTLs in the area addressed.

The site submitted another incident notification form to Palm Beach County ERM in September 2016 after discovering a failure of a UST spill bucket on diesel tank #3. The spill bucket was replaced. Petroleum-impacted pea rock was excavated around the spill bucket and placed into five drums for disposal. Soil analysis did not detect CoCs above SCTLS. In a December 2016 letter, Palm Beach County ERM agreed the Fill Port Spill Bucket Replacement, Soil Screening, Sampling, and Closure report appeared to comply with requirements. The results provided do not support the presence of petroleum contamination above SCTLs in the area addressed.

The site was registered as a SQG in 2005 and changed status to a conditionally exempt small quantity generator (CESQG) in 2011. The site does not have documented violations, leaks, or environmental contamination related to hazardous waste.

Site No. 2 (Medium Risk)

Site Name:	Florida Power and Light (FPL) Hillcrest Substation
Site Address:	4800 Dreher Trail North West Palm Beach, FL 33405
Photo Nos.:	2-1, 2-2
Figure Nos.:	6-8, 6-10, 6-11
FDEP/EPA Facility ID:	FLR000042176
Distance to Project:	82 feet
Contamination Concern:	Hazardous Waste

This site is identified as Medium risk based on the potential for contamination related to releases of mineral/dielectric oil.

The site registered as a large quantity generator in 1998 and changed status to a CESQG in 1999. A February, 2015 Hazardous Waste Inspection Report indicated the site was in compliance and did not have documented violations related to hazardous waste.

According to this report, the facility uses mineral/dielectric oil bearing electrical equipment. Used mineral/dielectric oil leaks/discharges occasionally occur during routine operation of this equipment. Releases are cleaned up / managed with absorbent pads on plastic tarps. One leak was observed during the inspection. No discharges to the environment from leaking areas were observed by the Inspector. If discharges occur, stained gravel and spent pads are transported to and managed by FPL's main hub facilities. In addition, mineral / dielectric oil is routinely tested for PCB content. At the time of inspection, equipment was labelled as "Oil Tested by FPL to be <50 ppm PCB."

Although the report indicated leaks were being managed in accordance with the Mineral Oil Dielectric Fluid Emergency Response Action Protocol and the substation's Spill Prevention, Control and Countermeasures Plan, the possibility of contamination cannot be ruled out.

Site No. 6 (Medium Risk)

Site Names:	Specialty Glass of the Palm Beaches Inc. Former Amoco Service Station #7032; Former Knowles Texaco Service Station; Former Whitman's Texaco Service Station
Site Address:	1440 Southern Boulevard West Palm Beach, FL 33406
Photo Nos.:	6-1, 6-2
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility ID:	8514253
Distance to Project:	Adjacent
Contamination Concern:	Petroleum

This site is identified as Medium risk based on a documented petroleum release and subsequent remediation activities.

The site had three 10,000 gallon USTs (two, unleaded gasoline; one, leaded gasoline) installed in May 1983 and removed in June 1991. The site also had one 550 gallon waste oil UST removed from site in June 1991 (install date unknown).

The site reported a discharge in December 1988 when unleaded gasoline (free product) was detected in a monitoring well. It was registered with the EDI program and was deemed eligible for reimbursement by FDEP in November 1989. A February 1990 Contamination Assessment Report (CAR) found the groundwater flow direction to be south, southwest. Assessment activities determined the dissolved hydrocarbon contamination plume to be approximated by an ellipse with a 106-foot east-west axis and a 60-foot north-south axis, estimated to impact 79,709 gallons of groundwater.

A remedial action plan (RAP) was developed in October 1990 and modified in June 2000. An air sparge and soil vapor extraction system operated on site from August 2001 to July 2003 followed by post active remediation monitoring. A September 2005 PARM report indicates groundwater depth just under 9 feet and flow direction was to the west, and did not detect

CoCs above GCTLs in groundwater samples. Based on the September 2005 PARM report, the site received a SRCO/NFA in March 2006.

Site No. 8 (Medium Risk)

Site Names:	FL Department of Transportation Parcel #155; Former Tire Kingdom
Site Address:	1330 Southern Boulevard West Palm Beach, FL 33406
Photo Nos.:	8-1, 8-2
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility IDs:	9804997, FLT020070744, FLT990064289
Distance to Project:	Adjacent
Contamination Concerns:	Petroleum; Hazardous waste

This site is identified as Medium risk based on a documented petroleum release.

The site had an emergency hazardous waste ID issued in 1999 to allow FDOT to dispose of a drum found on the property during building demolition.

The site had one UST estimated at 700-800 gallons removed in July 2002 (installation date unknown). The tank was discovered during SR 80 roadway expansion and partially excavated and punctured by the roadway contractor. Fluids from the tank were removed and disposed off-site. In 2002, a second hazardous waste ID was issued to allow FDOT to dispose of the UST contents and contaminated soils. CoCs were detected in the surrounding soils above leachability and direct exposure commercial target levels. Impacted soils were excavated and disposed off-site. No CoCs above SCTLs were detected in groundwater samples. Groundwater depth was approximately 3.5 fbls. The site received a letter from Palm Beach County ERM in May 2003 stating no additional investigation was required regarding the tank closure.

Site No. 14 (Medium Risk)

Site Name:	I-95 Southbound at SR 80
Site Address:	I-95 Southbound at SR 80 West Palm Beach, FL 33406
Photo No.:	14
Figure Nos.:	6-8, 6-10, 6-11
FDEP/EPA Facility ID:	9810212
Distance to Project:	Within Project Area
Contamination Concern:	Petroleum

This site is identified as Medium risk based on a documented petroleum release.

On August 31, 2007, a traffic incident resulted in a towed trailer-mounted boat catching on fire. After the fire was extinguished, approximately 2,000 gallons of petroleum contact water were removed from the boat. Soil screening activities were conducted on the pervious surface surrounding the boat. Soil was excavated to approximately 0.5 feet below grade in the area of elevated OVA readings. The site was issued a NFA in April 2008.

Since extinguishing hydrocarbon fueled fires is typically accomplished with foam suppression systems, the potential exists that aqueous film fighting foam (AFFF) contaminants (i.e. perfluorochemicals (PFCs)) may be present in the soil and / or groundwater at this location.

Site No. 20 (Medium Risk)

Site Names:	Signature Flight Support; Gulfstream Product Support Corporation
Site Address:	1500 Perimeter Road Hangar C West Palm Beach, FL 33406
Photo Nos.:	20-1, 20-2
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility IDs:	8623045; FLR000101881; FLD981468424
Distance to Project:	236 feet
Contamination Concerns:	Petroleum; Hazardous Waste

This site is identified as Medium risk based on petroleum tanks present onsite and a documented release in 2014.

Signature Flight Support has five ASTs in service: two 50,000 gallon jet fuel ASTs and one 15,000 gallon aviation gasoline AST installed in October 1993; one 1,000 gallon vehicular diesel AST installed in May 2000; and one 500 gallon unleaded gasoline AST (install date unknown). The ASTs were deemed in compliance during an August 2015 inspection.

The site previously had five 15,000 gallon ASTs installed in December 1987 and removed in October 1993. The site also had three aviation fuel USTs installed in 1974 and removed in October 1988 (two 12,000 gallon; one 15,000 gallon). No TCAR was available for review.

Signature Flight Support reported a spill of jet fuel in March 2014 (<25 gallons). The spill was contained and sewer drain skimmed as a precaution due to weather. The site does not have any other documented leaks or environmental contamination related to petroleum.

Signature Flight Support registered as a SQG in April 1993. Signature Flight Support had documented procedural violations noted during a 2013 inspection, but does not have documented leaks or environmental contamination related to hazardous waste. As of May 2013, site notifies as a CESQG.

Gulfstream registered as a SQG in October 2003. Gulfstream had documented procedural violations noted during a 2011 inspection, but does not have documented leaks or environmental contamination related to hazardous waste.

Site No. 21 (Medium Risk)

Site Names:	Jet Aviation Associates Ltd. Building; Palm Beach Aircraft Painting, Inc.
Site Address:	1515 Perimeter Road West Palm Beach, FL 33406 33406
Photo Nos.:	21-1, 21-2
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility IDs:	8623186; FLD982111510; FLD984258095
Distance to Project:	236 feet
Contamination Concerns:	Petroleum; Hazardous Waste

This site is identified as Medium risk based on aviation fuel ASTs onsite and a documented release in 1998. The site has two 30,000 gallon jet fuel ASTs and one 12,000 aviation gasoline AST installed in February 1993. All ASTs were deemed in compliance during a February 2016 inspection.

The site previously had 12 ASTs installed in December 1981 and removed in April 1993 (eight 14,600 gallon and four 275 gallon). No TCAR was available for review.

A petroleum discharge was discovered on site in October 1998 during utility construction. The site assessment report was not available electronically in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review. A SRCO/NFAP was issued in June 1999.

Palm Beach Aircraft Painting, Inc., notifies as a CESQG. The site does not have documented leaks or environmental contamination related to hazardous waste.

Site No. 23 (Medium Risk)

Site Name:	Hilton Hotel Palm Beach Airport
Site Address:	150 Australian Avenue West Palm Beach, FL 33406
Photo Nos.:	13-1, 22-1, 23-1, 23-2, 23-3
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility IDs:	9400992
Distance to Project:	Adjacent
Contamination Concern:	Petroleum

This site is identified as Medium risk based on documented petroleum contamination. The site currently has one 500 gallon diesel AST installed in 1999 for an emergency generator.

The site previously had one 500 gallon UST for emergency generator diesel which was closed in place in November 1999. Petroleum contamination (soil and groundwater) was discovered in August 1999 during the tank closure. An April 2000 CAR indicates contamination may have existed within close proximity of the UST but no contamination above GCTLs was identified upon further analysis. The site was issued a SRCO / NFA in May 2000.

Site No. 27 (Medium Risk)

Site Name:	Brown Distributing Company
Site Address:	1300 Allendale Road West Palm Beach, FL 33405
Photo Nos.:	27-1, 27-2, 27-3
Figure Nos.:	6-8, 6-12
FDEP/EPA Facility IDs:	8630717
Distance to Project:	121 feet
Contamination Concerns:	Petroleum

This site is identified as Medium risk based on documented petroleum discharges.

Records indicate the site has one 4,000 gallon diesel AST installed in January 2008 for an emergency generator. This AST was deemed in compliance during a November 2014 inspection. This 4,000 gallon AST was not observed during corridor reconnaissance. Instead, field personnel observed two ASTs estimated at 300 gallons each.

The site had one 6,000 gallon gasoline UST, two 5,000 gallon diesel USTs, and one 4,000 gallon UST installed in the 1960/1970's and removed in October 1986. No TCAR was available for review regarding the 1986 UST removal.

The site had one 10,000 gallon diesel UST, one 6,000 gallon gasoline UST, and one 4,000 gallon emergency generator diesel UST installed in October 1986 and removed in March 2008.

The facility had a discharge of vehicular diesel in August 1999. This discharge occurred during an upgrade of the fuel dispensers. Palm Beach County ERM determined the spill was de-minimus and did not require further action. The facility had a second discharge in December 2006 discovered during a compliance inspection. Free product was detected in a monitoring well at the USTs. According to the 2007 Limited Site Assessment Report (LSAR), neither soil nor groundwater contamination was detected above regulatory standards.

The 2008 TCAR indicates approximately 200 cubic yards of contaminated soil was removed during tank excavation of the 10,000 and 6,000 gallon tanks. These tanks were located in an area with pre-existing contamination, and as such, no soil or groundwater analysis was conducted during tank excavation. Palm Beach County ERM personnel observed a petroleum odor and fuel sheen on the water in the excavation during removal of these USTs. The 4,000 gallon tank was in an uncontaminated area. Sampling results from this area indicate no reportable level of contamination was detected in the soil or groundwater.

Additional groundwater testing was conducted in September 2010 and no reportable level of contamination was detected. A SRCO was issued in October 2010.

6.7 Low Risk Potential Sites

This section addresses all Low Risk potential sites that are located within the 500-foot screening area.

Site No. 3 (Low Risk)

Site Name:	Publix Supermarkets Store #50
Site Address:	828 Southern Boulevard West Palm Beach, FL 33405
Photo Nos.:	3-1, 3-2
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility IDs:	9808379, FLR000005066
Distance to Project:	Adjacent
Contamination Concerns:	Petroleum, Hazardous Waste

This site is identified as Low risk based on the presence of an emergency generator diesel AST at the site with no records of releases or contamination.

Publix is the owner of the Southdale Shopping Center, which also includes Sites Nos. 4 and 5 (CVS Pharmacy #5140 and Flamingo Laundromat, respectively).

The site has one 1,000 gallon double-walled AST for emergency generator diesel installed in July 2006 and deemed in compliance during a November 2016 inspection. The site does not have documented discharges or environmental contamination related to petroleum.

In 1995, Publix applied for a temporary Hazardous Waste ID number to dispose of five 55 gallon drums of contaminated monitoring well development and purge water produced during site assessment activities at the location of the Flamingo Laundromat/Former F&M Cleaners (Site No. 5). The site registered as a CESQG in 1995 and changed status to a non-handler of hazardous waste in 2010.

Site No. 4 (Low Risk)

Site Name:	CVS Pharmacy #5140
Site Address:	818 Southern Boulevard West Palm Beach, FL 33405
Photo Nos.:	3-1, 3-2
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility ID:	FLR000190116
Distance to Project:	Adjacent
Contamination Concern:	Hazardous Waste

This site is identified as Low risk based on its SQG status with no records of releases or contamination.

The CVS Pharmacy #5140 registered as a SQG of hazardous waste in 2012. The site had several administrative violations and areas of concern as noted in a 2012 inspection report. The 2012 report indicated universal waste generated onsite included pharmaceuticals, universal waste lamps, photo lab waste, and unsalable and expired products. The site does not have documented leaks or environmental contamination related to petroleum or hazardous waste.

Site No. 11 (Low Risk)

Site Names:	Holy Cross Catholic Preschool and Center; Former Woody's Clothes A Clean; Former Shaw Bros Oil Company
Site Address:	930 Southern Boulevard West Palm Beach, FL 33405
Photo Nos.:	11-1, 11-2
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility ID:	None
Distance to Project:	Adjacent
Contamination Concern:	Petroleum, Hazardous Waste

This site is identified as Low risk based on its historical use as a gasoline station and dry cleaning establishment with no records of releases or contamination.

The site was formerly split into several parcels, but is now a single parcel with the address 930 Southern Blvd. The property currently operates as a preschool facility and community center.

EDR lists 928 Southern Blvd as a historical auto station with a record in 1956 (Shaw Bros). EDR lists 938 Southern Blvd as a historical dry cleaners with records in 1962 and 1965 (Woody's). No additional records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

Site No. 12 (Low Risk)

Site Names:	Oil Well & Brakes; Former Grease Monkey
Site Address:	900 Southern Boulevard West Palm Beach, FL 33405
Photo Nos.:	12-1, 12-2
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility ID:	8842195
Distance to Project:	Adjacent
Contamination Concern:	Petroleum, Hazardous Waste

This site is identified as Low risk based on the presence of lube and waste oil ASTs at the site with no record of releases or contamination.

The site has five ASTs in-service: one 1,000 gallon waste oil, one 1,000 gallon new lube oil, two 500 gallon new lube oil, and one 275 gallon new lube oil. All tanks were installed in November 1988. According to a 2015 Annual Compliance Inspection, the two 1,000 gallon AST systems were deemed out of compliance due to procedural violations. The 2015 inspection report indicates the site has single-walled tanks; however the Tank System Construction Report indicates they are double-walled.

The facility notifies as a CESQG of hazardous waste. Facility generates antifreeze, petroleum contact waters, mineral spirits, and used oil wastes.

The site has a history of repeated administrative and procedural violations related to petroleum. The site does not have documented leaks or environmental contamination related to petroleum or hazardous waste.

Site No. 13 (Low Risk)

Site Name:	Palm Beach County - Airport Center Building #1
Site Address:	100 Australian Avenue West Palm Beach, FL 33406
Photo Nos.:	13-1, 13-2, 13-3, 13-4, 13-5, 13-6, 13-7, 22-1
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility ID:	9811386
Distance to Project:	Adjacent
Contamination Concern:	Petroleum

This site is identified as Low risk based on the presence of an emergency generator diesel AST at the site with no records of releases or contamination.

The site has one 1,000 gallon diesel AST installed in April 2009 for an emergency generator. The AST was deemed in compliance during a September 2016 inspection. The site does not have documented leaks or environmental contamination related to petroleum.

Site No. 15 (Low Risk)

Site Name:	Emergency Generator, FDOT Right-of-way
Site Address:	Northwest of I-95 Northbound Ramp and Southern Boulevard, West Palm Beach, FL
Photo Nos.:	15-1, 15-2, 15-3, 15-4
Figure Nos.:	6-8, 6-10, 6-11
FDEP/EPA Facility ID(s):	None
Distance to Project:	Adjacent
Contamination Concern:	Petroleum

This site is identified as Low risk based on the presence of a generator at the site with no records of releases or contamination.

A generator was observed during corridor reconnaissance. Reconnaissance personnel did not identify stressed vegetation, surface staining, monitoring wells, or other visual environmental concerns at the site. No records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

Site No. 22 (Low Risk)

Site Name:	Palm Beach County - Airport Center Building #2
Site Address:	160 Australian Avenue West Palm Beach, FL 33406
Photo Nos.:	13-1, 22-1, 22-2, 22-3
Figure Nos.:	6-8, 6-10
FDEP/EPA Facility ID:	9602089
Distance to Project:	Adjacent
Contamination Concern:	Petroleum

This site is identified as Low risk based on the presence of a diesel AST at the site with no records of releases or contamination.

The site had a 1,000 gallon double-walled diesel AST installed in March, 1994 for an emergency generator. The AST was deemed in compliance during a September 2016 inspection. The site does not have documented leaks or environmental contamination related to petroleum.

Site No. 24 (Low Risk)

Site Name:	Palm Beach County School Board, Conniston Middle School
Site Address:	673 Conniston Road West Palm Beach, FL 33405
Photo Nos.:	24-1, 24-2, 24-3
Figure Nos.:	6-8, 6-11
FDEP/EPA Facility IDs:	8630662, FLD982104275
Distance to Project:	Adjacent
Contamination Concerns:	Petroleum; Hazardous Waste

This site is identified as Low risk based on the presence of a diesel AST at the site, and the former presence of diesel/fuel oil USTs, with no records of releases or contamination.

The site currently has one 250 gallon diesel AST that was installed in July 1991 for an emergency generator.

The site had one 300 gallon emergency generator diesel UST closed in place in July 1991. A tank closure assessment form and letter indicate no reportable level of contamination was detected in the soil. Groundwater sampling was not conducted since the depth to groundwater was greater than 20 feet.

The site also had two 1,000 gallon fuel oil USTs closed in place in November 1991 and two 1,000 gallon fuel oil USTs removed in November 1991. All fuel oil tanks were estimated to have been installed in 1956. A tank closure assessment form and letter indicate no reportable level of contamination was detected in the soil. Groundwater sampling was not conducted because tanks containing heating oil are non-regulated. No soil contamination was discovered.

The site first notified as a SQG in June 1987. As of June 2012, site notifies as a CESQG. The site does not have documented violations or environmental contamination related to hazardous waste.

Site No. 26 (Low Risk)

Site Names:	Marshall and Vera Lea Rinker Athletic Campus, Palm Beach Atlantic University; Bill Moss-Hillcrest Paseo Park; Hillcrest Buyout Areas Debris Staging Area; FDOT - Parker Avenue
Site Address:	Parker Avenue at Ridgewood Drive and El Prado West Palm Beach, FL 33405; and North of Southern Boulevard & East of I-95, West Palm Beach, FL 33405
Photo Nos.:	26-1, 26-2, 26-3
Figure Nos.:	6-8, 6-11, 6-12
FDEP/EPA Facility ID(s):	98348, 98354, 100019
Distance to Project:	Adjacent
Contamination Concern(s):	Soil: PAH, dioxin/furans, and arsenic Water: VOC, SVOC, OCP/PCB, dioxin/furans, metals

This site is identified as Low risk based on the potential for contamination resulting from disaster debris managed/stored onsite and park maintenance operations.

The site is listed as an inactive disaster debris management site, currently operating as a park with amenities such as ball fields and walking trials. In the northwest corner of the property is a grounds maintenance building associated with the Palm Beach Atlantic University Athletic Campus. Reconnaissance personnel observed equipment, such as mowers, parked outside this building. Maintenance operations have a variety of potential sources that can contribute to local environmental impacts. Typical sources include gasoline/diesel fuel, lubricating oil for equipment, and wastes associated with used oil, paints, and spent solvents. Reconnaissance personnel did not identify stressed vegetation, surface staining, monitoring wells, or other visual environmental concerns at the site. No records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

6.8 No Risk Potential Sites

This section addresses all No Risk potential sites identified within the 500-foot screening area.

Site No. 10 (No Risk)

Site Name:	FDOT Right-of-way
Site Address:	I-95 & SR80/Southern Boulevard West Palm Beach, FL
Photo Nos.:	9-3, 10-1, 10-2, 10-3
Figure Nos.:	6-8, 6-10, 6-11
FDEP/EPA Facility ID:	None
Distance to Project:	Within Corridor
Contamination Concern:	Trash

This site is identified as No risk based on the presence of trash at the site, but no records of releases or contamination.

The site was identified during corridor reconnaissance. Reconnaissance personnel observed trash in right-of-way, but did not identify stressed vegetation, surface staining, monitoring wells, or other visual environmental concerns at the site. The site is identified as No risk because there is no evidence or documentation of contamination. No records were available in FDEP OCULUS, Palm Beach County ERM CINEMA, or internet search databases for review.

6.9 Analysis of Alternative Alignments

As part of the PD&E Study, several roadway improvement alternatives were considered for improving traffic operations and safety in the project study area. Table 6-3 below provides a summary of the potential contamination sources directly impacted by each alternative. Direct impacts evaluated include right-of-way acquisition, stormwater pond locations, and installation of mechanically stabilized earth (MSE) walls and pier excavations to support flyovers.

Table 6-3: Summary of Potential Contamination Sources Impacted Per Alternative

Risk Rating	Alternative 1	Alternative 3	Alternative 4
High	2 (Site No. 7, 9)	2 (Site No. 7, 9)	2 (Site No. 7, 9)
Medium	3 (Site No. 6, 8, 23)	3 (Site No. 6, 8, 14)	4 (Site No. 6, 8, 14, 23)
Low	2 (Site Nos. 13, 22)	1 (Site Nos. 15)	3 (Site Nos. 13, 15, 22)
No	1 (Site No. 10)	1 (Site No. 10)	1 (Site No. 10)
Total	**8**	**7**	**10**

Alternative 4 is the Preferred alternative. Alternative 4 requires additional right-of-way along the north and south sides of Southern Boulevard, west of I-95, that could be impacted from five potential contamination sources (Site Nos. 6, 7, 13, 22, and 23). The installation of MSE walls directly impacts two potential contamination sources (Site Nos. 8 and 13). Site No. 13 has an emergency generator located directly adjacent to the existing MSE wall along Southern Boulevard. Re-construction of the MSE wall adjacent to Site No. 13 may impact this generator and associated diesel AST. The placement of piers for the dual flyovers may impact three potential contamination sources (Site Nos. 9, 14, and 15). Site No. 15 is an emergency generator located north of Southern Boulevard adjacent to the northbound lanes of I-95. Construction in this area may impact this generator and associated diesel AST.

7.0 Regulatory Status

The acquisition of contaminated property could transfer environmental responsibility to FDOT if cleanup is required. Exacerbation of an existing contaminant plume could result in added liability to FDOT. Sections 6.5 through 6.8 detail site-specific activities where a regulatory agency is taking, has taken, or may take action on a property with known or potential contamination problems.

7.1 ETDM ETAT Regulatory Review

This project has been coordinated through the Efficient Transportation Decision Making (ETDM) Environmental Technical Advisory Team (ETAT) regulatory review. The contamination-related ETDM ETAT comments are detailed below. All comments have been reviewed and the type and number of sites identified in this report concur with the ETDM ETAT comments.

FDOT D4 (11/21/2014)

1. **Coordinator Summary Degree of Effect:** Moderate
2. **Comments:** FDEP and the United States Environmental Protection Agency (USEPA) reported a number of potential contamination sites within the 500-foot project buffer including: one dry cleaning program site, two hazardous waste facilities, six petroleum contamination monitoring sites, 13 storage tank contamination monitoring sites, one SUPER Act risk source, one SUPER Act well, and six USEPA RCRA regulated facilities. A Summary Degree of Effect of Moderate has been assigned to the Contamination issue due to the number of sites within proximity to the project, the potential contamination risk associated with these sites, and the potential presence of hazardous substances associated with the existing bridge over the South Florida Rail Corridor/CSX Railroad line.

   Contamination (including any required permits) will be evaluated during Project Development in accordance with federal, state, and local laws and regulations. A CSER (similar to Phase I and Phase II Audits) will be prepared in accordance with

Part 2, Chapter 22 of the FDOT PD&E Manual, including site specific surveys to assess existing known subsurface contamination and proximity to construction activities, as well as historical contamination release. Contingency Plans/"Special Provisions for Unidentified Areas of Contamination" shall be included in the project's construction contract documents. These provisions will specify procedures to follow in the event any hazardous material or suspected contamination is encountered during construction or should there be any construction-related spills.

FDEP (09/19/2014)

1. **Contamination Degree of Effect:** Moderate
2. **Identified Resources and Level of Importance:** Geographic information system (GIS) data indicates that there are 2 hazardous waste facilities, 1 dry cleaning program site, 6 petroleum contamination monitoring sites, 13 storage tank contamination monitoring sites and 6 RCRA regulated facilities within the 500-foot project buffer zone.
3. **Comments on Effects to Resources:** A Contamination Screening Evaluation (similar to Phase I and Phase II Audits) will need to be conducted along the project right-of-way in considering the proximity to known petroleum and hazardous material handling facilities. The Contamination Screening Evaluation should outline specific procedures that would be followed by the applicant in the event drums, wastes, tanks, or potentially contaminated soils are encountered during construction. Special attention should be made in the screening evaluation to historical land uses (such as solid waste disposal) that may have an affect on the proposed project, including any stormwater retention and treatment areas.

USEPA (09/18/2014)

1. **Contamination Degree of Effect:** Minimal
2. **Identified Resources and Level of Importance:** Groundwater, soils, and surface water canal
3. **Comments on Effects to Resources:** Based on EST data five, RCRA regulated sites are identified to be within 500 feet of the proposed project. In addition a dry cleaning

site and several petroleum contamination monitoring sites are also identified. Subsurface contamination may exist. A contamination screening report will need to be prepared to better determine subsurface contamination potential.

SFWMD (08/18/2014)

1. **Contamination Degree of Effect**: Minimal
2. **Coordination Document**: Permit Required
3. **Coordination Document Comments**: Environmental Resource Permit and potentially a Water Use Permit for dewatering.
4. **Identified Resources and Level of Importance**: Surface waters, wetlands and groundwater
5. **Comments on Effects to Resources:** The project may have minor impacts to surface waters. The summary report indicates there may be contamination in the area. Care must be taken during dewatering and construction activities to prevent contaminated soil/water from migrating into non-contaminated areas.

7.2 Permits and Specifications

The SFWMD administers groundwater monitoring well construction and abandonment permits, environmental resource permits (ERP), and dewatering permits. All permits necessary for the current project design will be obtained in accordance with federal, state, and local laws and regulations.

Right-of-way acquisition and project construction activities will not impede on existing monitoring wells at identified potential contamination sources. Additionally, groundwater monitoring well installation is not required for discrete groundwater sampling as recommended for Level II Assessments. A permit for construction or abandonment of monitoring wells will not be required for the current project design.

An ERP is required when proposed improvements and subsequent roadway construction activities alter surface water flow. The additional impervious area for the proposed

improvements will require alteration of existing stormwater facilities. An ERP will be required for the current project design.

Dewatering Permits are dependent on construction methods used for pier installation and other subsurface work. Pier locations and construction methods have not been determined for the current project design. Dewatering operations in the vicinity of potentially contaminated areas may require the implementation of engineering controls. A dewatering plan may also be necessary to avoid potential contamination plume exacerbation.

Additionally, Section 120 Excavation and Embankment – Subarticle 120-1.2 Unidentified Areas of Contamination of the Standard Specifications for Road and Bridge Construction should be provided in the proposed project's construction contract documents. This specification requires that in the event any material or suspected contamination is encountered during construction, or if any spills caused by construction-related activities should occur, the contractor shall be instructed to stop work immediately and notify the D4 Planning and Environmental Management Office, as well as, the appropriate regulatory agencies for assistance.

8.0 Conclusions and Recommendations

8.1 Conclusions

FDOT D4 is considering improvements to the SR 9 / I-95 at SR 80 / Southern Boulevard interchange located in Palm Beach County, Florida. As part of the engineering process for the proposed project corridor, a contamination screening evaluation was performed in accordance with Part 2, Chapter 22 "Contamination Impacts" of the FDOT PD&E Manual, revised September 1, 2016. The objective of this contamination screening was to identify and evaluate contamination sources that can potentially impact the proposed project schedule and costs.

The project corridor is surrounded by a mixture of residential and commercial land use. The evaluation included reviewing environmental databases and aerial photographs, performing a visual reconnaissance of the project corridor and surrounding area, obtaining pertinent environmental records from state and local agencies, and assigning potential contamination ratings for each source within and adjacent to the project corridor. Through this process, 27 potential contamination sources were identified within 500 feet of the project corridor. In general, the environmental databases indicated these sources were associated with hazardous waste generators, former or current petroleum / spill sites containing UST and / or AST systems, and known or former cleaning / dry cleaning facilities. Table 8-1 details the type of sites identified; sites may be listed as more than one type.

Table 8-1: Summary of Types of Potential Contamination Sources

Site Type		Number of Sites	Site Nos.
Superfund Waste Cleanup		0	
Solid Waste Facilities		2	6, 25
Drycleaning Solvent Program		1	5
Petroleum Contamination Monitoring		8	6, 14, 16, 17, 19, 21, 23, 27
Storage Tank Contamination Monitoring		17	1, 3, 5, 6, 8, 12, 13, 14, 16, 17, 19, 20, 21, 22, 23, 24, 27
SUPER Act Risk Sources		4	1, 5, 17, 27
USEPA RCRA-Regulated Facilities	LQG	0	
	SQG	2	5, 20
	CESQG	6	1, 2, 4, 12, 21, 24
	Non-Handler / Closed	3	3, 8, 19

Evaluation of each site's history and characteristics identified 8 - High, 9 - Medium, 9 - Low, and 1 - No contamination risk rated sources associated with hazardous waste or petroleum. Based on these risk ratings, construction activities may encounter soil or groundwater contamination which can potentially impact worker health, the environment, and construction schedule and costs if these sites are not addressed during the design phase. Furthermore, certain construction activities, such as dewatering, can exacerbate existing groundwater contamination plumes, if not controlled.

The proposed improvements and subsequent roadway construction activities, such as dredging and filling in wetlands or surface waters, constructing flood protection facilities, providing storm water containment and treatment, and site grading, will alter surface water flow in the project study area and require an ERP.

8.2 Recommendations

Since contaminated soil and groundwater has the potential to exist at or in close proximity to the project corridor, further site-specific Level II Assessments are recommended as detailed in Table 8-2.

Table 8-2: Level II Site-Specific Assessments

Site No.	Risk Rating	Site Description	Sampling Location	CoCs for Laboratory Analysis	No. of Sampling Points
9	High	Rail Corridor	Pier areas and Bridge expansion area	Full Waste Characterization	6 to 10
2	Medium	Power Substation	MSE wall area	Petroleum (e.g. BTEX, PAH, 8 RCRA Metals) Used Oil Characteristics, PCBs, Herbicides	4 to 6
6	Medium	Auto Glass Garage	Right-of-way acquisition area	Petroleum (e.g. BTEX, PAH, 8 RCRA Metals)	4 to 6
8	Medium	Stormwater Pond	MSE wall area		4 to 6
14	Medium	Roadway Accident	Pier areas	Petroleum (e.g. BTEX, PAH, 8 RCRA Metals) AFFF (e.g. PFCs)	3 to 5
13	Low	Municipal Building	MSE wall and Right-of-way acquisition area	Petroleum (e.g. BTEX, PAH, 8 RCRA Metals)	3 to 5
7	High	Vacant Land, Former Dry Cleaners	Right-of-way acquisition area	Solvents (e.g. VOCs)	3 to 5
17	High	Gas Station	Southwest corner of Southern Blvd and Parker Ave	Petroleum (e.g. BTEX, PAH, 8 RCRA Metals) Solvents (e.g. VOCs)	3 to 5
16	Medium	Restaurant; Former Gas Station			
12	Low	Auto Service Station			
11	Low	School			

The Level II Assessments include the advancement of soil borings and the collection of soil and discrete groundwater samples in areas where excavation and/or dewatering activities are anticipated to accommodate MSE walls, noise walls, ponds, storm water drainage, and bridge expansion. It is estimated soil borings would be no deeper than 15 fbls since depth to water in the project area is typically within 10 feet of natural grade. Soil and discrete groundwater samples should be collected from each boring location and submitted for analytical parameters related to the former and/or current facility type. Soil samples should also be field analyzed for the presence of petroleum hydrocarbon vapors. The frequency, exact location, sampling depths, sampled media, and associated laboratory analyses can be finalized once construction designs have been developed. Recommendations listed in Table 8-2 are further detailed below:

- Site No. 2: Sampling points should be distributed along the western parcel boundary impacted by ramp widening and MSE wall installation.
- Site No. 6: Sampling points should be distributed along the northern parcel boundary impacted by right-of way acquisition.
- Site No. 7: Sampling points should be distributed along the northern parcel boundary impacted by right-of-way acquisition.
- Site No. 8: Sampling points should be distributed along the northern parcel boundary impacted by MSE wall installation.
- Site No. 9: Sampling points should be distributed under the bridge along the western and eastern edges of the railway corridor. This distribution should include areas impacted by construction activities associated with the widening of the bridge and installation of piers.
- Site No. 13: Sampling points should be distributed along the southern parcel boundary impacted by right-of-way acquisition and MSE wall installation. The sampling points should be concentrated around the existing emergency generator and associated petroleum AST.

- Site No. 14: Sampling points should be distributed in areas impacted by construction activities associated with the installation of piers. Since extinguishing hydrocarbon fueled fires is typically accomplished with foam suppression systems, the potential exists that AFFF contaminants may be present in the soil and/or groundwater at this location. To assess the presence of CoCs associated with AFFF (i.e. PFCs), EPA Method 570 should be used to assess groundwater, and ASTM Method D7968 should be used to assess soils.

- Site Nos. 11, 12, 16, and 17: A limited Level II Assessment involving shallow hand auger sampling only should be conducted. The objective of this shallow investigation is to confirm soil near the intersection of Southern Boulevard and Parker Avenue is not impacted by local dry cleaning or petroleum contamination sites. Groundwater contamination is not a concern in this area of the corridor since construction activities are expected to be shallow. Depth-to-water (DTW) in the vicinity of this intersection has been documented at approximately 14 fbls.

Sampling activities should be performed in accordance with FDEP standard operating procedures (SOPs) for Field Activities, DEP-SOP-001/01, March 1, 2014. Soil and groundwater assessment activities should be in accordance with sections FS 3000 and FS 2200, respectively. These SOPs are designed to ensure collected samples will be representative of current site conditions and that samples have not been altered or contaminated by sampling and handling procedures.

The objective of the recommended Level II Assessments is to evaluate potentially impacted soil and groundwater. The Level II Assessments can determine the extent of CoCs within the project corridor that may be encountered during construction. Recommended laboratory analyses in Table 8-2 reference Chapter 62-770, F.A.C., Table A, titled "Petroleum Products' Contaminants of Concern" and Chapter 62-782, F.A.C., Table A, titled "Drycleaning Contaminants of Concern." Sample analytical results should be evaluated against CTLs for groundwater and soil as detailed in CH 62-777 F.A.C., Tables I and II, respectively. Analytical results above CTLs are indicative of environmental liability associated with the property from current or historical operations.

Knowing the extent of impacted media at these areas of concern in the design phase can expedite handling, disposal and/or treatment requirements, as well as protecting worker health and the environment during construction. It can also identify locations, within the project corridor, where certain construction methods require engineering controls so as not to exacerbate contaminant plumes.

Additional site investigation is not recommended for all sites directly impacted by roadway improvement alternatives as detailed in Table 6-3 and discussed in Section 6.9. Likewise, additional site investigation is not recommended for all High and Medium risk rated sites. A recommendation of "No Sampling" is based on site attributes, history, and the specific construction activity affecting the site. Impacted sites and High and Medium risk rated sites with "No sampling" recommendations are detailed in Table 8-3.

Table 8-3: "No Sampling" Recommendations

Site No.	Risk Rating	Site Description	Alternative Impact	"No Sampling" Rationale
5	High	Coin Laundry, Former Dry Cleaners	None	• Contamination located at southeast corner of parcel outside of project corridor and beyond construction activities.
19	High	Gas Station	None	• Distance from subsurface construction activities (i.e. 2,000 feet).
25	High	Former Landfill	None	• Hydraulically separated from the project corridor by Pine Lake.
1	Medium	School Transportation Facility	None	• Distance from subsurface construction activities (i.e. 700 feet). • Hydraulically separated from project corridor by C-51 canal. • Issued SRCO in 2010.
20 /21	Medium	Aircraft Maintenance	None	• Distance from subsurface construction activities (i.e. 500 feet). • Potential hydraulic barrier provided by ponds.
23	Medium	Hotel	Right-of-way Acquisition	• Current AST and former UST located in northeast section of parcel away from subsurface construction activities. • Potential hydraulic barrier provided by ponds. • Issued SRCO in 2000.
27	Medium	Beverage Distributor	None	• Distance from subsurface construction activities (i.e. 1,000 feet). • Issued SRCO in 2010.
15	Low	Right-of-way Emergency Generator	Piers	• No documented contamination related to AST.
22	Low	Municipal Building	Right-of-way Acquisition	• In-compliance AST with no documented violations or contamination. • Right-of-way acquisition is minimally impacting the parcel.
10	No	Roadway Right-of-way	Right-of-way Acquisition	• Trash observed in right-of-way. • Trash requires removal, but no further assessment is warranted by its presence.

Tables 8-2 and 8-3 detail sampling and "No Sampling" recommendations, respectively, for 22 sites. The remaining five sites identified in Table B-1 in Appendix B are not impacted by the alternative alignments presented (i.e. Sites 3, 4, 18, 25, and 26). Based on all available information, there is no reason to believe there would be any involvement with contamination from these sites in relation to this project.

It is recommended the contractor be held responsible for ensuring compliance with necessary ERPs issued by the SFWMD for this project. If dewatering will be necessary during construction, a SFWMD Water Use Permit will be required. The contractor will be held responsible for ensuring compliance with any necessary dewatering permit(s). Any dewatering operations in the vicinity of potentially contaminated areas shall be limited to low-flow and short-term. A dewatering plan may be necessary to avoid potential contamination plume exacerbation. All permits will be obtained in accordance with Federal, State, and local laws and regulations.

Additionally, Section 120 Excavation and Embankment – Subarticle 120-1.2 *Unidentified Areas of Contamination of the Standard Specifications for Road and Bridge Construction* will be provided in the proposed project's construction contract documents.

A hazardous material survey is recommended if construction activities will disturb existing infrastructure, equipment, or utilities that potentially contain asbestos, PCBs, or paint with heavy metals.

Finally, sampling recommendations, as detailed in this section, apply only to the current project design. A re-evaluation of this CSER is recommended if the project design changes substantially.

9.0 References

Environmental Data Resources, EDR DataMap™ Corridor Study, I-95 At State Road 80 Interchange PD and E Study, January 12, 2016, Inquiry Number: 4510578.2s

Florida Department of Environmental Protection, DEP Information Portal (website), August-September 2016. http://webapps.dep.state.fl.us/DepNexus/public/search-portal

Florida Department of Environmental Protection, Map Direct Galleries (website), August-September 2016. http://ca.dep.state.fl.us/mapdirect/

Florida Department of Environmental Protection, OCULUS - Electronic Document Management System (website), August-September 2016. http://depedms.dep.state.fl.us/Oculus/servlet/login

Florida Department of Revenue, 2015 Tax Roll and GIS Data, August 2016. http://dor.myflorida.com/dor/property/resources/data.html

FDOT APLUS, January 2016. https://fdotewp1.dot.state.fl.us/AerialPhotoLookUpSystem/

Google Earth, August-September 2016.

National States Geographic Information Council (NSGIC), GIS Inventory, SUPER Act Program Risk Sources in Florida, July 2011 (2014). https://www.gisinventory.net/GISI-24505-SUPER-ACT-RISK-SOURCES-IN-FLORIDA-JULY-2011-Environmental-Monitoring-Water-Quality.html

Palm Beach Quadrangle, Florida-Palm Beach County, 7.5 Minute Series, United States Department of the Interior, United States Geological Survey, 2015.

Palm Beach County Board of County Commissioners, CINEMA – Countywide Information Network for Electronic Medic Access (website), August-September 2016. http://files.co.palm-beach.fl.us/cinema/pbc.cinema.welcome

Palm Beach County Board of County Commissioners, Department of Environmental Resources Management, Steve Rial, P.G., Hydrogeologist, January 21, 2016 (meeting).

"Soil Survey of Palm Beach County Area, Florida", United States Department of Agriculture, Soil Conservation Service, In cooperation with University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations, Soil Science Department, December 1978.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions (website). Accessed December, 2016 at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/geo/?cid=nrcs142p2_053587

Solid Waste Authority of Palm Beach County, Planning & Rules (website), June 2016. http://www.swa.org/246/Planning-Rules

United States Department of Agriculture, Web Soil Survey (website), June 2016. http://websoilsurvey.nrcs.usda.gov/app/

"Water Resources of Palm Beach County, Florida, Report of Investigation No. 13," Florida Geological Survey, M.C. Schroeder, D.L. Miliken, and S.K. Love, 1954.