June 2009 0838-7584

W9.0 WEST CORRIDORS



W9.0 WEST CORRIDORS

W9.1 Maps

Maps detailing the West Preferred/Secondary Corridors are all found at the end of this Section W9.0 for use in reviewing the resources along the West Corridors (Figures W9.1.0-1 through W9.1.0-4, Map Sheets 1 through 38). These figures also include the two proposed Access Corridors and the Levee substation expansion. The length of the West Preferred Corridor is 52 miles; the West Secondary Corridor is 51 miles.

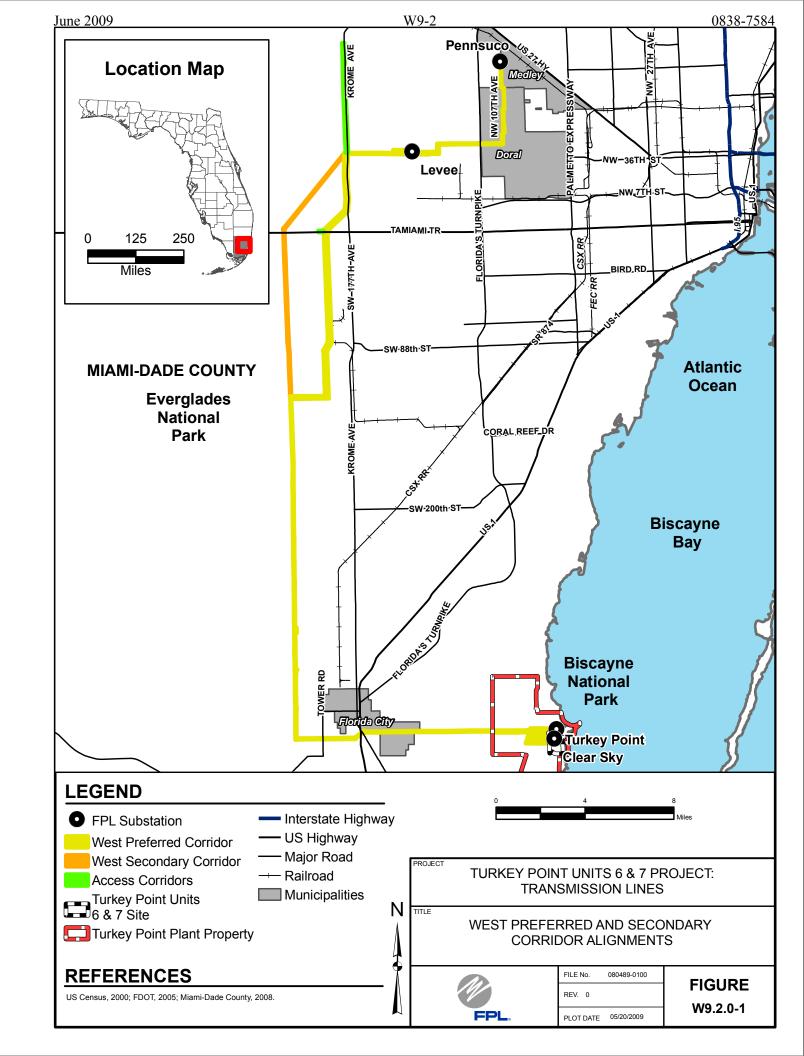
W9.2 Project Description: West Corridors

On April 11, 2008, the Florida Public Service Commission (PSC) issued the need determination order for the Turkey Point Units 6 & 7 Project (Project) including transmission facilities to interconnect and integrate the new generation to the transmission grid. This order (No. PSC-08-0237-FOF-EI) is found in Site Certification Application (SCA) Chapter 2.0. The West Preferred or Secondary Corridor will accommodate two 500-kilovolt (kV) single-circuit transmission lines and one 230-kV single-circuit transmission line. The 500-kV lines will connect the Clear Sky substation on-Site to the existing Levee substation in northern Miami-Dade County (approximately 43.6 miles in the West Preferred Corridor or approximately 42.6 miles in the West Secondary Corridor). The 230-kV line will connect the Clear Sky substation to the existing Pennsuco substation, also in northern Miami-Dade County, but will not connect to Levee (approximately 52 miles in the West Preferred Corridor or approximately 51 miles in the West Secondary Corridor). It is intended, however, that all three lines will be constructed within a single right-of-way of approximately 330 feet (ft) in width within either of the West Corridors up to the Levee substation. From the Levee substation to Pennsuco substation, the single 230-kV line will be mostly constructed in an existing multi-circuit right-of-way of a minimum 170 ft in width. Additionally, there will be two Access Corridors associated with the West Corridors. Figure W9.2.0-1 provides a depiction of these corridors.

Although there will be improvements required at the Pennsuco substation, any required permits will be obtained separately from this application for certification.

<u>Clear Sky to Levee</u>—The two proposed Clear Sky-Levee 500-kV transmission lines are to be constructed typically using 135- to 150-ft-tall, single-circuit, guyed, concrete poles directly embedded





into the ground. Other structure types that may be used along the route include single-circuit, guyed, hybrid poles (bottom section of the structure is concrete, top section is tubular steel) or single-circuit, unguyed, tubular steel poles installed on concrete caisson foundations. Figure W9.2.0-2 illustrates the typical guyed tangent structure. Guyed, multi-pole structures will also be used where the transmission lines turn large angles or cross other major linear facilities.

The 500-kV transmission lines will typically be framed in a triangular configuration (see Figure W9.2.0-2). The conductor to be used for these transmission lines is anticipated to be a three-conductor bundle of 1,272-thousand circular mil (kcmil) aluminum conductor, steel-reinforced, alumoweld core. The maximum current rating (MCR) for this conductor is 4,215 amperes. The MCR is the nominal value that would be expected to cause the conductor to reach a design temperature limit of 115 degrees Celsius (°C).

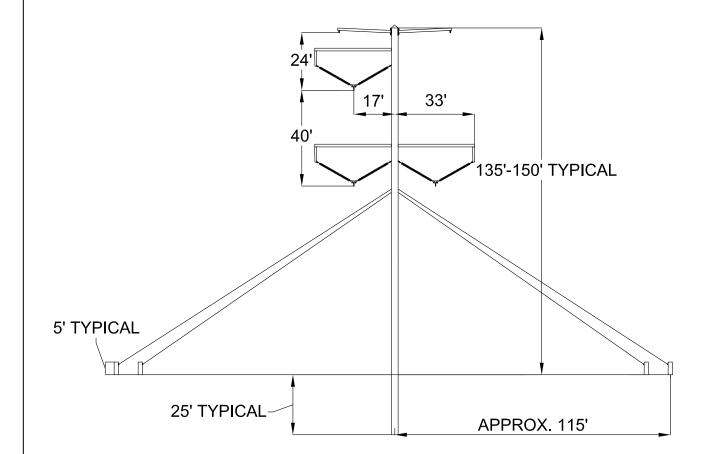
<u>Levee Substation</u>—The existing Levee substation is located northwest of the intersection of NW 41st Street and NW 147th Avenue in unincorporated Miami-Dade County. The substation property encompasses approximately 65 acres. The property currently includes the fenced area of substation equipment, stormwater retention areas, wetland mitigation areas, compacted access/patrol roads, and undeveloped areas. The proposed expansion of the fenced area of the substation is approximately 2.3 acres.

Levee substation is a transmission substation with multiple existing 500- and 230-kV transmission lines connected to it. Equipment inside the 15-acre fenced substation yard includes steel and concrete structures, aluminum and copper bus systems, security systems, circuit breakers, switches, and other associated equipment. The substation also has two capacitor banks used to help control system voltages. In addition, a concrete block relay vault within the substation fence houses sensitive electrical equipment.

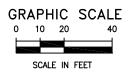
The expansion of Levee substation is necessary to connect the new 500-kV transmission lines from the Clear Sky substation to the existing FPL grid. To accommodate these two transmission lines, additional equipment will be added at Levee substation. To accomplish this, the substation fenced area must be expanded approximately 130 ft to the north along the entire length of the existing fence (approximately 800 ft). This substation expansion involves excavation, filling, grading, and fencing to extend the existing substation yard, for a total area of approximately 2.3 acres. Additional stormwater retention areas will be constructed in the vacant open area north of the fenced expansion.



TYPICAL SINGLE-POLE GUYED 500-kV STRUCTURE



NOTE: EACH STRUCTURE WILL HAVE EIGHT GUY WIRES CONNECTED TO CONCRETE PILE ANCHORS.



TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

TITLE

PROJECT

TYPICAL SINGLE-POLE GUYED 500-kV STRUCTURE



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Clear Sky to Pennsuco—The proposed Clear Sky-Pennsuco 230-kV transmission line will typically be constructed using 80- to 105-ft-tall, single-circuit, concrete poles directly embedded into the ground. Figure W9.2.0-3 illustrates the typical guyed structure. Alternative designs may be used along the corridor to accommodate location-specific conditions. For example, Figure W9.2.0-4 depicts a typical unguyed structure that will be used when the pole accommodates other underbuilt facilities (distribution and/or communication lines). Double-circuit guyed concrete poles will be used in portions of existing rights-of-way where the line will be collocated with existing transmission lines. Alternative guyed configurations, which may include multiple guyed structures, will be used where the transmission line turns large angles or crosses other major linear facilities. Figure W9.2.0-5 depicts the typical guyed, double-circuit structure proposed for this Project. Figure W9.2.0-6 depicts the typical unguyed, double-circuit structure with underbuilt facilities. In some areas of the line, due to localized considerations, variations to these typical designs may be needed.

The six conductors (two per phase) of the proposed Clear Sky-Pennsuco 230-kV transmission line will typically be framed in a vertical configuration, as shown in Figures W9.2.0-3 through W9.2.0-6. Each conductor is anticipated to be one 954-kcmil aluminum conductor, steel-reinforced alumoweld core. The MCR for the transmission line will be 2,990 amperes. The MCR is the nominal value that would be expected to cause the conductor to reach its design temperature limit of 115°C.

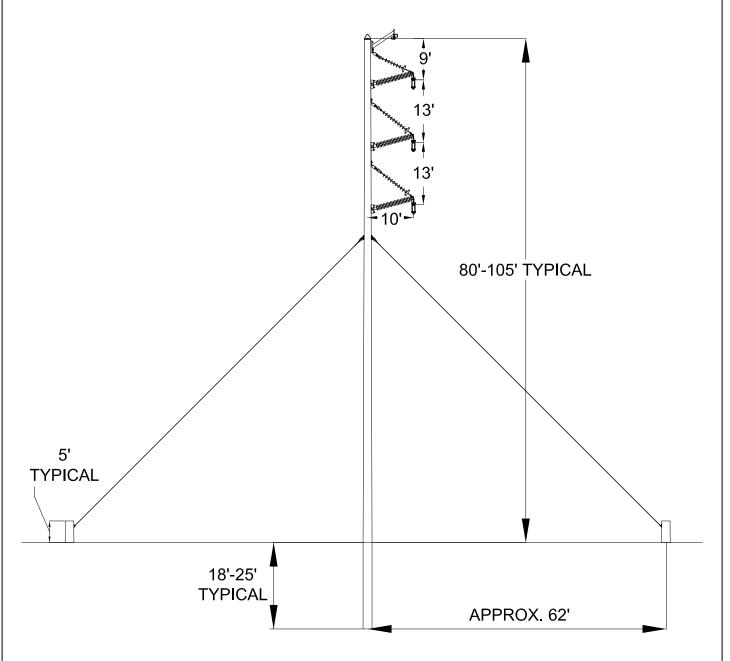
Other Design Information—Typical span lengths for the two Clear Sky-Levee 500-kV lines will be approximately 1,000 ft. In certain areas along the route, the span length between structures may vary, for example, to provide proper clearance over roads, canals, or other existing features. Typical span lengths on the Clear Sky to Levee section of the Clear Sky-Pennsuco 230-kV line will be approximately 500 ft. Span lengths on the Levee to Pennsuco section of the 230-kV transmission line will vary between 250 and 750 ft, following the alignment of existing FPL 230-kV transmission lines. In this area of the Project (east of Florida's Turnpike), the transmission line may also provide for other attachments, such as electric distribution lines, communication facilities, or other equipment.

Figures W9.2.0-7 and W9.2.0-8 depict potential typical conductor profiles for the West Preferred/Secondary Corridors.

Depending on the particular segment of the West Preferred Corridor, FPL is proposing several potential cross-sectional configurations for the western transmission lines:



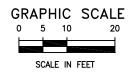
TYPICAL SINGLE-CIRCUIT GUYED 230-kV STRUCTURE



NOTES:

- 1. GUYED STRUCTURES ARE CONNECTED TO CONCRETE PILE ANCHORS.
- 2. STRUCTURES MAY BE UNGUYED AT CERTAIN LOCATIONS.

TITLE



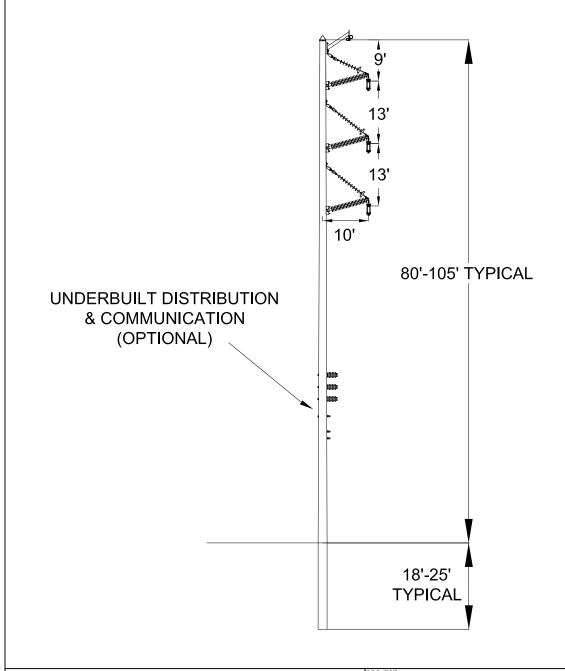
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

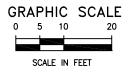
TYPICAL SINGLE-CIRCUIT GUYED 230-kV STRUCTURE



FILE No. 080489-0100
REV. 0
PLOT DATE 05/19/2009

TYPICAL SINGLE-CIRCUIT 230-kV STRUCTURE WITH UNDERBUILT FACILITIES





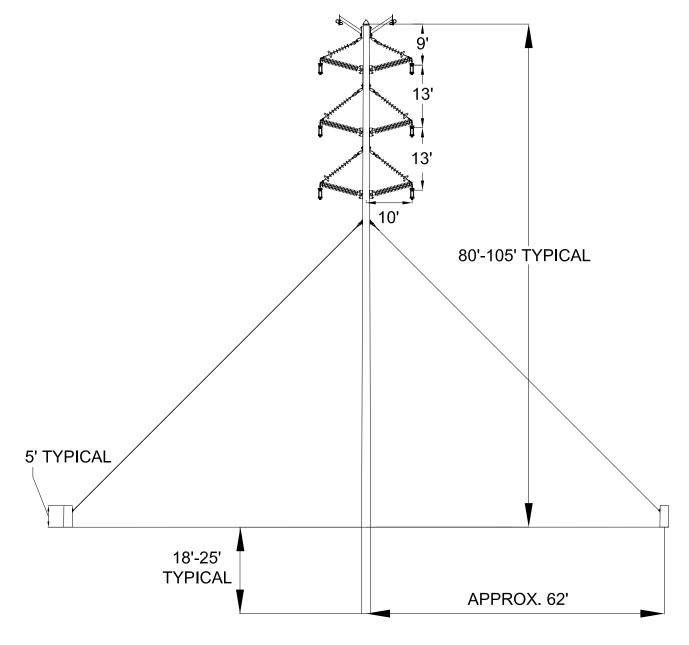
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

TYPICAL SINGLE-CIRCUIT 230-kV
STRUCTURE WITH UNDERBUILT FACILITIES



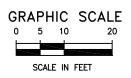
FILE No. 080489-0100
REV.0
PLOT DATE 05/18/2009

TYPICAL DOUBLE-CIRCUIT GUYED 230-kV STRUCTURE



NOTES:

- 1. GUYED STRUCTURES ARE CONNECTED TO CONCRETE PILE ANCHORS.
- 2. STRUCTURES MAY BE UNGUYED AT CERTAIN LOCATIONS.



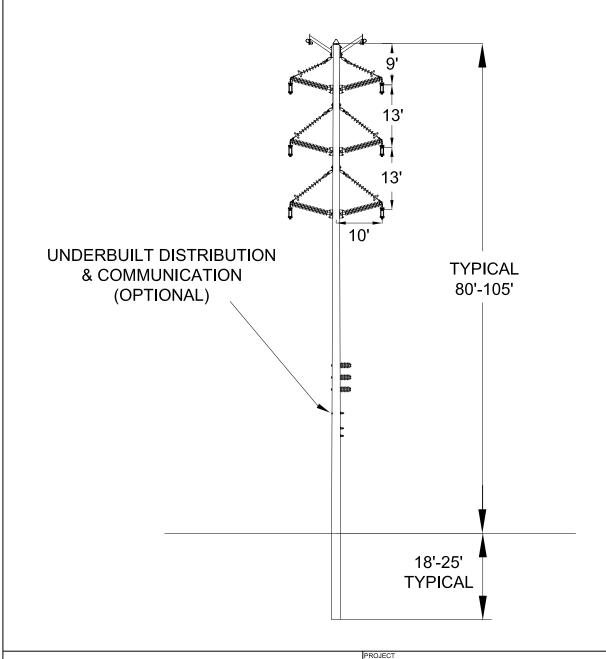
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

> TYPICAL DOUBLE-CIRCUIT GUYED 230-kV STRUCTURE



FILE No. 080489-0100	
REV. 0	
PLOT DATE 05/19/2009	

TYPICAL DOUBLE-CIRCUIT 230-kV STRUCTURE WITH UNDERBUILT FACILITIES



GRAPHIC SCALE
0 5 10 20
SCALE IN FEET

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

TYPICAL DOUBLE-CIRCUIT 230-kV
STRUCTURE WITH UNDERBUILT FACILITIES



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- Transition to plant property (W1).
- SW 117th Avenue to SW 162nd Avenue (W2).
- SW 162nd Avenue to SW 136th Street (W3).
- Along South Florida Water Management District (SFWMD) levees (W4).
- Along SFWMD levees (alternative configuration) (W5).
- Krome Avenue east to Levee substation (W6).
- Krome Avenue east to Levee substation (alternative configuration) (W7).
- Levee substation boundary (W8).
- East of Levee substation (W9).
- West of Florida's Turnpike (W10).
- South end of NW 107th Avenue (W11).
- North end of NW 107th Avenue (W12).
- West Secondary Corridor (W13).
- West Secondary Corridor (alternative configuration) (W14).

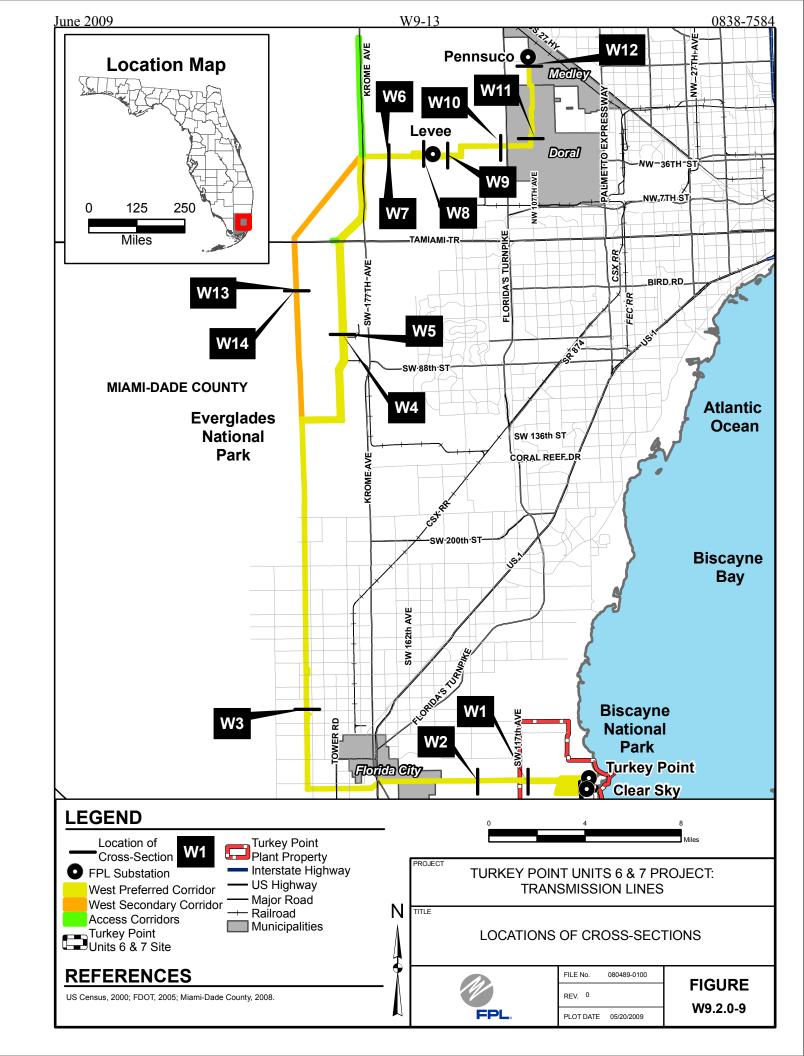
These locations and a depiction of the typical cross-section at each are shown in Figures W9.2.0-9 through W9.2.0-23.

Transmission line conductor vertical clearances will vary along the length of the transmission lines; however, in all instances, the clearances will comply with the National Electrical Safety Code (NESC) (Institute of Electrical and Electronics Engineers, Inc., 2007), as required by Section 366.04, Florida Statutes (F.S.), and Rule 25-6.0345, Florida Administrative Code (F.A.C.). Clearances will also provide for operational requirements of regulatory agencies (U.S. Army Corps of Engineers [USACE], SFWMD, etc.) where the facilities of these agencies are crossed by the transmission lines.

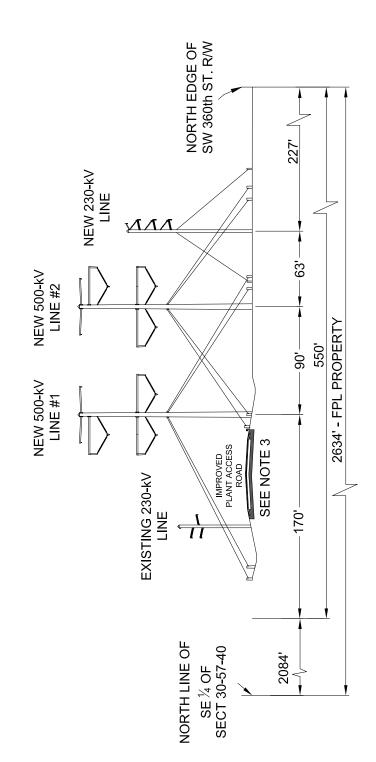
W9.3 Corridor

The West Corridors were generally described in Section 9.0. FPL is proposing within this application a West Preferred Corridor and a West Secondary Corridor. The West Preferred Corridor is described under Section W9.3.2. The West Secondary Corridor is addressed under Section W9.3.3.





(W1) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV SW 117TH AVENUE (TRANSITION TO PLANT PROPERTY) **LOOKING EAST**



NOTES:

1. STRUCTURES MAY BE SPACED AT DIFFERING INTERVALS LONGITUDINALLY ALONG THE RIGHT-OF-WAY.

2. TYPICAL CONFIGURATION SHOWN. FINAL CONFIGURATION MAY VARY. 3. SEE SECTION R9.0 FOR PLANT ACCESS ROAD AND SECTION D9.0 FOR POTABLE WATER PIPELINES.

GRAPHIC SCALE
0 40 80
SCALE IN FEET

(W1) TRANSITION TO PLANT PROPERTY

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES



PROJEC

TITLE

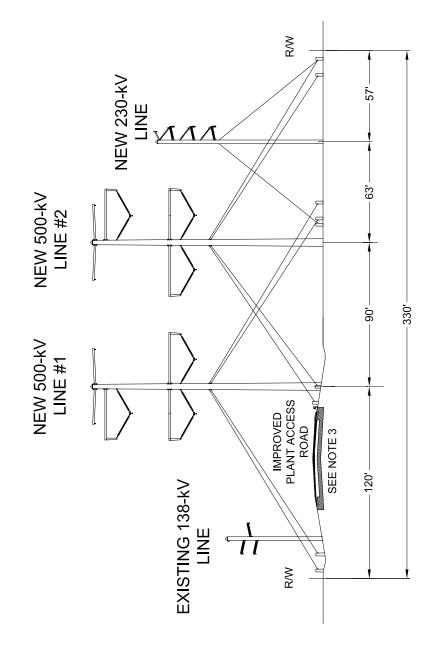
FILE No. 080489-0100

REV. 0

PLOT DATE 05/19/2009

(W2) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV SW 117th AVENUE TO SW 162nd AVENUE

LOOKING EAST



NOTES:

1. STRUCTURES MAY BE SPACED AT DIFFERING INTERVALS LONGITUDINALLY ALONG THE RIGHT-OF-WAY. 2. TYPICAL CONFIGURATION SHOWN. FINAL CONFIGURATION MAY VARY.

3. PLANT ACCESS EXTENDS FROM SW 117TH AVENUE TO SW 137TH AVENUE (SEE SECTION R9.0). WEST OF SW 137TH AVENUE, ACCESS ROAD IS FOR TRANSMISSION ONLY.

GRAPHIC SCALE
0 30 60
SCALE IN FEET

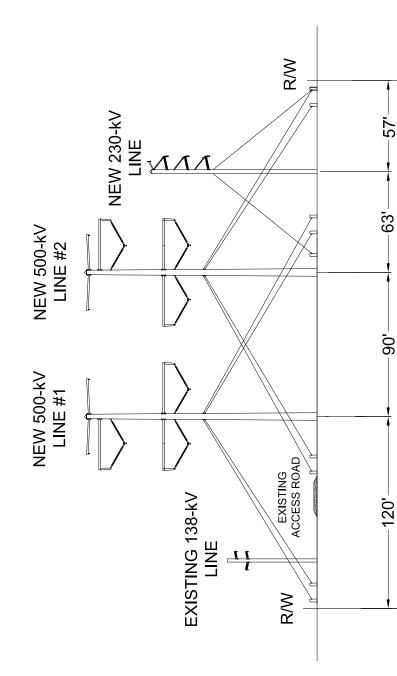
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

(W2) SW 117th AVENUE TO SW 162nd AVENUE



FILE No. 080489-0100
REV. 0
PLOT DATE 05/19/2009

(W3) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV FROM SW 162nd AVENUE TO SW 136th STREET LOOKING EAST OR SOUTH



1. STRUCTURES MAY BE SPACED AT DIFFERING INTERVALS LONGITUDINALLY ALONG THE RIGHT-OF-WAY. 2. TYPICAL CONFIGURATION SHOWN. FINAL CONFIGURATION MAY VARY. NOTES:

330'

GRAPHIC SCALE
0 30 60

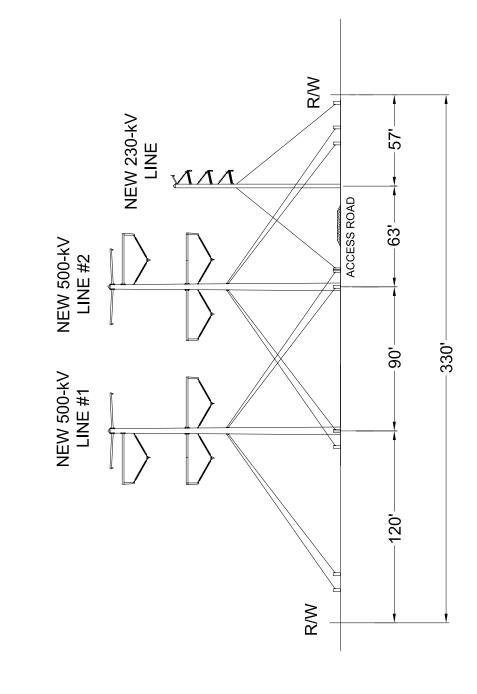
SCALE IN FEET

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

(W3) SW 162nd AVENUE TO SW 136th STREET

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	REV. 0
FPL.	PLOT DATE 05/19/2009

(W4) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV DESIGN ALONG SFWMD LEVEES WITH 230-KV LINE TO WEST **LOOKING SOUTH**



GRAPHIC SCALE
0 30 60

SCALE IN FEET

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

(W4) ALONG SFWMD LEVEES



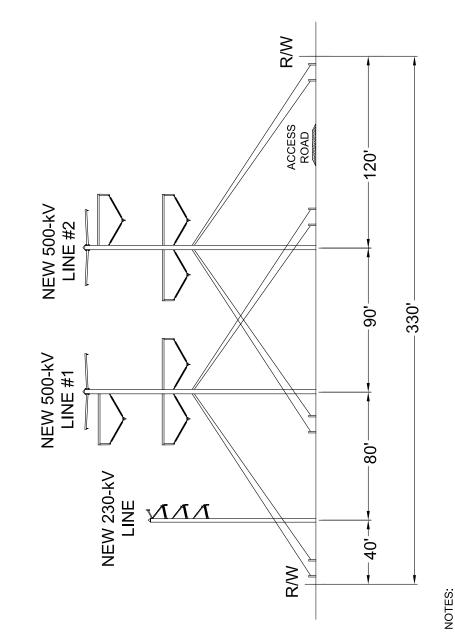
FILE No. 080489-0100
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PLOT DATE 05/19/2009

FIGURE W9.2.0-13

NOTES: 1. STRUCTURES MAY BE SPACED AT DIFFERING INTERVALS LONGITUDINALLY ALONG THE RIGHT-OF-WAY. 2. CONCEPTUAL CONFIGURATION SHOWN. FINAL CONFIGURATION MAY VARY.

(W5) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV DESIGN ALONG SFWMD LEVEES WITH 230-KV LINE TO THE EAST

LOOKING SOUTH (ALTERNATIVE CONFIGURATION)





GRAPHIC SCALE
0 30 60
SCALE IN FEET

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

(W5) ALONG SFWMD LEVEES (ALTERNATIVE CONFIGURATION)



TITLE

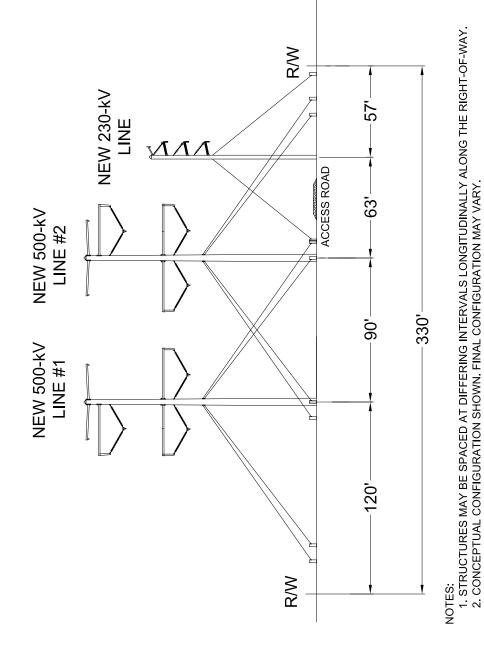
FILE No. 080489-0100	
REV.0	
PLOT DATE 05/19/2009	

KROME AVENUE EAST TO LEVEE SUBSTATION WITH 230-KV LINE TO THE NORTH (W6) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV



GRAPHIC SCALE

SCALE IN FEET



TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

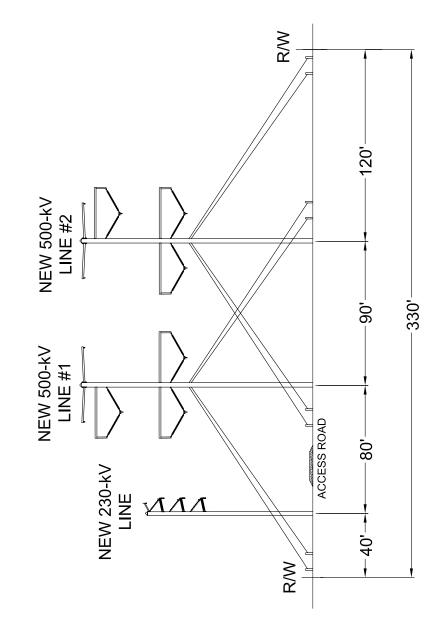
(W6) KROME AVENUE EAST TO LEVEE SUBSTATION



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REV. 0
PLOT DATE 05/19/2009

KROME AVENUE EAST TO LEVEE SUBSTATION WITH 230-KV LINE TO THE SOUTH (W7) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV

LOOKING WEST (ALTERNATIVE CONFIGURATION)



NOTE

NOTES: 1. STRUCTURES MAY BE SPACED AT DIFFERING INTERVALS LONGITUDINALLY ALONG THE RIGHT-OF-WAY. 2. CONCEPTUAL CONFIGURATION SHOWN. FINAL CONFIGURATION MAY VARY.

GRAPHIC SCALE
0 30 60
SCALE IN FEET

TURKEY POINT UNITS 6 & 7 PROJECT:
TRANSMISSION LINES

(W7) KROME AVENUE EAST TO LEVEE SUBSTATION (ALTERNATIVE CONFIGURATION)

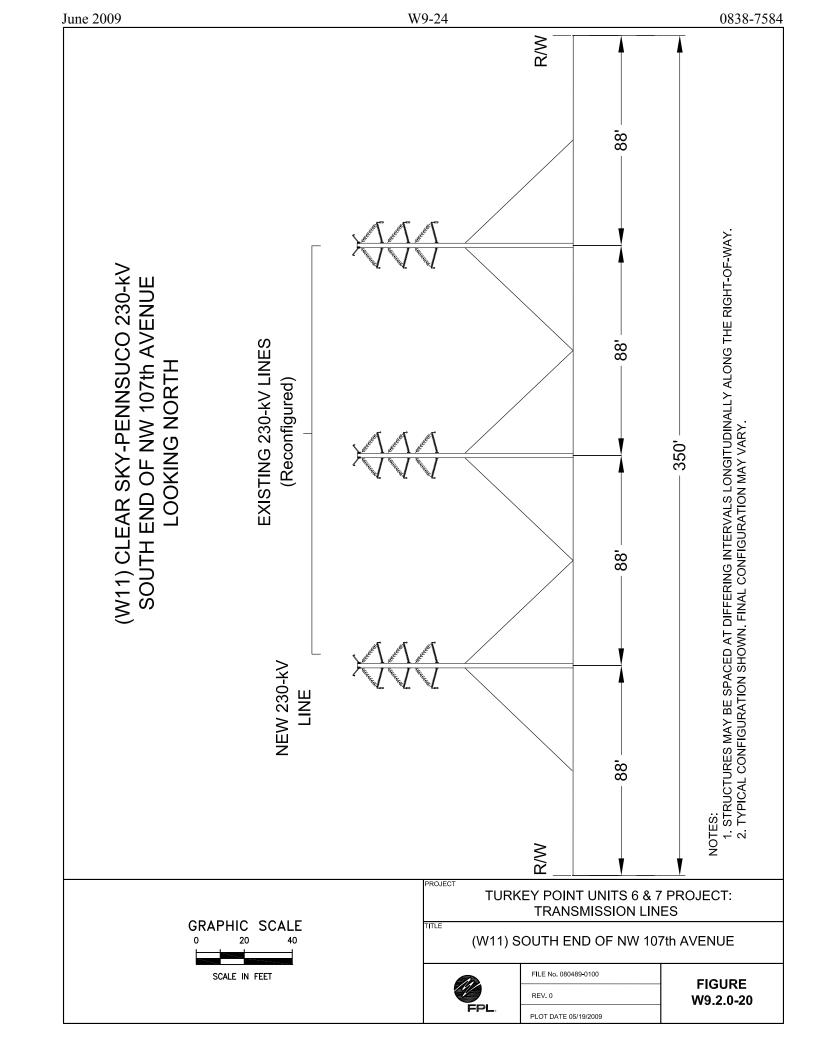


FILE No. 080489-0100

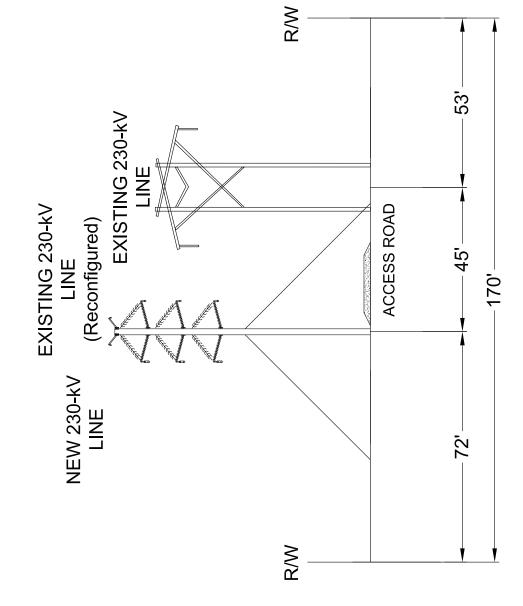
REV. 0

PLOT DATE 05/19/2009

PLOT DATE 05/19/2009



(W12) CLEAR SKY-PENNSUCO 230-kV NORTH END OF NW 107th AVENUE LOOKING NORTH



1. STRUCTURES MAY BE SPACED AT DIFFERING INTERVALS LONGITUDINALLY ALONG THE RIGHT-OF-WAY.
2. TYPICAL CONFIGURATION SHOWN, FINAL CONFIGURATION MAY VARY.
3. EXISTING 230-KV H-FRAME LINE WILL BE REBUILT TO SHARE SINGLE-POLE STRUCTURE WITH NEW LINE.

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

(W12) NORTH END OF NW 107th AVENUE



REV.0
PLOT DATE 05/19/2009

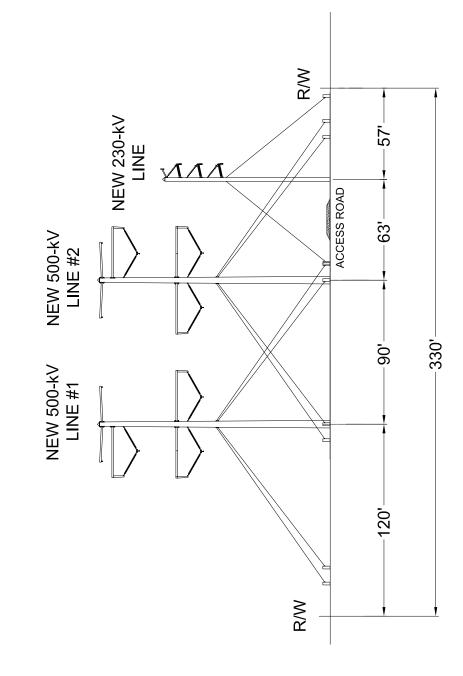
FIGURE W9.2.0-21

GRAPHIC SCALE
0 15 30

SCALE IN FEET

(W13) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV WEST SECONDARY CORRIDOR

LOOKING SOUTH



NOTES: 1. STRUCTURES MAY BE SPACED AT DIFFERING INTERVALS LONGITUDINALLY ALONG THE RIGHT-OF-WAY. 2. CONCEPTUAL CONFIGURATION SHOWN, FINAL CONFIGURATION MAY VARY.

PROJEC1

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

ITLE

(W13) WEST SECONDARY CORRIDOR



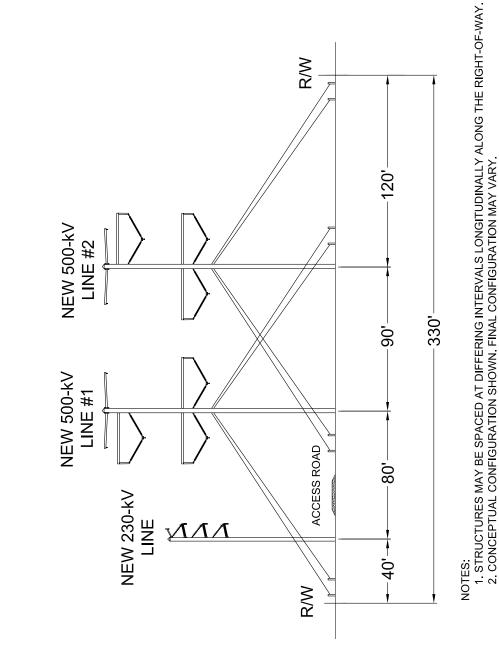
FILE No. 080489-0100
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FIGURE W9.2.0-22

GRAPHIC SCALE
0 30 60
SCALE IN FEET

(W14) CLEAR SKY-LEVEE #1 & #2 500-kV & CLEAR SKY-PENNSUCO 230-kV WEST SECONDARY CORRIDOR

LOOKING SOUTH (ALTERNATIVE CONFIGURATION)



TURKEY POINT UNITS 6 & 7 PROJECT:
TRANSMISSION LINES

(W14) WEST SECONDARY CORRIDOR (ALTERNATIVE CONFIGURATION)



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FIGURE W9.2.0-23

GRAPHIC SCALE
0 30 60
SCALE IN FEET

W9.3.1 Corridor Selection

The West Preferred/Secondary Corridors for the Project were selected by a multi-disciplinary transmission line siting team consisting of experts in land use, engineering, and the environment.

The objective of the corridor selection study was to select a certifiable corridor that balances land use/socioeconomic, environmental, engineering, and cost considerations. Corridor selection methods were designed to be:

- Integrative of multi-disciplinary siting criteria.
- Rational and objective in decision-making.
- Sensitive to social and environmental conditions.
- Responsive to regulatory requirements.
- Reflective of community concerns and issues.
- Capable of accurate documentation and verification.

The corridor selection process consisted of four major tasks: (1) project and study area definition, (2) resource mapping and alternative route delineation, (3) evaluation of alternative routes and selection of the corridor(s), and (4) community outreach. The following subsections present a summary description of each of these major tasks. Input from government agencies and the public was obtained through a community outreach program developed specifically for this transmission line routing study.

W9.3.1.1 Study Area

The corridor selection process was initiated by the identification of the geographic locations of the starting and ending substations. A study area was first selected that incorporated the Clear Sky, Levee, and Pennsuco substations and Florida Power & Light Company's (FPL's) existing rights-of-way that connect into those substations. Figure W9.3.1-1 generally depicts the west study area. Much of the west study area is dominated by low-density residential development, agricultural and nursery operations, conservation lands, and mining activities. There are relatively few existing linear features (e.g., roads, canals, or other transmission lines) that provide collocation opportunities. The limited collocation opportunities created a few logical choices for routes, with focus on opportunity to use FPL's existing rights-of-way. FPL has an available, existing right-of-way leaving the Turkey Point Units 6 & 7 Site wide enough to accommodate the proposed new transmission lines, which continues west and north for several miles before turning east and proceeding into the Levee substation. A portion of this available right-of-way, which was acquired in the 1960s and early 1970s, traverses



CRITICAL ENERGY INFRASTRUCTURE INFORMATION

Page W9-29 - FIGURE W9.3.1-1 has been removed from this file. The file can be found in the Folder "Critical Energy Infrastructure Information" on this CD.

PLEASE NOTE:

Due to the sensitive nature of site-specific electrical infrastructure location information and confidentiality requirements of the Federal Energy Regulatory Commission, these maps should not be posted on internet sites or disseminated beyond those persons with an interest in the siting of the transmission lines discussed in this application.

through what subsequently became parts of the 8.5 Square Mile Area (SMA) project, the Everglades National Park (ENP) Expansion Area, and the Pennsuco Wetlands. FPL's existing right-of-way already contains an existing transmission line along most of its length south of the ENP area. North from SW 136th Street, FPL has available right-of-way without transmission lines through the ENP and continuing to the Levee substation. From the Levee substation to the Pennsuco substation, there are also existing transmission line rights-of-way and roads that provide collocation opportunities.

W9.3.1.2 Resource Mapping and Alternative Route Delineation

FPL first evaluated the study area for all collocation opportunities and siting constraints in a regional screening mapping exercise. Resource mapping information was obtained from available information sources, including local, regional, state, and federal agency data files, such as Miami-Dade County's geographic information system (GIS); the Florida Geographic Data Library (FGDL); the Florida Natural Areas Inventory (FNAI); SFWMD data sources; and other commercial nonagency entities with relevant databases. FPL used a technique of overlay mapping through the use of computer mapping software programs such as AutoCAD® and ArcView®. Use of computer mapping allowed flexibility in adding new information as it became available and modifying coverages to analyze certain constraints or opportunities. Table W9.3.1-1 provides a listing of the types of resources mapped. Once those resources were mapped, the team developed alternative routes that attempted to best avoid or minimize siting constraints and maximize use of collocation opportunities. Figure W9.3.1-1 depicts the west regional screening map and alternative routes studied.

Using route selection guidelines developed by the multi-disciplinary team (Table W9.3.1-2), several alternative route segments were developed that, when combined, could connect the Project substations.

Through this process, 34 route segments were identified, comprising 99 potential alternative route alignments between the Clear Sky substation and the Levee and Pennsuco substations. Each of these routes was then evaluated as described in the following subsection.

W9.3.1.3 Alternative Route Evaluation and Preferred Corridor Selection

The objective of this task was to evaluate, in detail, the routes identified and ultimately select a West Preferred Corridor.



TABLE W9.3.1-1 STUDY AREA RESOURCES MAPPED

Category	Resource
Dogo mon information	Ticheren made stoots
Base map information	Highways, roads, streets County boundaries
	County boundariesCity boundaries
	Railroads, airports, heliports Eviating and proposed EPL substations
	Existing and proposed FPL substations Full transmission lines.
	Existing FPL transmission lines Full transmission lines
	• Existing FPL properties, rights-of-way, and easements
	 Water bodies, rivers, streams, canals
Land use information	 Existing and proposed development for which local approvals are pending
	 Planned unit developments (PUDs) and developments of regional impact (DRIs)
	 Property boundaries
	 Existing schools and Miami-Dade County School Board lands
	 Cemeteries and historical structures and districts
	 National parks, wildlife refuges, estuarine sanctuaries, landmarks, or historical locations
	 State parks, preserves, proposed and existing Florida Forever lands, Areas of Critical State Concern, Save Our Rivers (SOR) lands, aquatic preserves
	SFWMD-owned lands
	 Miami-Dade County lands, parks, recreation areas, and mitigation lands
	 Native American lands
	 Privately designated wetland mitigation areas
	 Privately owned environmental preserves/sanctuaries
	 Military properties
Environmental information	• Listed federal- and state-protected species and unique habitats, U.S.
	 Fish and Wildlife Service (USFWS)-designated critical habitats Wetlands as delineated on USFWS National Wetlands Inventory
	(NWI) maps



TABLE W9.3.1-2 ALTERNATIVE ROUTE IDENTIFICATION GUIDELINES

- Maximize collocation with certain linear features (existing FPL transmission lines, easements, or rights-of-way; roads; canals; etc.)
- Follow parcel or section lines where practicable and when other linear collocation opportunities do not exist
- Minimize crossing of constraints identified as a result of regional screening (e.g., environmentally sensitive lands, existing development, and proposed development for which local approvals are pending)
- Avoid known airports and private airstrips consistent with Federal Aviation Administration (FAA) and other applicable regulations
- Follow disturbed alignments (ditches, roads) through wetlands, where practicable
- Minimize crossing of existing transmission lines



The first step of the integrated alternative route evaluation process was to perform a systematic, quantitative evaluation of each route alternative using environmental, land use, cost, and engineering criteria. Table W9.3.1-3 presents the criteria used in this evaluation. These criteria are based on application of accepted transmission line siting factors used on projects across Florida.

Data used to apply these criteria came from the regional screening map data, recent digital aerial photography for the study area, input from agencies and local governments, ground and aerial surveys of routes, and input from the community outreach program. Each segment was analyzed for each of the criteria listed in Table W9.3.1-3, and the value for each criterion was recorded by segment.

The relative weight (importance) of each criterion to be used in the alternative route evaluation was then established by the multi-disciplinary transmission line siting team. These criteria and weights were validated through input from the community obtained as part of the community outreach program discussed in Section W9.3.1.4.

Recognizing that the quantitative evaluation alone does not provide a complete indication of the potential suitability of the routes, the second step of the integrated alternative route evaluation process involved performing a qualitative assessment of more localized conditions. This evaluation included analyses of siting issues and opportunities, siting constraints, additional ground and aerial surveys, and feedback and comments received at agency workshops and meetings, the nine community open houses, and individual meetings with area residents, property owners, and local governments. Table W9.3.1-4 depicts a list of the types of criteria evaluated at this stage.

After evaluation of the identified route alignments and significant consideration of public input throughout the community outreach program, the West Preferred and a West Secondary Route were selected (see Figure W9.3.1-2).

Finally, corridor boundaries were delineated along the West Preferred and Secondary Routes. The West Preferred/Secondary Corridors are of variable width, being wider in certain areas to give FPL flexibility in accommodating localized conditions or taking advantage of certain opportunities, and narrower in other areas to avoid existing siting constraints or to use existing FPL rights-of-way. The West Preferred/Secondary Corridors are shown on recent (2007) aerial photographs at a scale of 1 inch equals 1,000 ft (1" = 1,000') in Section W9.1 (Figure W9.1.0-1, Maps 1 through 38). Through field verification and helicopter flyovers, the transmission line siting team verified that data contained



TABLE W9.3.1-3 ALTERNATIVE ROUTE QUANTITATIVE EVALUATION CRITERIA—WEST ROUTES

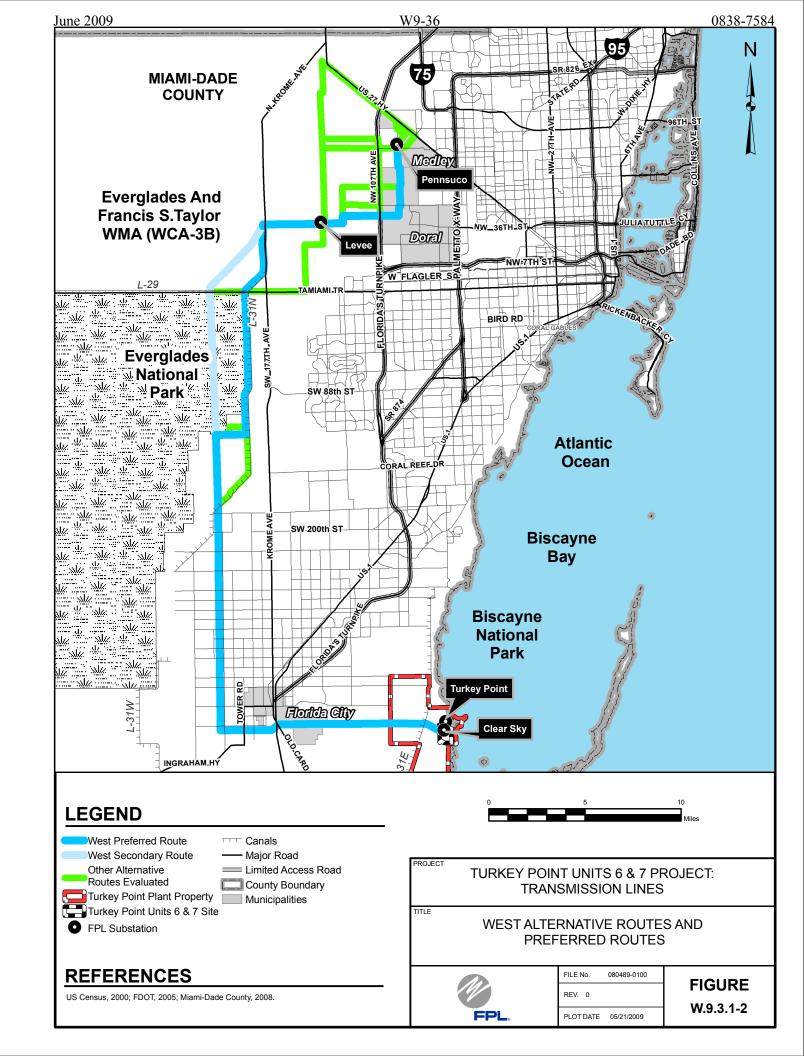
- Number of buildings within 500 ft of route centerline
- Number of school properties within 500 ft of route centerline
- Number of non-FPL parcels/lots crossed
- Length of route not following FPL-owned right-of-way or other transmission line easements
- Length of route not following other linear features (roads, railroads, canals, etc.)
- Length of route through existing parks/recreation areas/designated conservation lands
- Length of forested wetlands crossed
- Length of nonforested wetlands crossed
- Number of eagle nests/wading bird colonies within 0.5 mile
- Engineering/construction cost estimates



TABLE W9.3.1-4 ALTERNATIVE ROUTE QUALITATIVE EVALUATION CRITERIA—WEST ROUTES

- Available space within existing FPL rights-of-way, easements, or fee-owned property
- Available right-of-way along roads, transmission lines, and railroads
- Road plans (new roads, extensions, widening projects)
- Proposed development plans
- Proximity of existing development to collocation rights-of-way
- Types of development in proximity
- Proximity and orientation of public airports and private airstrips
- Ingress/egress at substations
- Bridge crossings
- Constructability
- Acquisition status of existing and proposed conservation lands and/or greenways
- Availability of multi-agency land exchange
- Ability to avoid or minimize wetland impacts
- Ability to avoid or minimize impacts to parks, recreation, and conservation lands
- Proximity to historical districts, roads, and/or structures
- Review of potential underground scenarios where overhead is not feasible
- Potential listed species presence
- Crossing of Native American lands
- Potential use of local access roads/trails
- Proximity to known archaeological locations
- Vegetative landscapes along streets (tall trees)





on the aerial photographs are representative of the route area and current within 6 months of this application filing. Sections W9.3.2 and W9.3.3 describe the West Preferred/Secondary Corridors, respectively.

W9.3.1.4 Community Outreach Program

Understanding the importance of public involvement, and in keeping with past practice, FPL expended considerable effort to inform and involve the public during the route selection process for the West and East Corridors. FPL used direct mail, a community e-survey, nine open houses, a newspaper advertisement, a Project Web page, two agency workshops, meetings with local governments and regional and state agencies, a Project e-mail address, and a toll-free telephone number to share information and provide an opportunity for interested persons to learn more about the Project and express their views.

Initially, using the Miami-Dade County Property Appraisers' and FPL customer databases, more than 260,000 letters were sent to FPL customers and property owners within 0.5 mile from the potential routes that were under consideration for both the East and West Corridors. This letter, sent in English and Spanish, introduced the transmission line improvement project and invited people to attend upcoming open houses. Enclosed with the letter was a map of Miami-Dade County showing the potential routes being studied and a list of the locations, dates, and times for the nine open houses.

Prior to the open houses, customers within 0.5 mile of the routes under consideration who previously provided their e-mail addresses and who allowed unsolicited e-mail were identified using the FPL customer database. These 64,000 customer accounts were sent an e-survey that asked people to identify the relative importance of the selection criteria. The survey received 1,345 responses, generating results that validated the route selection criteria used.

Nine open houses were held in November and December 2008. With the intent of distributing the open houses geographically along the east and west potential routes, an open house was held in each of the following locations:



November 18, 2008
Reception Palace Ballrooms
14375 SW 42nd Street
Miami, Florida 33175

November 19, 2008 Signature Gardens 12725 SW 122nd Avenue Miami, Florida 33186

November 20, 2008
Boys and Girls Club of Miami-Dade
2805 SW 32nd Avenue
Miami, Florida 33133

<u>December 2, 2008</u> Doral Park Country Club 5001 NW 104th Avenue Doral, Florida 33178

December 3, 2008
St. Michael the Archangel
Catholic Church
2987 West Flagler Street
Miami, Florida 33135

December 4, 2008 Redland Golf & Country Club 24451 SW 177th Avenue Homestead, Florida 33031 <u>December 9, 2008</u> Miami Mart Airport Hotel 711 NW 72nd Avenue Miami, Florida 33126

December 10, 2008
Sacred Heart Catholic
Church
106 SE 1st Drive
Homestead, Florida 33030

December 11, 2008
South Miami/Coral Gables
Elks Lodge #1676
6304 SW 78th Street
South Miami, Florida 33143

More than 350 people attended these open houses. During the open houses, visitors were able to talk directly, informally, and one-on-one with FPL Project team members. Attendees could learn about the Project and the routes being considered, view maps and aerial photographs of the routes being evaluated, and specifically identify on Google Earth® interactive software their home and/or property in relation to the alternative routes under consideration. Engineers, biologists, land use planners, and other FPL representatives in attendance were available to answer questions and review with attendees the information provided about the Project and FPL on display boards and in brochures. Attendees at the open houses could express their views and provide feedback for consideration by FPL in the route selection process.

Two agency/local government workshops were held with local, regional, state, and federal government staff. The first was conducted at the initiation of the route selection process. The second was held after the open houses as the team began to narrow its focus. The agency and local government representatives provided valuable input regarding routing alternatives for evaluation, local details, community values, and future plans for development within their respective jurisdictions. They also offered suggestions on ways to communicate with their constituents.

Additional one-on-one meetings and contacts with local, regional, state, and federal government officials were held throughout the selection process, not only to collect relevant data and maps but also to seek input on route selection issues. Agencies and local governments provided important information about the routes FPL was studying, as well as identified individuals and groups who might have specific interest in the Project. Some agency and local government representatives proposed routes that



were considered and studied by FPL. Appendix 10.1 provides a list of the agency and local government contacts for the Project.

FPL representatives were available to meet with community groups, homeowner associations, and property owners upon request to discuss the Project route selection process, the routes under consideration, as well as the Florida Electrical Power Plant Siting Act (PPSA) process.

The input obtained through the community outreach program was incorporated into the preferred corridor selection decision. For example, members of the public and governmental agencies, including local government representatives, who participated through the various components of the program suggested the following:

- Places to consider or avoid in routing.
- Specific linear facilities to consider for collocation with the proposed line.
- Which evaluation criteria should be considered as more important relative to other criteria.
- Specific routes to evaluate.
- Unique or important study area features or characteristics that should be given consideration in route selection.
- Areas under consideration for future development in proximity to routes being evaluated.
- Existing operational considerations for land uses on or near the rights-of-way.
- Preferences on structure design.
- Ways to effectively communicate with the public regarding the Project.

W9.3.2 West Preferred Corridor Description

The proposed corridor width varies from a minimum of 170 ft to a maximum of 3,700 ft along the length of the West Preferred Corridor. This allows FPL the ability to maximize use of existing FPL rights-of-way, avoid constraints in some areas, and provide FPL the necessary flexibility to locate a right-of-way consistent with local conditions and landowner and agency input. Once a corridor is certified, FPL expects to use a combination of existing and relocated right-of-way of approximately 330 ft in width from Clear Sky to Levee and then largely use an existing right-of-way of approximately 170-ft minimum width between the Levee and Pennsuco substations. Existing SW 359th Street, which is located within the existing FPL right-of-way both within and west of the Turkey Point plant



property, will be improved to accommodate the Project's peak construction traffic and provide access for Units 6 & 7, as described in Section R9.0 of this chapter.

As provided in Section 403.503(10), F.S., once a corridor is certified and FPL acquires the property interests required for the rights-of-way, the boundaries of the certified corridor will narrow to only that land within the rights-of-way. At that point, the remainder of the corridor will have no further legal significance related to this certification.

The total length of the West Preferred Corridor is approximately 52 miles; between Clear Sky and Levee is 43.6 miles and between Levee and Pennsuco is 8.4 miles. The Tamiami Trail and Krome Avenue Access Corridors are an additional 0.25 and 5 miles in length, respectively. Figure W9.3.2-1 provides a depiction of the transmission and Access Corridors' alignments and the existing transmission lines 115 kV or greater within 5 miles of the corridors.

W9.3.2.1 West Preferred Corridor from Clear Sky to Levee

The West Preferred Corridor begins within the Turkey Point plant property at the boundary of the proposed Turkey Point Units 6 & 7 Site. The proposed location of the West Preferred Corridor is on FPL's Turkey Point plant property for a distance of approximately 3.2 miles. For the first mile, the corridor is 3,700 ft wide. The remainder of the corridor on the Turkey Point plant property is approximately 500 ft wide.

FPL has an existing approximately 330- to 370-ft-wide right-of-way running west from the Turkey Point plant property for several miles. There is currently one single-pole, 230-kV line in that right-of-way that runs for a distance of approximately 4.5 miles. The West Preferred Corridor is collocated with this existing transmission right-of-way. The two 500-kV lines and the 230-kV line can be constructed within this available right-of-way alongside the existing 230-kV line. Therefore the corridor is limited to FPL's existing right-of-way boundaries in this location, and no additional property will be necessary.

The West Preferred Corridor continues to run due west for another approximately 4.25 miles following FPL's existing right-of-way containing a 138-kV line. Just west of SW 202nd Avenue, the West Preferred Corridor and existing 138-kV line turn to the north and then run due north for approximately 14.5 miles to SW 136th Street where the 138-kV line turns due east and departs the West Preferred Corridor. The West Preferred Corridor then continues for approximately 1 mile to SW 120th Street.



CRITICAL ENERGY INFRASTRUCTURE INFORMATION

Pages W9-41 through W9-43 - FIGURE E9.3.2-1 have been removed from this file. The file can be found in the Folder "Critical Energy Infrastructure Information" on this CD.

PLEASE NOTE:

Due to the sensitive nature of site-specific electrical infrastructure location information and confidentiality requirements of the Federal Energy Regulatory Commission, these maps should not be posted on internet sites or disseminated beyond those persons with an interest in the siting of the transmission lines discussed in this application.

The width of the West Preferred Corridor in this area remains 330 to 370 ft, collocated with FPL's existing right-of-way. Adjacent to the Miami-Dade County Natural Forest Community (NFC) north of SW 304th Street, the corridor is expanded by 50 ft to the west to allow flexibility in accessing the transmission line within the NFC.

Although FPL currently owns sufficient right-of-way in fee or by easement for this Project through the ENP and the Water Conservation Area 3B (WCA-3B), FPL has been working cooperatively with multiple federal and state agencies to relocate this portion of the right-of-way to outside the ENP. To that end, these agencies have entered into agreements with FPL to implement the relocation. This land exchange has been authorized by the federal Omnibus Public Land Management Act of 2009. As a result of relocating the 7.4-mile portion of the right-of-way now within the ENP Expansion Area to outside the ENP, contiguous portions of the existing right-of-way to the north and south must also be relocated to provide a continuous right-of-way. FPL is agreeable to the proposed right-of-way exchange in this area if this can be accomplished in a timely manner and is therefore proposing the relocated right-of-way as its West Preferred Corridor.

At SW 120th Street, the West Preferred Corridor turns due east and continues to the SFWMD L-31N Canal right-of-way and is approximately 900 to 1,000 ft wide. This alignment will allow FPL to locate the proposed transmission lines at the periphery of the ENP and provide the opportunity to use the existing SFWMD L-31N levee as an access road.

The West Preferred Corridor continues to follow the L-31N Canal right-of-way for several miles, crossing U.S. Highway 41 (U.S. 41)/Tamiami Trail, and then runs parallel to the L-30 Canal right-of-way. In this area, the West Preferred Corridor is approximately 900 to 1,000 ft wide and provides the opportunity to use the existing SFWMD L-30N levee as an access road.

Approximately 3 miles north of U.S. 41/Tamiami Trail, the West Preferred Corridor turns due east along an existing FPL right-of-way (at approximately NW 41st Street) and proceeds to the Levee substation. In this area, the West Preferred Corridor is limited to the existing FPL 330- to 1,100-ft-wide right-of-way. At the Levee substation, the two 500-kV lines terminate, but the corridor expands around the substation to approximately 1,750 ft (to accommodate the proposed Clear Sky-Pennsuco 230-kV line bypassing the substation) and lies entirely within FPL property.



From Clear Sky to Levee, the West Preferred Corridor crosses the jurisdictions of Miami-Dade County and Florida City. Maps provided on Figure W9.1.0-1 (Sheets 1 through 38) depict the West Preferred Corridor on a scale of 1 inch equals 1,000 ft (1" = 1,000') on recent aerial photographs.

W9.3.2.2 West Preferred Corridor from Levee to Pennsuco

Beginning at the existing Levee substation area, the West Preferred Corridor exits the substation property heading due east within an existing FPL right-of-way along NW 41st Street between NW 147th Avenue and NW 137th Avenue. It then turns north at NW 137th Avenue continuing to NW 50th Street and then turns east for 3 miles to NW 107th Avenue. The right-of-way within this portion of the West Preferred Corridor, which ranges from approximately 170 to 1,750 ft (exiting the Levee substation) wide, currently accommodates multiple transmission lines and has room to accommodate most of the new 230-kV line.

At NW 107th Avenue, the corridor turns due north and follows the existing FPL right-of-way paralleling NW 107th Avenue approximately 4 miles to the existing Pennsuco substation. The West Preferred Corridor paralleling NW 107th Avenue averages 170 ft wide and is wholly located within FPL's existing right-of-way.

From the Levee substation to Pennsuco substation, the West Preferred Corridor crosses the jurisdictions of Miami-Dade County, Doral, and Medley. Maps provided on Figure W9.1.0-1 (Sheets 23 through 27) depict the West Preferred Corridor in this area on a scale of 1 inch equals 1,000 ft (1" = 1,000') on recent aerial photographs.

W9.3.2.3 Access Corridors

FPL is proposing two Access Corridors for the West Preferred Corridor. These Access Corridors will contain no transmission line structures but may require access road construction or improvements to existing roads, bridges, or other access facilities. Due to the narrow access road width along the L-30N Canal right-of-way north of U.S. 41/Tamiami Trail, FPL's construction and maintenance equipment will not be able to turn around. The two proposed Access Corridors will provide for continuous one-way access in this portion of the West Preferred Corridor between the north end of the Krome Avenue Access Corridor and U.S. 41/Tamiami Trail and avoid the need to construct additional bridge crossings of the L-30N Canal. These Access Corridors, which have been proposed to minimize impacts to wetlands and works of SFWMD, are described in the following paragraphs and are also depicted on Figure W9.3.2-1.



<u>Tamiami Trail Access Corridor</u>—This Access Corridor occurs just north of U.S. 41/Tamiami Trail as the West Preferred Corridor crosses the road. The Access Corridor is a rectangle that adjoins the West Preferred Corridor. The Access Corridor is approximately 0.25 mile long, 370 ft wide, and will enable FPL personnel and equipment to cross the Tamiami Canal at an existing SFWMD bridge.

Krome Avenue Access Corridor—This Access Corridor is proposed along the L-30 Canal right-of-way and includes Krome Avenue from the northern West Preferred/Secondary Corridor intersection. The Access Corridor extends approximately 5 miles due north along SFWMD right-of-way, which contains the levee access road and Krome Avenue. This will provide access to the West Preferred Corridor at the north via an existing SFWMD bridge from Krome Avenue. This access road corridor is approximately 600 ft wide.

W9.3.2.4 Levee Substation

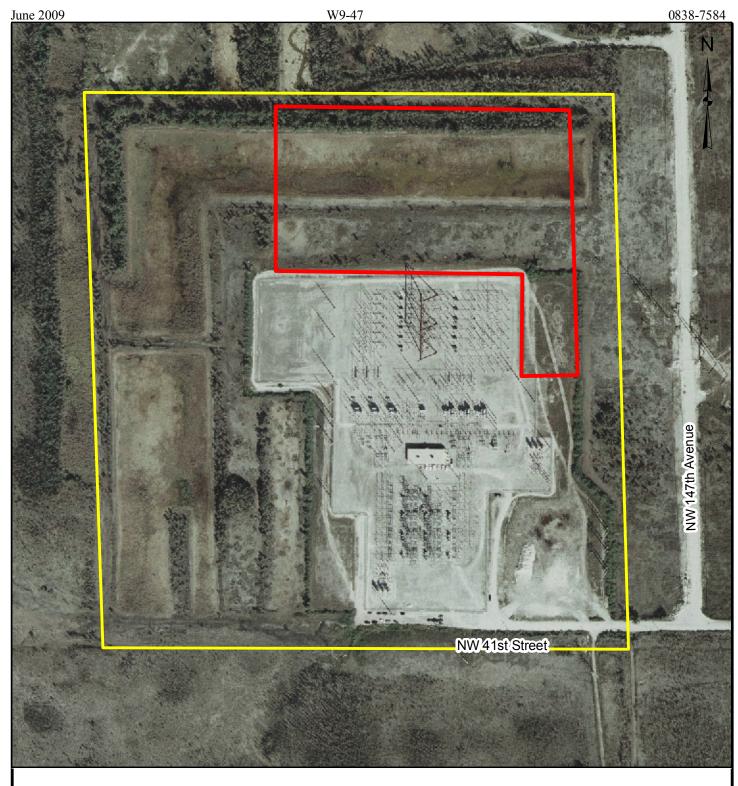
As previously described in Section W9.2, the Levee substation, the expansion of which is proposed for certification in this application as part of the West Preferred Corridor, is an existing FPL 500/230-kV substation located on an approximately 65-acre parcel at the intersection of NW 41st Street and NW 147th Avenue. FPL's current fenced area property covers approximately 15 acres of the parcel (see Figure W9.3.2-2). The substation expansion will encompass another approximately 2.3 acres. In addition, stormwater retention areas are currently proposed to be added to the north of the expanded fenced area. Certification (including Miami-Dade County site plan approval through a postcertification submittal process) is sought for both the substation expansion and the new stormwater retention areas.

W9.3.3 West Alternate Corridors

FPL is proposing one alternate corridor to its West Preferred Corridor, which is referred to as the "West Secondary Corridor."

The West Secondary Corridor is an alternate for the West Preferred Corridor in the ENP and WCA-3B areas. The West Secondary Corridor (depicted on Figure W9.3.2-1) deviates from the West Preferred Corridor at SW 120th Street in the 8.5 SMA and continues to follow FPL's existing right-of-way directly northward through the ENP Expansion Area for approximately 7.4 miles to U.S. 41/Tamiami Trail. There the West Secondary Corridor crosses U.S. 41/Tamiami Trail and then turns northeastward along FPL's existing right-of-way to its intersection with the West Preferred





LEGEND

Levee Substation Parcel Boundary

Substation Expansion Area To Be Certified



TURKEY POINT UNITS 6 & 7 PROJECT:
TRANSMISSION LINES

TITLE

LOCATION OF FPL LEVEE SUBSTATION EXPANSION



ı	FILE No.	080489-0100
	REV. 0	
	PLOT DATE	05/18/2009

FIGURE W9.3.2-2

:0489\WEST\Application_Maps\Le

REFERENCES
Miami-Dade County, 2007, 2008.

Corridor along Krome Avenue. The West Secondary Corridor is approximately 330 to 370 ft wide and is wholly located within existing FPL right-of-way. The total length of FPL's West Secondary Corridor is approximately 51 miles; the length where it differs from the West Preferred Corridor is 12 miles.

The West Secondary Corridor is being proposed as an alternative option in the event the previously described proposed right-of-way exchange is not completed on a timely basis.

As mentioned in Section 9.0, based on recent changes to the PPSA, an applicant under the PPSA has the option to allow other parties to submit alternate corridors to its own proposed corridors. FPL is opting to allow other parties to file alternate corridors for consideration in the certification proceeding along with the West Preferred and West Secondary Corridors proposed in this application (see Rule 403.5064[1][b], F.S.).

If any party wishes to file an alternate corridor to FPL's West Preferred or Secondary Corridor, they should contact Florida Department of Environmental Protection's (FDEP's) Siting Coordination Office for specific instructions or consult the PPSA, Sections 403.501 through .518, F.S., and rules adopted thereunder, Chapter 62-17, Part I, F.A.C. Public notice of the alternate corridor will be required pursuant to Sections 403.5271 and 403.5363, F.S.

W9.3.4 Transmission Line Access Roads

For much of its length, the West Preferred Corridor contains existing access roads and/or levees that may provide access opportunities and the potential to minimize the need for new transmission line access road and bridge construction. These existing features will be reviewed to determine if they are suitable to use for line construction and ongoing operation and maintenance activities for the proposed 230- and 500-kV transmission lines. Existing roads/levees may be upgraded as required to accommodate Project construction vehicles, including within the Access Corridors. New roads will be constructed along the length of the corridor where roads currently do not exist. The new and upgraded transmission access roads will be unpaved and, as needed, constructed of clean fill from available sources. Culverts will be included beneath access roads in wetlands to maintain channel flow and/or overland flow. The details of this work will be submitted for review pursuant to the conditions of certification in a postcertification submittal. Figure W9.3.4-1 shows a typical access road/pad cross-section. From the Turkey Point Units 6 & 7 Site to SW 137th Avenue, plant access along SW 359th Street will be improved within the transmission line right-of-way. That access road will also



CROSS-SECTION FILE No. 080489-0100 **FIGURE** REV.0 W9.3.4-1 PLOT DATE 05/15/2009

provide construction and maintenance access for the proposed transmission lines in this area and is described in Section R9.0.

Access to the transmission lines within the existing industrial wastewater facility on the Turkey Point plant property will be accomplished using bridges (fixed and/or floating).

W9.3.5 Cost Projections

The costs for the West transmission facilities are under development. Final cost ranges will be developed incorporating a number of contributing factors including right-of-way preparation, the need for access road and pad construction, fill, mitigation, property rights acquisition, and engineering design and construction costs. The exact location of the transmission lines within a certified corridor and the number and types of structures necessary to complete those transmission lines will be determined following corridor certification and selection of the right-of-way within the corridor. The actual cost of the transmission facilities will depend on the final location of the right-of-way within the corridor, ultimate locations of structures, structure configuration, number and type of structures, mitigation costs, costs of right-of-way, other location-specific conditions, and conditions of certification.

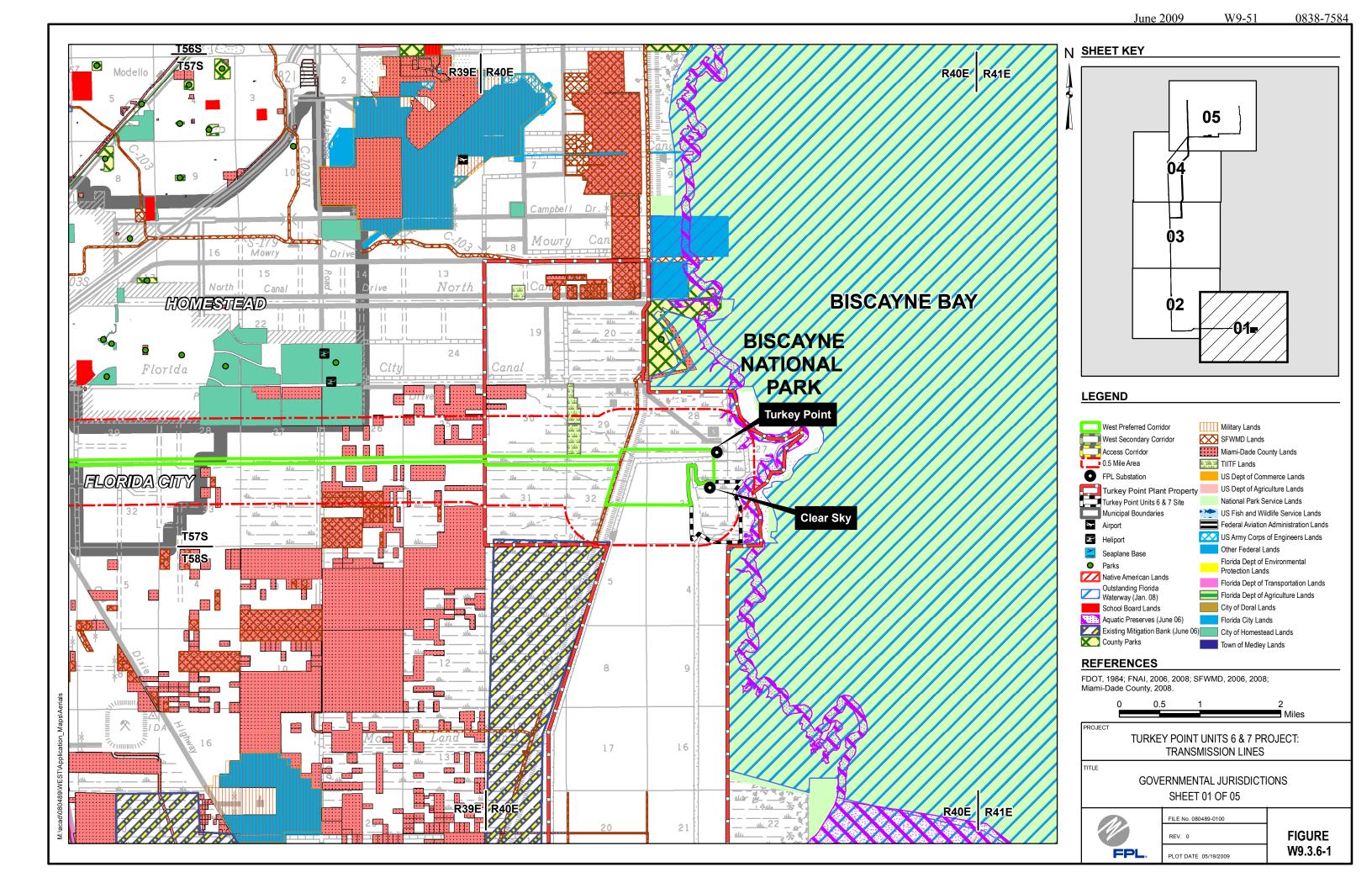
Since commencement of construction is 3 to 5 years from this application, the impact to final costs due to market variations in materials, equipment, and labor is difficult to predict. The costs to integrate and interconnect the new generation are the result of a series of transmission studies that will continue to be reviewed and revised closer to the time of construction. The detailed location and design of the West transmission lines, including the technological option to be used in each location and the number and types of structures necessary to complete those transmission lines, will be determined following corridor certification and, where necessary, selection of the right-of-way within the corridor.

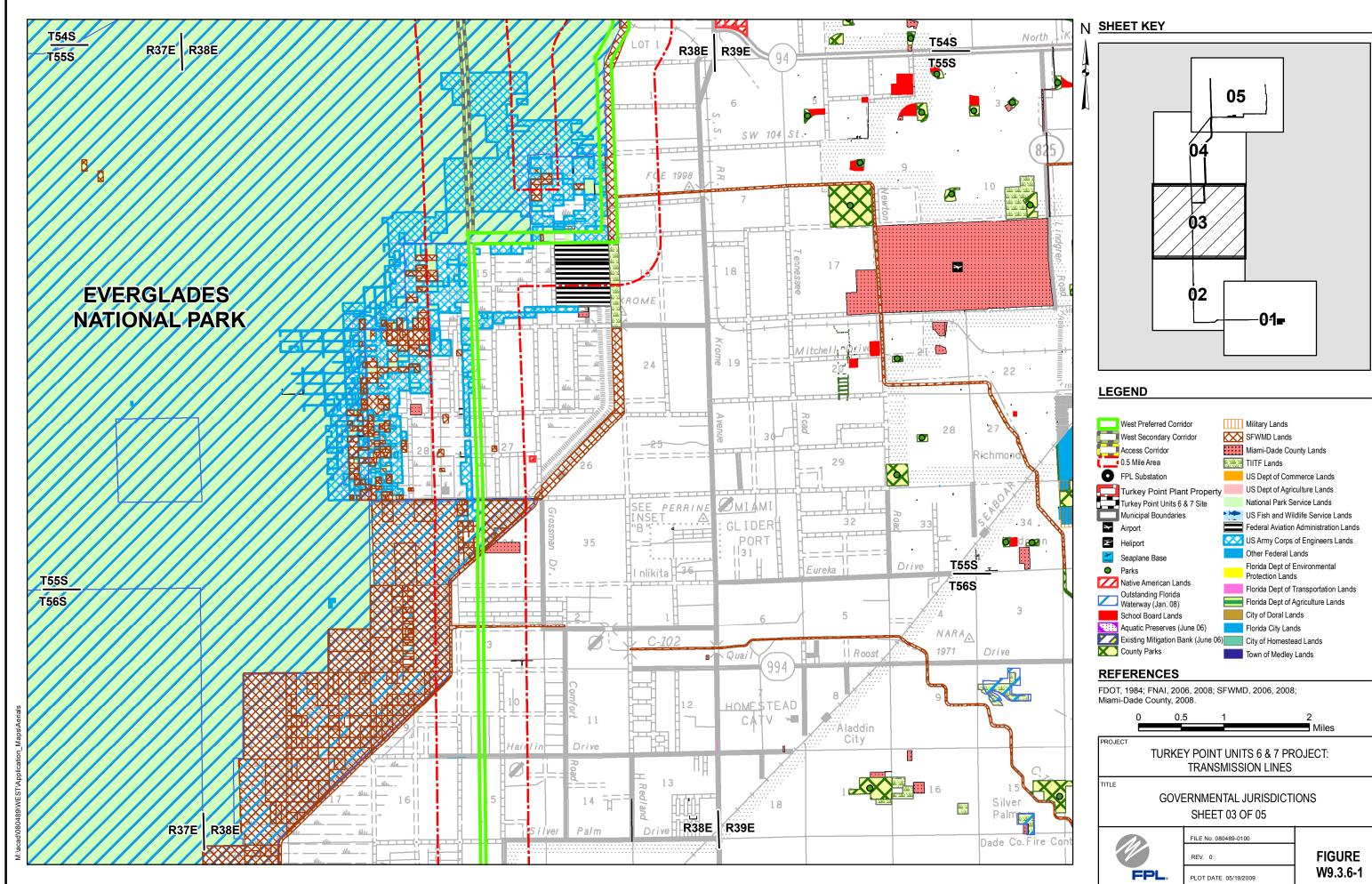
W9.3.6 Social and Political Environment of the Corridor Area

W9.3.6.1 Governmental Jurisdictions

The West Preferred/Secondary Corridors are located entirely within Miami-Dade County and include crossing the jurisdictions of Florida City, Doral, and Medley. Figure W9.3.6-1 depicts these jurisdictions, as well as lands owned, managed, or specially designated by governmental jurisdictions located in or near the West Preferred/Secondary Corridors. Table W9.3.6-1 provides a list of these governmental lands.







T53S

T54S

TABLE W9.3.6-1 GOVERNMENTAL JURISDICTIONS WITHIN 0.5 MILE OF THE WEST PREFERRED/SECONDARY CORRIDORS

Name	Governmental Jurisdiction
Federal	
Naval Reserve Station	U.S. Department of Defense (DOD), U.S. Navy
ENP	U.S. Department of Interior (USDI), National Park Service
Native American properties	Miccosukee Tribe of Indians of Florida
<u>State</u>	
Everglades and Francis S. Taylor Wildlife Management Area	Trustees of the Internal Im-
(WMA)/WCA-3B	provement Trust Fund (TIITF)
Biscayne Bay Aquatic Preserve	FDEP
Biscayne Bay Outstanding Florida Water	FDEP
ENP Outstanding Florida Water	FDEP
Miami Rockridge Pinelands Outstanding Florida Water	FDEP
Model Lands SOR	SFWMD
Water Conservation SOR	SFWMD
East Coast Buffer SOR	SFWMD
L-31N Transition Lands SOR	SFWMD
County Parks	
Trail Glades Range	Miami-Dade County
Fuch's Hammock Preserve	Miami-Dade County
Navy Wells Pineland Preserve	Miami-Dade County
Municipal Parks	
Doral Park	City of Doral

Source: Miami-Dade County, 2008.



Other governmental jurisdictions researched but not found in the West Preferred or Secondary Corridor include:

- National forests.
- National wilderness areas.
- Roadless area and review evaluation (RARE)
 areas.
- State parks.
- State forests.
 - Native American reservations.

W9.3.6.2 Zoning and Land Use Plans

The PPSA, comprising Sections 403.501 through .518, F.S., is the process for licensing of certain electrical generating power plants and associated facilities such as transmission lines. While most large-scale developments typically require permits and approvals from local, regional, and state agencies, certain power plants and associated facilities receive all necessary regulatory approvals through the PPSA process. All procedures for the issuance of local, regional, and state permits and/or approvals are preempted by the PPSA, and only a certification is issued. Unless a variance, exemption, or exception is approved through the PPSA process, all applicable nonprocedural requirements of the agencies and local governments are applied to the transmission line certified corridor through the agency and governmental review and any appropriate conditions of certification.

Florida law excludes electrical transmission lines and certain other linear utility facilities from the definition of *development* that is subject to local government comprehensive plans, zoning ordinances, and land development regulations (see Section 163.3164[6], F.S.). Therefore, under Florida law, the West Preferred/Secondary Corridors described herein are not subject to future land use planning or zoning regulations. (See also Section 403.50665, F.S.) Substations, however, are not included within this exclusion.

To assist in characterizing the areas through which the West Preferred/Secondary Corridors are located, the following subsections describe the various future land use categories and zoning districts crossed by the corridors. Also described are potentially applicable regulations from the codes of ordinances of the local governmental jurisdictions through which the West Preferred/Secondary Corridors are located. The procedures of the PPSA supersede many otherwise applicable procedural provisions of comprehensive plans, zoning ordinances, and land development regulations. Any references to such nonapplicable procedures in the following paragraphs are provided only for the purpose of a thorough review of the contents of the land use provisions of the various governmental entities.



Comprehensive Plans

Figure W9.1.0-2, provided in Map Sheets 1 through 38 at the end of this Section W9.0, shows the location of the West Preferred/Secondary Corridors, including the Access Corridors, and the Levee substation expansion area in relation to the adopted future land use maps (FLUMs) of the local governments traversed.

West Preferred Corridor

The West Preferred Corridor crosses unincorporated areas of Miami-Dade County and the incorporated Cities of Florida City and Doral and the Town of Medley. The Levee substation expansion and the Access Corridors are within unincorporated Miami-Dade County. The Local Government Comprehensive Planning and Land Development Regulation Act of 1985 (Chapter 163, F.S.) requires all counties and municipalities within the state to prepare comprehensive plans. The following future land use categories are crossed by the West Preferred Corridor, as identified in the local comprehensive plans:

- Miami-Dade County
 - Institutions, Utilities, and Communications
 - Environmental Protection
 - Agriculture
 - Business and Office
 - Transportation
 - Industrial and Office
 - Open Land
 - o Environmentally Protected Parks
- Medley
 - Industrial

- <u>Doral</u>
 - Medium Density Residential
 - o Moderate Density Residential
 - Estate Density Residential
 - Business
 - o Private Parks and Open Space
 - o Traditional Neighborhood Development
 - Low Density Residential
 - o Office/Residential
 - o Regional Activity Center (overlay)
- Florida City
 - Agriculture

Descriptions of these future land use categories are provided in the following subsections.

Miami-Dade County

- <u>Institutions</u>, <u>Utilities</u>, <u>and Communications</u>—The FLUM depicts the location of major institutional uses, communication facilities, and utilities of metropolitan importance. In this specific instance, the land use designation depicts much of the Turkey Point plant property.
- <u>Environmental Protection</u>—This land use category applies to those areas of the county
 most environmentally significant, most susceptible to environmental degradation, and
 where such degradation would adversely affect the supply of fresh water or environ-



mental systems of county, regional, state, or national importance. Portions of the West Preferred Corridor are located in the state WCAs, Dade-Broward Levee Basin, C-111 Wetlands, Southeast Wetlands, and Coastal Wetlands and Hammocks Environmental Protection subareas.

- Agriculture—This category designates the best agricultural land remaining in the county and is intended for agriculture and uses ancillary to and directly supportive of agriculture and farm residences. Also included in this land use category are enclaves of estate density residential use approved and grandfathered by zoning, ownership patterns, and platting activities that predate the comprehensive plan. Residential development is allowed at a density of no more than one unit per 5 acres.
- Business and Office—This land use category accommodates the full range of sales and service activities. Residential uses and a mix of residential, commercial, office, and hotel uses are allowed.
- Transportation—The FLUM depicts the location of major components of Miami-Dade County's existing and future transportation network. Included are roadways, rapid transit corridors, railways, major switching yards, and such major terminals as the county airports and the Miami-Dade Seaport. In the specific instance, the land use designation depicts U.S. Highway 1 (U.S. 1)/South Dixie Highway, Tamiami Trail, Florida's Turnpike, and Krome Avenue.
- <u>Industrial and Office</u>—This land use category allows for manufacturing operations, maintenance and repair facilities, warehouses, mini-warehouses, office buildings, wholesale showrooms, distribution centers, and similar uses. Also included are construction and utility equipment maintenance yards, utility plants, public facilities, hospitals, medical buildings, hotels, and motels. Limited commercial uses are allowed. Typical residential development is incompatible with this land use category.
- Open Land—Land designated in this category is not needed for urban uses between now and the year 2015 and has been set aside for uses other than urban development. Open Land areas are intended to serve as production for uses such as agriculture, limestone extraction, and/or other resource-based activity; rural residential development at a density no greater than one unit per 5 acres; compatible utility and public facilities; and/or conservation, maintenance, or enhancement of environmental character. Also included are some existing agricultural activities and some enclaves of estate density residential uses. Portions of the West Preferred Corridor are located in the Northwest



- Wellfield, East Everglades Residential Area, and Tamiami-Bird Canal Basins Open Land subareas.
- Environmentally Protected Parks—This land use designation is mainly comprised of environmentally sensitive land and water areas within the authorized boundaries of Big Cypress National Preserve, Biscayne National Park (BNP) and the ENP. The National Park Service retains ownership of most of the lands in these areas and is pursuing the acquisition of the remainder. Some designations are proposed for public acquisition or have been acquired under county- and/or state-funded programs. Land uses and activities allowed in the National Parks and Big Cypress National Preserve outlined in management plans are supported by Miami-Dade County.

Florida City

• <u>Agriculture</u>—This land use category is reserved for agriculture and uses ancillary to agriculture. Residential uses are allowed up to a density of one dwelling unit per acre.

Doral

- Medium Density Residential

 This land use designation allows residential densities up
 to 19 dwelling units per acre. Typical housing is low- and mid-rise condominiums and
 apartments. Building height is restricted to eight stories.
- Moderate Density Residential
 —The residential densities allowed in this category are up
 to 13 dwelling units per acre. Housing types include detached, single-family homes,
 townhouses, and low-rise condominiums and apartments. Building height is limited to
 six stories.
- Estate Density Residential—This future land use category allows residential uses up to six units per acre. This density category is characterized by detached single-family homes only on relatively large lots. Building height cannot exceed two stories.
- <u>Business</u>—This category accommodates the full range of sales and services activities.
 Building height is limited to no more than six stories.
- <u>Private Parks and Open Space</u>—This land use category identifies private parks and open space areas including private membership golf courses, cemeteries, and golforiented resorts.
- <u>Traditional Neighborhood Development</u>—These areas mandate the vertical and horizontal integration of uses such as residential, business, office, civic, public facilities, education, childcare, and artisan and home occupations. Residential density cannot ex-



- ceed 18 units per acre, and all types of housing are allowed. Building height is limited to no more than eight stories.
- Low Density Residential

 —The residential densities allowed in this category cannot exceed ten units per acre. Housing types are generally detached, single-family homes, townhomes, and low-rise condominiums and apartments. Building height is limited to three stories.
- Office and Residential—Uses allowed in this designation include a mix of professional
 and clerical offices, hotels, motels, and residential uses. The maximum density is
 16 units per acre, and building height is restricted to eight stories.
- Regional Activity Center—This is an overlay district shown over the eastern side of NW 107th Avenue between an area located just north of NW 74th Street and NW 90th Street. A regional activity center is a designation allowed under Section 380.06(2)(e), F.S., which allows local governments to encourage higher intensities of development by increasing thresholds under the development of regional impact process.

Medley

<u>Industrial</u>—This land use category allows for manufacturing, finishing, or processing
of goods, equipment, and/or supplies. This land use category includes factories and
other fabricating facilities, warehousing, wholesaling, machine repair, and supply
yards.

The Miami-Dade County Comprehensive Development Master Plan (as the county's local comprehensive plan future land use element is known) states that electrical transmission line corridors are permitted in every land use category when located in established rights-of-way or are certified under the PPSA as an ancillary use to a new power plant or are certified under the Transmission Line Siting Act (TLSA). This is consistent with the allowance for electric transmission lines in every land use category under Florida law, as previously referenced. The comprehensive plans for Florida City, Doral, and Medley do not expressly address electrical transmission lines. Doral has the following policy relevant to electrical transmission lines:

 <u>Policy 1.3.3</u>—Work with county and regional utility service providers, as needed, to help locate suitable land for expansion of their operations and services.



West Secondary Corridor

The entire West Secondary Corridor (where different from the West Preferred Corridor) is located in unincorporated Miami-Dade County in an FPL-owned 330- to 370-ft-wide right-of-way. The West Secondary Corridor crosses the Environmental Protection and Environmentally Protected Parks land use designations of Miami-Dade County. Descriptions of these land use categories were provided previously in this section.

Levee Substation Expansion

The Levee substation expansion area and surrounding FPL property fall within the Open Land category of Miami-Dade County's FLUM. That land use category was previously described in this section. Utility facilities such as the Levee substation are allowed in this land use category. The Levee Substation expansion, therefore, is consistent with the Miami-Dade County land use plans.

Zoning and Land Use Restrictions

West Preferred Corridor

Zoning within the West Preferred Corridor is shown at a scale of 1 inch equals 1,000 ft (1' = 1,000") in Figure W9.1.0-3 provided in Map Sheets 1 through 38 at the end of this chapter. The West Preferred Corridor crosses the following zoning districts:

- Miami-Dade County Zoning Districts:
 - o Industrial, Unlimited Manufacturing (IU-3)
 - o Industrial District, Conditional (IU-C)
 - o Interim District (GU)
 - o Agricultural District (AU)
 - o Hotel Apartment House District (RU-4A)
 - o Single-Family Estate Modified District (EU-M)
 - Limited Business District (BU-1A)
- Florida City Zoning Districts:
 - None at present (Miami-Dade County zoning districts [Agricultural District and Interim District] are pending change to Florida City zoning for recently annexed property.)
- Doral Zoning Districts:
 - o General Use (GU)
 - o Multi-Family 1 (MF-1)
 - Multi-Family 2 (MF-2)



- o Multi-Family 3 (MF-3)
- o Neighborhood Commercial (NC)
- o Planned Unit Development (PUD)
- o Single-Family 4 (SF-4)
- o Single-Family 5 (SF-5)
- o Traditional Neighborhood Development (TND)
- Medley Zoning District:

o Industrial: Heavy (M-3)

West Secondary Corridor

The only zoning district identified within the West Secondary Corridor is the Interim District of Miami-Dade County.

Levee Substation

The existing Levee substation and surrounding FPL property fall within Miami-Dade County's Interim District. Utility facilities such as the Levee substation are allowed in this zoning district, and the existing substation as well as the proposed expansion area both fall within the boundaries of the area approved for substation development by Miami-Dade County Resolution 4-ZAB-116-72. The Levee substation expansion, therefore, is consistent with the Miami-Dade County Zoning Code.

Provisions of each local government's land development regulations applicable to the lands crossed by the West Preferred/Secondary Corridors and the Levee substation expansion and potentially relevant to the transmission lines and substation expansion are discussed in the following paragraphs.

<u>Miami-Dade County: Code of County Ordinances</u>—The definitions section of Chapter 33 (Zoning) of the Miami-Dade Code of County Ordinances does not contain definitions for essential services, utilities, transmission lines, or any references to transmission lines except for an exclusion from coverage for power plants and associated facilities that are preempted by Chapter 403, F.S.

Miami-Dade County addresses excessive noise in Article IV, Section 21-28 of the Code of County Ordinances. This section indicates that it is unlawful to make, continue, or cause to be made or continued any unreasonably loud, excessive, unnecessary, or unusual noise. A series of noises are listed as examples in this section that could be deemed under certain circumstances to be violations includ-



ing horns, radios, televisions, phonographs, animals, birds, whistles, exhausts, defect in vehicle or load, hawkers and peddlers, loudspeakers, power tools, landscaping equipment, and shouting.

Florida City: Code of Ordinances—Chapter 62 of the Florida City Code of Ordinances (Zoning) identifies public facilities and utilities as conditional permitted uses. The terms "public facilities" and "public utilities" are not defined in the zoning chapter. A review of Chapter 58 (Utilities) of the Code indicates that electrical transmission lines are not addressed. According to the planning director for Florida City, neither of these terms includes electrical transmission lines (information obtained by personal communication).

Sections 30-26 through 30-36, Article II, address noise. Maximum limits have been established for each zoning district as measured at any point on or beyond the property from which the sound or noise is emanating as follows:

Zoning Use Districts	Time	Maximum Noise Levels (dBA)
Residential and multi-family	10 p.m. to 7 a.m.	55
	7 a.m. to 10 p.m.	60
Commercial, institutional, community facilities,	10 p.m. to 7 a.m.	60
government, recreational, and public facilities	7 a.m. to 10 p.m.	65
Light industrial	10 p.m. to 7 a.m.	65
-	7 a.m. to 10 p.m.	70
Heavy industrial	Any time	75

Note: dBA = A-weighted decibel.

In addition to the noise levels enumerated in the table, there are noises that could be declared to be loud, disturbing, and/or excessive under certain circumstances including radios, televisions, phonographs, animals, birds, exhausts, loading operations, construction, repairs and testing, impulsive sources, powered model vehicles, and motor vehicle racing events. This list is not exclusive.

As noted previously, the West Preferred Corridor crosses agricultural lands within the jurisdiction of Florida City. These lands were recently annexed from Miami-Dade County, so zoning is pending.



<u>Doral: Land Development Code</u>—The definitions section of Doral's land development code (LDC) contains no definitions for essential services, utilities, transmission lines, or any references to transmission lines except for an exclusion for power plants and associated facilities that are preempted by Chapter 403, F.S.

Noise is regulated pursuant to Chapter XV, Section 21, of the LDC. Excessive noise is addressed in Article IV, Section 21-28 of the Code of Ordinances. This section indicates it is unlawful to make, continue, or cause to be made or continued any unreasonably loud, excessive, unnecessary, or unusual noise. A series of noises are listed as examples in this section that could be deemed violations under certain circumstances including horns, radios, televisions, phonographs, animals, birds, whistles, exhausts, defect in vehicle or load, hawkers and peddlers, loudspeakers, power tools, landscaping equipment, shouting, and construction (must be conducted within prescribed hours).

<u>Medley: Land Development Code</u>—Chapter 62 (Zoning) of the Code of Ordinances makes no reference to electrical transmission lines.

Noise is regulated pursuant to Section 41-27 of the Code of Ordinances. This section indicates that it is unlawful to make, continue, or cause to be made or continued any unreasonably loud, excessive, unnecessary, or unusual noise. A series of noises are listed as examples in this section that could be deemed violations under certain circumstances including horns, radios, televisions, phonographs, animals, birds, whistles, exhausts, defect in vehicle or load, hawkers and peddlers, loudspeakers, power tools, landscaping equipment, shouting, and construction (must be conducted within prescribed hours). This list is not exclusive.

W9.3.6.3 Easements, Title, Agency Works

Easements, approvals, and various other authorizations will be required to cross certain lands under federal, state, regional, or local governmental jurisdictions. Road crossings in the West Preferred Corridor will require Florida Department of Transportation (FDOT) (including U.S. 1, Florida's Turnpike, U.S. 41, Ingraham Highway, and Krome Avenue), Miami-Dade County, or local government approvals or easements for crossing or collocating within those facilities. All crossings of state roadways will conform to the applicable specifications in FDOT's Utility Accommodation Manual (2007).



Additionally, the West Preferred/Secondary Corridors cross several canals/waterways under the jurisdiction of SFWMD, USACE, or the Miami-Dade County Public Works Department. Those will require crossing approvals or easements and are addressed in Section W9.3.7.2.

Other lands or facilities requiring special approvals are listed in Table W9.3.6-2.

W9.3.6.4 Vicinity Scenic, Cultural, and Natural Landmarks

The West Preferred/Secondary Corridors cross one notable scenic, cultural, or natural landmark, which is the ENP. It is a federally owned/managed national park and a scenic resource. In addition to the ENP, FPL also identified historic structures, locations, roads, areas, etc., in a report, which are discussed in Appendix 10.7.2 of this SCA.

W9.3.6.5 Archaeological and Historic Sites

FPL conducted a cultural resources assessment of the western routes evaluated and West Corridors proposed in this application (see Appendix 10.7.2). Based on that research for the west routes, three previously recorded archaeological resources, two previously recorded historic structures, and three previously recorded resource groups were found in proximity to the West Preferred or Secondary Corridor (Table W9.3.6-3).

The Division of Historical Resources (DHR) will review these results for the West Preferred/Secondary Corridors and make an assessment as to potential impacts to these known, as well as potentially unknown, locations. DHR may request, as a condition of certification, a cultural resources assessment be conducted along areas of the final right-of-way that have a likelihood of containing archaeological artifacts.

W9.3.7 Biological and Physical Environment of the Corridor Area

W9.3.7.1 Land Use/Vegetation

The existing land use and vegetation cover types (generally 5 acres or larger in size) were identified for the West Preferred/Secondary Corridors using FDOT's Florida Land Use, Cover, and Forms Classification System (FLUCFCS) published in 1999 as modified by SFWMD (2004). SFWMD used Categories II, III, and IV to identify land uses and vegetation types within SFWMD's boundaries. The classifications were obtained from SFWMD GIS data and overlaid on aerial photographs. Additionally, FPL performed field surveys in preparation for the environmental resource permit (ERP) informational data submittal for this Project in many areas of the corridors for which FPL had access (Golder



TABLE W9.3.6-2 EASEMENTS, TITLE, OR AGENCY WORKS OR CROSSINGS POTENTIALLY RE-QUIRED FOR THE WEST PREFERRED, WEST SECONDARY, OR ACCESS CORRIDORS

Governmental Jurisdiction	Affected Agency	Type of Approval
ENP Land	USDI, National Park Service, TIITF, SFWMD, USACE	Permit/easement
Other federal lands	USACE	Easement
Everglades and Francis S. Taylor WMA (WCA-3B)	TIITF	Easement
Miami-Dade County—northern 35 ft of the southeast quarter and a portion of the southwest quar- ter of Section 23, Township 52 south, Range 39 east	TIITF	Easement
Various canals (identified in Tables W9.3.7-2 through W9.3.7-4)	SFWMD, Miami-Dade County Public Works, USACE	Works of the District approval, crossing permit, easement
Florida's Turnpike	FDOT	Utility
U.S. 1	FDOT	Utility
State Road (SR) 997 (Krome Avenue)	FDOT	Utility
U.S. 41 (Tamiami Trail)	FDOT	Utility
Ingraham Highway	FDOT	Utility
Various county roads	Miami-Dade County Public Works	Utility
Various principal streets	Doral, Florida City, and Medley	Utility
County lands	Miami-Dade County	Permit/easement
SOR lands	SFWMD	Works approval/easement
To be determined	Various	Vegetation management easements to remove danger timber adjacent to right-of-way



TABLE W9.3.6-3 CULTURAL RESOURCES WITHIN OR ADJACENT TO THE WEST PREFERRED/SECONDARY CORRIDORS

FMSF* Number	Resource Name	Property Type/ Resource Type	NRHP† Evaluation‡
Archaeologic	al Resources within 100 ft		
8DA2104	Levee Cut	Archaeological resource/pre- historic midden(s)	Not evaluated
8DA2106	Benchmark Island	Archaeological resource/pre- historic lithic scatter/quarry	Not evaluated
8DA7016	Ingraham Highway	Archaeological resource/historic road segment	Ineligible
Resource Gro	ups within 100 ft		
8DA6453	Tamiami Canal	Historic linear resource	Potentially eligible
8DA6510	Tamiami Trail	Historic linear resource	Potentially eligible
8DA10107	F.E.C. Railway	Historic linear resource	Insufficient information
Historic Struc	etures within 500 ft		
8DA8040	AT&T Pennsuco (11011 NW 177 th Avenue)	Historic structure	Ineligible
8DA9602	11001 NW 177 th Avenue	Historic structure	Ineligible

^{*}Florida Master Site File.



[†]National Register of Historic Places.

[‡]As recorded in the FMSF; may require reevaluation.

Associates, Inc. [GAI], 2009). The FLUCFCS coverages were mapped/revised in the field to reflect current conditions. These data were also used to supplement those from SFWMD. The land use and vegetation classifications that occur within the corridor and the 0.5-mile area adjacent to either side are shown in Figure W9.1.0-4 (Map Sheets 1 through 38) (vegetation/land cover maps) at the end of this Section W9.0. Table W9.3.7-1 lists the various land use and vegetation categories found within the West Preferred/Secondary Corridors. Descriptions of the major land use and vegetation classifications that occur within these corridors are provided in the following subsections. For more detailed descriptions of these coverages that also occur on-Site, refer to Section 3.3.5.

Land Use

Most of the land use/cover classifications identified along the West Corridors reflect human-induced changes within the landscape. That is, much of the historical vegetation that occurred within the corridors and in the region has been cleared for residential, agricultural, or industrial uses. Table W9.3.7-1 lists land covers that were identified within the West Preferred/Secondary Corridors based on the SFWMD-modified FLUCFCS.

Urban and built-up land uses (100 series classifications) consist of lands primarily occupied by manmade structures and associated activities. Included in this category are medium- and high-density single-family units, low-density rural residential units, medium-density units under construction, and low-rise multiple dwelling units. Also contained within this land use category are commercial and services, commercial and services under construction, retail sales and services, educational and correctional facilities, rock quarries, holding ponds, golf courses, racetracks, and open land.

The agricultural land uses (200 series classifications) are among the dominant land uses along the West Preferred Corridor. The predominant agricultural land uses along the corridor are field crops, citrus groves, tree nurseries, row crops, and fruit orchards. Other agricultural land uses within the corridor include improved pastures, tree crops, other groves, nurseries and vineyards, ornamentals, and horse farms.

Barren land (700 series classifications) has little or no vegetation and limited potential to support vegetative communities. Two such categories, disturbed land and fill areas for highways-railways, are present in the West Preferred Corridor.



TABLE W9.3.7-1 LAND USE AND VEGETATION CLASSIFICATIONS OCCURRING WITHIN THE WEST PREFERRED/SECONDARY CORRIDORS

Low-Density: Rural Residential Medium-Density: Fixed Single-Family Units	
j	
121 Wedulii-Density. Tixed Single-Taility Units	
Medium-Density: Under Construction	
131 High-Density: Fixed Single-Family Units	
133 High-Density: Low-Rise Multiple Dwelling Units	
140 Commercial and Services	
141 Retail Sales and Services	
149 Commercial and Services: Under Construction	
163 Rock Quarries	
166 Holding Ponds	
171 Educational Facilities	
176 Correctional Facilities	
182 Golf Courses	
183 Race Tracks	
190 Open Land	
211 Improved Pastures	
214 Row Crops	
214 Row Clops 215 Field Crops	
220 Tree Crops	
220 Tree Crops 221 Citrus Groves	
222 Cittus Groves 222 Fruit Orchards	
223 Other Groves	
240 Nurseries and Vineyards	
240 Nurseries and Vineyards 241 Tree Nurseries	
243 Ornamentals	
251 Horse Farms	
320 Upland Shrub and Brushland 330 Mixed Rangeland	
420 Upland Hardwood Forests 422 Brazilian Pepper	
422 Brazilian Fepper 424 Melaleuca	
424 Melaleuca 436 Upland Scrub, Pine and Hardwoods	
437 Australian Pines	
510 Canals	
512 Channelized River, Stream, Waterway 530 Reservoirs	
530 Reservoirs 534 Reservoirs < 10 acres	



TABLE W9.3.7-1 LAND USE AND VEGETATION CLASSIFICATIONS OCCURRING WITHIN THE WEST PREFERRED/SECONDARY CORRIDORS (Continued, Page 2 of 2)

Number	Land Use Designation	
612	Mangrove Swamps	
617	Mixed Wetland Hardwoods	
619	Exotic Wetland Hardwoods	
619/641	Exotic Wetland Hardwoods/ Freshwater Marshes	
641	Freshwater Marshes	
641/643	Freshwater Marshes/Wet Prairies	
642	Saltwater Marshes	
643	Wet Prairies	
650	Non-Vegetated Wetlands	
651	Tidal Flats	
740	Disturbed Land	
744	Fill Areas: Highways and Railways	
814	Roads and Highways	
831	Electric Power Facilities	
832	Electrical Power Transmission Lines	

Sources: FDOT, 1999.

SFWMD, 2004. GAI, 2009.



Transportation, communication, and utilities (800 series classifications) consist of land primarily occupied by manmade facilities, which are necessary for movement of people and goods, airwave communications, power generating, and water supply and treatment plants. Included in this category are roads and highways, electric power facilities, and electrical power transmission lines.

Vegetation

Although some of the areas within the West Preferred/Secondary Corridors have been altered by the various land uses described previously, a variety of plant communities of varying quality exist within the corridors. Descriptions of the upland communities (300 and 400 series classifications), aquatic communities (500 series classifications), and wetland communities (600 series classifications) found within the corridor(s) are presented in the following subsections.

Upland Communities

Upland communities found within the corridor(s) range from less disturbed communities to areas vegetated by a variety of nuisance or weedy plants (Brazilian pepper [Schinus terebinthifolius]-, melaleuca [Melaleuca leucodendron]-, or Australian pine [Casuarina equisetifolia]-dominated areas). The upland communities that exist within the West Preferred/Secondary Corridors are summarized in the following paragraphs.

Herbaceous (Dry Prairie)—310

This plant association is dominated by a variety of herbs and may include scattered clumps of shrubs. Typical herbs include broomsedges (*Andropogon* spp.), bluestems (*Schizachyrium* spp.), bahia grass (*Paspalum notatum*), wire grass (*Aristida stricta* var. *beyrichiana*), crabgrasses (*Digitaria* spp.), love grasses (*Eragrostis* spp.), dog fennel (*Eupatorium capillizolium*), sweetbroom (*Scoparia dulcis*), slender goldenrod (*Euthamia caroliniana*), smutgrass (*Sporobolus indicus*), finger grass (*Eustachys petraea*), buttonweeds (*Spermacoce* spp.), paspalums (*Paspalum* spp.), witchgrasses (*Dichanthelium* spp.), and blackberries (*Rubus cuneifolius* and *R. trivialis*). Shrubs are often present, but not dominant, and include Brazilian pepper, saw palmetto (*Serenoa repens*), wax myrtle (*Myrica cerifera*), and groundsel tree (*Baccharis halimifolia*). This community is similar to unimproved pasture and likely represents former pasture that has not been used in some time.

Upland Shrub and Brushland—320

This plant association exists where historical plant cover was cleared for grazing or other uses and allowed to go fallow. These areas are dominated by a variety of weedy or adventive shrubs including



wax myrtle, groundsel tree, Brazilian pepper, winged sumac (*Rhus copallina*), saw palmetto, and immature cabbage palm (*Sabal palmetto*). Herbs are usually abundant and similar to those described for herbaceous (dry prairie).

Mixed Rangeland—330

This classification describes a mixture of weedy shrubs and herbs where shrubs and herbs comprise at least one-third of the total cover. Typical shrubs include Brazilian pepper, wax myrtle, saw palmetto, and groundsel tree. Herbs include broomsedges, bahia grass, finger grass, beggarticks (*Bidens alba*), dog fennel, sweetbroom, and slender goldenrod.

Upland Hardwood Forests—420

This is a catchall designation for upland hardwood forests that are not easily classified under the classifications as defined by FLUCFCS. Generally, these areas are a mixture of live oak (*Quercus virginiana*), laurel oak (*Quercus hemisphaerica*), and water oak (*Quercus nigra*) that is second growth on land cleared in the past.

Rockland hammock community is a variant of an upland hardwood community. It is a unique community because it grows on limestone outcrops, often supporting a distinct flora. Rockland hammock is the advanced successional stage of pine rockland. Pine rockland community is similar to rockland hammock and differs only by canopy trees consisting mostly of pines instead of hardwoods.

Two pine rockland communities occur within the West Preferred/Secondary Corridors, and two additional pine rockland communities occur within a 0.5-mile area of the corridors. They are concentrated in the lower half (southwest portion) of the corridors. The Navy Wells Park, Fuchs Hammock Preserve, and Sunny Palms Pinelands contain pine rockland communities. The Fuchs Hammock Preserve also supports one rockland hammock community.

Brazilian Pepper—422

This association is dominated by the exotic Brazilian pepper with lesser amounts of other shrubs including groundsel tree and wax myrtle. Herbs are usually uncommon in the interiors of these areas where the cover of Brazilian pepper completely shades the ground but are abundant at the margins of these communities. Common herbs usually include smutgrass, dog fennel, bahia grass, John Charles (*Hyptis verticillata*), and cottonweed (*Froelichia floridana*). Vines are usually present, especially muscadine grape (*Vitis rotundifolia*) and peppervine (*Ampelopsis arborea*). This type of community



normally becomes established on fallow land, berms, or other disturbed areas where the native vegetation was destroyed.

Melaleuca—424

This association is dominated by almost pure stands of melaleuca, which is an aggressive exotic that outcompetes other native vegetation and forms a nearly impenetrable stand. Shrubs and herbs are usually uncommon in the interiors of these areas where the cover of melaleuca completely shades the ground. This type of community can invade a wide variety of habitats ranging from wetland areas to mesic prairies. It is also commonly found on disturbed areas like roadsides and ditch banks.

Upland Scrub, Pine and Hardwoods—436

This is a designation that encompasses upland areas with no clear dominance of plant species and is usually a second growth on land cleared in the past. It includes a mixture of hardwood-conifer-scrub communities that contain plant species typical of these land uses. Generally, these areas will usually include a mixture of live oak, laurel oak, sand live oaks (*Quercus geminata*), cabbage palm, and various plant species common to pineland.

Australian Pines—437

This association is dominated by Australian pine. These exotic trees form thickets and produce dense leaf litter beneath them, outcompeting other native vegetation. Shrubs and herbs are usually uncommon in the interiors of these areas where the cover of Australian pine and their leaf litter completely cover the ground. This type of community can invade a wide variety of habitats from beach communities to wetland areas or disturbed areas where the native vegetation was destroyed.

Aquatic and Wetland Communities

Aquatic communities within the West Preferred/Secondary Corridors include canals, ditches, channelized river/stream/waterway, reservoirs, and reservoirs less than 10 acres. No natural aquatic communities exist within the corridor. Most are vegetated by a variety of floating or emergent herbs, many of which are considered nuisance species by the Florida Exotic Plant Pest Council. Categories or classifications of aquatic habitats that occur within the West Preferred/Secondary Corridors are described in the following paragraphs.

Forested and herbaceous wetlands in the West Preferred/Secondary Corridors are comprised of 11 different associations. Of these, freshwater marsh, wet prairies, exotic, and mixed wetland hardwoods



associations are the most prevalent. The quality of wetlands ranges from those exhibiting expected floristic and structural characteristics providing valuable wildlife habitat to those that have been so impacted by drainage or location within/next to intensive agricultural or developed areas that inherent functional values such as wildlife habitat, water quality, and flood attenuation have been severely degraded. The extensive drainage system (canals/ditches) that has been constructed in the region has drastically altered the historical hydrology of the wetland communities in the corridors with a concomitant change to structure and functional attributes. This is often manifested by the proliferation of transitional or even upland species, as well as nuisance exotics in many wetlands within the region.

Canals/Channelized River, Stream, Waterway—510/512

Several canals are crossed by the West Preferred/Secondary Corridors. Manmade canals associated with the existing Turkey Point plant industrial wastewater facility are located in the extreme southeast portion of the corridor. Vegetation in this system includes submerged, rooted marine plants, primarily widgeon grass (Ruppia maritima), and marine algae, as well as terrestrial woody vegetation along the berms such as Brazilian pepper, Australian pine, wild sage (Lantana involucrata), and buttonwood (Conocarpus erectus). Other canals located along the remainder of the corridor are typically vegetated by a variety of floating and emergent hydrophytes. Common plants include water lettuce (*Pistia* stratiotes), water hyacinth (Eichhornia crassipes), galingale (Cyperus odoratus), Cuban bulrush (Scirpus cubensis), primrose willow (Ludwigia sp.), Mexican primrose willow (Ludwigia octovalvis), smartweeds (*Polygonum* spp.), torpedo grass (*Panicum repens*), duck potato (*Sagittaria lancifolia*), pickerelweed (*Pontederia cordata*), and common reed (*Phragmites australis*). Most of the linear waterways are periodically maintained by the spraying of herbicides to maintain flow. Much of the vegetation in these canals is considered nuisance species, either native or exotic. The banks (spoil areas) along these linear water bodies are also dominated by weedy, often nuisance, native and exotic plants. The species observed adjacent to canals include elephant grass (*Pennisetum purpureum*), largeflower Mexican clover (Richardia grandiflora), beggarticks, cottonweed, camphorweed (Heterotheca subaxillaris), finger grass, bahia grass, Brazilian pepper, immature cabbage palm, wax myrtle, guinea grass (Panicum maximum), swamp flatsedge (Cyperus ligularis), southern beeblossum (Gaura angustifolia), and numerous others.

Ditches—511

Ditches are generally smaller and shallower than canals and generally contain/convey less water than canals. They are often located adjacent to roads and are typically vegetated with a mixture of nuisance/exotic species such as Brazilian pepper, cattail (*Typha domingensis* and/or *latifolia*), parrot



feather (*Myriophyllum aquaticum*), torpedo grass, primrose willow, and wild taro (*Colocasia esculenta*), as well as native species including arrowhead (*Sagittaria lancifolia*), water spangles (*Salvinia minima*), mosquitofern (*Azolla caroliniana*), and beggarticks.

Reservoirs—530

This classification is used to describe open water areas that have been created from borrow pits. Generally, they are square or rectangular deepwater pits with cattails and/or primrose willow growing at the margins. They are often bordered with spoil piles vegetated with species listed previously under the description of spoil areas for canals.

Reservoirs <10 acres—534

This classification further narrows the reservoirs (530) land use into a category of reservoirs that are less than 10 acres in size.

Mangrove Swamps—612

This community type is located in some of the undeveloped portions of the Turkey Point plant property. Dominant species present in these coastal hardwood communities usually include red (*Rhizophora mangle*), black (*Avicennia germinans*), and white mangrove (*Laguncularia racemosa*); buttonwood; sea grape (*Coccoloba uvifera*); leather fern (*Acrostichum* spp.); cankerberry (*Solanum bahamense*); and cocoplum (*Chrysobalanus icaco*).

Dwarf Mangroves—612 B

Patches of the dwarf mangrove community are located within the undeveloped portions of the existing Turkey Point plant property and contain mangroves less than 24 inches in height, stunted in response to decreased nutrient availability and increased salinity (McKee, 1996). Approximately 90 percent of the red mangroves are characteristic of the dwarf mangrove community, while approximately 10 percent are large individuals located adjacent to tidal creeks. Buttonwood is a common subdominant canopy component, along with occasional white and black mangroves. Additional vegetative species observed within the dwarf mangrove community include occasional Brazilian pepper, Australian pine, seaside oxeye, grey nicker (*Caesalpinia bonduc*), groundsel tree, and cordgrass (*Spartina* sp.).



Mixed Wetland Hardwoods—617

This community occurs throughout the West Preferred/Secondary Corridors, with most areas occurring near or in the ENP. Mixed wetland hardwood forests are typically dominated by sweet bay (Magnolia virginiana), swamp laurel oak (Quercus laurifolia), and swamp red bay (Persea palustris) in association with other hardwoods including buttonwood, Australian pine, cocoplum, red mangrove, Brazilian pepper, and Carolina willow (Salix caroliniana). The shrub stratum is typically sparse, comprised of scattered individuals of wax myrtle and buttonbush (Cephalanthus occidentalis), among others. The stratum density varies with degree of shading. Typically, lizard's tail (Saururus cernuus), pickerelweed, beakrushes (Rhynchospora spp.), royal fern (Osmunda regalis), and swamp fern (Blechnum serrulatum) are found. These forests are characteristically flooded or saturated for much of the year, drying only for short periods during the dry winter season. Construction of ditches and canals has shortened the hydroperiod of many of these forests.

Exotic Wetland Hardwoods—619

Areas dominated by Brazilian pepper, melaleuca, Australian pine, or a combination thereof are classified as exotic wetland hardwoods. Subdominant species include primrose willow, wild taro, Johnson grass (*Sorghum halepense*), and beggarticks.

Exotic Wetland Hardwoods/Freshwater Marshes—619/641

This category describes a community with a combination of exotic wetland hardwoods and freshwater marsh. Plant species commonly encountered in this association are a combination of those in exotic wetland hardwoods (619), described previously, and freshwater marshes (641), described in the following.

Freshwater Marshes—641

Freshwater marshes occur throughout the West Preferred/Secondary Corridors and dominate areas of the ENP. They are dominated by a wide assortment of herbaceous plant species growing on sandy or organic soils in areas of variable water depths and inundation regimes. Species characteristic of the marshes in the study area include sawgrass (*Cladium* spp.), pickerelweed, maidencane (*Panicum hemitomon*), fireflag (*Thalia geniculata*), cattail, smartweeds, and sedges (*Cyperus haspan*, *C. odoratus*, and *C.* spp.). In more disturbed areas, primrose willows, Brazilian pepper, poisonwood (*Metopium toxiferum*), Australian pine, musky mint (*Hyptis alata*), silktree (*Albizia julibrissin*), nettletree (*Trema micranthum*), and torpedo grass are abundant. The best quality marshes exhibit zonation and a variety



of desirable, native herbs. Many marshes within the West Preferred/Secondary Corridors have been impacted by drainage and agricultural practices to varying degrees.

Freshwater Marshes/Wet Prairies—641/643

This category describes a community structure with characteristics common to both freshwater marsh and wet prairies. Plant species commonly encountered in this association are a combination of those in freshwater marshes (641), described previously, and wet prairies (643), described in a subsequent paragraph.

Saltwater Marshes—642

Saltwater marshes consist of nonwoody, salt-tolerant plant species such as needlerush (*Juncus roeme-rianus*), bushy seaside oxeye (*Borrichia frutescens*), saltmeadow and saltmarsh cordgrass (*Spartina patens* and *S. alternifolia*), and glassworts (*Salicornia* spp.). Saltwater marshes' extents and vegetative composition depend on factors such as salinity, tidal range and duration, wave energy, and topographic relief.

Wet Prairies—643

Wet prairies are similar to freshwater marshes with the exception that they usually do not flood as deeply nor exhibit as long a hydroperiod as do freshwater marshes. Typically, wet prairies are dominated by grasses and sedges including sand cordgrass, saw grass (*Cladium jamaicense*), fall panicgrass (*Panicum dichotomiflorum*), redtop panicum (*Panicum rigidulum*), bluejoint panicum (*Panicum tenerum*), yellow-eyed grasses (*Xyris* spp.), doll's daisy (*Boltonia diffusa*), love grasses, and torpedograss. As for freshwater marshes, wet prairies have been impacted by drainage and agricultural practices to some degree.

Non-Vegetated Wetlands—650

Non-vegetated wetlands have either very sparse vegetation or are lacking vegetation completely, because ongoing erosion by wind and water make the establishment of plant communities difficult. The constant flux of sedimentation caused by the elements does not allow vegetation to establish. Shorelines and tidal flats are examples of such communities.

Tidal Flats—651

Small areas of this vegetative community occur in the corridor at the Turkey Point plant property. Vegetative cover is sparse in the tidal flat area due to the high salinity and routine fluctuations in wa-



ter levels. Species present in this area include saltwort (*Batis maritima*), sea oxeye daisies (*Borrichia* spp.), woody glasswort (*Salicornia virginica*), and dwarf glasswort (*Salicornia bigelovii*).

W9.3.7.2 Affected Waters and Wetlands

Surface water bodies and wetlands that are crossed/included within the West Preferred Corridor and West Secondary Corridor were identified using SFWMD land cover mapping, 2007 aerial photographs, hydrologic information from Miami-Dade County GIS and SFWMD, and field surveys conducted for this Project (GAI, 2009).

Water Bodies

Major water bodies crossed by the corridors are listed in Table W9.3.7-2 through W9.3.7-4, which list those for the West Preferred Corridor from Clear Sky to Levee, the West Secondary Corridor segment, and the West Preferred Corridor from the Levee substation to Pennsuco substation, respectively. According to Section 62-302.400, F.A.C., there are no designated Florida Class I or II waters within the West Preferred/Secondary Corridors. Most of the waters crossed by the West Corridors are considered Class III waters, which means they are of sufficient quality to support fish and wildlife populations.

Wetlands

Wetlands within and 0.5 mile from the corridors as identified by SFWMD (2004) and updated by FPL in many areas where access was available (GAI, 2009) are identified on maps presented in Figure W9.1.0-4. Descriptions of the wetland communities are found in Section W9.3.7.1

W9.3.7.3 Ecology

The West Preferred/Secondary Corridors cross significant wetland habitats, but natural upland habitats are limited and usually small. Therefore, it is expected that plants and wildlife found in these corridor areas will be those adapted to wetland cover types or man-induced habitats such as nurseries, agricultural operations, disturbed areas, low-density residential, etc. Of the upland communities, some, such as pine rockland habitats, are unique and have the potential for harboring certain listed species.

Wildlife species typically found in Miami-Dade County will be expected to occur in the West Preferred/Secondary Corridors since they cover typical natural habitats found in the county. Ecological surveys of the corridor areas were conducted for FPL. FPL described the ecological resources along



TABLE W9.3.7-2 WATER BODIES CROSSED BY THE WEST PREFERRED CORRIDOR BETWEEN CLEAR SKY AND LEVEE SUBSTATIONS

Water Body	Jurisdiction	Comments		
Existing Turkey Point cooling canals of the industrial wastewater facility	FPL	On FPL Turkey Point plant property		
L-31E Canal	SFWMD	Crosses the corridor just west of the existing Turkey Point industrial wastewater facility		
Unnamed canal	Miami-Dade County	Crosses the West Preferred Corridor and is contained within the road corridor along SW 137 th Avenue		
Unnamed canal	Miami-Dade County	Crosses the corridor just west of U.S. 1		
C-113 Canal	SFWMD	Crosses the corridor north of SW 312 th Street		
8.5 SMA seepage canal	USACE	Crosses the corridor north of SW 136 th Street		
C-103 (Mowry) Canal	SFWMD	Crosses the corridor north of SW 272 nd Street		
Princeton Canal	SFWMD	Crosses the corridor at SW 192 nd Street		
L-31N Canal	SFWMD	Crosses the corridor along SW 205 th Avenue and is included within the corridor from north of SW 120 th Street to the corridor's intersection with Tamiami Trail (U.S. 41)		
Black Creek Canal (C-1W)	SFWMD	Portion of the canal occurs in the corridor along SW 112 th Street		
ENP	FDEP	Outstanding Florida Water included along edge of corridor		
C-4 (Tamiami) Canal	SFWMD	Crosses corridor at U.S. 41/Tamiami Trail		
L-29 Borrow Enlargement	SFWMD	Contained within the Tamiami Trail Access Corridor		
L-30 Canal	SFWMD	Contained within the Tamiami Trail and Krome Avenue Access Corridors		
Dade-Broward Levee	Miami-Dade County	Crosses the corridor just west of the Levee substation		



TABLE W9.3.7-3 WATER BODIES CROSSED BY THE WEST SECONDARY CORRIDOR

Water Body	Jurisdiction	Comments
ENP	FDEP	Outstanding Florida Water encompasses much of corridor
C-4 (Tamiami) Canal	SFWMD	Crosses corridor at U.S. 41/Tamiami Trail

TABLE W9.3.7-4
WATER BODIES CROSSED BY THE WEST PREFERRED CORRIDOR
BETWEEN LEVEE AND PENNSUCO SUBSTATIONS

Water Body	Jurisdiction	Comments	
Unnamed mine pits	Private	Some portions of pits occur within the corridor between NW 137 th Avenue and Florida's Turnpike	
Snapper Creek Extension Canal	Miami-Dade County	Crosses corridor along NW 117 th Avenue	
Dressel's Dairy Canal	Miami-Dade County	Crosses corridor just south of NW 58 th Street on a golf course	
NW 74 th Street Canal	Unknown	Crosses corridor at NW 74 th Street	
Russian Colony Canal	Miami-Dade County	Crosses corridor along NW 106 th Street just south of the Pennsuco substation	



the West Corridors as part of the fieldwork to develop the information typically required for an ERP application. A summary of the ecological resources for this Project can be found in Section 3.3.6 and Appendix 10.7.1.

Based on findings along accessible areas of the corridors and near the Turkey Point plant property, common wildlife species are generally comprised of wetland-dependent species.

Common bird species included a variety of herons and egrets, terns, sandpipers, gulls, and birds of prey such as bald eagle (*Haliaeetus leucocephalus*), red-shouldered hawk (*Buteo lineatus*), snail kite (*Rostrhamus sociabilis*), and American kestrel (*Falco sparverius*).

Upland bird species commonly observed included the northern cardinal (*Cardinalis cardinalis*), turkey vulture (*Cathartes aura*), mockingbird (*Mimus polyglottos*), and mourning dove (*Zenaida macroura*).

Common mammals found included opossum (*Didelphis virginiana*), white-tailed deer (*Odocoileus virginianus*), marsh rabbit (*Sylvilagus palustris*), and raccoon (*Procyon lotor*).

Reptiles included Carolina anole (*Anolis carolinensis*), eastern diamondback rattlesnake (*Crotalus adamanteus*), and American crocodile (*Crocodylus acutus*), which occurs in the existing Turkey Point cooling canals of the industrial wastewater facility.

Amphibians included various frogs and treefrogs (*Rana* sp. and *Hyla* spp.) and the southern toad (*Bufo terrestris*).

Since much of the West Preferred/Secondary Corridors are relatively undeveloped, these species are expected to occur throughout the corridor area.

Threatened and Endangered Species

Floral and faunal species listed by USFWS as endangered, threatened, or proposed for listing; Florida Fish and Wildlife Conservation Commission (FWC) as endangered, threatened, or of special concern; and Florida Department of Agriculture and Consumer Services (FDACS) as endangered or threatened were evaluated for their potential to occur along the West Preferred/Secondary Corridors. Sources included FPL's field surveys, as well as information contained in Section 3.3.6, and Appendix 10.4.



Known occurrences of listed species within 1,500 ft of the West Preferred/Secondary Corridors are illustrated in Figure W9.1.0-4 on Map Sheets 1 through 38.

The FNAI database also was used to identify known occurrences of listed species throughout Miami-Dade County (FNAI, 2009). It should be noted that FNAI records can be based on collections made years ago. It is possible that many of the occurrences reflected in FNAI records may no longer exist, having been eliminated by subsequent development or natural events (hurricanes, fires). However, FNAI data are discussed in the following subsections. Where available, other listed plant species data are also presented as found in Appendix 10.4.

Plant Species

A total of 173 regulated plant species or subspecies is known to occur within Miami-Dade County in habitats similar to those found within the study area. All were evaluated for the potential to occur within either the West Preferred or Secondary Corridor or within the vicinity of each. Table W9.3.7-5 lists the plants known to occur within the region that were evaluated for the likelihood of occurrence within the West Preferred/Secondary Corridors.

Five plants on the comprehensive list for the county are designated by USFWS as endangered, one is listed as threatened, and eight are listed as candidates for listing (those plants that have sufficient information on biological vulnerability to support proposing to list the species as endangered or threatened). In the western study area, two plants listed by USFWS as candidates for future listing as threatened or endangered have been reported: *Brickellia mosieri* and *Chamaesyce deltoidea* ssp. *pinetorum*. Both plants were observed during FPL field surveys of the corridor in a pine rockland community in the southern portion of the West Preferred Corridor where it turns north.

As indicated in Table W9.3.7-5, a total of 29 plants listed as threatened or endangered by FDACS are present within the boundaries of the West Preferred or Secondary Corridor based on FNAI records or observations made by FPL during the field survey mentioned previously. Of these, ten are listed as state-endangered: *Aeschynomene pratensis*, *Brickellia mosieri*, *Chamaesyce deltoidea* ssp. *pinetorum*, *Ipomoea tenuissima*, *Lantana depressa* var. *depressa*, *Phyla stoechadifolia*, *Poinsettia pinetorum*, *Stylosanthes calcicola*, *Koanophyllum villosum*, and *Trema lamarchianum*. Nineteen are listed as state-threatened: *Angadenia berteroi*, *Bletia purpurea*, *Byrsonima lucida*, *Chaptalia albicans*, *Coccothrinax argentata*, *Crossopetalum ilicifolium*, *Cynanchum blodgettii*, *Melanthera parvifolia*, *Pteris bahamensis*, *Solanum donianum*, *Thelypteris augescens*, *Jacquemontia curtissii*, *Rhynchosia*



TABLE W9.3.7-5.

COMPREHENSIVE LIST OF RARE, THREATENED, OR ENDANGERED PLANT TAXA FOUND IN MIAMI-DADE COUNTY AND THEIR POTENTIAL TO OCCUR WITHIN 1,500 FT OF THE WEST PREFERRED/SECONDARY CORRIDORS

Scientific Name	Common Name	Federal Status*	State Status†	Habitat Preference	Likelihood of Species Occurrence within Corridors‡
Acoelorraphe wrightii	Paurotis palm	_	T	Swamps, everglades, and hammocks	L
Acrostichum aureum	Golden leather fern	_	T	Mangrove swamps, saltmarshes, and limestone sinks	L
Actinostachys pennula	Ray fern	_	Е	Swamps	L
Adiantum melanoleucum	Fragrant maidenhair fern	_	Е	Limestone sinks in rockland hammocks	L
Adiantum tenerum	Brittle maidenhair fern	_	Е	Limestone sinks in rockland hammocks	L-M
Aeschynomene pratensis	Meadow jointvetch	_	Е	Marl prairies, cypress domes, and swales	H-P
Aletris bracteata	Bracted colic-root	_	Е	Rocky pine savannahs	L
Alvaradoa amorphoides	Everglades leaf lace		Е	Pine rocklands, transition zone between pine rocklands and rockland hammock	L
Amorpha herbacea var. crenulata	Crenulate lead-plant	Е	Е	Rockland hammocks and pine rocklands	L-M
Anemia wrightii	Wright's pineland fern	_	Е	Limestone outcrops in moist hammocks, pine rocklands, and prairies	L
Angadenia berteroi	Pineland golden trumpet	_	T	Pinelands	H-P
Argythamnia blodgettii	Blodgett's wild-mercury	С	Е	Open gaps in pine rocklands, rockland hammocks, and coastal berms	L
Asplenium dentatum	American toothed spleenwort	_	Е	Limestone outcrops in moist hammocks	L
Asplenium serratum	American bird's nest fern	_	Е	Cypress swamps and moist hardwood hammocks	L
Asplenium verecundum	Modest spleenwort	_	Е	Limestone outcrops in rockland hammocks	L
Basiphyllaea corallicola	Rockland orchid	_	Е	Openings in pine rocklands, leaf litter, and in moist hardwood hammocks	L
Beloglottis costaricensis	Costa Rican ladies'-tresses	_	Е	Hardwood hammocks	L
Bletia purpurea	Pine pink	_	T	Pine rocklands; stumps and tree bases and cypress swamps	H-P
Bourreria cassinifolia	Smooth strongbark	_	Е	Pine rocklands	L
Bourreria succulenta	Bahama strongbark	_	Е	Hardwood hammocks	L
Brickellia mosieri	Florida brickell-bush	C	Е	Pinelands	H-P
Byrsonima lucida	Locustberry	_	T	Pine rocklands, hardwood hammocks	H-P
Calyptranthes pallens	Spicewood	_	T	Hardwood hammocks	L
Calyptranthes zuzygium	Myrtle-of-the-river	_	Е	Rockland hammocks - coastal strand	L
Catopsis berteroniana	Powdery catopsis	_	Е	Hardwood hammocks, mangroves, and hardwood trees in pinelands	L
Catopsis floribunda	Many-flowered catopsis	_	Е	Hardwood hammocks	L
Chamaesyce deltoidea ssp. adhaerens	Hairy deltoid spurge	Е	Е	Pine rocklands	L
Chamaesyce deltoidea ssp. deltoidea	Deltoid spurge	Е	Е	Pine rocklands	L
Chamaesyce deltoidea ssp. pinetorum	Pinelands spurge	C	Е	Pine rocklands	H-P
Chamaesyce garberi	Garber's spurge	T	Е	Pinelands and dunes	L
Chamaesyce pergamena	Southern Florida sandmat		T	Pine rocklands	L

TABLE W9.3.7-5.

COMPREHENSIVE LIST OF RARE, THREATENED, OR ENDANGERED PLANT TAXA FOUND IN MIAMI-DADE COUNTY AND THEIR POTENTIAL TO OCCUR WITHIN 1,500 FT OF THE WEST PREFERRED/SECONDARY CORRIDORS (Continued, Page 2 of 6)

Scientific Name	Common Name	Federal Status*	State Status†	Habitat Preference	Likelihood of Species Occurrence within Corridors‡
Chamaesyce porteriana	Porter's broad-leaved spurge	_	Е	Pine rocklands, rockland hammocks, coastal rock barrens, and marl prairies	L-M
Chaptalia albicans	Sunbonnets	_	T	Pinelands	H-P
Chrysophyllum oliviforme	Satinleaf	_	T	Hardwood hammocks and pinelands	L
Coccothrinax argentata	Silver palm	_	T	Pine rocklands and dunes	H-P
Colubrina cubensis var. floridana	Cuban snake-bark	_	Е	Pine rocklands, rockland hammocks on Miami rock ridges, and Everglades Keys	L-M
Colubrina elliptica	Soldierwood	_	Е	Hardwood hammocks	L
Crossopetalum ilicifolium	Christmas berry	_	T	Pinelands	H-P
Crossopetalum rhacoma	Maidenberry	_	T	Pinelands, hardwood hammocks	L
Croton humilis	Pepperbush	_	Е	Hardwood hammocks	L
Ctenitis sloanei	Florida tree fern	_	Е	Hardwood hammocks, often on limestone outcrops	L
Ctenitis submarginalis	Brown-hair comb-fern	_	Е	Swamps and wet hardwood hammocks	L
Cynanchum blodgettii	Blodgett's swallowwort	_	T	Hardwood hammocks	H-P
Cyperus filiformis	Wiry flatsedge	_	Е	Dry, sandy open areas, shell ridges	L
Cyrtopodium punctatum	Cowhorn orchid	_	Е	Cypress swamps, scrub cypress strands, coastal hammocks, rarely terrestrial in rock pinelands, and marl prairies	L
Dalbergia brownei	Browne's Indian rosewood	_	Е	Margins of hardwood hammocks and mangroves	L
Dalea carthagenensis var. floridana	Florida prairie clover	С	Е	Pine rocklands and rockland hammocks, coastal uplands, and marl prairies	L
Digitaria filiformis var. dolichophylla	Caribbean crabgrass	_	T	Rock pinelands	L-M
Digitaria pauciflora	Few-flowered fingergrass	С	Е	Rock pinelands	L-M
Drypetes lateriflora	Guiana plum	_	T	Hardwood hammocks	L
Eltroplectris calcarata	Spurred neottia	_	Е	Mesic hardwood hammocks and rockland hammocks	L-M
Epidendrum amphistomum	Dingy flowered star orchid	_	Е	Swamps	L
Epidendrum floridensis	Florida star orchid		Е	Cypress and hardwood swamps	L
Epidendrum nocturnum	Night-scented orchid		Е	Cypress swamps, moist hardwood hammocks, and mangroves	L
Epidendrum rigidum	Stiff flower star orchid		Е	Swamps and moist hammocks	L
Erithalis fruticosa	Black torch		T	Coastal hammocks and dunes	L
Ernodea cokeri	Coker's beach creeper		Е	Pine rocklands, dunes	L-M
Eugenia confusa	Tropical ironwood		Е	Hardwood hammock	L
Eugenia rhombea	Red stopper	_	Е	Rockland hammocks	L
Evolvulus convolvuloides	Bindweed dwarf morning-glory		Е	Pine rocklands	L

TABLE W9.3.7-5.
COMPREHENSIVE LIST OF RARE, THREATENED, OR ENDANGERED PLANT TAXA FOUND IN MIAMI-DADE COUNTY AND THEIR POTENTIAL TO OCCUR WITHIN 1,500 FT OF THE WEST PREFERRED/SECONDARY CORRIDORS

(Continued, Page 3 of 6)

Scientific Name	Common Name	Federal Status*	State Status†	Habitat Preference	Likelihood of Species Occurrence within Corridors‡
Exostema caribaeum	Princewood		Е	Pine rocklands and rockland hammocks	L
Galactia smallii	Small's milk pea	Е	Е	Pine rocklands	L
Galeandra bicarinata	Two-keeled helmet orchid	_	Е	Hardwood hammocks	L
Glandularia maritima	Coastal vervain	_	Е	Dunes, coastal pinelands	L
Gossypium hirsutum	Wild cotton	_	Е	Coastal hammocks, beaches, disturbed sites, and shellmound spoil piles	L
Govenia floridana	Florida govenia	_	Е	Hardwood hammocks	L
Guzmania monostachia	Fakahatchee guzmania	_	Е	Swamps and wet hardwood hammocks	L
Habenaria nivea	Snowy platanthera	_	T	Wet pinelands, prairies, and wet ditches	L
Harrisia simpsonii	Simpson's prickly apple	_	Е	Shell mounds, xeric coastal hammocks, and scrubby flatwoods	L
Hibiscus poeppigiii	Poeppig's rosemallow	_	Е	Hardwood hammocks	L
Hippomane mancinella	Manchineel	_	Е	Coastal berms and hammocks	L
Hypelate trifoliata	White ironwood	_	Е	Pine rocklands and rocklands	L
Ilex krugiana	Krug's holly	_	T	Pinelands and hardwood hammocks	H-P
Ionopsis utricularioide	Delicate violet orchid	_	Е	Cypress swamps and citrus groves	L
Ipomoea microdactyla	Wild potato morning glory	_	Е	Pine rocklands	L-M
Ipomoea tenuissima	Rocklands morning glory	_	Е	Pine rocklands	H-P
Jacquemontia curtisii	Pineland jacquemontia	_	T	Pinelands	H-P
Jacquemontia pentanthos	Skyblue clustervine	_	Е	Pine rocklands and disturbed edges, areas of rockland hammocks, and coastal rock barrens	L
Jacquinia keyensis	Joewood	_	T	Coastal hammocks	L
Koanophyllum villosum	Villose fennel	_	Е	Hammocks and pinelands	H-P
Lantana canescens	Small-headed lantana	_	Е	Transition zones between rockland hammocks and pine rocklands	L
Lantana depressa var. depressa	Florida lantana	_	Е	Rock pinelands	H-P
Lantana depressa var. floridana	Atlantic Coast Florida lantana	_	Е	Dry, open dunes and sandy ridges, primarily along coasts	L
Leiphaimos parasitica	Ghost plant	_	Е	Hardwood hammocks	L
Licaria triandra	Gulf licaria	C	Е	Hardwood hammocks	L-M
Linum arenicola	Sand flax	C	Е	Pine rocklands, marl prairires, and adjacent disturbed areas	M-H
Linum carteri var. carteri	Carter's small-flowered flax	C	Е	Pine rocklands	L-M
Linum carteri var. smallii	Carter's large-flowered flax	_	Е	Pine flatwoods, pine rocklands, and adjacent disturbed areas	M
Lomariopsis kunzeana	Holly vine fern	_	Е	Wet hardwood hammocks, limestone outcrops in wet hardwood hammocks	L
Manilkara jaimiqui ssp. emarginata	Wild dilly	_	T	Hardwood hammocks	L

TABLE W9.3.7-5.

COMPREHENSIVE LIST OF RARE, THREATENED, OR ENDANGERED PLANT TAXA FOUND IN MIAMI-DADE COUNTY AND THEIR POTENTIAL TO OCCUR WITHIN 1,500 FT OF THE WEST PREFERRED/SECONDARY CORRIDORS (Continued, Page 4 of 6)

Scientific Name	Common Name	Federal Status*	State Status†	Habitat Preference	Likelihood of Species Occurrence within Corridors‡
Maytenus phyllanthoides	Florida mayten	_	T	Coastal hammocks and dunes	L
Melanthera parvifolia	Small-leaved melanthera	_	T	Old coral reefs, limestones, pine forests	H-P
Mesadenus lucayana	Florida Keys ladies'-tresses	_	Е	Dry calcareous hardwood hammocks and coastal middens	L
Microgramma heterophylla	Climbing vine fern	_	Е	Hardwood hammocks, limestone outcrops in hardwood hammocks	L
Myrcianthes fragrans	Simpson stopper	_	T	Coastal hammocks; rarely, inland hardwood hammocks	L
Nephrolepis biserrata	Giant sword fern	_	T	Swamps and wet hardwood hammocks	L
Ocimum campechianum	Wild basil	_	Е	Disturbed sites	L-M
Odontosoria clavata	Wedgelet fern	_	Е	Rock pinelands and rockland hammocks, often on limestones	L
Oncidium floridanum	Florida dancinglady orchid	_	Е	Pine rocklands, rockland hammocks, mangroves, and cypress swamps	L
Oncidium undulatum	Muleear orchid	_	Е	Mangrove swamps, cypress swamps, and hardwood hammocks	L
Ophioglossum palmatum	Hand fern		Е	Wet hammocks, epiphytic on sabal palmetto	L
Opuntia stricta	Erect pricklypear	_	T	Shell middens, dunes, and coastal hammocks	L
Paspalidium chapmanii	Coral paspalum		Е	Hardwood hammocks, prairies, and disturbed sites	M
Passiflora pallens	Pineland passionflower	_	Е	Rockland hammocks, coastal berms, and strand swamps	L
Passiflora sexflora	Everglades Key passion-flower	_	Е	Hardwood hammocks	L
Pavonia paludicola	Mangrove mallow		Е	Hardwood hammocks	L
Peperomia humilis	Low peperomia	_	Е	Shell mounds and limestone outcrops in mesic hardwood hammocks, coastal berms, and cypress swamps	L
Peperomia obtusifolia	Blunt-leaved peperomia	_	Е	Rockland hammocks, wet hardwood hammocks, and strand swamps	L
Phyla stoechadifolia	Southern frog-fruit	_	Е	Wet pinelands and glades	H-P
Picramnia pentandra	Bitter bush	_	Е	Hammocks	L
Pithecellobium keyense	Black bead		T	Coastal hammocks and strands	L
Poinsettia pinetorum	Pineland spurge	_	Е	Pine rocklands	H-P
Polygala smallii	Tiny polygala	Е	Е	Pine rocklands, scrubs, sandhills, and open coastal spoil piles	L
Polystachya concreta	Greater yellowspice orchid		Е	Cypress swamps, hardwood hammocks, and mangroves	L
Ponthieva brittoniae	Britton's shadow-witch	_	Е	Rock pinelands and rockland hammocks	L
Prosthechea boothiana var. erythronioides	Dollar orchid		Е	Hardwood hammocks and mangroves	L
Prosthechea cochleata var. triandra	Clamshell orchid	_	Е	Swamps, mangroves, and hardwood hammocks	L
Prunus myrtifolia	West Indian cherry	_	T	Rock pinelands and rockland hammocks	L
Psidium longipes	Mangrove berry	_	T	Pine rocklands and rockland hammocks	L
Psychotria ligustrifolia	Bahama wild coffee	_	Е	Pine rocklands and rockland hammocks	L
Pteris bahamensis	Bahama brake	_	T	Pine rocklands and edges of rockland hammocks	H-P

TABLE W9.3.7-5.

COMPREHENSIVE LIST OF RARE, THREATENED, OR ENDANGERED PLANT TAXA FOUND IN MIAMI-DADE COUNTY AND THEIR POTENTIAL TO OCCUR WITHIN 1,500 FT OF THE WEST PREFERRED/SECONDARY CORRIDORS (Continued, Page 5 of 6)

Scientific Name	Common Name	Federal Status*	State Status†	Habitat Preference	Likelihood of Species Occurrence within Corridors‡
Pteroglossaspis ecristata	Giant orchid	_	T	Sandhills, scrubs, pine flatwoods, and pine rocklands	L
Reynosia septentrionalis	Darlingplum	_	T	Hardwood hammocks and margins of mangroves	L
Rhipsalis baccifera	Mistletoe cactus	_	Е	Rockland hammocks and mangroves	L
Rhynchosia parviflora	Small-leaf snoutbean	_	T	Pinelands and beaches	H-P
Roystonea elata	Florida royal palm	_	Е	Wet hardwood hammocks, swamps, and cypress sloughs	L
Sachsia polycephala	Bahama sachsia	_	T	Rock pinelands	H-P
Sacoila lanceolata var. paludicola	Fahkahatchee ladies'-tresses	_	T	Wet hardwood hammocks, cypress swamps, and middens	L
Savia bahamensis	Bahama maidenbush		Е	Coastal thickets, pine rocklands, and rockland hammocks	L
Schaefferia frutescens	Florida boxwood		Е	Rockland hammocks	L
Scleria lithosperma	Florida Keys nutrush		Е	Pine rocklands and rockland hammocks	L
Scutellaria havanensis	Havana skullcap	_	Е	Rock pinelands	L-M
Selaginella eatonii	Eaton's spikemoss	_	Е	Moist limestone outcrops in rock pinelands and rockland hammocks	L
Senna mexicana var. chapmanii	Bahama senna	_	T	Rock pinelands, rockland hammocks, and dunes	L
Smilax havanensis	Everglades greenbrier	_	T	Rock pinelands and rockland hammocks	L
Solanum donianum	Mulle in nightshade	_	Т	Coastal hammocks and dunes, marl prairies, edges or roads in mangroves	H-P
Spermacoce terminalis	Everglades Keys false button-weed	_	T	Pine rocklands	H-P
Spiranthes laciniata	Lacelip ladies-tresses		T	Hypericum-sedge, marshes, and open cypress swamps	L
Spiranthes longilabris	Longlip ladies'-tresses		T	Wet prairies and pine rocklands	L
Spiranthes torta	Southern ladies'-tresses	_	Е	Pine rocklands and marl prairies	M
Stylosanthes calcicola	Pineland pencil flower	_	Е	Pine rocklands, marl prairies, and transitional areas between them	H-P
Swietenia mahagoni	West Indies mahogany	_	Т	Coastal strands, rockland hammocks, and hammocks also naturalized in disturbed areas from cultivated trees	L
Tectaria fimbriata	Least halberd fern	_	Е	Limestone outcrops in rockland hammocks	L
Tectaria heracleifolia	Broad halberd fern	_	T	Limestone outcrops in rockland hammocks	L
Tephrosia angustissima var. angustissima	Devil's shoestring	_	Е	Pine rocklands	L
Tephrosia angustissima var. corallicola	Rockland hoary-pea		Е	Pine rocklands	L
Tephrosia angustissima var. curtisii	Coastal hoary-pea	_	Е	Coastal strands	L
Tetrazygia bicolor	Florida clover ash	_	T	Rock pinelands and rockland hammocks	H-P
Thelypteris augescens	Abrupt tip maiden fern	_	T	Rockland hammocks	H-P
Thelypteris patens	Grid-scale maiden fern	_	Е	Rockland hammocks	L
Thelypteris reptans	Creeping maiden fern	_	Е	Limestone sinks in rockland hammocks	L
Thelypteris reticulata	Lattice-vein fern		Е	Wet hardwood hammocks and cypress swamps	L

TABLE W9.3.7-5.

COMPREHENSIVE LIST OF RARE, THREATENED, OR ENDANGERED PLANT TAXA FOUND IN MIAMI-DADE COUNTY AND THEIR POTENTIAL TO OCCUR WITHIN 1,500 FT OF THE WEST PREFERRED/SECONDARY CORRIDORS (Continued, Page 6 of 6)

Scientific Name	Common Name	Federal Status*	State Status†	Habitat Preference	Likelihood of Species Occurrence within Corridors‡
Thelypteris sclerophylla	Stiff-leaved maiden fern	_	Е	Rockland hammocks	L
Thelypteris serrata	Toothed maiden fern	_	Е	Cypress swamps and slough floodplains	L
Thrinax morrisii	Brittle thatch palm	_	Е	Rockland hammocks and rock pinelands	L
Thrinax radiata	Florida thatch palm	_	Е	Coastal thickets on limestone	L
Tillandsia balbisiana	Twisted wildpine	_	T	Hammocks	M
Tillandsia fasciculata var. densispica	Cardinal airplant	_	Е	Cypress swamps and hardwood hammocks	L
Tillandsia flexuosa	Banded wildpine	_	T	Cypress swamps and hardwood hammocks	L
Tillandsia utriculata	Giant wildpine	_	Е	Hardwood hammocks, pineland, and scrubs	M
Tillandsia variabilis	Leatherleaf airplant	_	T	Cypress swamps and hardwood hammocks	L
Tournefortia hirsutissima	Chiggery grapes	_	Е	Rockland hammocks, cypress swamps	L
Tragia saxicola	Pineland noseburn	_	T	Rock pinelands	H-P
Trema lamarckianum	Lamarck's trema	_	Е	Hardwood hammocks and shell middens	H-P
Trichomanes krausii	Kraus' bristle fern	_	Е	Rockland hammocks	L
Trichomanes punctatum ssp. floridanum	Florida filmy fern	_	Е	Rockland hammocks, shell middens, limestone sinks, and limestone boulders	L
Tripsacum floridanum	Florida gama grass	_	T	Rock pinelands, hammock edges	H-P
Vallesia antillana	Tearshrub	_	Е	Rockland hammocks	L
Vanilla barbellata	Worm-vine orchid	_	Е	Mangroves, coastal hardwood hammocks, pine rocklands, rockland hammocks, and road banks	L
Vanilla inodora	Mexican vanilla	_	Е	Wet rockland hammocks	L
Vanilla phaeantha	Leafy vanilla	_	Е	Cypress swamps and moist hammocks	L
Zanthoxylem coriaceum	Biscayne pricklash	_	Е	Coastal hammocks	L
Zephyranthes simpsonii	Simpson's zephyrlily	_	T	Wet flatwoods and prairie	Н

^{*}Listing by USFWS. E = endangered. T = threatened. C = candidate for listing.

Sources: USFWS, http://ecos.fws.gov/tess_public//pub/stateListing.jsp?state=FL&status=listed, 2009. FDACS Regulated Plants: Section 5B-40.0055, F.A.C.

[†]Listing by FDACS. E = endangered. T = threatened. ‡L = low. M = medium. H = high. P = present in corridor. PE = possibly extinct.

parviflora, Ilex krugiana, Tripsacum floridanum, Sachsia polycephala, Spermacoce terminalis, Tetrazygia bicolor, and Tragia saxicola. It should be noted that several of these species, confirmed by FPL's botanical surveys, occurred on existing FPL rights-of-way, indicating those managed habitats were suitable for the plants.

Wildlife Species

State- or federally listed wildlife species potentially occurring in Miami-Dade County are depicted in Table W9.3.7-6. Also shown in Table W9.3.7-6 are the species' current status and their likelihood for occurrence in the West Preferred or Secondary Corridor.

Amphibians

Gopher Frog (*Rana capito*)—The gopher frog is a species of special concern as identified by FWC. This amphibian is typically considered a commensal species to the gopher tortoise. Therefore, habitat requirements tend to be xeric upland habitats that support gopher tortoise populations. Therefore, along the West/Secondary Preferred Corridors, there is a low likelihood this species may be present due to a general lack of suitable habitats for gopher tortoises.

Reptiles

American Alligator (*Alligator mississippiensis*)—The alligator is listed by USFWS as threatened due to similarity of appearance to the American crocodile and a species of special concern by FWC. This reptile may certainly be present in wetlands and water bodies along the West Preferred/Secondary Corridors.

American Crocodile (*Crocodylus acutus*)—This federally threatened/state-endangered species successfully inhabits the canals and berms located within the existing Turkey Point cooling canals of the industrial wastewater facility. This canal system is part of the federally designated critical habitat for the crocodile.

<u>Florida Pine Snake (*Pituophis melanoleucus mugitus*)</u>—The Florida pine snake prefers well-drained sandy soils associated with upland pine areas. Its likelihood of occurrence is considered low because of the lack of suitable habitat.



TABLE W9.3.7-6 STATE OR FEDERALLY LISTED WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE WEST CORRIDORS

(Page 1 of 2)

		Design Stat		-
Common Name	Scientific Name	USFWS	FWC	Likelihood of Occurrence within West Preferred/Secondary Corridors
<u>Amphibians</u>				
Gopher frog	Rana capito	_	SSC	Low, and only in areas where gopher tortoise burrows may be found
Reptiles				
American alligator	Alligator misissippiensis	T(S/A)	SSC	Likely in wetlands all along the corridors
American crocodile	Crocodylus acutus	T	Е	Present on the Turkey Point plant property, existing Turkey Point cooling canals of the industrial wastewater facility
Florida pine snake	Pituophis melanoleucus mugitus	_	SSC	Low, primarily along coastal areas with well-drained soils
Rim rock crowned snake	Tantilla ooliticus	_	T	Moderate, could be found in sandy or rocky upland habitats found along the corridors
Eastern indigo snake	Drymarchon corais couperi	T	T	High in suitable habitats; FNAI records indicate observations near the corridors
Gopher tortoise	Gopherus polyphemus	_	T	Low due to range and minimal habitats present
Birds				
Bald eagle	Haliaeetus leucocephalus	_	*	Likely in suitable habitats along corridors; one active nest documented within 1,200 ft east of West Preferred Corridor and one inactive nest located 0.7 mile west of the West Preferred Corridor, both in Doral area; also observed on existing transmission line right-of-way and northwest corner of industrial wastewater facility
Snail kite	Rostrhamus sociabilis plumbeus	E	E	Likely, especially in the ENP; observed
Southeastern American kestrel	Falco sparverius paulus	_	T	Low because of known range in Florida
Florida burrowing owl	Speotyto cunicularia floridana	_	SSC	Moderate in open lands along corridors
White-crowned pigeon	Patagioenas leucocephala	_	T	Present, found in hammocks with fruit trees; has been observed on the Turkey Point plant property and on the West Preferred Corridor
Cape Sable seaside sparrow	Ammodramus maritimus mirabilis	Е	Е	Low, found in certain marshes near Shark Slough in the lower ENP
Florida sandhill crane	Grus canadensis pratensis	_	T	Likely in suitable marshes in the ENP
Limpkin	Aramus guarauna	_	SSC	Moderate; suitable habitat occurs in some areas in the ENP
Little blue heron	Egretta caerulea	_	SSC	Likely in suitable wetlands along the corridors; observed on the Turkey Point plant property
Peregrine falcon	Falco peregrinus	_	E	Low, especially near open water
Snowy egret	Egretta thula	_	SSC	Likely in suitable wetlands along the corridors; observed on the Turkey Point plant property
Tricolored heron	Egretta tricolor	_	SSC	Likely in suitable wetlands along the corridors; observed on the Turkey Point plant property



TABLE W9.3.7-6 STATE OR FEDERALLY LISTED WILDLIFE SPECIES POTENTIALLY OCCUR-RING WITHIN THE WEST CORRIDORS

(Page 2 of 2)

		Desig Sta		_
Common Name	Scientific Name	USFWS	FWC	Likelihood of Occurrence within West Preferred/Secondary Corridors
White ibis	Eudocimus albus	_	SSC	Likely in suitable wetlands along the corridors; observed on the Turkey Point plant property
Wood stork	Mycteria americana	Е	Е	Likely in suitable wetlands along corridors; known colonies (FNAI, 2009) occur within 1 mile west of West Secondary Corridor and another 0.6 mile west of West Preferred Corridor in the ENP; observed on the Turkey Point plant property
Piping plover	Charadrius melodus	T	T	Low, sandy beaches along coast
Reddish egret	Egretta rufescens	_	SSC	Low, normally along coast and mangrove islands
American oystercatcher	Haematopus palliatus	_	SSC	Low, found on beaches and coastal sandbars
Brown pelican	Pelecanus occidentalis carolinensis	_	SSC	Low for most of the corridors; observed at the Turkey Point plant property
Roseate spoonbill	Platalea ajaja	_	SSC	Low to moderate, could be found foraging in wetlands along the corridors
Black skimmer	Rhynchops niger	_	SSC	Low, found on the coast
Least tern	Sterna antillarum	_	T	Low, found on sandy or gravel habitats along the coast; they have been recorded on berms within the Turkey Point cooling canals of the industrial wastewater facility south of the corridor (FNAI, 2009)
Mammals				
Florida bonneted (mastiff) bat	Eumops glaucinus floridanus	_	Е	Moderate; could be found roosting in trees or buildings along the corridors
Florida manatee	Trichechus manatus latirostris	Е	Е	Low, primarily found along the coast and some of the canals north of the Turkey Point plant property
Florida mouse	Podomys floridanus	_	SSC	Unlikely, found in more central/northern Florida in dry sandy habitats; usually associated with gopher tortoise burrows
Everglades mink	Mustela vison evergladensis	_	T	Moderate in wetlands near the Everglades
Florida black bear	Ursus americanus floridanus	_	T	Low along corridors; more likely found west of the corridors
Florida panther	Puma concolor coryi	Е	Е	Moderate; panthers occur in the ENP; observation records exist along both the West Preferred/Secondary Corridors (Parsons, 2008)

Note: E = endangered. T = threatened.

SSC = species of special concern. T(S/A) = threatened due to similarity in appearance to a federally listed species.

Sources: FWC, 2008. FNAI, 2009. Parsons, 2008.



^{*}The eagle has recently been delisted by FWC with the adoption of the Bald Eagle Management Guidelines found in Section 68A-16.002, F.A.C. It is included here due to the regulatory protection still afforded it.

Rim Rock Crowned Snake (*Tantilla ooliticus***)**—This snake occupies a wide variety of habitats in southern Florida and, therefore, is considered to have a moderate likelihood of occurrence. Some of the pine rockland habitats found along the corridors could serve as potential habitat.

Eastern Indigo Snake (*Drymarchon corais couperi*)—This distinctive large, bluish-black snake can occur in suitable habitats throughout Florida. It has a wide range of habitat preferences and prey species. Often considered as a gopher tortoise commensal, it can be found in xeric habitats, but uses more mesic habitats as well. It has a high likelihood to occur along the West Preferred/Secondary Corridors within these habitat types. FNAI (2009) lists a few records of this individual within a few miles of the West Preferred Corridor. The indigo is listed as a threatened species by both USFWS and FWC.

<u>Gopher Tortoise (Gopherus polyphemus)</u>—The gopher tortoise's range in Florida extends into northern Miami-Dade County. The gopher tortoise is currently listed as a threatened species by FWC, but its likelihood along the West Preferred/Secondary Corridors is considered low.

Birds

Bald Eagle (*Haliaeetus leucocephalus*)—The bald eagle was delisted by USFWS and FWC within the past year. It is still included here because of special rules protecting it (Section 68A-16.002, F.A.C.). The eagle is making a comeback in population numbers in the United States, and eagle nests are becoming more common in Florida. One active eagle nest is known to exist approximately 1,200 ft east of the West Preferred Corridor in Doral, according to FWC records. The nest was recorded as active in 2008. Another inactive nest is also reported by FWC 0.7 mile west of the West Preferred Corridor in this same vicinity of Doral. However, this nest was last active in 2005. These nest locations are at the northern terminus of the West Preferred Corridor. The West Preferred Corridor in these locations already includes existing FPL transmission lines. Another individual bald eagle was observed along the northwest corner of the industrial wastewater facility.

<u>Snail Kite (Rostrhamus sociabilis plumbeus)</u>—Often called the Everglades snail kite, this bird is listed as endangered by USFWS and FWC. Its habitat requirements are also specific. It prefers freshwater marsh systems with distinct vegetation profiles. Since its primary food source is the apple snail (*Pomacea paludosa*), hydrological regime is critical to both the food source and nesting of this bird. It is likely to occur in some of the marsh systems along the corridors, especially in and around the ENP. It was observed along the West Preferred Corridor.



Southeastern American Kestrel (*Falco sparverius paulus*)—This subspecies of the American kestrel is a common resident of open land habitats throughout Florida south to the Lake Okeechobee area. It has been documented in Miami-Dade County and is state-listed as threatened by FWC. The more northern subspecies migrates here in the winter months, but the southeastern kestrel breeds here in summer. Since it prefers open habitats for foraging, it is commonly seen alongside road and transmission line rights-of-way. However, due to its known range and relative few documented occurrences in the county, its likelihood of occurrence is considered low.

<u>Florida Burrowing Owl (Speotyto cunicularia)</u>—The small Florida burrowing owl is listed as a species of special concern by FWC. It is most common in central Florida and lives in burrows in sandy soils associated with cattle pastures, prairies, and sandhills. It has a moderate likelihood of occurrence in open, drier habitats along the West Preferred Corridor.

White-Crowned Pigeon (*Patagioenas leucocephala*)—This state-listed threatened bird forages in fruit-bearing trees in hardwood hammocks in southern Florida. It has been observed at the Turkey Point plant property and on the West Preferred Corridor. Therefore, its presence is likely in other suitable habitats along the West Preferred Corridor.

<u>Cape Sable Seaside Sparrow (Ammodramus maritimus mirabilis)</u>—This endangered, ecologically isolated bird is primarily limited to the marl prairies of Big Cypress National Preserve and ENP. Therefore, it has a low likelihood of occurring in the West Preferred or Secondary Corridor.

Florida Sandhill Crane (*Grus canadensis pratensis*)—This large bird is state-listed as threatened by FWC. It commingles with the greater sandhill crane, which migrates to Florida. Sandhills prefer shallow marshes for nesting and wet prairies and pastures for foraging. It is likely to occur along portions of the West Preferred/Secondary Corridors in or near the Everglades.

<u>Limpkin (Aramus guarauna)</u>—The secretive limpkin is listed as a species of special concern and is found in suitable habitats throughout most of the state. It prefers large, slow-moving watercourses, such as the Everglades. Therefore, its likelihood of occurrence is moderate in the West Preferred/Secondary Corridors.



<u>Little Blue Heron (Egretta caerula)</u>—This wading bird is listed as a species of special concern by FWC and is found in suitable wetlands throughout Florida. They prefer freshwater habitats for foraging. This heron is likely to be found in suitable habitats along the West Preferred/Secondary Corridors and has been observed near the Site.

<u>Peregrine Falcon (Falco peregrinus)</u>—This state-listed endangered migratory bird winters in Florida. It is often seen over coastlines or large water bodies, where it hunts waterfowl. Since these habitats are generally absent from the West Preferred/Secondary Corridors, the peregrine falcon's likelihood of occurrence in much of the corridors is low, but it could be observed near the Turkey Point plant property.

Snowy Egret (*Egretta thula*)—Snowy egrets, like the other wading birds discussed, are listed as a species of special concern by FWC. This bird is widely distributed in Florida in both fresh and saltwater systems. It is likely to occur in wetlands along the West Preferred/Secondary Corridors. It was observed near the Site.

<u>Tricolored Heron (Egretta tricolor)</u>—The tricolored heron (formerly called Louisiana heron) is a species of special concern as listed by FWC. It likes estuarine habitats but can be found foraging in almost any wetland system. It is likely to be found along the West Preferred/Secondary Corridors. It was observed near the Site.

White Ibis (*Eudocimus albus*)—The white ibis is one of the most common wading birds in Florida, but it is listed as a species of special concern by FWC. Large flocks of this bird are often seen foraging in shallow marshes or wet pastures. The white ibis is likely to occur along the West Preferred/Secondary Corridors. It was observed near the Site.

Wood Stork (*Mycteria americana*)—The wood stork is an endangered species listed by both USFWS and FWC. This large bird prefers nesting in cypress swamps, and some of the largest nesting areas in Florida occur in the Corkscrew Swamp Sanctuary well west of the study area. Two known wood stork colonies occur within the West Preferred/Secondary Corridors' vicinities. Both colonies are found south of U.S. 41 (Tamiami Trail), one approximately 1 mile west of the West Secondary Corridor and nearly 3 miles west of the West Preferred Corridor. It was last observed active in 2004 (FNAI, 2009). The second colony is located between the West Preferred/Secondary Corridors (approximately 0.6 mile west of the West Preferred Corridor). This colony was last reported active in



2004 also (FNAI, 2009). Certainly the wood stork could be found foraging in suitable habitats along either the West Preferred or Secondary Corridor. They were observed foraging near the Site.

<u>Piping Plover (Charadrius melodus)</u>—This federal- and state-listed threatened bird occurs on sandy beaches along the Atlantic Coast. Therefore, its likelihood of occurrence in the West Preferred or Secondary Corridor is considered low.

Reddish Egret (*Egretta rufescens*)—This state-listed bird is a species of special concern, more coastal than the other egrets, and, while it could be occasionally observed along the eastern portion of the West Preferred Corridor near the Site, its likelihood of occurrence is considered low.

<u>American Oystercatcher (Haematopus palliatus)</u>—This state-listed coastal bird is a species of special concern and may be found around the Turkey Point plant property, but its likelihood of occurrence along the remainder of the West Preferred/Secondary Corridors is considered low.

Brown Pelican (*Pelecanus occidentalis carolinensis*)—This state-listed coastal bird is a species of special concern and may be found flying over or near the Turkey Point plant property, but its likelihood of occurrence for the West Preferred/Secondary Corridors is considered low.

Roseate Spoonbill (*Platalea ajaja*)—This state-listed species of special concern forages and nests in estuarine systems of South Florida. It may be found occasionally foraging inland along the West Preferred/Secondary Corridors.

<u>Black Skimmer (Rhynchops niger)</u>—This state-listed species of special concern is primarily found along undisturbed coastlines of Florida. There is a low likelihood of its occurrence along the corridors.

<u>Least Tern (Sterna antillarum)</u>—The least tern is state-listed as threatened and is usually found near the coast where they nest on sandy or gravel surfaces. While they have been previously recorded on the berms of the existing Turkey Point cooling canals within the industrial wastewater facility, their likelihood of occurrence in the corridors is low.

<u>Wading Bird Colony</u>—The FWC Florida water bird colony database lists a wading bird colony as occurring at the northern intersection of the West Preferred/Secondary Corridors. This colony



(No. 620125) is listed as last active in 1999 but of unknown species composition. Because it may still be present and may have listed species occupying the colony, it is included here for discussion.

Mammals

<u>Florida Bonneted (Mastiff) Bat (Eumops glaucinus floridanus)</u>—This state-listed endangered bat typically roosts in trees or buildings. It is known to occur in Miami-Dade County, so there is a moderate likelihood it could be found along the West Corridors.

Florida Manatee (*Trichechus manatus latirostris*)—This endangered mammal occurs along the coast and perhaps in some of the canals connecting to the coast. USFWS designated much of coastal Miami-Dade County as federal critical habitat for this animal. However, its likelihood of occurrence in or near the transmission corridors is considered low. In any event, transmission lines will span water bodies likely to support manatees.

<u>Florida Mouse (*Podomys floridanus*)</u>—This state-listed species of special concern is likely only to be found in northern Miami-Dade County in sandy, well-drained soils. Along the West Preferred/Secondary Corridors, its likelihood of occurrence is considered unlikely.

<u>Everglades Mink (Mustela vison evergladensis)</u>—This threatened species is a subspecies of the southeastern mink. It is found in a variety of wetlands in and around the Everglades. Its likelihood of occurrence is therefore considered moderately likely in suitable habitats.

Florida Black Bear (*Ursus americanus floridanus*)—The Florida black bear is currently listed as threatened by FWC. This large mammal is known to occur west of the study area and prefers large swamps and dense thickets. There is a low likelihood of occurrence of the animal along the West Preferred/ Secondary Corridors due to the predominance of open lands and nonforested wetlands.

Florida Panther (*Puma concolor coryi*)—The panther is listed by USFWS and FWC as endangered. This large cat prefers most natural vegetation communities of south Florida. Its primary range includes southwest Florida and the western Everglades. Several recorded observations exist from the last 20 years in and around the West Preferred/Secondary Corridors in the ENP (Parsons, 2008). The panther's range in this area gives it a moderate likelihood of occurrence along the portion of the West Preferred/Secondary Corridors in or near the ENP.



W9.3.7.4 Other Environmental Features

There are no other environmental features to address that have not been addressed in the previous sections.

W9.4 Effects of Right-of-Way Preparation and Transmission Line Construction

W9.4.1 Construction Techniques

Construction phases will typically consist of right-of-way clearing, access road and structure pad construction (where necessary), line construction, and right-of-way restoration. The following construction phases generally will be performed sequentially along the right-of-way such that activities in any one area will be short-termed.

All activities will conform to applicable state and local regulations. Throughout construction, activities will conform to the USFWS and FWC guidelines for protection of listed species and SCA Appendix 10.7.1.

In the event of inadvertent equipment or vehicle fluid release, construction crews will be equipped with spill containment and absorption materials.

W9.4.1.1 Right-of-Way Clearing and Preparation

Right-of-way clearing required along the West Preferred or Secondary Corridor will vary, as the corridor passes through a mix of unimproved areas, agricultural areas, and controlled and natural wetlands. Where clearing is required, all trees and shrubs within the right-of-way limits whose mature height could exceed 14 ft and are proximate to the transmission lines will be evaluated for pruning or clearing to ground level consistent with the requirements of American National Standards Institute (ANSI) A300 (Part I)-2000 Pruning Standards and ANSI Z133.1-2000 Pruning, Repairing, Maintaining and Removing Trees, and Cutting Brush-Safety Requirements. Where trees are cut to ground level, stumps will either be cut or ground down to natural grade and treated with an approved herbicide to prevent regrowth, or the entire stump and root mat will be grubbed to at or below grade. Chipped material will be spread uniformly in uplands along the right-of-way unless landowner restrictions require disposal in another manner. When chipped material is not spread in uplands along the right-of-way, vegetation debris may be hauled to landfills or piled and burned within the limits of the right-of-way consistent with state and local regulations.



Side trimming and pruning of trees along the right-of-way edges may also be required. All required tree pruning will conform to the current edition of ANSI A300 (Part I)-2000 Pruning Standards and ANSI Z133.1-2000 Pruning, Repairing, Maintaining and Removing Trees, and Cutting Brush-Safety Requirements.

Clearing in wetlands and sensitive pine rockland communities such as Miami-Dade County-designated NFC areas of vegetation along the right-of-way will be accomplished using restrictive clearing techniques. Restrictive clearing is performed by hand, usually with chain saws or with low ground pressure shear or rotary type machines, which reduce soil compaction and vegetation disturbance.

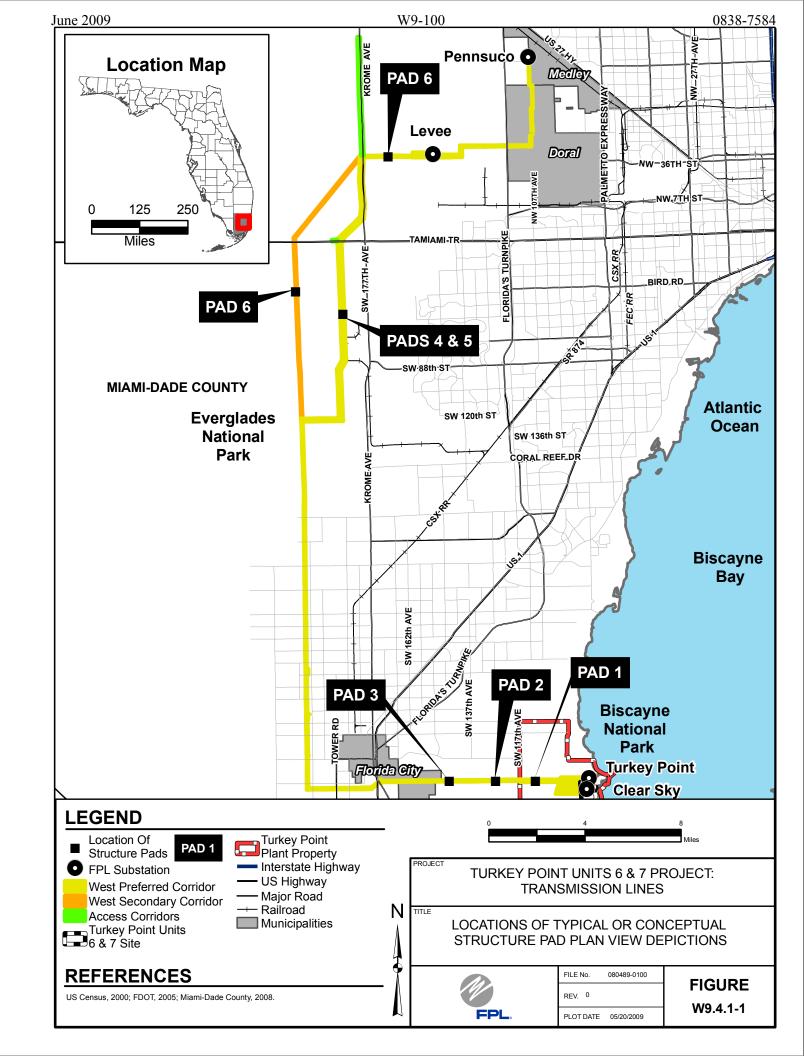
Use of herbicides for vegetation control on the rights-of-way will meet federal, state, and local regulations. Typically, herbicides will be used on exotic and incompatible species. Care will be taken to retain a cover of compatible native species. For the portions of the right-of-way that will be adjacent to the ENP, herbicide use will be in compliance with the National Park Service's Integrated Pest Management Plan.

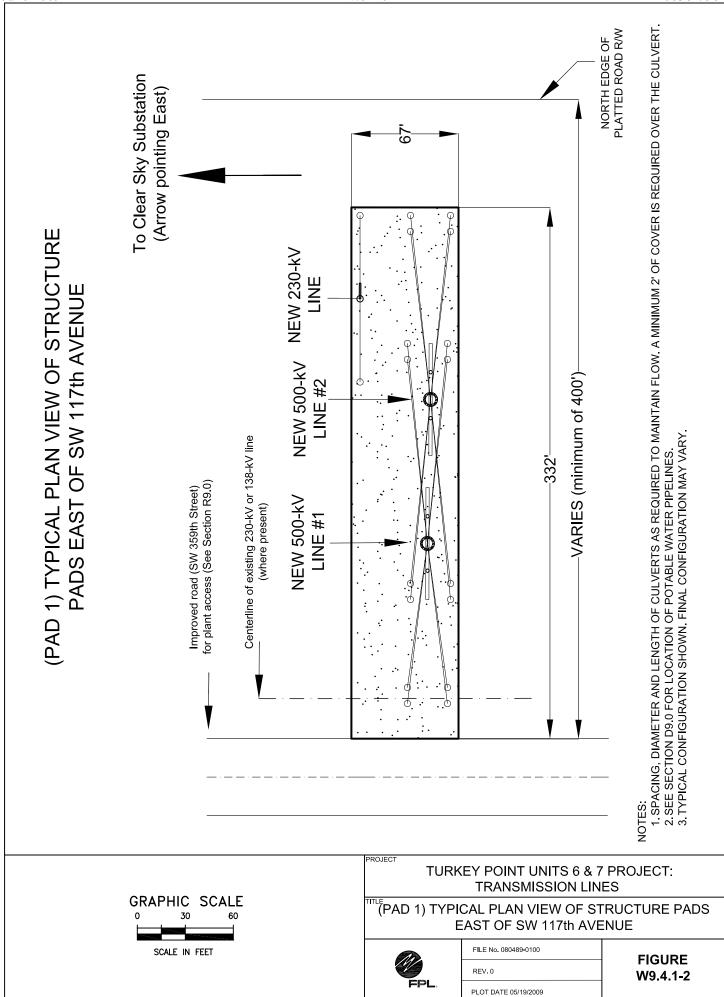
W9.4.1.2 Access Road/Structure Pad Construction

Access roads and structure pads are typically needed to provide efficient, safe, and cost-effective ingress and egress to the transmission line structures. Access roads will be used for initial line construction and will remain for routine maintenance and emergency access. FPL will evaluate existing access roads (e.g., agricultural roads, public roadways, and SFWMD levees) for possible use of these existing facilities. In some cases, these existing access roads may need to be improved to accommodate the construction and maintenance equipment.

Where access roads are currently not available or where existing roads need to be enhanced, such as throughout the West Secondary Corridor, the construction or enhancement of these roads will be completed with clean fill. Figure W9.3.4-1 previously depicted a typical cross-section of access roads proposed for the West Preferred/Secondary Corridors. Figure W9.4.1-1 depicts the locations of the typical or conceptual plan views of structure pads shown on Figures W9.4.1-2 through W9.4.1-7 that may be used along the corridors.





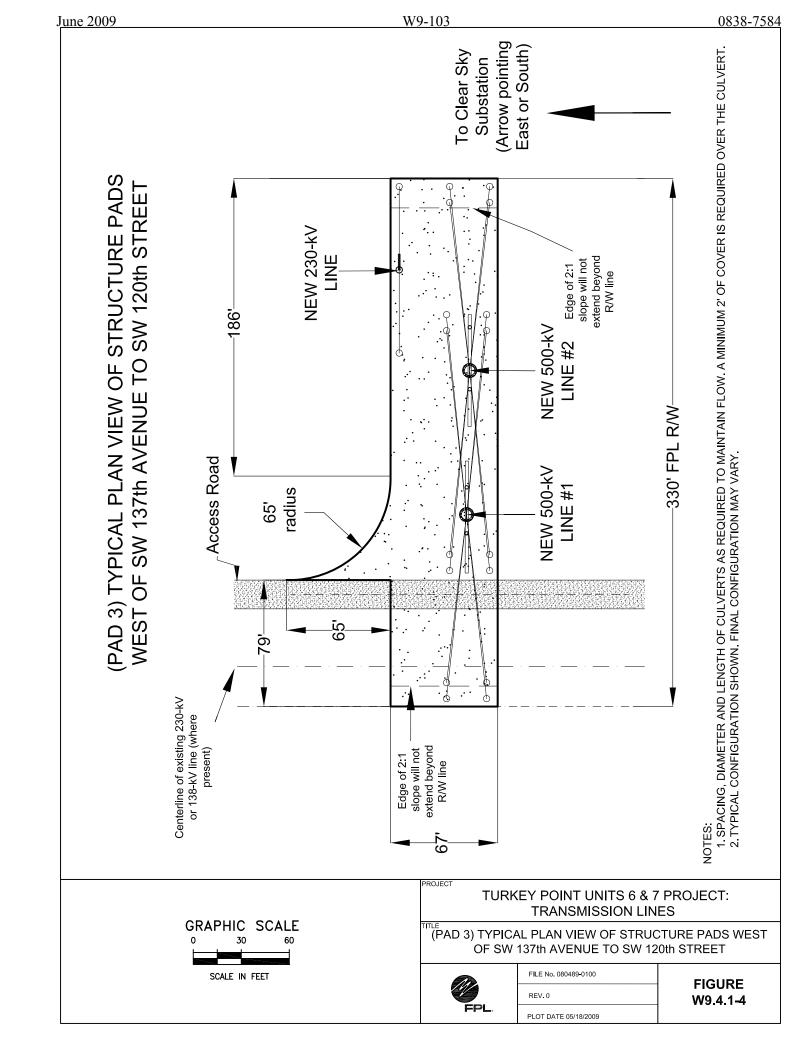


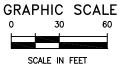
FIGURE

W9.4.1-3

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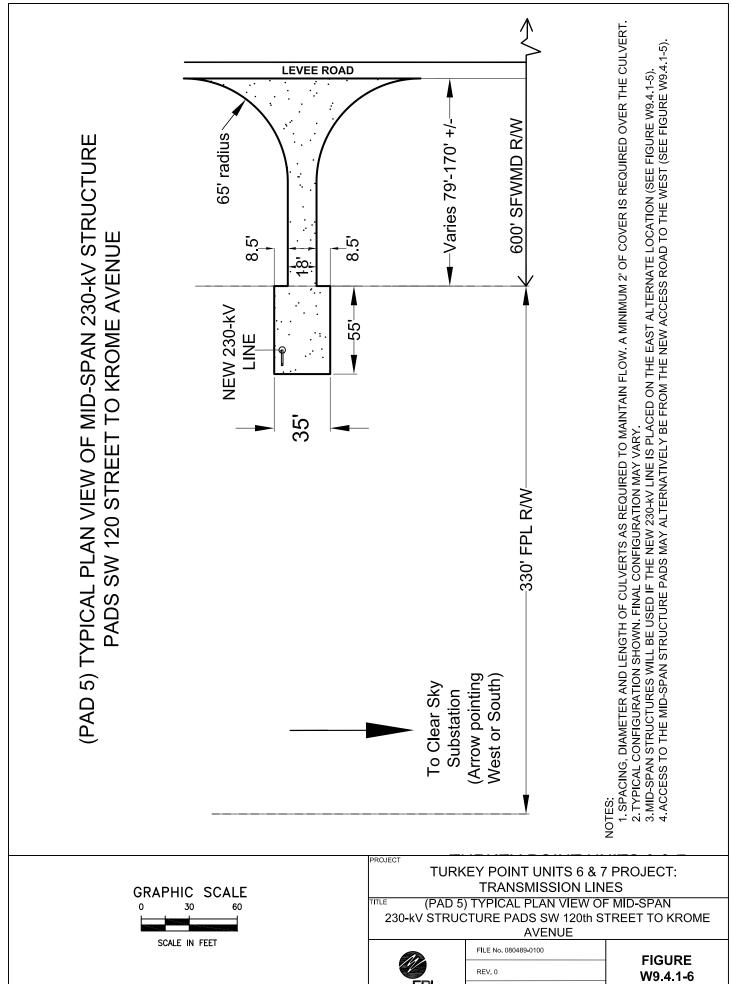




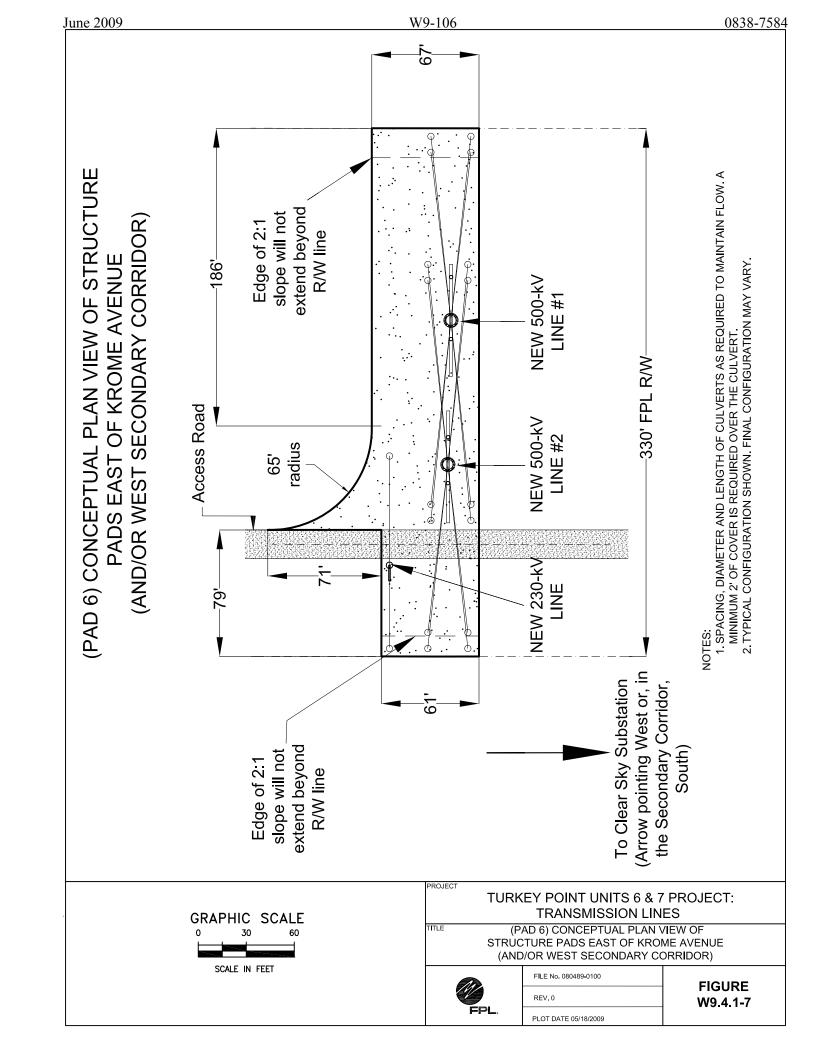


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FIGURE W9.4.1-5



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Construction of access roads and pads (where required) in uplands is accomplished by first completing the clearing and grubbing of the road footprint and then placing, spreading, shaping, and compacting hauled clean fill to the design elevation.

Construction of access roads and pads in wetlands is accomplished by first installing silt fences or hay bales along the perimeter of the work area of the right-of-way, followed by selective clearing of the right-of-way to remove vegetation whose mature height could exceed 14 ft. Then an additional silt fence is installed along both sides of the proposed access road and pad footprints, followed by a final clearing and grubbing of the areas to be filled. After clearing and grubbing is complete, a geotextile liner may be laid and staked before road and pad construction commences. The final grade of access roads and structure pads is typically set to be 12 inches above the expected seasonal high water (or controlled high water) elevation. Specific locations and design of access roads through wetlands will be part of the final design of the transmission line to be submitted to agencies as a postcertification submittal in compliance with the conditions of certification. Transmission line construction stormwater discharges released into waters of the state will be addressed through compliance with Rule 62-621.300(4) (Generic Permit for Stormwater from Large and Small Construction Activities).

Activities in the existing Turkey Point cooling canals of the industrial wastewater facility are discussed in Appendix 10.7.1, FPL Turkey Point Units 6 & 7 Threatened and Endangered Species Evaluation and Management Plan, and will conform to USFWS and FWC guidelines and regulations. Due to the unique geographic challenges of the canal system, transmission structure locations will be selected to balance maximum conductor span lengths between structures, structure height, and the number of transmission structures located within the existing Turkey Point industrial wastewater facility cooling canals. Access will be designed using a combination of bridges (fixed or floating) and barges. Care will be taken in selecting each structure and bridge location to avoid active crocodile nests.

Culverts are included under access roads in wetlands to maintain channel flow and/or overland flow. Typically a minimum of 2 ft of cover is installed over culverts to ensure they are not crushed by vehicle loads. The culverts are installed so that their invert elevations match the wetland floor elevation. A combination of 18-, 24-, 30-, and 36-inch culverts are expected to be used on the transmission line access roads and structure pads where required to maintain existing surface water flows. Smaller diameter culverts are preferred, as practicable, to limit the depth of fill to be installed. However, larger diameter culverts may be required in some locations.



Culverts and access roads are designed based on best available information and good engineering practice to equalize the water volume created from a small rainfall event. Culverts are used to maintain normal pool equilibrium. Installation of culverts in conjunction with construction of transmission line access roads and structure pads is not intended to create retention or detention areas. Under a major intensity rainstorm (25-year storm event), the water level will flow over the access road. In these events, the access road will act as an emergency spillway, equalizing the wetland pool.

Culvert sizing for the access roads and structure pads in extensive wetland areas will be based on appropriate hydrological studies and comply with applicable codes and requirements.

To the extent practicable, FPL will adjust span lengths between structures and carefully place the required access road and structure pads within the right-of-way to minimize impacts to wetlands and designated NFC areas. Where construction of access roads and structure pads is required in wetlands, FPL will use turbidity screens and erosion control devices to minimize construction impacts to wetlands and water bodies and ensure that state water quality standards for turbidity are met.

W9.4.1.3 Line Construction

Transmission Line Construction

Transmission structures are generally delivered to the work area using semi-trailer trucks with open trailers. Structure transport will comply with applicable state and local road regulations. Assembly occurs as close as possible to the design location. Typically the structures are framed with the insulator and overhead ground wire assemblies while lying on the ground. Installing the transmission line structures requires an auger truck, which will typically auger a hole approximately 18 to 25 ft deep and approximately 72 inches (6 ft) in diameter on average. Dewatering of the holes during construction, in the unlikely event it is required, may discharge water to catch basins, temporary settling basins, or watercourses if the water is sufficiently free of sediments. The concrete single-pole or hybrid single-pole structures (bottom section of the pole being concrete, top section of the pole being tubular steel) will be embedded directly into the hole and backfilled with crushed rock. (Use of taller, multiple-piece, single-pole concrete or taller hybrid pole structures, localized geography, or poor subsurface conditions may require the selection of additional setting depths.) Multiple-piece structures can be assembled on the ground prior to lifting in place, or they can be installed in the air one section at a time with the use of a crane. Where tubular steel, single-pole, unguyed structures are used, they will require augering a hole approximately 108 inches (9 ft) in diameter to accommodate the installation



of concrete caisson foundations. A caisson foundation is composed of a reinforcing steel cage with poured-in-place concrete.

Excess excavated fill material will be spread evenly onto adjacent uplands, preferably onto existing or recently constructed access roads or pads.

Guys and anchors will be required at most structure locations. Anchors to be used will typically be either multi-helix screw-in-type anchors or pile-type anchors. Pile anchors provide strength applications by embedding a short reinforced concrete pole section to a required depth with backfill. Multi-helix anchors are installed using truck-mounted equipment to screw the anchor into the ground to the required length or torque to meet design requirements. Guy wires are attached to hardware connected to the pole section extending above the ground.

Construction will be performed so as to minimize disturbance to natural ground cover. FPL will also use turbidity screens and other erosion control devices (silt fences) where there is erosion potential to minimize any impacts to wetlands and water bodies and ensure that state water quality standards for turbidity are met.

Transmission line construction within the existing Turkey Point cooling canals of the industrial wastewater facility will be coordinated to avoid any disruptions to the operation of the cooling canals and minimize any impacts to crocodiles or their nests. Construction activities will be in conformance with the Threatened and Endangered Species Evaluation and Management Plan, contained in Appendix 10.7.1.

Cranes, bucket trucks, flatbed trucks, semi-trailer trucks, front-end loaders, bulldozers, and other support vehicles are typically used in structure erection and anchor/guying installations. Laydown areas for equipment and materials will be located in uplands to the fullest extent practical. If laydown areas must be located where no uplands exist then they will be permitted as such as a temporary impact then fully restored.

Prior to construction, FPL will provide notification to the Federal Aviation Administration (FAA) via form 7460-1 for appropriate structures and construction equipment and will coordinate with licensed airports as necessary.



Insulator and conductor installation follows structure erection. Installing conductors between structures requires stringing a lead line between each structure's stringing block to form a continuous connection between end points of a conductor stringing pull. The lead line is used to pull the conductors into position. The conductor is then tensioned to design specifications, transferred to the support clamp at the structure, and then clipped into its final position. This operation is repeated for each of the conductors and overhead ground wires on the transmission line.

Bucket trucks, wire-pulling equipment, wire reels, trailers, tensioners, and other support vehicles are typically used in conductor and overhead ground wire installation operations.

Levee Substation Construction

The proposed improvement to the existing Levee substation is necessary to connect the new 500-kV transmission lines from the Clear Sky substation to the existing FPL grid. The existing substation footprint covers approximately 15 acres of the 65-acre property. The fenced area is conceptually proposed for expansion by approximately 2.3 acres and is entirely within the boundaries of the area approved for substation development by Miami-Dade County Resolution 4-ZAB-116-72. This expansion will accommodate the new 500-kV bay (transmission pull-off tower and associated equipment) for the proposed new 500-kV lines from the Clear Sky substation.

The Levee substation expansion area preparation will involve clearing and grubbing as required. Prior to any land alteration activities, stormwater pollution prevention plans will be implemented through the installation of turbidity screens and other erosion control devices and techniques to minimize construction impacts to wetlands and water bodies. Clean fill will be trucked to the substation expansion area from off-premises sources. The new expanded substation yard area will be excavated, filled, graded, and rolled to match the existing substation yard elevation prior to the new security fence being installed.

After the substation area preparation, equipment foundations will be installed. Installation of the large caisson foundations will require the use of drilling rigs and large cranes. Smaller slab and pier and/or flat slab foundations will require backhoes for excavation. The foundations will be formed, and concrete will be transported to the substation area by trucks. Concrete and steel structures will be erected with cranes and man lifts, followed by installation of the bus system, circuit breakers, switches, and other associated equipment.



W9.4.1.4 Right-of-Way Restoration

Once construction is completed, construction debris, if any, will be removed, and FPL will employ various methods to restore the right-of-way. These methods will be specific to each location. Restoration may include stabilizing potentially erodible areas, typically through seeding and mulching.

W9.4.2 Environmental Resource Permit (ERP)

Currently, certification is sought for a corridor within which a final right-of-way will be located. Once the specific right-of-way alignments and detailed designs are finalized for the two proposed Clear Sky-Levee 500-kV lines and the Clear Sky-Pennsuco 230-kV line, as well as the detailed design for the Levee substation expansion, information typically provided in an ERP application will be submitted to reviewing agencies for postcertification monitoring of compliance with the Conditions of Certification, as authorized by Section 62-17.191, F.A.C. The ERP informational data submittal contained in Appendix 10.4 reflects an enveloping approach for the transmission portion of the Project. Further refinements to the fill footprint, including those to minimize wetland impacts, are expected as the Project design progresses.

W9.4.3 Solid Wastes

Solid waste generated from transmission line right-of-way preparation and line construction typically consists of cleared vegetation and construction-related debris. Solid wastes will be collected and removed for disposal in compliance with state and local landfill regulations, chipped and spread in uplands, or piled and burned within the limits of the right-of-way in compliance with state and local regulations.

W9.4.4 Changes to Vegetation, Wildlife, and Aquatic Life

Impacts on terrestrial and aquatic systems and species associated with transmission line right-of-way preparation and construction depend primarily on the location of the selected right-of-way and, to a lesser degree, on clearing and construction techniques.

Through a systematic, environmentally responsive corridor selection process, the crossing of major terrestrial, wetland, and aquatic systems was minimized or avoided to restrict any potential impacts to sensitive habitats and/or endangered and threatened species associated with transmission line construction and maintenance. Where the West Preferred/Secondary Corridors cross agricultural lands, it is not anticipated that transmission line construction or maintenance will have any significant impact on native vegetation, wildlife, or aquatic life. The remaining areas that could be potentially crossed by



the transmission lines include a number of natural and disturbed upland and wetland community types. Within the West Preferred Corridor as it crosses the ENP and WCA-3B, the ecology of the proposed corridor is already fragmented by the canal and levee road, and the property along the canal is highly disturbed. Design options will be explored to minimize wetland impacts and provide environmental benefits. However, if the West Secondary Corridor is certified, it would be expected that impacts due to construction will be greater because of the current lack of any existing disturbances or existing access roads.

An evaluation of potential and expected impacts on vegetation and wildlife components is presented in the following subsections.

W9.4.4.1 Vegetation

Since much of the West Preferred Corridor contains lands that have already been cleared and maintained for electric transmission lines, nursery operations, other agriculture, mining, and residential development, construction associated with the transmission lines should not pose any significant additional adverse changes to vegetation in these areas. Limited permanent alterations will be associated with right-of-way clearing, access road and structure pad installation, and additional right-of-way maintenance. The West Preferred/Secondary Corridors cross no large expanses of heavily forested uplands or forested wetlands.

Section W9.4.1, Construction Techniques, addresses types of impacts to the existing vegetation communities crossed by the West Corridors. Most of the wetlands crossed by the corridors, including those portions in the ENP, are nonforested (herbaceous) wetlands. Here, the vegetation tends to grow low enough to not require any clearing except at access road and structure pad locations. Wetland impacts anticipated from construction are documented in the ERP informational data submittal contained in Appendix 10.4 of this SCA.

Construction practices in wetlands will retain the vegetative root mat in the right-of-way in areas not filled for road or structure pad construction, thereby minimizing impacts to wetland vegetation. Impacts to wetland vegetation will vary depending on the wetland system through which the transmission line is routed. The shift in wetland composition will vary with the type of original overstory and soil alterations resulting from construction activities. Outside of areas where filling may be necessary for roads or structure pads, freshwater marsh/wet prairie systems crossed by the transmission lines



will not be affected by construction activities since no clearing will be required, and proper culverting will maintain the existing hydroperiod.

Surveys undertaken by FPL on existing transmission line rights-of-way within the West Preferred Corridor indicate that some listed plants, such as *Byrsonima liscida*, *Solanum domanium*, and *Trema lamarckianum*, are thriving on existing FPL access roads or spoil piles created by transmission line construction and maintenance. It is expected species such as these may be temporarily impacted during construction of the new lines, but that the populations will recover and continue to thrive in these locations. FPL will perform additional specific listed species surveys within the eventual right-of-way as a postcertification condition.

Several other listed plant species are found in the pine rockland communities included within the West Preferred Corridor. For any species documented within the proposed right-of-way as a result of postcertification surveys, FPL will work with USFWS (for any federally listed species) or FDACS (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts to species within the respective agencies' jurisdiction.

W9.4.4.2 Wildlife

Specific impacts to terrestrial and aquatic animals due to transmission line construction vary by species and depend primarily on the extent of habitat alteration and continued availability of such habitat after construction. In addition, no aquatic habitats critical to the continued regional presence of important species will be affected. The transmission line rights-of-way will not create barriers to animals' movements and, where crossing agricultural lands, will not result in habitat losses.

Individual small burrowing mammals (e.g., rodents), reptiles, or amphibians may be lost during right-of-way clearing. Such individual losses, however, will not affect local or regional populations. No losses of medium-sized or large mammals, birds, or other mobile species due to direct impacts or habitat alterations are expected because of the mobility of these animals. Therefore, no adverse impacts are expected to local or regional populations of game species, species of special concern, or threat-ened or endangered species occurring or potentially occurring within the right-of-way area.

FPL's commitment to the protection of the environment led to the development and implementation of the FPL Avian Protection Plan. This plan was prepared in consultation with USFWS and submitted on May 31, 2007. The plan provides for the identification of high-risk areas where various avian spe-



cies may congregate, nest, or forage. The plan also sets forth guidelines and avian-friendly design standards that minimize the likelihood of collisions and electrocutions of eagles, wood storks and other birds from electrical facilities. No significant impacts to resident birds or migratory species are expected since the West Preferred Corridor does not cross major staging, breeding, or wintering areas for social, migratory species (e.g., waterfowl, shorebirds, passerines). Local disturbance or displacement of wildlife due to construction noise will be minor and short-termed since construction activities in any one location will be intermittent and are not expected to last more than a few weeks.

The potential construction impacts on listed species are discussed in the following paragraphs. The West Preferred Corridor crosses one federally designated critical habitat.

As the West Preferred Corridor leaves the Clear Sky substation, it encompasses the northern portion of the existing Turkey Point cooling canals of the industrial wastewater facility, which is critical habitat for the American crocodile. Transmission line construction within the existing Turkey Point cooling canals of the industrial wastewater facility will be coordinated to avoid any disruptions to the operation of the cooling canals and minimize any impacts to crocodiles or their nests. Minimization of impacts will be accomplished by avoiding current nest locations when selecting transmission structure and bridge locations and by minimizing construction activities during crocodile nesting season. Construction activities will be in conformance with the Threatened and Endangered Species Evaluation and Management Plan, contained in Appendix 10.7.1. The conclusions presented in that report are that there will be no adverse impacts to the breeding population of crocodiles from construction of this Project.

The endangered wood stork is likely to forage in many areas along the West Preferred/Secondary Corridors. As documented in Section W9.3.7.3, two recorded wood stork colonies are reported near the corridors in the ENP just south of Tamiami Trail. Construction of the lines in either corridor will not directly affect the colonies. However, USFWS regulates foraging habitat for several miles around active wood stork colonies. FPL will comply with any federal permit conditions regarding these colonies.

The one active bald eagle nest documented east of the West Preferred Corridor in Doral will not be affected by construction of this Project. The nest is approximately 1,200 ft east of the corridor, which already has multiple transmission lines in it. Based on the current eagle management guidelines, no further action should be required relative to this species.



Construction activities will temporarily deter panthers from using the areas within either the West Preferred or Secondary Corridor. However, the additional roads and pads in the ENP may actually improve foraging opportunities for these animals due to the expected use of the raised areas by prey species (Parsons, 2008). Long-term existence of the right-of-way and maintenance activities should not deter a panther from reoccupying these areas. FPL will work with USFWS/FWC to mitigate any potential impacts to panther habitat once a corridor is certified and a specific right-of-way is designed.

W9.4.4.3 Aquatic Life

Impacts on aquatic systems and species are expected to be minor to nonexistent since the West Preferred/Secondary Corridors avoid major lakes, rivers, and streams. For any minor ditches, canals, or any wetlands that are crossed, the construction of the transmission lines may involve installation of culverts and placement of fill resulting in temporary localized increases in turbidity and silt deposition. Such impacts will be local and temporary and are not expected to adversely affect aquatic resources. Appropriate control measures such as staked hay bales and silt curtains will minimize or eliminate siltation resulting from stormwater runoff. Transmission line and access road (if necessary) construction in wetland areas will use methods such as proper culverting and erosion control as necessary to minimize any significant disruption to the aquatic ecosystem or resultant changes in species composition. The likelihood of manatees occurring in the West Preferred or Secondary Corridors is low. The transmission lines will span water bodies where manatees could occur.

W9.4.5 Impact on Human Populations

In general, due to the temporary nature of the construction process and the short duration of each phase of construction at each location, the nuisance and inconvenience experienced by people near the transmission lines will be minor. Activities will typically be scheduled during daylight hours to minimize disturbances to residents while the transmission lines are under construction. In addition, the majority of the West Preferred/Secondary Corridors are within existing FPL right-of-way or in sparsely populated areas.

Transmission line construction occurs as a series of tasks accomplished in sequence by different specialized crews. Tasks include clearing the right-of-way, constructing access roads and pads (if necessary), installing foundations, assembling and erecting structures, stringing conductors, and cleanup activities. Several crews may work simultaneously along the length of the line. During the construction



tion of the transmission line, the duration of a crew's stay in any one area will be relatively short (approximately 1 to 2 weeks per location). Crew sizes vary depending on the task. The largest crew in any one location could consist of 20 to 30 members; however, on the average, crew size will be approximately 10 to 15 members. Minor nuisances and inconveniences that may be experienced by residents near the transmission line are primarily confined to noise from equipment used intermittently at various locations or heavy equipment traffic along the right-of-way during the construction period.

Land clearing and road and pad construction in the West Preferred Corridor should cause minimal impacts on human populations since, for the most part, the corridor alignment avoids densely populated areas. In areas where residences are present, the work will take place within an existing right-of-way where transmission lines are already present and development has occurred around those lines.

During other phases of construction, activities should be largely confined to structure locations. The first phase, if foundations are used, is foundation construction. A foundation crew is usually made up of 10 to 12 members. If concrete foundations are used, a machine will auger the hole. The reinforcing steel is then installed, and the hole is backfilled with concrete. If steel caisson foundations are used, the caisson will be vibrated into the ground using a vibratory hammer suspended from a crane. If precast concrete foundations are used, a backhoe may be used to excavate the hole. Hauled clean fill will be dumped and compacted before the foundation is laid. Finally, any remaining holes will be backfilled. Foundation construction takes approximately 1 day per structure location. It is anticipated that for most of the structures, no foundation will be required, as the structures will be directly embedded into the ground.

After foundation construction, if required, the second phase is assembly. The structure pieces will be delivered to the structure's planned location. At that location, a small crew, usually 8 to 12 members with a small crane, will assemble the structure. This activity typically takes only a few hours per structure. A different crew will then follow to erect the structure on the foundation. This crew is usually 10 to 15 members with a larger crane. This activity typically also takes only a few hours per structure.

Once a section of structures is erected, the process of stringing (installing) the conductors starts. This third phase of construction requires the largest crew, usually 20 to 30 members; however, conductor-stringing locations are on the average 2 to 3 miles apart. Various pieces of wire-pulling equipment and support vehicles will be used during this phase of construction. The duration of this activity could



be 3 to 5 days at each location. Short-term traffic interruptions may occur as part of the conductor stringing operations over roadways.

The final phase of construction involves cleanup and restoration of those areas that were affected by the transmission line construction. These areas may require final grading.

Over the entire construction period for the transmission lines, construction crews and equipment will be present at each work location at irregular intervals for short durations. These durations will vary for each phase of construction but will usually be only a few days.

On a short-term basis, heavier traffic may occur on roads used by construction crews to travel to and from the right-of-way. Where required, the transmission line construction contractor will follow FDOT guidelines for traffic control.

Population density in the vicinity of the majority of the West Preferred Corridor is low; however, residential subdivisions have been developed adjacent to some areas of the existing FPL rights-of-way along the corridor.

In the southern section of the West Preferred/Secondary Corridors in unincorporated Miami-Dade County, single-family residential developments are located adjacent to FPL's right-of-way. These developments are located between SW 320th Street and SW 328th Street and between SW 202nd Avenue and SW 207th Avenue (Grove Hammock subdivision to the west of the right-of-way and the Farmland Estates subdivision to the east of the right-of-way). These two subdivisions are vested and were permitted to be developed at much higher densities than are currently allowed in this area of the county. FPL's existing transmission right-of-way and the existing 138-kV transmission line within that right-of-way predate the construction of these subdivisions.

The most densely populated areas are in Doral where areas of the West Preferred Corridor are bordered by higher-density, single-family, and multi-family developments located between the Florida's Turnpike and NW 107th Avenue. There is currently a multi-circuit transmission line right-of-way that predates these developments. Designs are being explored to evaluate additional collocation/consolidation opportunities along this right-of-way.



In summary, inconvenience to human populations attributable to construction of the Turkey Point Units 6 & 7 Project's transmission lines in the West Preferred/Secondary Corridors will be minimal and temporary. Impacts to existing developments have been minimized by locating the corridor largely within existing FPL rights-of-way where practicable, and short duration of construction activities in any one location.

W9.4.6 Impact on Regional Scenic, Cultural, and Natural Landmarks

While the West Preferred/Secondary Corridors cross the ENP, an important regional scenic and natural resource feature, the location of the existing FPL right-of-way predates the eastward expansion of the ENP. The West Preferred Corridor involves a proposed land exchange to move the existing FPL right-of-way further eastward to collocate with the SFWMD L-30/31N Canal right-of-way along the eastern edge of the ENP and WCA-3B. The West Secondary Corridor has been proposed within FPL's existing right-of-way in the event that the land exchange is not conducted in a timely manner.

If the proposed transmission lines are located within the West Secondary Corridor, transmission lines and structures will be in the far view of visitors to Shark Valley and on airboat tours, and adverse effects on ENP visitors' experiences will be minor (Parsons, 2008). If the proposed transmission lines are located within the West Preferred Corridor, they will be located along the L-30/31N Canal access road, a limited access road. The views of possible future transmission facilities from Tamiami Trail will be combined with views with other existing development such as the Miccosukee Casino and the pump station on the L-29 Canal, thereby further minimizing adverse impacts on ENP visitor experience (Parsons, 2008).

There are no other regional scenic, cultural, or natural landmarks in or within 0.5 mile of the West Preferred or Secondary Corridor.

W9.4.7 Impact on Archaeological and Historic Sites

Every attempt will be made to avoid known cultural resources along or within the West Preferred/ Secondary Corridors as identified in Section W9.3.6.5. This can be accomplished with alignment of the actual right-of-way and structure and pad placement.

If requested by DHR, an archaeological resource assessment survey will be conducted of archaeologically sensitive areas (as determined by DHR and the archaeologist retained by FPL) within the eventual right-of-way, and the report of the survey will be submitted to DHR for review. If any archaeo-



logical resources within the right-of-way are determined to be significant, DHR will be consulted regarding appropriate procedures for either preservation or excavation of the significant resource(s).

If unforeseen archaeological finds are discovered during construction, DHR will be notified. Following a determination of the importance of such finds, FPL will work with DHR to assess mitigation measures necessary to minimize adverse impacts.

W9.5 Postconstruction Impacts and Effects of Maintenance

W9.5.1 Maintenance Techniques

Safe and reliable operation of the new transmission lines will be maintained through regular inspection of the poles, conductors, insulators, hardware, access areas, and vegetation in proximity to the facilities. The inspections will primarily consist of ground patrols (truck) but may also include aerial (helicopter/airplane) patrols. Electric transmission lines normally require minimal maintenance; however, FPL will inspect the transmission lines on a regular basis to look for problems caused by weather, vandalism, vegetation regrowth, etc.

Transmission line maintenance within the existing Turkey Point cooling canals of the industrial wastewater facility will be coordinated to avoid any disruptions to the operation of the cooling canals and minimize any impacts to crocodiles or their nests. Maintenance activities will be in conformance with the Threatened and Endangered Species Evaluation and Management Plan, contained in Appendix 10.7.1.

Vegetation will be maintained in the right-of-way to ensure the safe, reliable operation of the transmission lines. In areas of the West Preferred/Secondary Corridors that are not in active agriculture or nursery use, FPL will manage vegetation on the transmission line right-of-way by a variety of methods, including trimming, mowing, and the use of approved growth regulators and herbicides, targeting species that are incompatible with the safe access and operation and maintenance of the transmission system. This encourages a broad diversity of vegetation growth to remain on the right-of-way, which enhances wildlife use potential.

FPL's right-of-way maintenance program is specific to each location, and a maintenance *prescription* is often detailed down to the individual spans between poles, allowing location-specific consideration of sensitive areas such as the NFC. The exact manner in which right-of-way maintenance will be per-



formed will depend on the location, type of terrain, surrounding environment, and regulatory control. Vegetation removal is minimized consistent with safe and reliable operation of the transmission line. For example, in nonurbanized or noncultivated portions of the FPL transmission line right-of-way, fast-growing vegetation species and other vegetation whose mature height could exceed 14 ft will be pruned or removed from the area between the structures to avoid interference with the conductor clearance. Any vegetation that could restrict access to the right-of-way will be removed. Other species are generally allowed to remain, resulting in a shrubby and herbaceous cover within the right-of-way.

FPL also works to control the spread of nuisance plants that could present a fire hazard within the right-of-way through the use of approved herbicides and other removal techniques. Use of herbicides for vegetation control will be selective. Application of these herbicides will meet applicable federal, state, and local regulations. Due to the selective nature of vegetation pruning, the limited use of herbicides, and the infrequent occurrence of maintenance activities, the potential effects on wildlife and water quality will be minimal. Where vegetation maintenance activities occur within or adjacent to the ENP, herbicide use or other removal techniques will be coordinated with the ENP and in accordance with the National Park Service Integrated Pest Management Plan.

Some vegetation maintenance activities outside the right-of-way are occasionally necessary. To enhance the safe, reliable operation of the proposed transmission lines, FPL may trim or remove danger timber outside the FPL right-of-way in coordination with the adjacent property owner(s). Danger timber includes trees in danger of falling or leaning into the conductors or, in areas of wildfire hazard, other vegetation that may provide excessive fuel loading in proximity to the transmission lines. For example, when the right-of-way is adjacent to the 8.5 SMA, ENP, WCA-3B, the Pennsuco Wetlands, and other natural areas, FPL may acquire the necessary property rights to maintain such vegetation, as needed.

As a result of this maintenance program, rural, noncultivated FPL rights-of-way are generally conducive to use by local wildlife. The open effect creates habitat that is attractive to certain raptors, songbirds, and small mammals, and the lower growing vegetation provides forage for deer and a multitude of other species. Open land- or marsh-dwelling wildlife should be unaffected by the existence of the new transmission line and the maintenance of the right-of-way.



At the Levee substation, the proposed expanded fenced substation yard and associated stormwater retention area will require periodic maintenance, including mowing, erosion control around the substation fence, and periodic removal of exotic plant species. Less frequently occurring will be repairs to the fence and addition of loose rock cover inside the fenced area to maintain the grounding system integrity.

W9.5.2 Multiple Uses

FPL rights-of-way are frequently used for other purposes compatible with the safe and reliable operation and maintenance of transmission lines. Multiple uses of a transmission line right-of-way typically include grazing, citrus and row-crop farming, other agricultural operations, controlled landscaping, recreational uses such as golf courses and hiking/biking trails, and other compatible activities that do not interfere with FPL's full use of the right-of-way and the safe, reliable function of the transmission line facilities. In most cases, FPL's property rights consist of an easement for the construction, maintenance, and operation of its transmission line, as well as the rights of ingress and egress to the line, from another party who retains the fee-simple interest in the property. The easement may provide for the acceptable use of the right-of-way by the fee owner for activities that do not interfere with FPL's full use of its easement and the safe, reliable function of the transmission line facilities.

In some cases, FPL owns or purchases a fee interest in its rights-of-way. If FPL owns the right-of-way, all rights to the property will be held by FPL. If a party wishes to use the company-owned property, a license agreement may be negotiated, allowing for activities that do not interfere with FPL's full use of the right-of-way and the safe, reliable function of the transmission line facilities.

W9.5.3 Changes in Species Populations

The status and potential for occurrence of important species in and along the West Preferred/Secondary Corridors are discussed in Section W9.3.7. The absence of significant impacts to important species is not coincidental, as efforts were made during the corridor selection study to avoid potentially sensitive habitats as much as practicable. The avoidance of ecologically unique or valuable habitats was achieved primarily through collocating the corridor with existing transmission line and other linear rights-of-way or traversing open lands or existing agricultural lands.

Changes in local species populations are not expected as a result of transmission line presence and maintenance. Displacement of individuals from the immediate right-of-way area that may occur during construction activities will be temporary. Habitat use will decline during actual construction due



to noise and human presence. Such avoidance behavior will enable wildlife to escape direct impacts from construction activities, although some losses of individual vertebrates (e.g., rodents, amphibians) may occur during right-of-way clearing. These displaced species are expected to reinhabit the right-of-way areas after construction. No animal or plant species is expected to be permanently displaced out of the transmission line right-of-way area.

Due to necessary maintenance practices in the right-of-way, a decrease in structural diversity will occur in formerly forested areas (i.e., permanent loss of a tree canopy layer), which are few on the corridor. Since most of the West Preferred/Secondary Corridors follow existing transmission lines, previously disturbed lands, or active agricultural lands, clearing of canopy vegetation will be minimal. That is also true in the ENP, which is characterized by herbaceous vegetation. In those portions of the corridor where clearing is necessary, a strip of canopy habitat will be lost. In these areas, clearing of overstory vegetation and subsequent maintenance requirements will not result in the loss of entire tracts or significant portions of regional wildlife habitat types.

The long-term effects of these transmission lines and associated maintenance should not adversely affect regional populations of any listed species, including panthers, crocodiles, snail kites, and wood storks. Through a vegetation maintenance program and proper culverting of access roads/pads, both existing habitat and hydrology will be maintained, providing foraging habitats for wood storks.

W9.5.4 Effects of Public Access

It is FPL's policy to provide locked gates at the point where the transmission line access road intersects previously fenced property. Since FPL will install locked gates at any location that is currently fenced, no increased vehicle access is anticipated following construction except by FPL personnel performing routine maintenance. Where structures are placed adjacent to an existing roadway, maintenance of the line will have no additional impact on public access to the adjacent properties. In the vicinity of the ENP, if the West Preferred Corridor is certified, FPL proposes collocating access on the L-30/31N Canal right-of-way with access currently used by SFWMD. This is currently a restricted access area, and FPL will maintain that restriction with SFWMD. In the event a new access road is constructed parallel to the levee, the road will be gated. No impacts to environmentally sensitive areas or resident wildlife populations from additional public access are expected.

If the West Secondary Corridor is certified, the access road that FPL constructs will be gated. No increased vehicle access is anticipated following construction except by FPL personnel performing rou-



tine and emergency maintenance. FPL will allow ENP staff to use the road for ENP management purposes, if requested.

W9.5.5 Other Postconstruction Effects

W9.5.5.1 Electric and Magnetic Fields (EMF)

The two proposed Clear Sky-Levee 500-kV lines and one proposed Clear Sky-Pennsuco 230-kV transmission line to be constructed on the West Preferred or Secondary Corridor will comply with the Florida EMF regulations specified in Chapter 62-814, F.A.C. (the Florida EMF Rule). The strength of the magnetic field under a transmission line is primarily a function of the amount of current carried by the transmission line and the height of the conductors above the ground. The electric field is primarily a function of the voltage impressed on the transmission line and the conductor height above the ground. Consequently, the electric field near the transmission line is relatively constant over time, but the magnetic field fluctuates depending on customer demand for power.

The EMF produced by the proposed transmission lines was calculated in accordance with the requirements of Section 62-814.460, F.A.C. The fields associated with the new transmission lines comply with the standards set forth in the Florida EMF Rule, as demonstrated in Table W9.5.5-1. Although the current carried by the transmission lines will vary throughout the day, the value used in the calculations is the maximum quantity of electric current that can be continuously carried on the conductors, as required by Chapter 62-814, F.A.C.

Table W9.5.5-1 presents the maximum EMF that can be produced by each of the proposed typical transmission line configurations, at their respective locations, under maximum operating conditions. These fields comply with FDEP rule requirements for new 500- and 230-kV transmission lines. FPL will provide detailed data and modeling results to FDEP as required, depicting the maximum EMF at maximum operating conditions for each of the typical transmission line right-of-way configurations (previously described in Section W9.2), both on the right-of-way and laterally under the transmission line to demonstrate compliance with the EMF field limits. This submittal is provided as a separate document filed concurrently with this SCA.

In the event additional configurations are required by the detailed design of the transmission lines after certification, FPL will submit the EMF compliance demonstrations to FDEP at least 90 days prior to the start of construction in compliance with Chapter 62-814, F.A.C.



TABLE W9.5.5-1
MAXIMUM EMF CAPABLE OF BEING PRODUCED BY THE TRANSMISSION
LINES FOR THE WEST PREFERRED/SECONDARY CORRIDORS

		Ampacity	Right-	El	Electric Field (kV/m)			Magnetic Field (mG)	
	Cross-Section Location*	of New Line(s) (amps)	of-Way Width (ft)	On Right-of- Way	Left Edge† of Right-of- Way	Right Edge† of Right-of- Way	Left Edge† of Right-of- Way	Right Edge† of Right-of- Way	
Clear	Sky-Levee #1 and #2 500-kV/Cle	ar Sky-Pennsuco	230-kV						
W1	Transition to plant property	4,215/2,990	2,634	6.26	0	0.08	0.3	15.65	
W2	SW 117 th Avenue to SW 162 nd Avenue	4,215/2,990	330	6.26	1.62	0.45	145	134.57	
W3	SW 162 nd Avenue to SW 136 th Street	4,215/2,990	330	6.26	1.03	0.44	133.83	135.85	
W4	Along SFWMD levees	4,215/2,990	330	6.35	0.78	0.44	66.2	136.32	
W5	Along SFWMD levees (alternative configuration)	4,215/2,990	330	6.35	0.25	0.76	132.4	57.02	
W6	Krome Avenue east to Levee substation	4,215/2,990	330	6.35	0.78	0.44	66.2	136.32	
W7	Krome Avenue east to Levee substation (alternative configuration)	4,215/2,990	330	6.35	0.25	0.76	132.4	57.02	
W8	Levee substation boundary	4,215/2,990	1,204	6.36	0.13	0.01	36.6	1.89	
Clear	Sky-Pennsuco 230-kV								
W9	East of Levee substation	2,990	660	6.4	0.06	0.11	18.4	35.34	
W10	West of Florida's Turnpike	2,990	300	5.66	0.06	0.17	97.38	50.12	
W11	South end of NW 107th Avenue	2,990	350	4.48	0.13	0.11	47.53	40.68	
W12	North end of NW 107th Avenue	2,990	170	4.89	0.09	1.5	81.21	115.12	
Clear	Sky-Levee #1 and #2 500-kV/Cle	ar Sky-Pennsuco	230-kV (We	st Secondary C	orridor)				
W13	West Secondary Corridor	4,215/2,990	330	6.35	0.78	0.44	66.2	136.32	
W14	West Secondary Corridor (alternative configuration)	4,215/2,990	330	6.35	0.25	0.76	132.4	57.02	
Florio lines‡	da EMF rule limit for new 500-kV			10.0	2.0	2.0	200	200	
Florio lines‡	da EMF rule limit for new 230-kV			8.0	2.0	2.0	150	150	

Note: mG = milliGauss.

The field levels of the proposed transmission lines shown in this table are based on the highest fields anticipated for the 500/230-kV transmission line configurations, even though structural configurations with lower fields may be employed for some portions of the line routes. The transmission lines will generally operate at a level well under the MCR.

Source: EzEmf software program developed through Florida Electric Power Coordinating Group and accepted by FDEP.



^{*}Locations previously depicted on Figure W9.2.0-9.

[†]The "left" and "right" designations are as shown in Figures W9.2.0-10 through W9.2.0-23.

[†]The field limits are established in Rule 62-814.450(2), F.A.C.

W9.5.5.2 Audible Noise

The audible noise associated with a transmission line is generated by either corona from the conductors or from gap-type discharges. Gap noise is typically due to faulty or failed hardware and easily corrected. Corona is a phenomenon that occurs when there is an irregularity on the surface of the conductor, such as buildup from fog, water droplets, or significant particulate matter. Corona activity at the surface of the conductors produces a low-level audible noise that is a slight humming sound. Under wet conditions, higher audible noise levels are experienced than will occur under dry conditions. However, background noise from various sources (inclement weather, traffic, agricultural activity, etc.) has the effect of masking transmission line noise.

Audible noise calculations were performed for the 14 representative transmission line cross-sections at various locations along the West Preferred/Secondary Corridors—eight cross-section configurations from Clear Sky substation to Levee substation and six cross-sections from Levee substation to Pennsuco substation (see Figure W9.2.0-9). These audible noise calculations were performed using corona field effects software produced by the Bonneville Power Administration (BPA), U.S. Department of Energy. This software provides estimated median (L50) noise levels for fair and rainy weather as a function of distance from the edge of right-of-way for the modeled transmission line configurations.

Table W9.5.5-2 shows the maximum calculated L50 audible noise levels at the edge of right-of-way for each of the 14 modeled transmission line configurations (the largest from both sides of the right-of-way and during rainy weather). Calculated sound levels are listed in decibels relative to an A-weighted value (dBA) that approximates the frequency response of the human ear. The maximum calculated median audible noise levels at edge of right-of-way during fair or dry weather are significantly lower, in the 20- to 30-dBA range. To provide some perspective on these calculated noise levels, 40 to 50 dBA corresponds to typical noise levels in a suburban living room, and 20 to 30 dBA is comparable to a bedroom at night.

Based on these calculations, noise levels produced by the proposed transmission lines will comply with all applicable noise regulations in the local governmental jurisdictions through which they pass (see Section W9.3.6.2 for applicable limits).



TABLE W9.5.5-2 CALCULATED MAXIMUM L50 AUDIBLE NOISE LEVELS AT EDGE OF RIGHT-OF-WAY FOR 14 REPRESENTATIVE CROSS-SECTIONS MODELED ALONG THE WEST PREFERRED/SECONDARY CORRIDORS

	Cross-Section Location	L50 Audible Noise (dBA)
Clear Sl	ky-Levee #1 and #2 500-kV/Clear Sky-Pennsuco 230-kV	
W1	Transition to plant property	46.3
W2	SW 117 th Avenue to SW 162 nd Avenue	55.0
W3	SW 162 nd Avenue to SW 136 th Street	48.9
W4	Along SFWMD levees	48.9
W5	Along SFWMD levees (alternative configuration)	48.8
W6	Krome Avenue east to Levee substation	48.9
W7	Krome Avenue east to Levee substation (alternative configuration)	48.8
W8	Levee substation boundary	46.8
Clear Sl	ky-Pennsuco 230-kV	
W9	East of Levee substation	43.5
W10	West of Florida's Turnpike	45.0
W11	South end of NW 107 th Avenue	47.1
W12	North end of NW 107 th Avenue	47.1
Clear Sl	ky-Levee #1 and #2 500-kV/Clear Sky-Pennsuco 230-kV (West Secondary Corrido	<u>or)</u>
W13	West Secondary Corridor	48.9
W14	West Secondary Corridor (alternative configuration)	48.8



W9.5.5.3 Radio and Television Interference

Corona, which can occur on high-voltage transmission lines, produces electromagnetic (EM) noise. When this noise is sufficiently strong, it can cause interference with broadcast radio and television signals. Since corona is enhanced by water vapor, the magnitude of this noise is greater during wet or rainy periods than during dry or fair weather periods.

Broadcast signals in the amplitude-modulated (AM) radio band and two television bands (very-high frequency [VHF] and ultra-high frequency [UHF] bands) are susceptible to this potential interference. EM noise from corona is not expected to cause interference with frequency-modulated (FM) radio, cable or satellite television systems, cellular telephones, home cordless telephones, or wireless networking.

In general, the EM noise from transmission line corona decreases with increasing distance from the right-of-way and with increasing noise frequencies (shorter wavelengths). Thus, interference effects are greatest immediately adjacent to the right-of-way and at the lower broadcast frequencies.

This section provides an evaluation of possible radio interference (RI) and television interference (TVI) from the planned transmission lines that will run from Clear Sky substation to Levee substation and from Levee substation to Pennsuco substation. Based on planned and existing transmission lines for these West Preferred/Secondary Corridors, RI and TVI calculations were performed for 14 representative transmission line configurations that are being proposed.

The RI and TVI calculations were performed using software produced by engineers at BPA. This software performs EM noise calculations as a function of transmission line configurations, the frequency of the EM noise, and the distance from the right-of-way. The potential electromagnetic noise levels were compared to typical broadcast radio and television signals to evaluate distances at which possible RI in the AM broadcast frequency and TVI in the VHF and UHF bands might occur. The results of this comparison are provided in the following paragraphs. Because the electromagnetic noise levels decrease with increasing frequency, the evaluations were conservatively performed at the low end of the frequency bands being considered (i.e., if interference is unlikely at the lower frequency, then it is even less likely at higher frequencies).

For RI, the evaluations were made based on calculated EM noise levels at 0.5 megahertz (MHz) (below the bottom end of the AM band at 0.54 MHz), and for TVI, the evaluations were made based on



calculated EM noise levels at 125 MHz. The value of 125 MHz was selected because most digital TV broadcasts are expected to use Channel 7 (174 MHz) or higher.

RI and TVI calculation results serve as a general indication of the likelihood for interference. Actual interference from transmission line corona will depend on numerous factors including the weather, terrain, antenna configuration, and broadcast signal strength and frequency.

Radio

Based on calculated EM noise levels, typical broadcast radio signal strengths, and required signal to noise ratios to receive a clear signal, Table W9.5.5-3 shows the distance in feet from the edge of the right-of-way for each of the 14 model configurations where interference is possible. The term *typical broadcast radio signal strengths* refers to the Federal Communications Commission (FCC) recommendations for minimum AM broadcast signals. The distance estimates provided in Table W9.5.5-3 for possible RI are conservative because the EM noise levels are calculated below the bottom end of the AM radio band and because the signal strengths in the "rural" areas adjacent to the West Preferred/Secondary Corridors may not be as weak as those characterized as "rural" elsewhere in the country due to the proximity of the large population centers in eastern Miami-Dade County. In general, EM noise levels will decrease with increasing radio frequency, making interference even less likely moving up through the broadcast frequencies and in areas with strong signal strengths. RI is not expected for FM broadcast signals, which are at higher frequencies than AM broadcast signals.

Where no distance is given in the table, no interference is expected anywhere outside the transmission line right-of-way. Table W9.5.5-4 shows a similar interference evaluation based on rainy or wet weather. These distances are further than those in Table W9.5.5-3 because corona effects are stronger in wet weather, mainly due to water droplets on the transmission line conductors.

The modeled configurations are not always symmetrical with respect to the right-of-way, so Tables W9.5.5-3 and W9.5.5-4 show the distance from the side with the strongest EM noise.

Television

FCC defined the coverage area for new digital television broadcasts as typically the region with a signal strength of 41 decibels relative to 1 microvolt ($dB\mu$) or greater. Based on a required signal to noise ratio of 30 decibels (dB) to receive a good picture, the distance from the edge of right-of-way at which interference goes away is the distance at which the calculated EM noise drops below 11 $dB\mu$.



TABLE W9.5.5-3
DISTANCE FROM EDGE OF RIGHT-OF-WAY WHERE RI IS POSSIBLE—FAIR WEATHER*

	Cross-Section	Typica Signal S	With al Rural Strength ft)	Typical F Signal S	With Residential Strength ft)
	Location	Weak	Strong	Weak	Strong
Clear Sky	-Levee #1 and #2 500-kV/Clear Sky-Pennsuco 230-kV				
W1	Transition to plant property	200	_	_	_
W2	SW 117 th Avenue to SW 162 nd Avenue	400	100	0	0
W3	SW 162 nd Avenue to SW 136 th Street	400	0		
W4	Along SFWMD levees	400	0	_	
W5	Along SFWMD levees (alternative configuration)	400	0	_	
W6	Krome Avenue east to Levee substation	400	0	_	
W7	Krome Avenue east to Levee substation (alternative configuration)	400	0	_	_
W8	Levee substation boundary	300	_	_	_
Clear Sky	r-Pennsuco 230-kV				
W9	East of Levee substation	0	_	_	_
W10	West of Florida's Turnpike	100	_	_	_
W11	South end of NW 107 th Avenue	200	0	_	_
W12	North end of NW 107 th Avenue	200	0	_	_
Clear Sky	-Levee #1 and #2 500 kV/Clear Sky-Pennsuco 230 kV	(West Secon	ndary Corridor	.)	
W13	West Secondary Corridor	400	0	_	
W14	West Secondary Corridor (alternative configuration)	400	0	_	_

^{*}Based on fair weather EM noise calculations at 0.5 MHz relative to typical rural and residential broadcast signals.



TABLE W9.5.5-4
DISTANCE FROM EDGE OF RIGHT-OF-WAY WHERE RI IS POSSIBLE—
RAINY WEATHER*

	Cross-Section	Typica Signal S	With I Rural Strength it)	Typical F Signal S	With Residential Strength ft)
	Location	Weak	Strong	Weak	Strong
Clear Sky	-Levee #1 and #2 500-kV/Clear Sky-Pennsuco 230-kV	<u>/</u> _			
W1	Transition to plant property	3,200	400		_
W2	SW 117 th Avenue to SW 162 nd Avenue	3,400	600	200	0
W3	SW 162 nd Avenue to SW 136 th Street	3,400	600	100	_
W4	Along SFWMD levees with 230-kV line to west	3,400	600	100	_
W5	Along SFWMD levees with 230-kv line to east	3,100	600	100	_
W6	Krome Avenue east to Levee substation	3,400	600	100	_
W7	Krome Avenue east to Levee substation (alternative configuration)	3,400	600	100	_
W8	Levee substation boundary	3,300	500	0	_
Clear Sky	y-Pennsuco 230-kV				
W9	East of Levee substation	1,200	0	_	_
W10	West of Florida's Turnpike	1,200	200	0	_
W11	South end of NW 107 th Avenue	1,800	300	0	_
W12	North end of NW 107 th Avenue	1,600	300	0	0
Clear Sky	-Levee #1 and #2 500 kV/Clear Sky-Pennsuco 230 kV	(West Secon	dary Corridor	<u>)</u>	
W13	West Secondary Corridor	3,400	600	100	_
W14	West Secondary Corridor (alternative configuration)	3,400	600	100	_

^{*}Based on rainy weather EM noise calculations at 0.5 MHz relative to typical rural and residential broadcast signals.



Table W9.5.5-5 shows these distances in feet from the edge of right-of-way, again, based on the side of the modeled configuration with the greater EM noise. Interference is much less likely for television broadcasts due to the significantly higher frequencies being used for the new digital broadcasts. The distances shown in Table W9.5.5-5 are based conservatively on the calculated EM noise levels at 125 MHz assuming the proposed transmission lines are all at maximum operating conditions. Most digital broadcasts are, or will be, in the UHF band at significantly higher frequencies (at or above 470 MHz); thus, interference from the proposed transmission lines is even less likely than shown on Table W9.5.5-5.

The switch to digital broadcast television is expected to alleviate interference, because most of the broadcast signals will be at higher frequencies, and the EM interference levels from corona decrease with increasing frequency. The switch to digital broadcasts will not eliminate interference, but it is even less likely than before (when compared with analog television broadcasts).

Induced Currents

Induced currents from EMF produced by the transmission lines are limited to safe levels by meeting the FDEP limits for field magnitudes on the right-of-way and at the edge of the right-of-way. Electric field limits guard against startle shocks that can occur when contacting other objects beneath the line. Furthermore, minimum clearances for the lines are designed to meet the NESC requirements for 5 milliamperes or less of short-circuit current (induced current due to electric field) when the largest anticipated vehicle or equipment is situated directly under the line.

FPL standards require that fences and gates either crossing or parallel to and within the transmission rights-of-way be grounded to mitigate shock hazard. FPL will provide this grounding as part of its construction activities.

Summary

Calculations show that the main potential for interference from the proposed West Preferred/Secondary Corridors transmission line configurations is within the low end of the AM radio band during rainy weather, with the potential for interference extending out several thousand feet from the edge of right-of-way for weak rural signals during rainy weather. For fair weather and more typical broadcast signal strengths, the impact to the AM radio band is minimal. As stated previously, no interference is expected with the FM radio band, cellular telephone, or other communication services due to the higher operating frequencies and less susceptible modulation techniques.



TABLE W9.5.5-5 DISTANCES FROM EDGE OF RIGHT-OF-WAY WHERE TVI IS POSSIBLE*

	Cross-Section Location	Distance from Edge of Right-of-Way (ft)	
Clear Sky	y-Levee #1 and #2 500-kV/Clear Sky-Pennsuco 230-kV		
W1	Transition to plant property	_	
W2	SW 117 th Avenue to SW 162 nd Avenue	100	
W3	SW 162 nd Avenue to SW 136 th Street	0	
W4	Along SFWMD levees	0	
W5	Along SFWMD levees (alternative congfiguration)	0	
W6	Krome Avenue east to Levee substation	0	
W7	Krome Avenue east to Levee substation (alternative configuration)	0	
W8	Levee substation boundary	_	
Clear Sk	y-Pennsuco 230-kV		
W9	East of Levee substation	_	
W10	West of Florida's Turnpike	_	
W11	South end of NW 107 th Avenue	_	
W12	North end of NW 107 th Avenue	0	
Clear Sky-Levee #1 and #2 500 kV/Clear Sky-Pennsuco 230 kV (West Secondary Corridor)			
W13	West Secondary Corridor	0	
W14	West Secondary Corridor (alternative configuration)	0	

^{*}Based on EM noise calculations at 125 MHz relative to the minimum digital broadcast signal in a defined coverage area.



TVI calculations indicate virtually no impact except in close proximity to the lines for signal strengths at the defined minimum level within a broadcast coverage area. Thus, in general, interference with broadcast television is not expected to be a problem.

Should any entity experience RI or TI as a result of these transmission lines, FPL will work with the entity to resolve the interference issue.

W9.5.5.4 Safety

FPL's transmission line facilities are designed to comply with all applicable codes, guidelines, and standards. The primary code used in the design of transmission lines is the NESC, 2007 edition. The NESC is an ANSI standard that covers electrical clearances and loading and strength requirements, including extreme wind. Codes and standards of other agencies and standard organizations that provide rules, guidelines, and conditions for particulars not specified by the NESC, used to design the proposed transmission lines, include:

- Occupational Safety and Health Administration (OSHA) rules provide requirements for safe minimum approach distances.
- American Society of Civil Engineers (ASCE) Manual 74, Guidelines for Electrical Transmission Line Structural Loading, and Standard 48-05, Design of Steel Transmission Pole Structures.
- FAA guidelines cover requirements in the vicinity of airports.
- FDOT 2007 Utility Accommodation Manual.

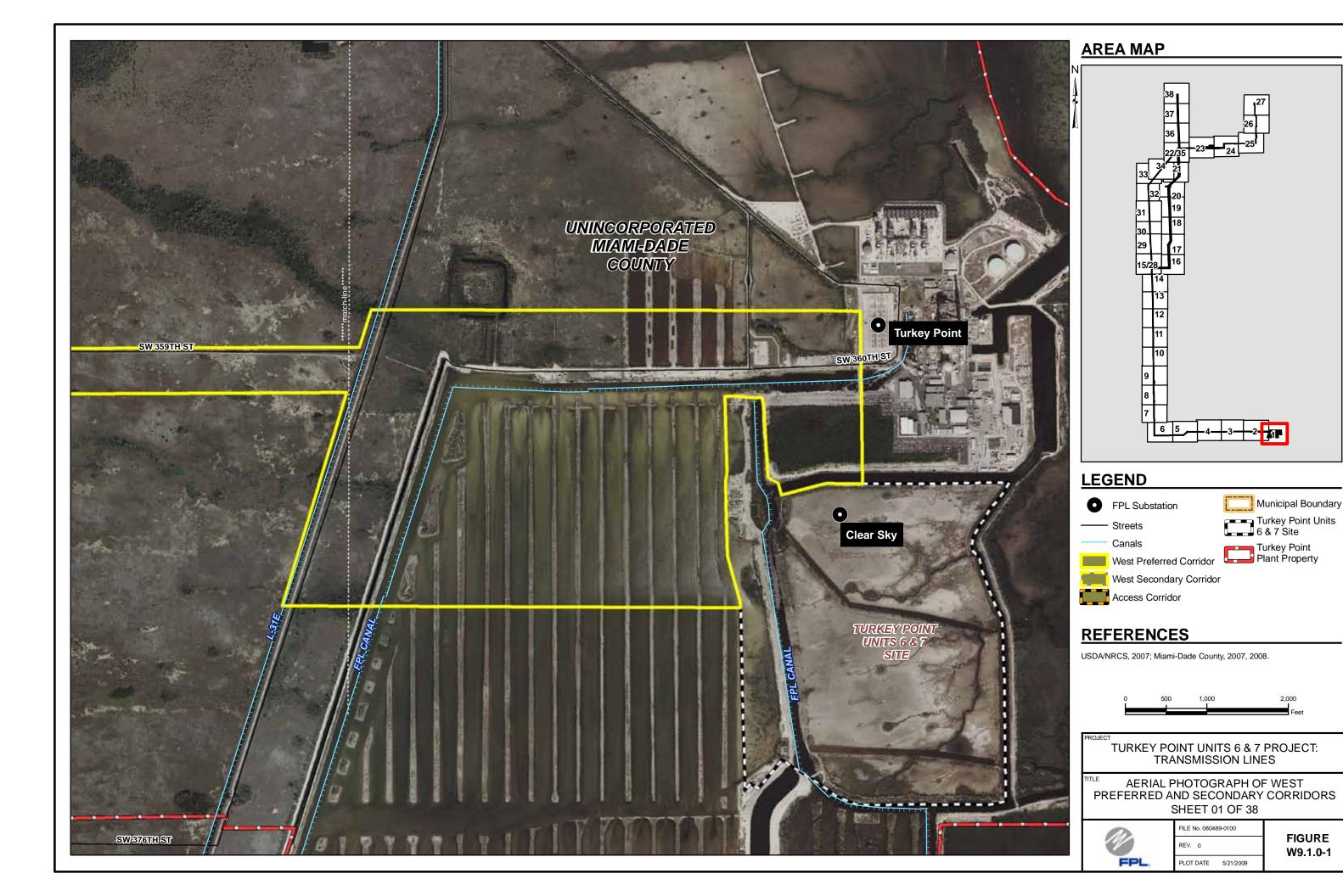
These codes, guidelines, and standards provide design parameters and guidelines with the goal of protecting public safety.

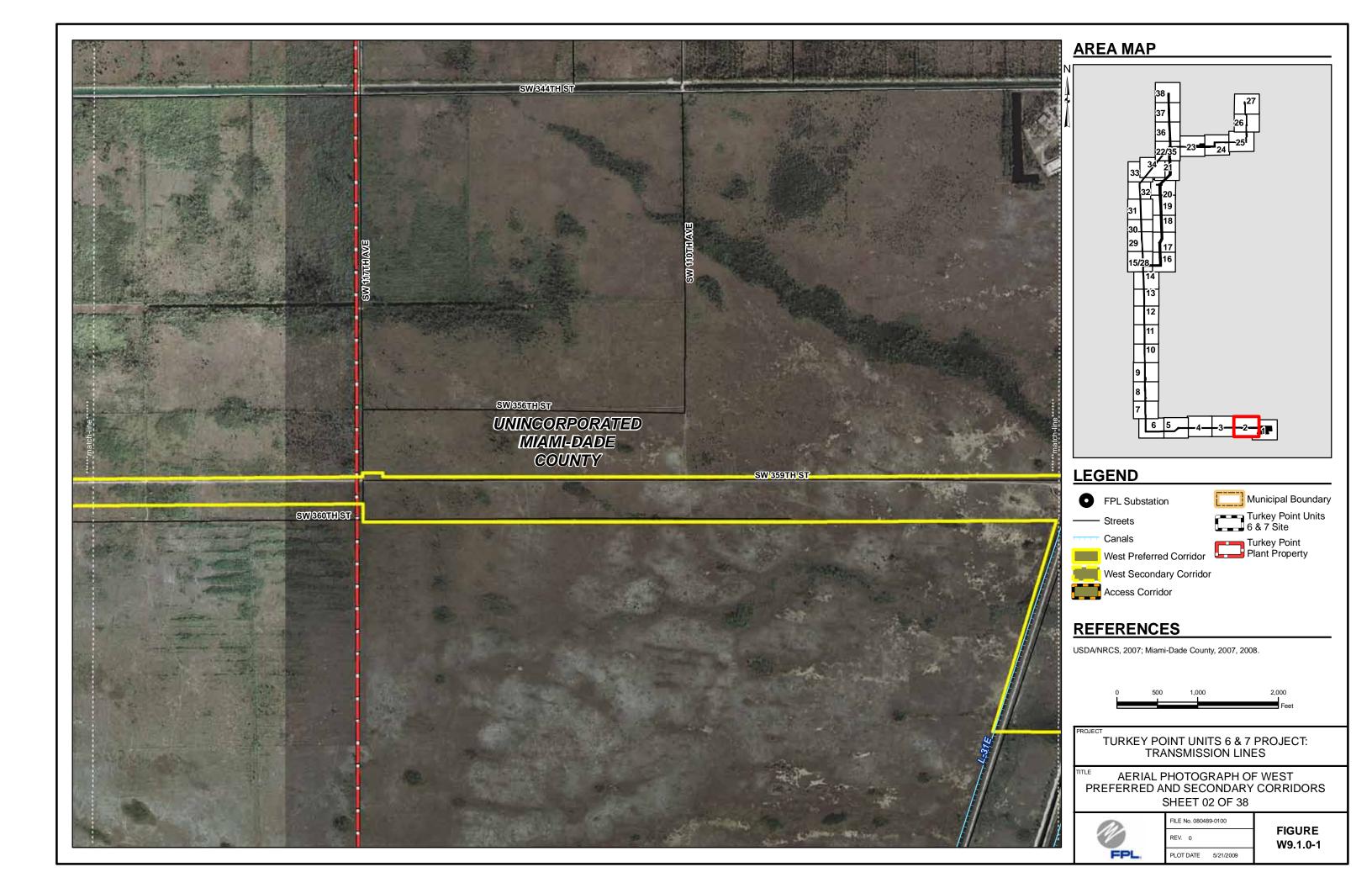


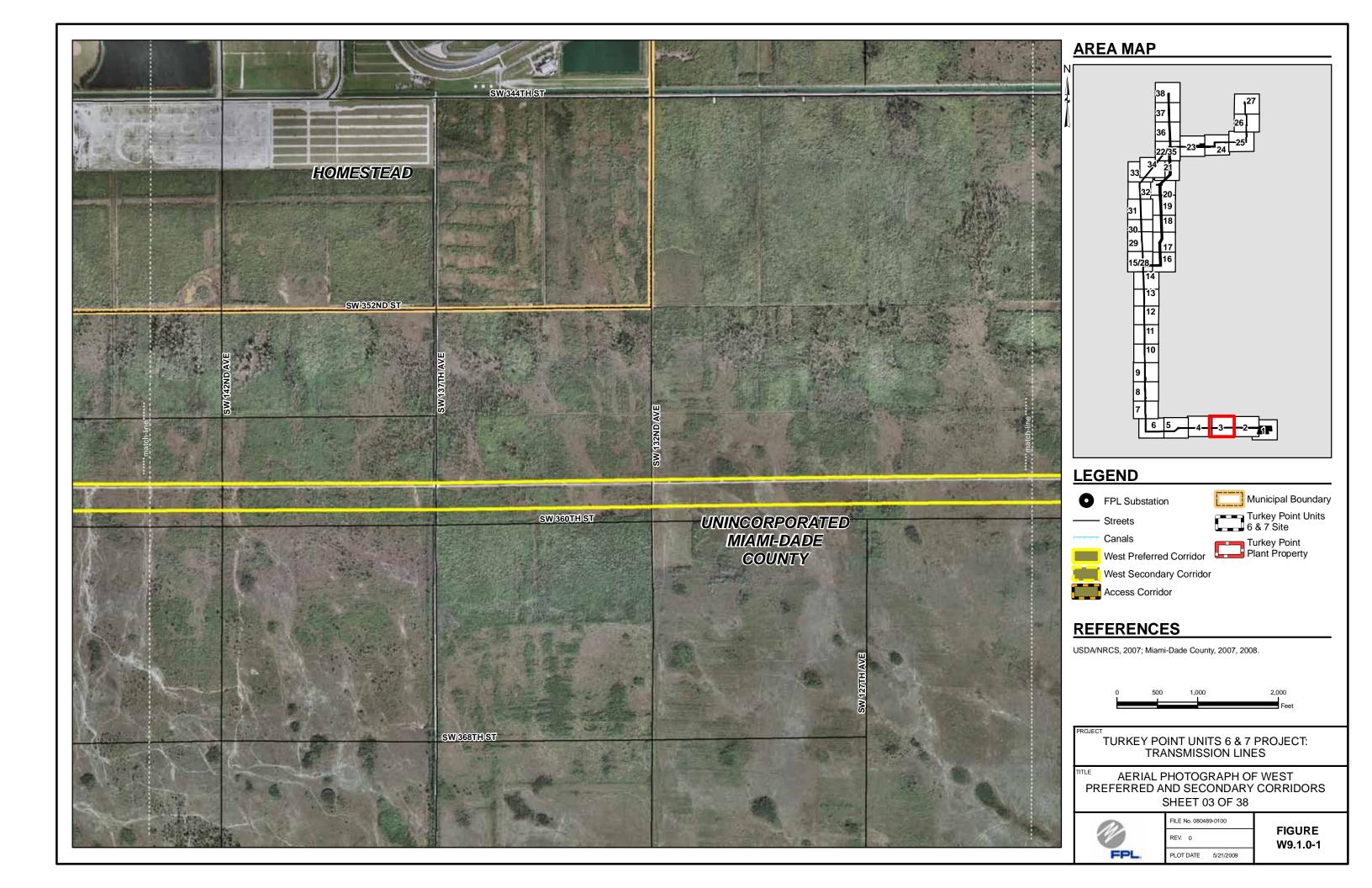
W9.1—MAPS

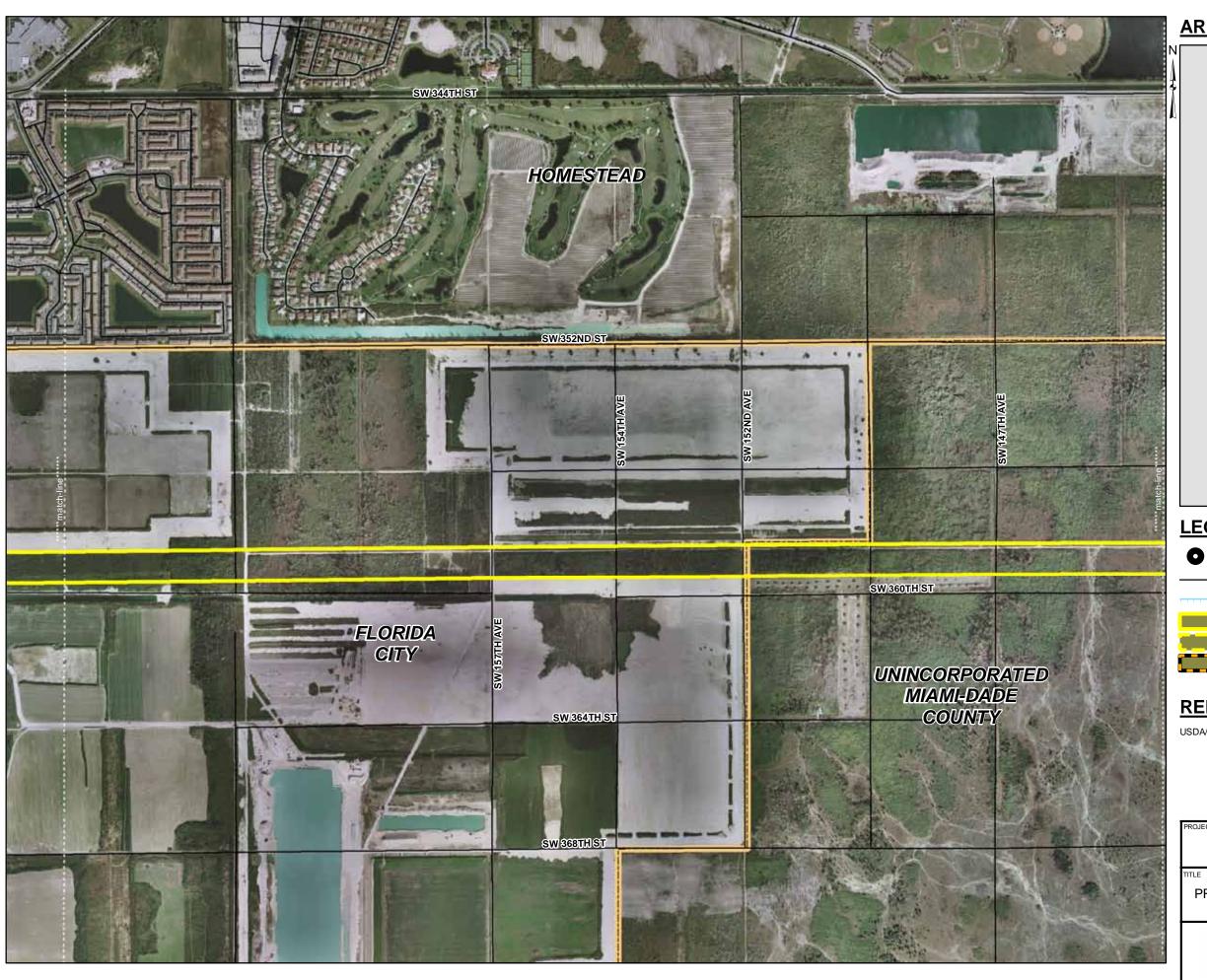
Figure W9.1.0-1. Aerial Photographs
Figure W9.1.0-2. Future Land Use Maps
Figure W9.1.0-3. Zoning Maps
Figure W9.1.0-4. Vegetation/Land Cover Maps

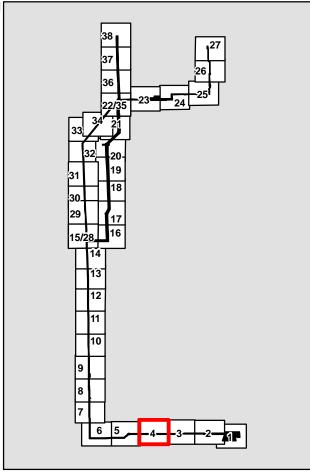












LEGEND

FPL Substation

Streets

Municipal Boundary
Turkey Point Units
6 & 7 Site
Turkey Point
Plant Property

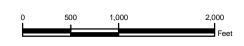
Canals

West Preferred Corridor
West Secondary Corridor

West Secondary Con
Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

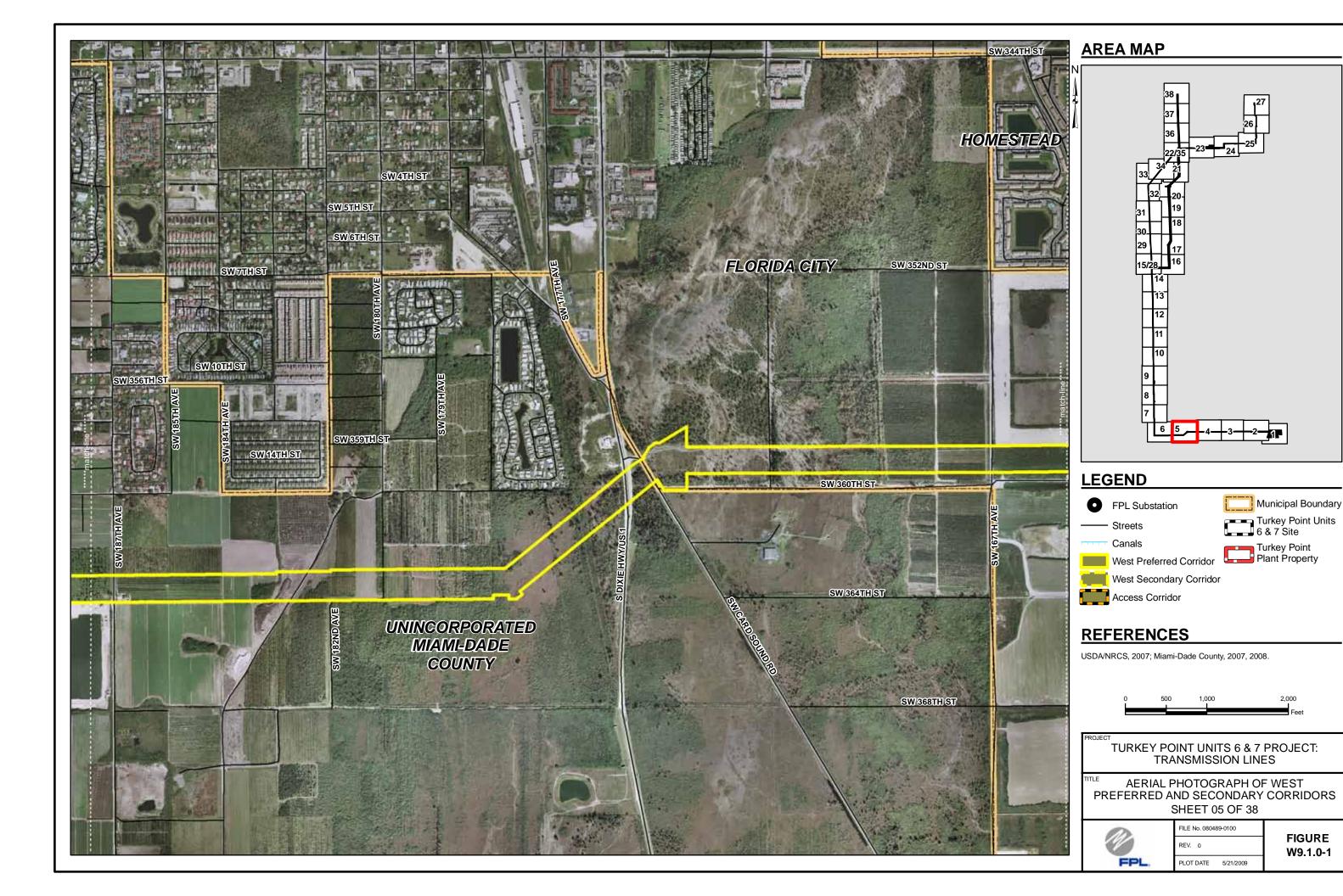


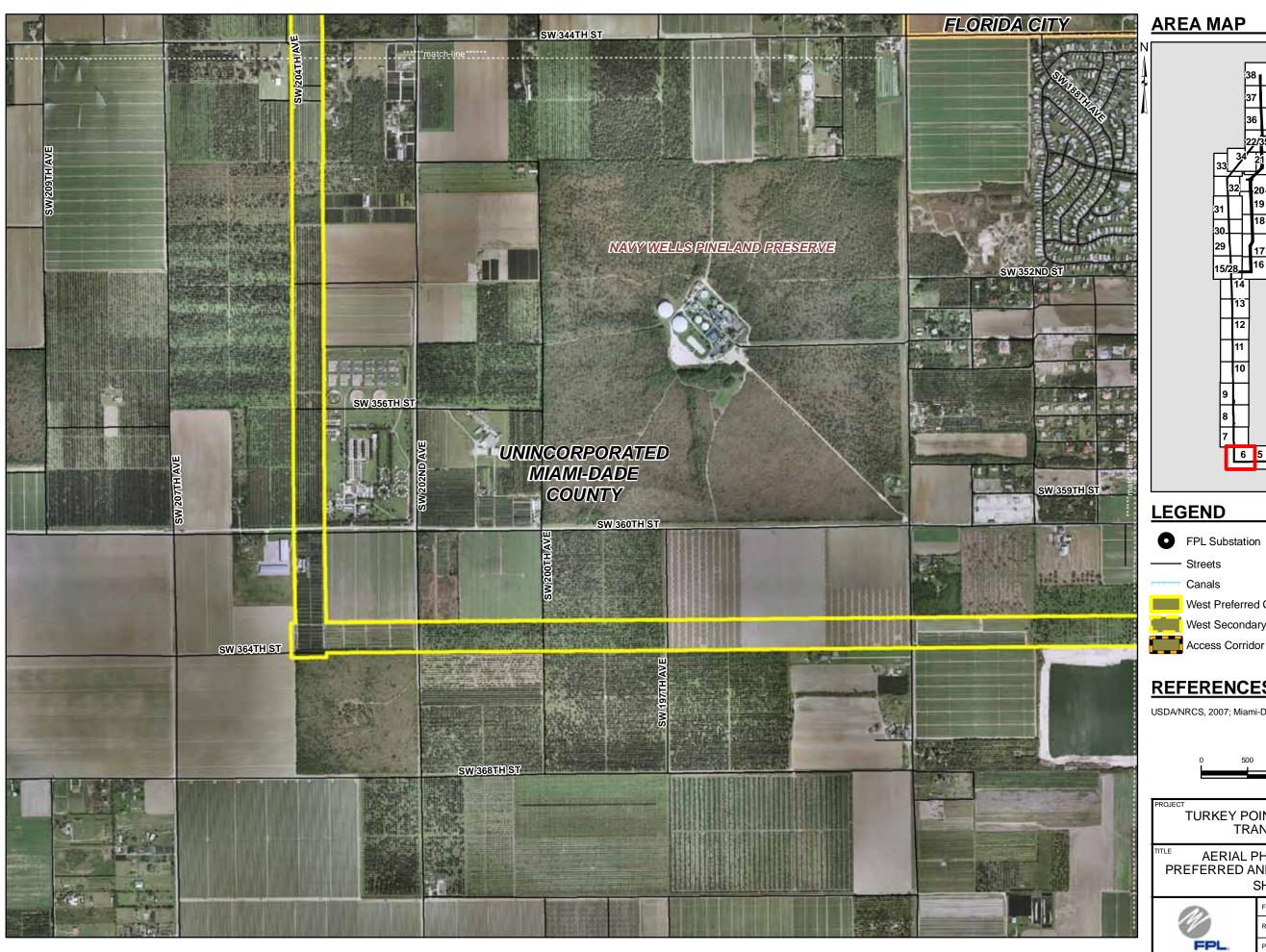
TURKEY POINT UNITS 6 & 7 PROJECT:
TRANSMISSION LINES

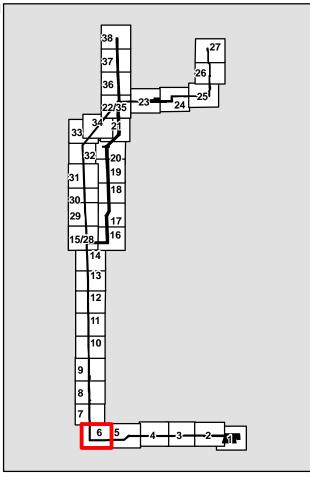
PREFERRED AND SECONDARY CORRIDORS
SHEET 04 OF 38



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LEGEND

FPL Substation

----- Streets

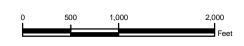
Municipal Boundary Turkey Point Units 6 & 7 Site Turkey Point Plant Property

West Preferred Corridor

West Secondary Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

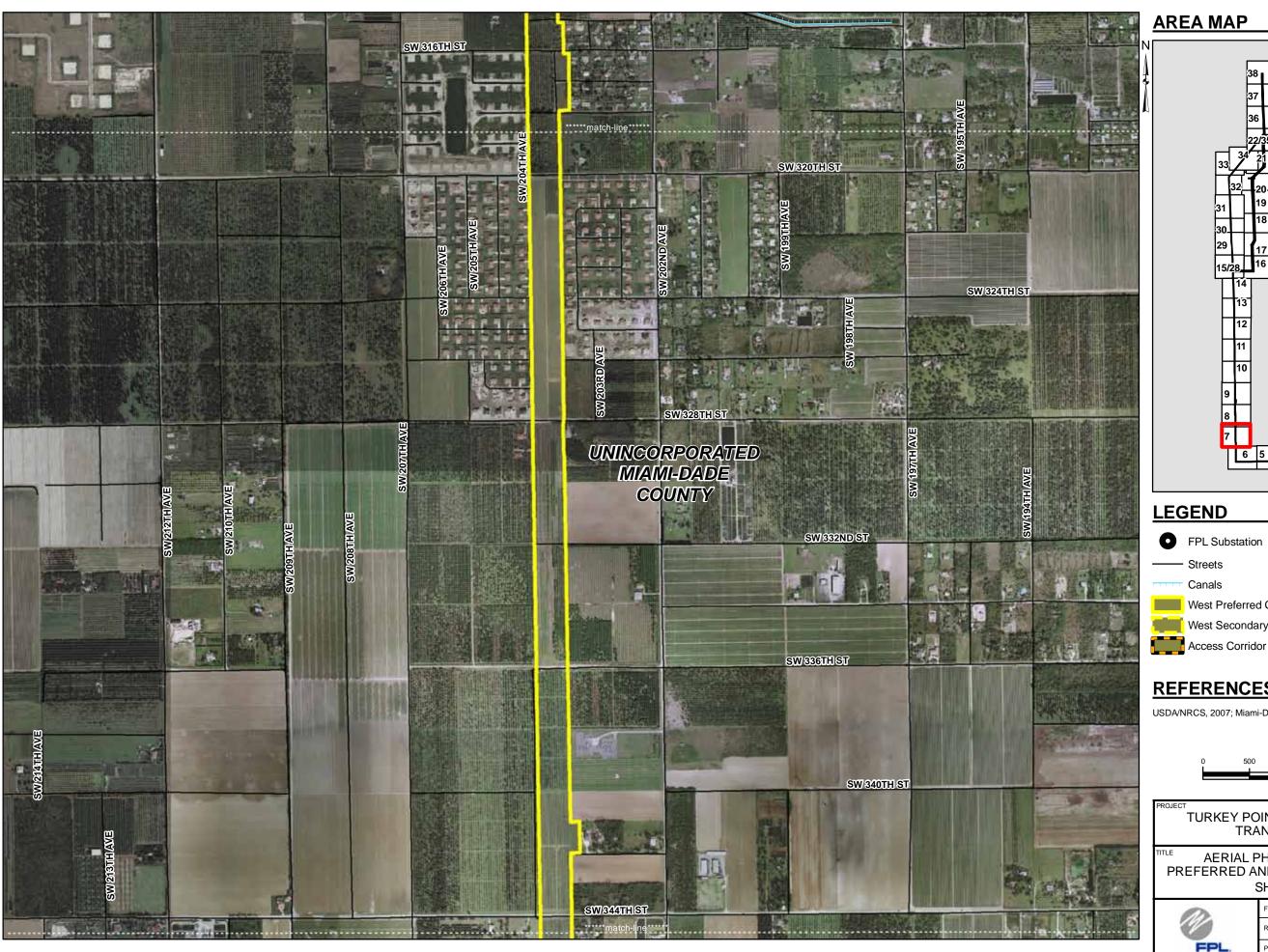


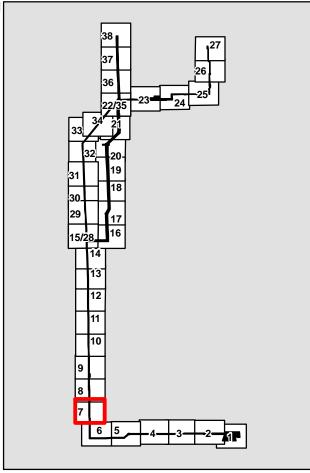
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS SHEET 06 OF 38

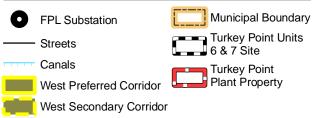


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PLOT DATE	5/21/2009	





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REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

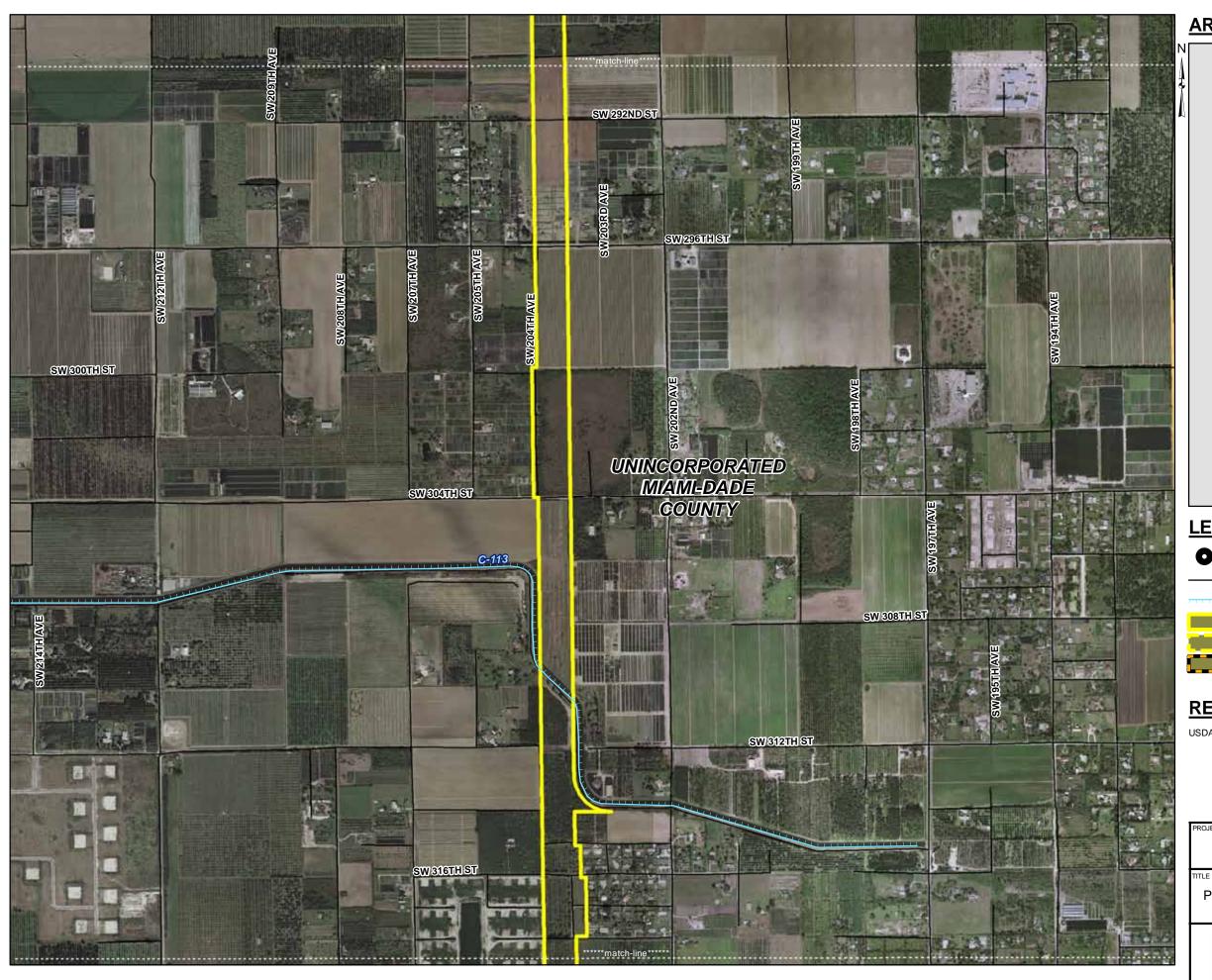


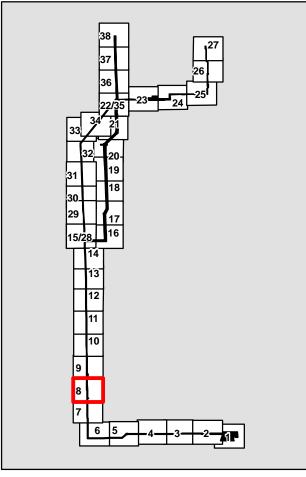
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

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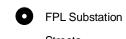


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PLOT DATE	5/21/2009	





LEGEND



---- Streets

Turkey Point Units 6 & 7 Site Turkey Point Plant Property

Municipal Boundary

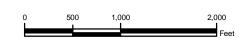
West Preferred Corridor

West Secondary Corridor

Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

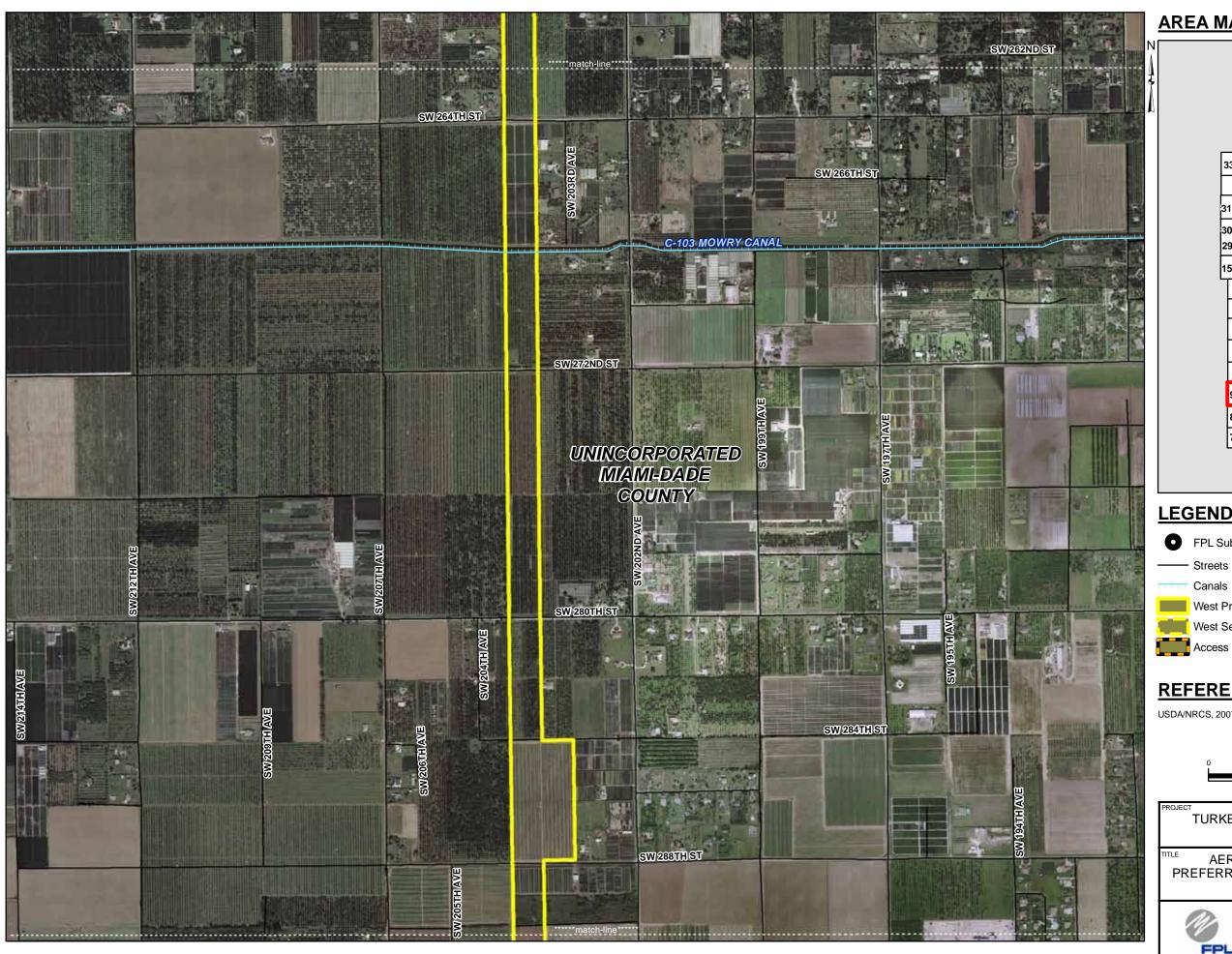


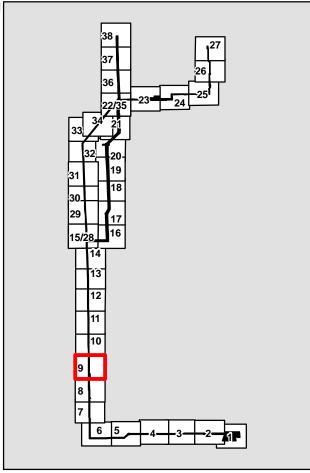
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS **SHEET 08 OF 38**



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REV. 0		
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LEGEND

FPL Substation

Municipal Boundary Turkey Point Units 6 & 7 Site

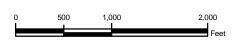
Turkey Point Plant Property West Preferred Corridor

West Secondary Corridor

Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

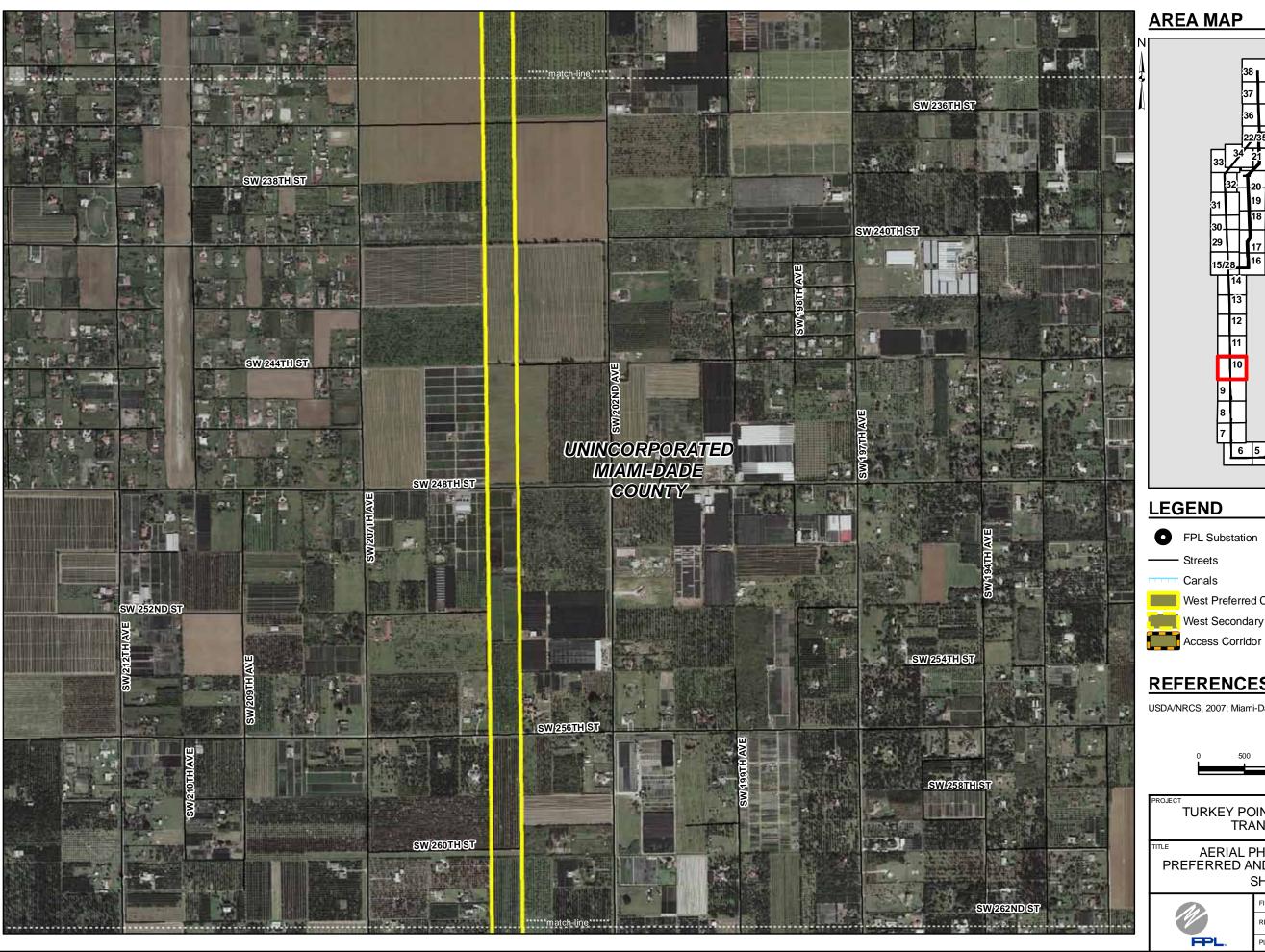


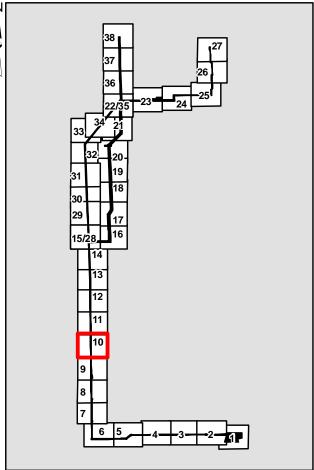
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

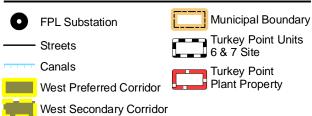
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PLOT DATE	5/21/2009	







REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

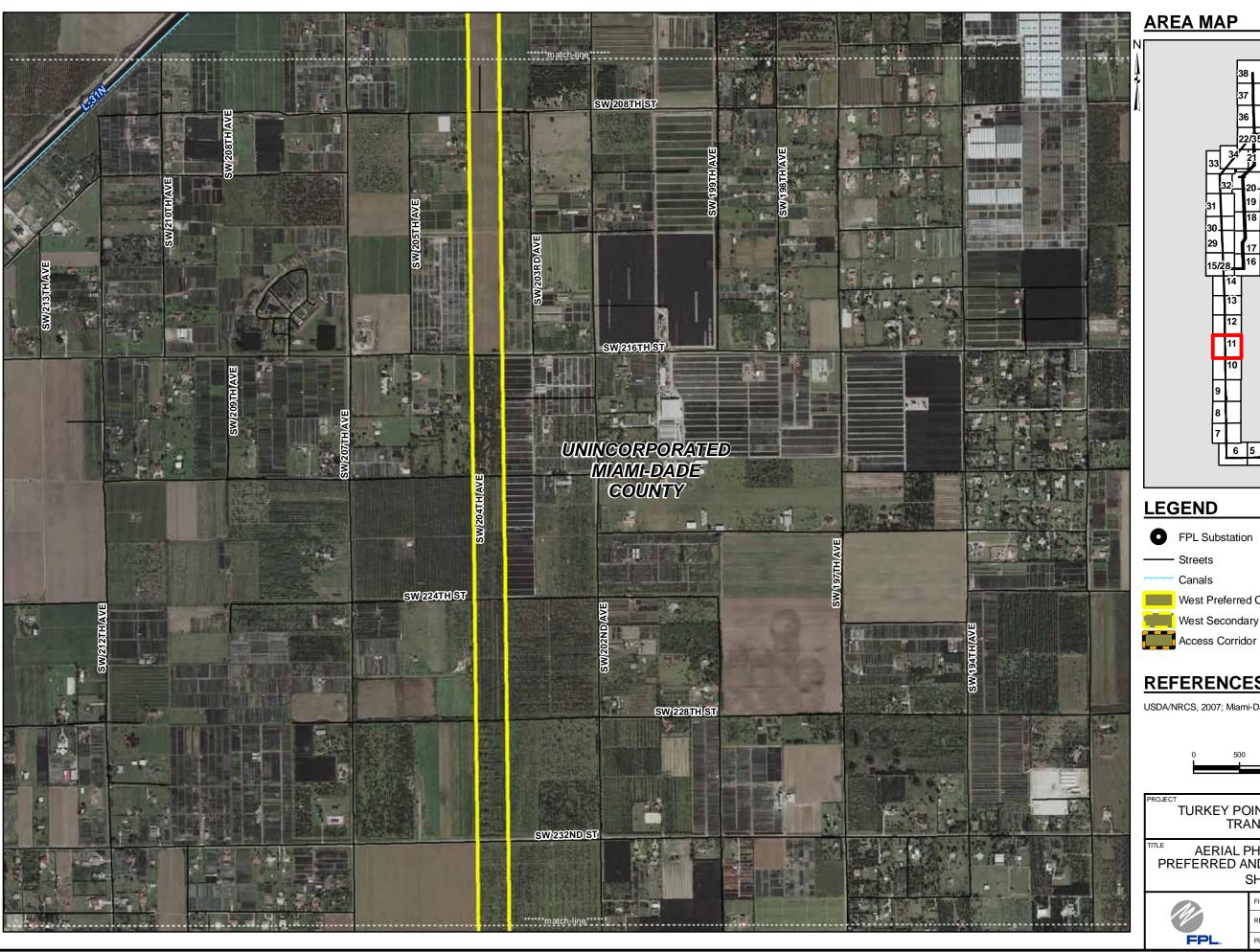


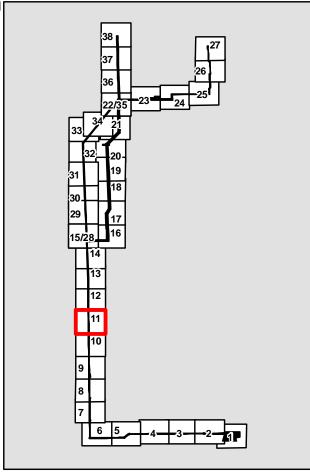
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS **SHEET 10 OF 38**



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PLOT DATE	5/21/2009	



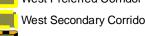


LEGEND

FPL Substation Streets

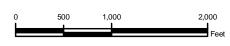
Municipal Boundary Turkey Point Units 6 & 7 Site Turkey Point Plant Property

West Preferred Corridor West Secondary Corridor



REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

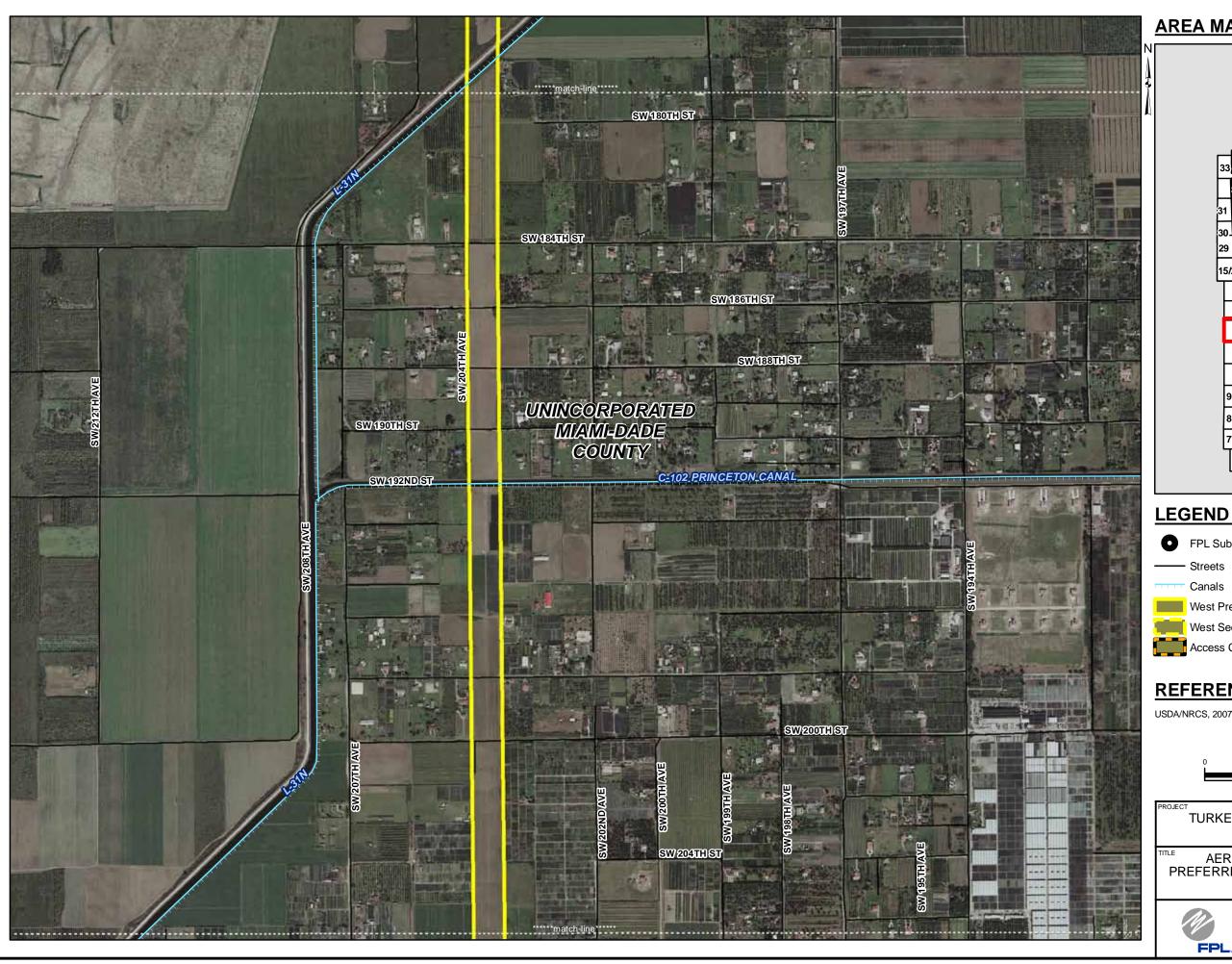


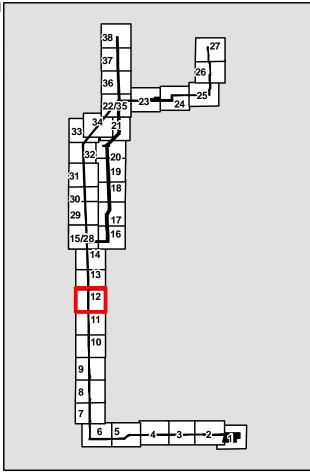
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

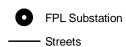
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PLOT DATE	5/21/2009





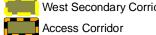


Turkey Point Units 6 & 7 Site Turkey Point Plant Property

Municipal Boundary

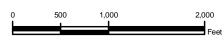
West Preferred Corridor

West Secondary Corridor



REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

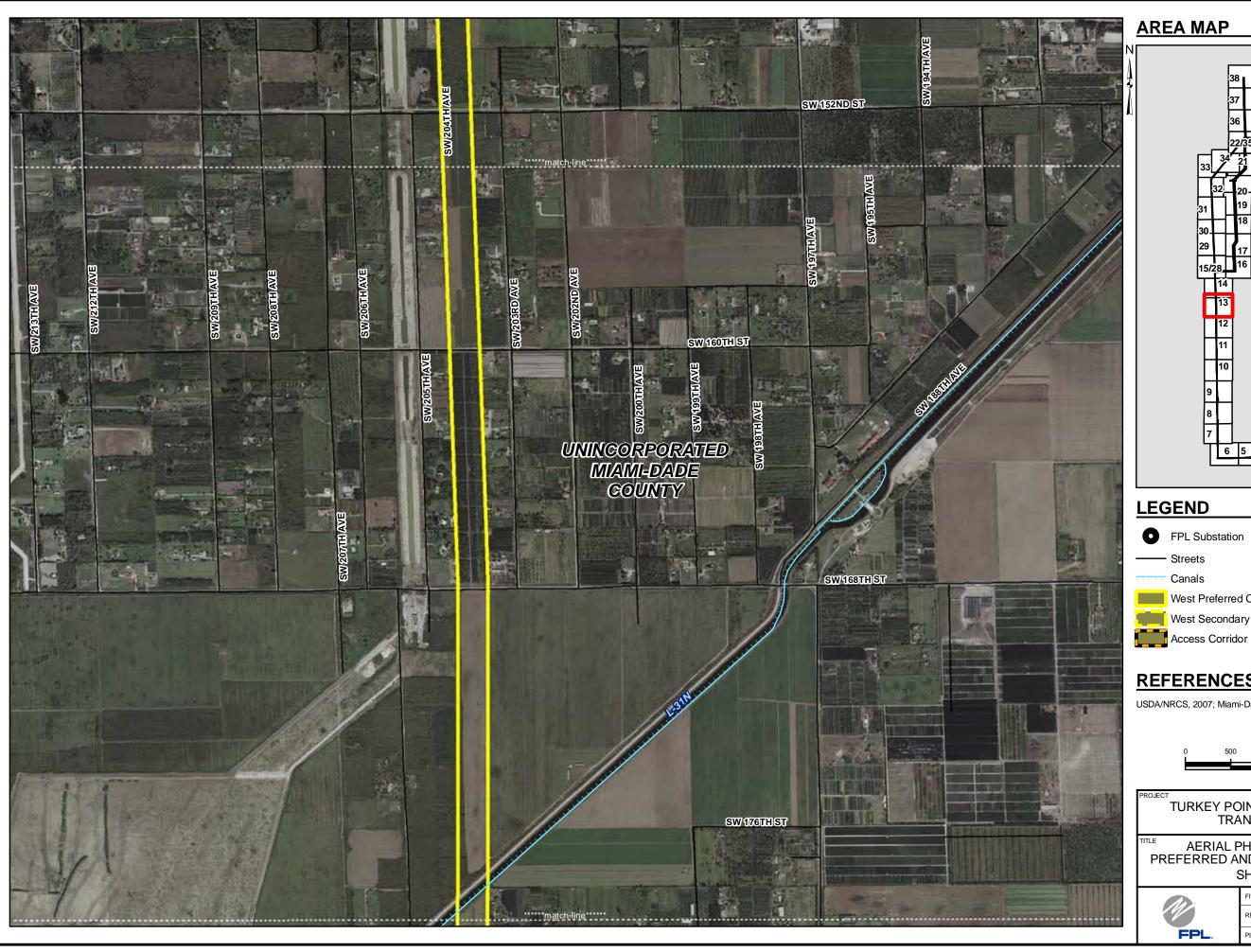


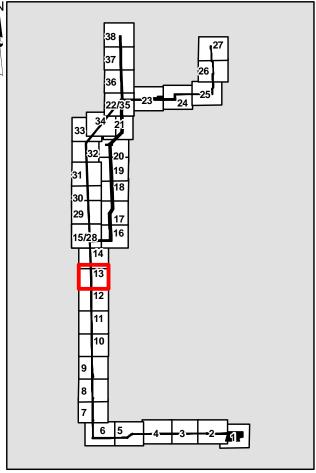
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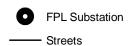
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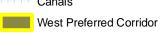
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PLOT DATE	5/21/2009













REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

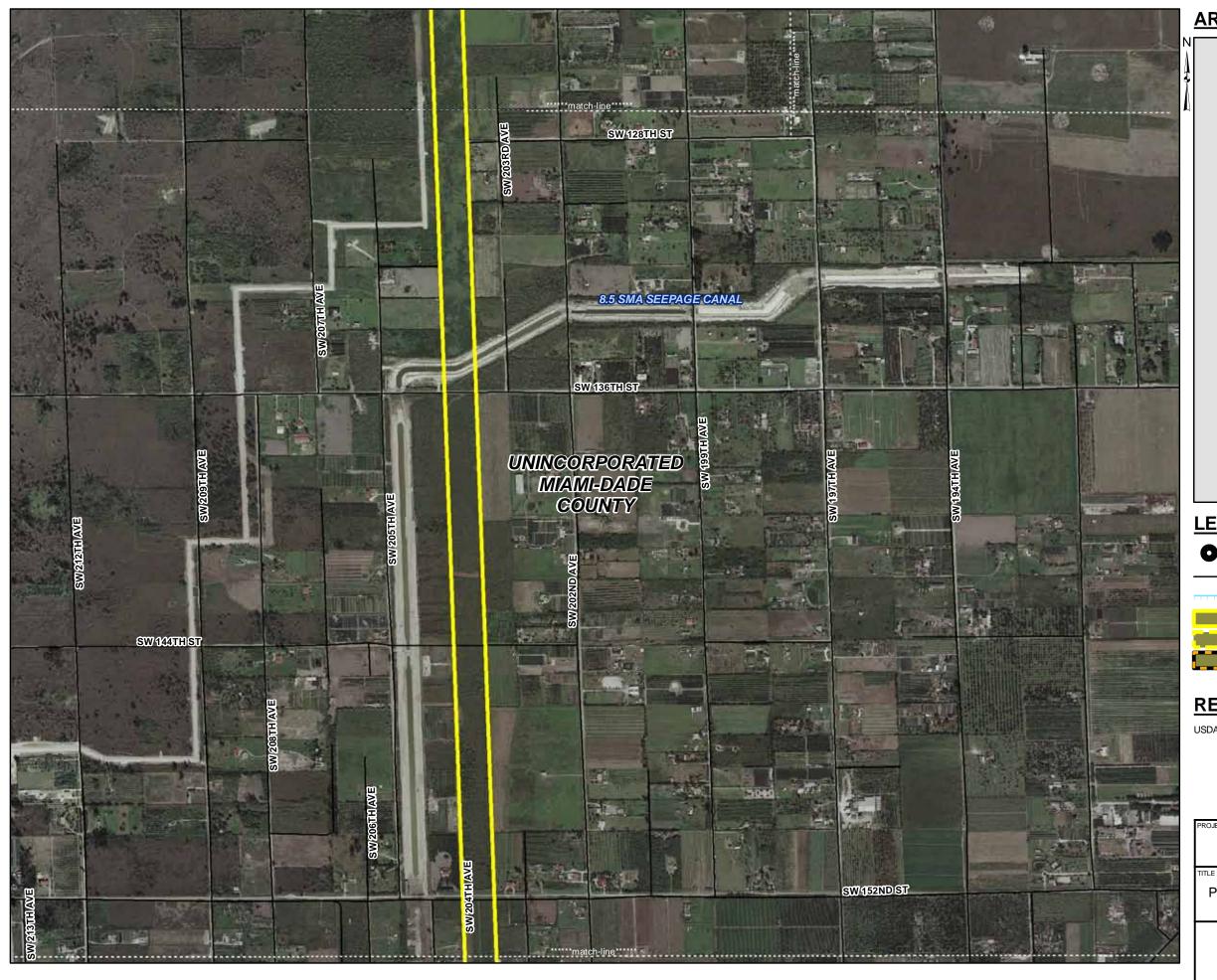


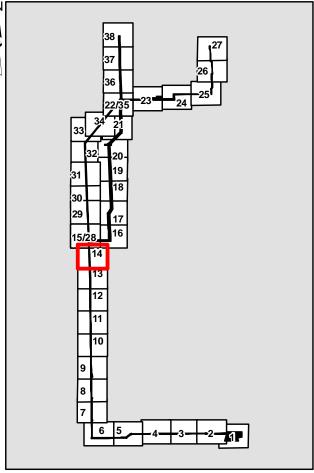
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

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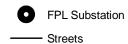


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PLOT DATE	5/21/2009





LEGEND



Municipal Boundary
Turkey Point Units
6 & 7 Site

Canals

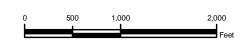
West Preferred Corridor

Corridor Turkey Point Plant Property

West Secondary Corridor
Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

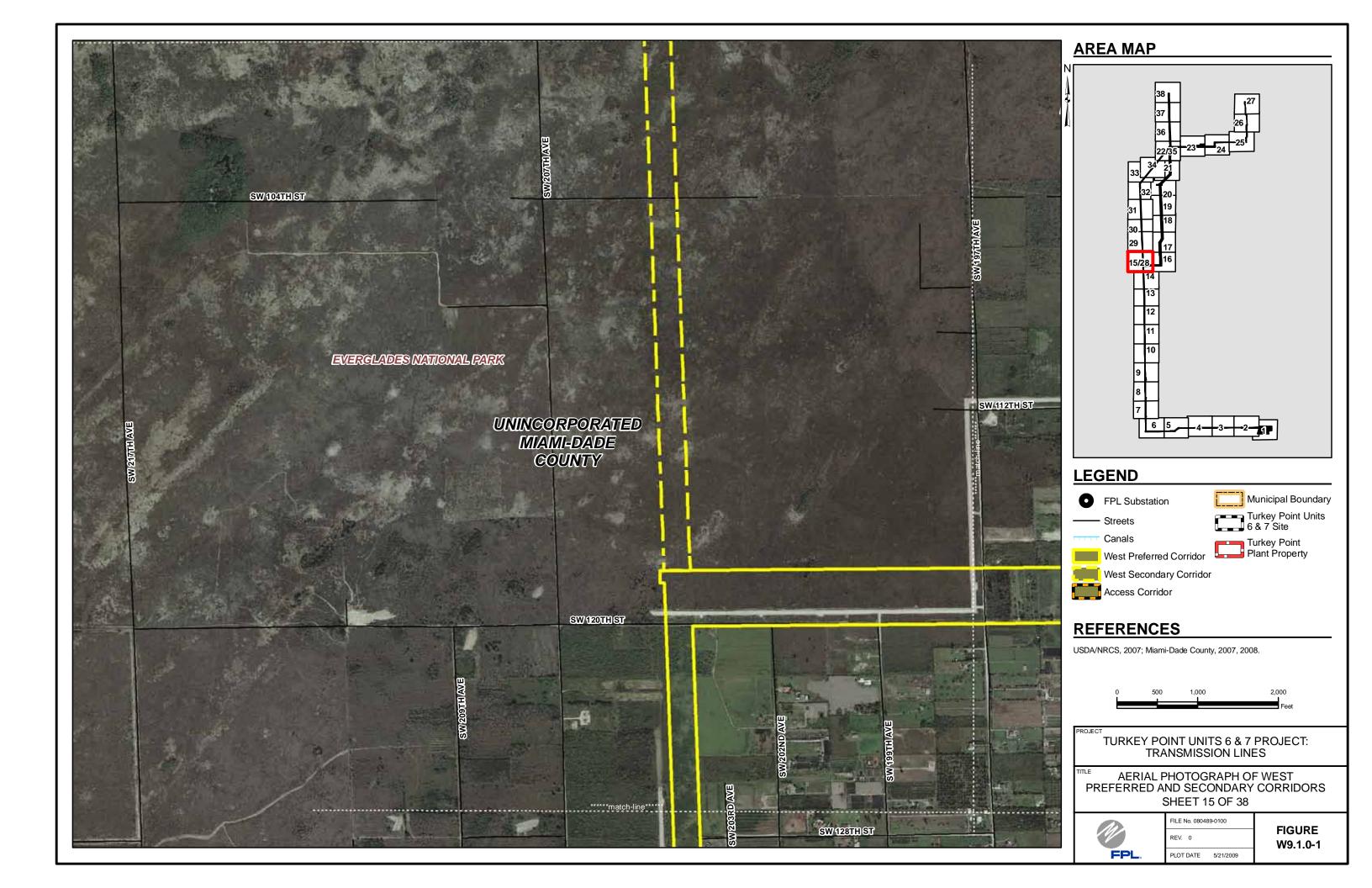


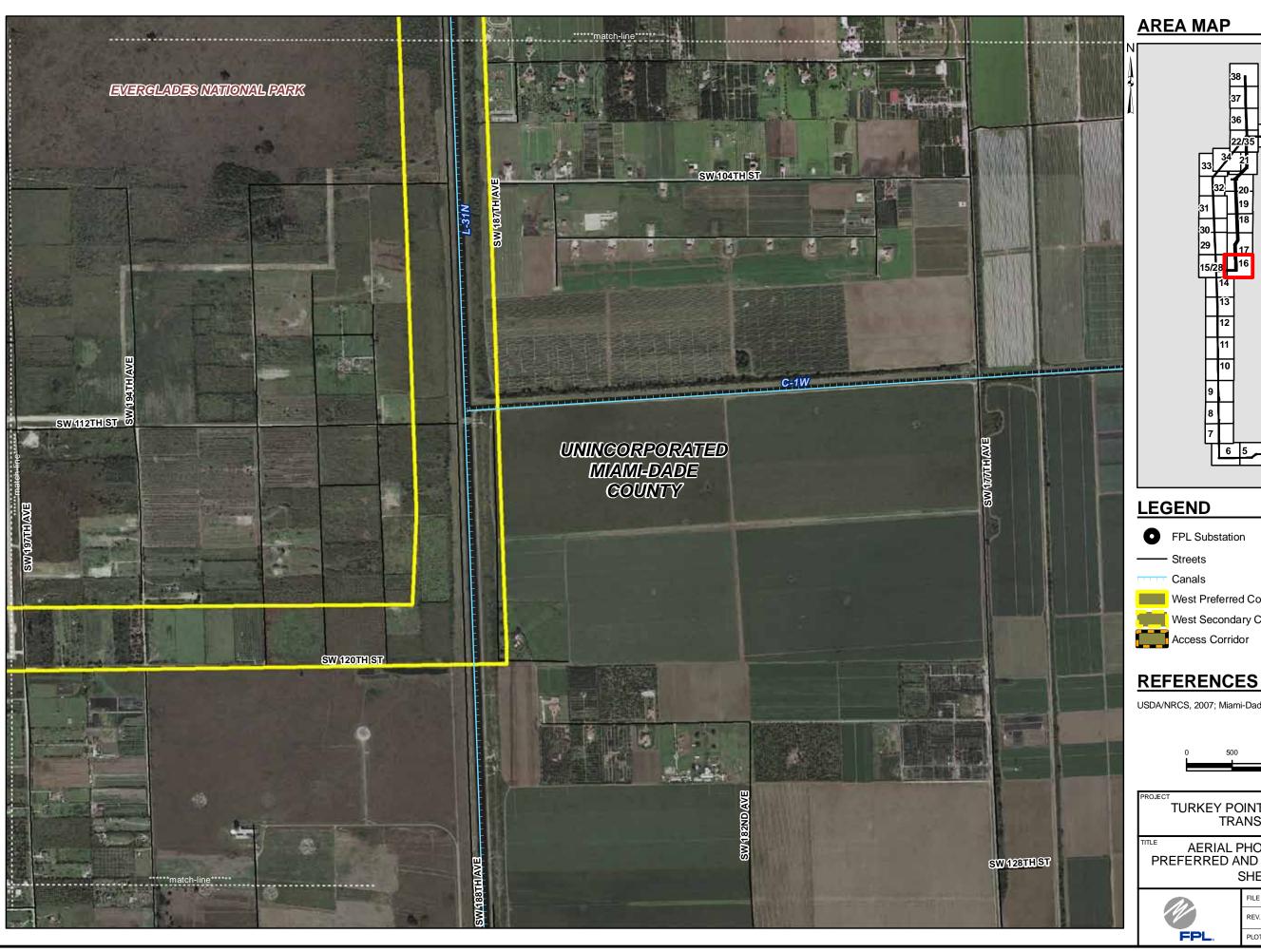
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

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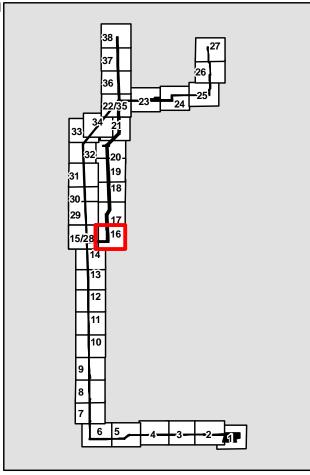


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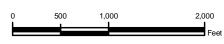
FPL Substation

Turkey Point Units 6 & 7 Site Turkey Point Plant Property

Municipal Boundary

West Preferred Corridor West Secondary Corridor

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.



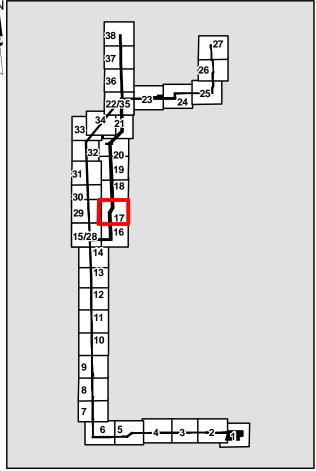
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS SHEET 16 OF 38



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PLOT DATE	5/21/2009





LEGEND

FPL Substation Streets

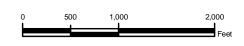
Municipal Boundary Turkey Point Units 6 & 7 Site

Turkey Point Plant Property West Preferred Corridor

West Secondary Corridor Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

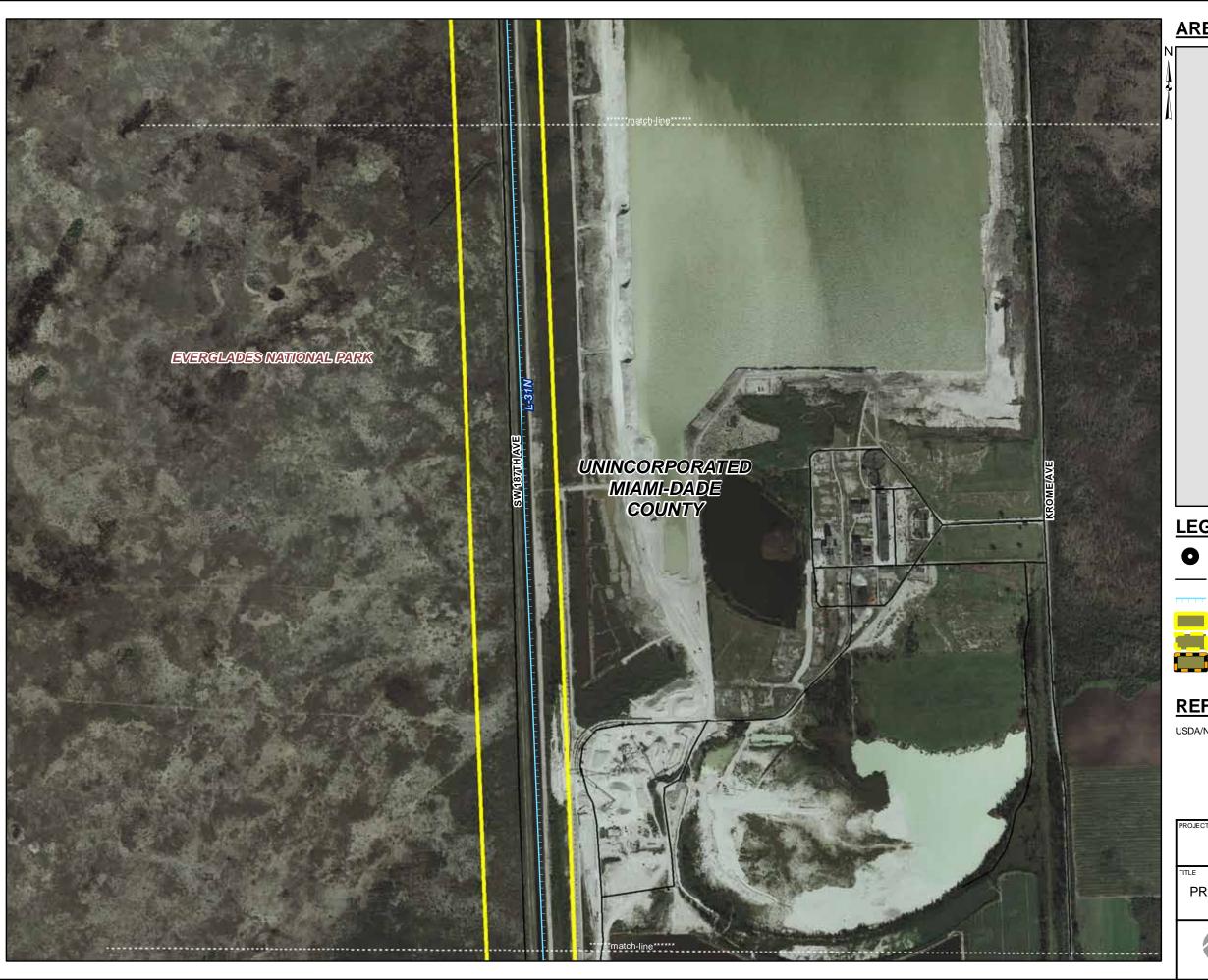


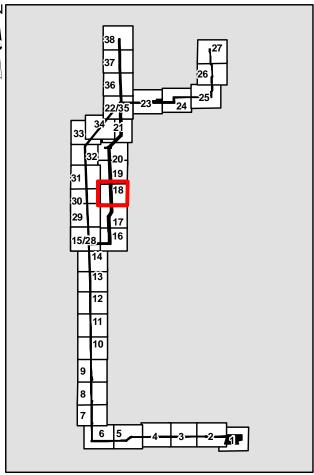
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS **SHEET 17 OF 38**



FILE No. 080489-0100		
REV. 0		
PLOT DATE	5/21/2009	





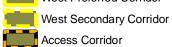
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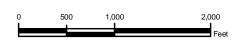


Turkey Point Plant Property West Preferred Corridor



REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.



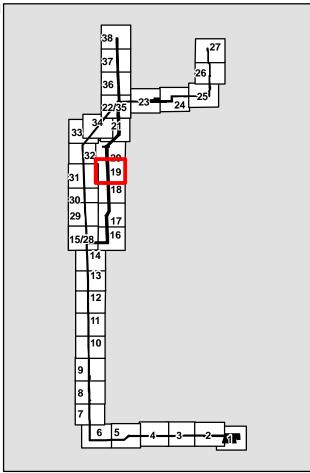
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS **SHEET 18 OF 38**

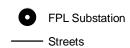


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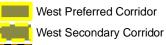


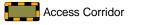


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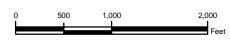






REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

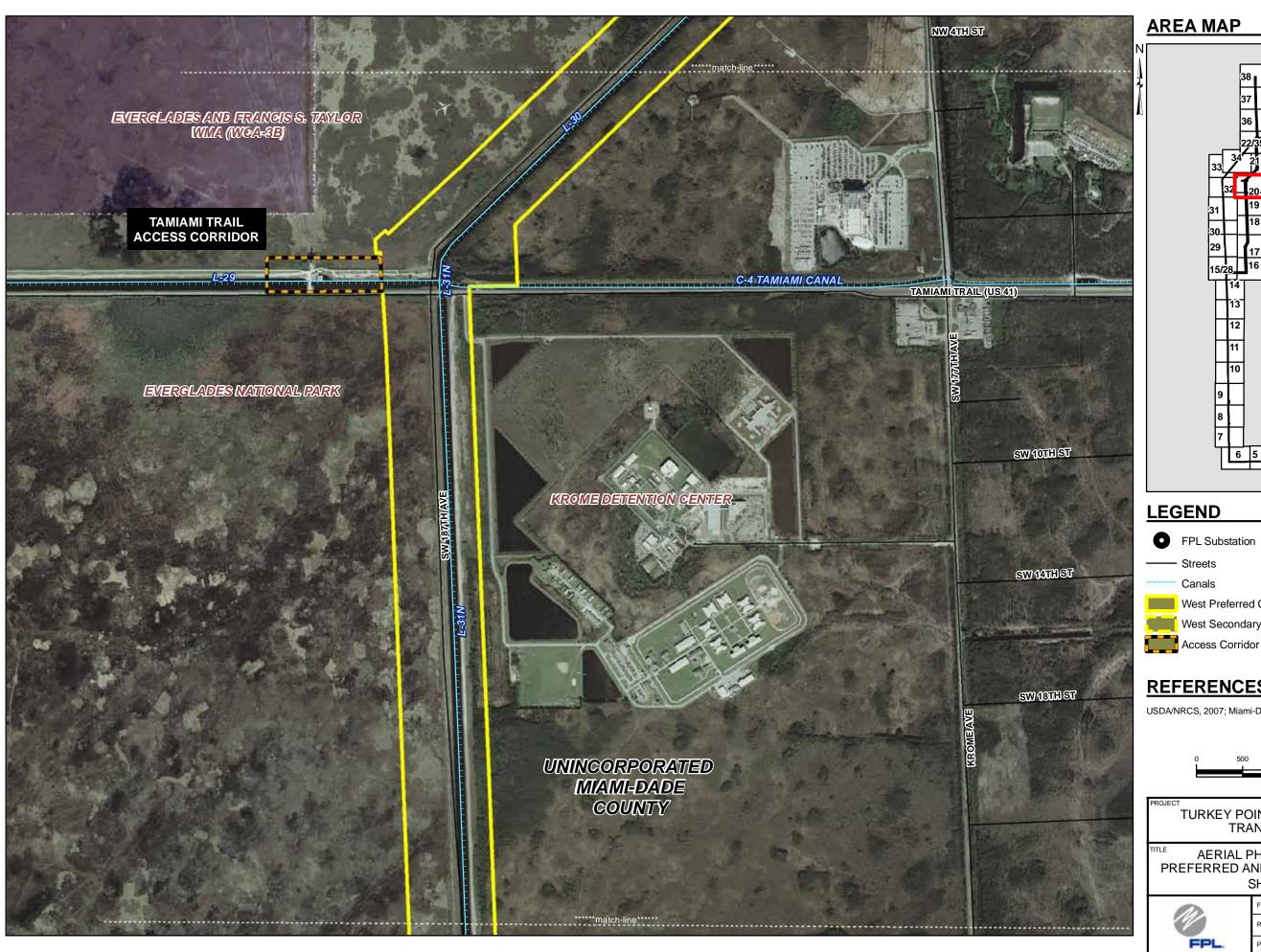


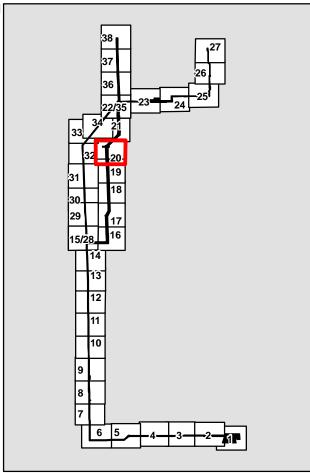
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

PREFERRED AND SECONDARY CORRIDORS
SHEET 19 OF 38



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PLOT DATE	5/21/2009





LEGEND

FPL Substation

Municipal Boundary Turkey Point Units 6 & 7 Site

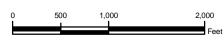
West Preferred Corridor

West Secondary Corridor

Turkey Point Plant Property

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

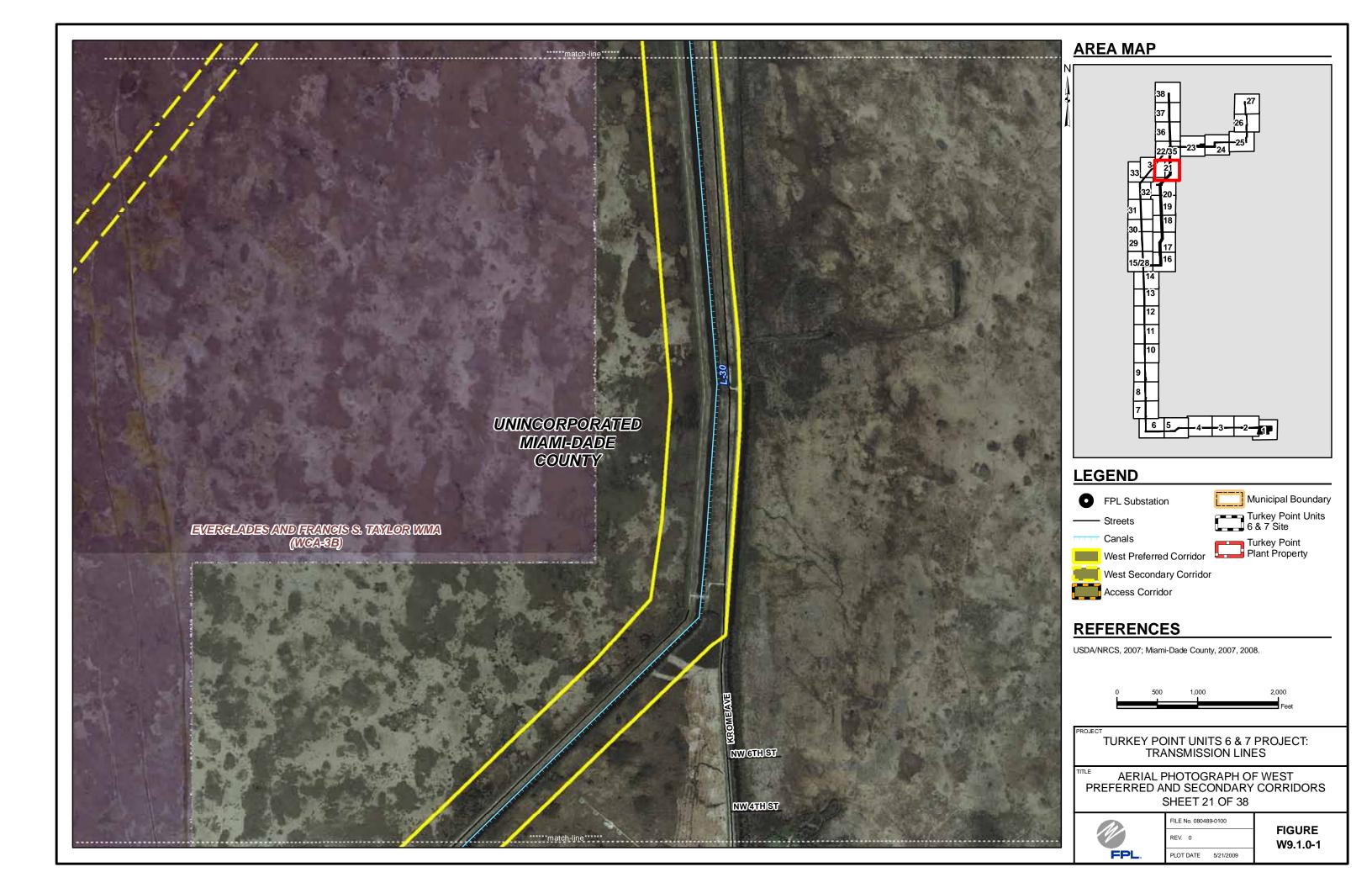


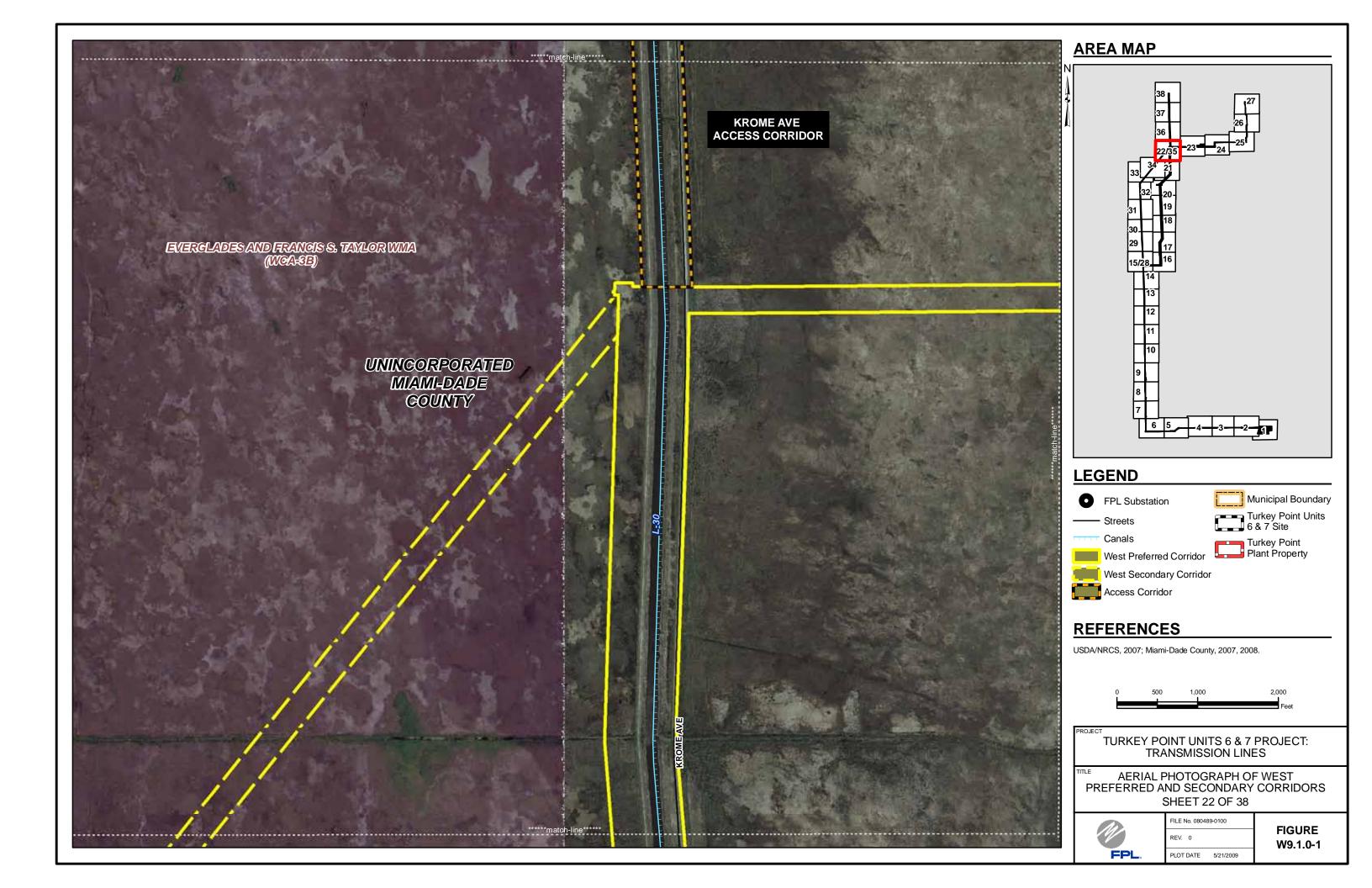
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

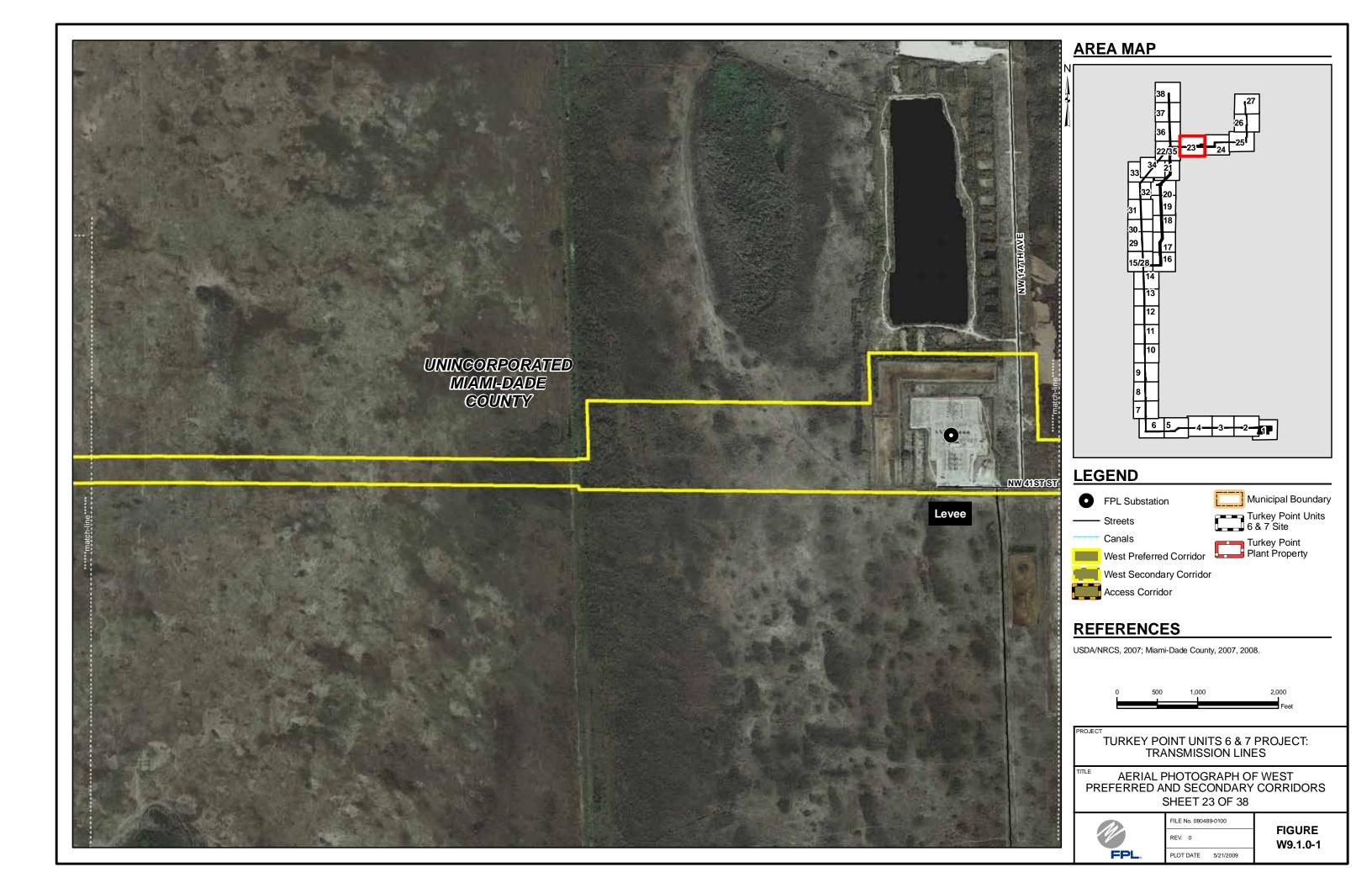
AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS SHEET 20 OF 38

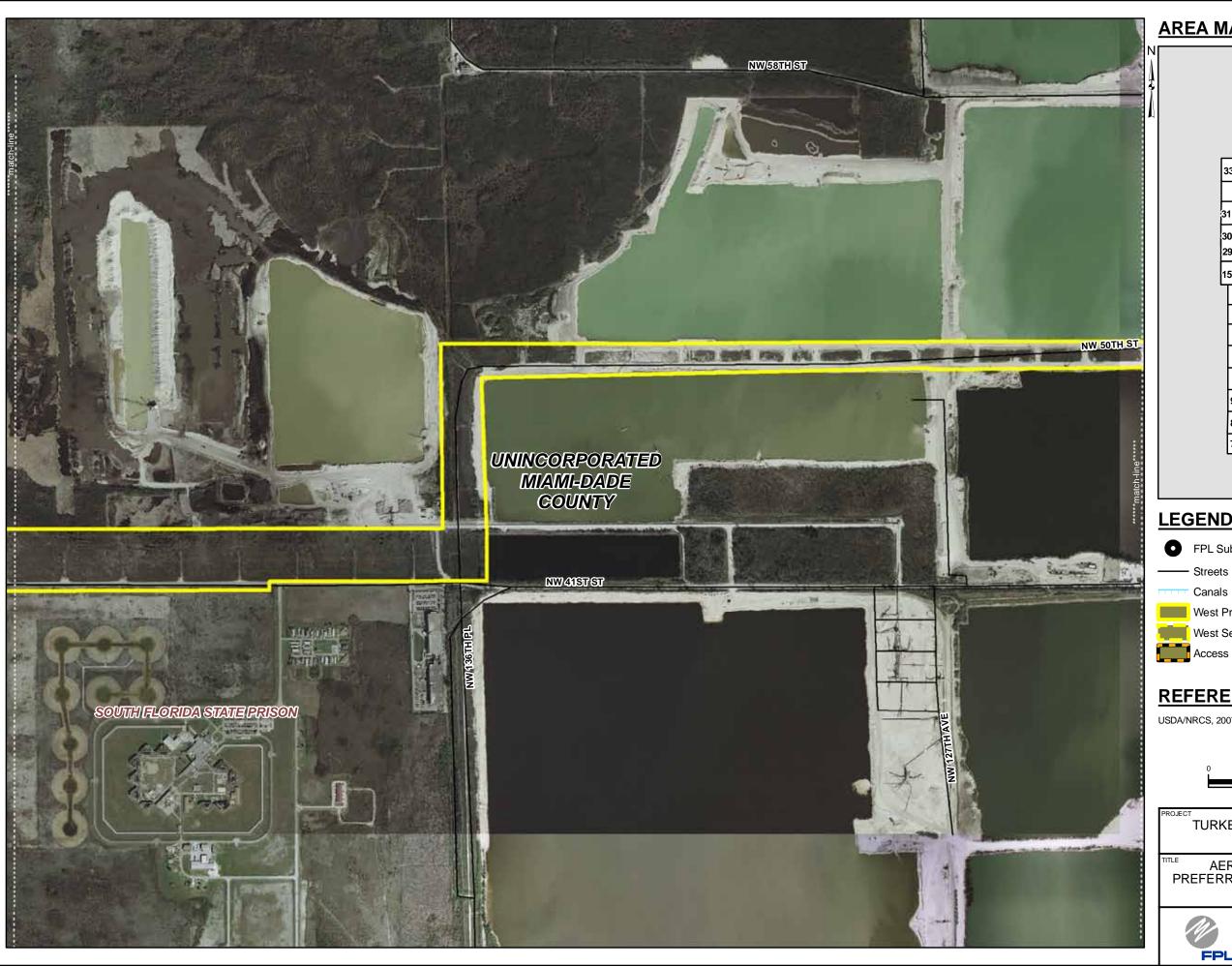


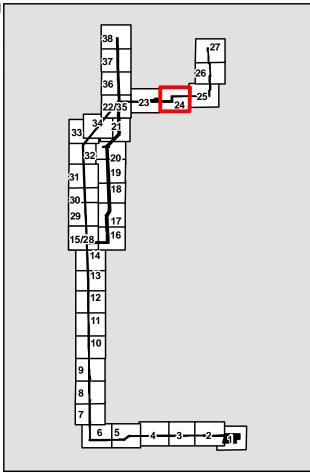
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REV. 0	
PLOT DATE	5/21/2009











LEGEND

FPL Substation ----- Streets

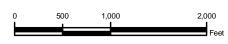
Municipal Boundary Turkey Point Units 6 & 7 Site Turkey Point Plant Property

West Preferred Corridor

West Secondary Corridor Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.



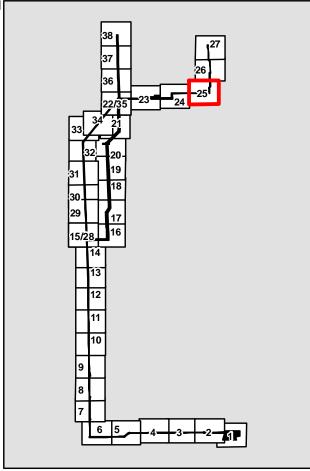
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS SHEET 24 OF 38



FILE No. 080489-0100		
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LEGEND

FPL Substation
—— Streets

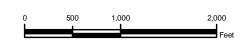
Municipal Boundary
Turkey Point Units
6 & 7 Site
Turkey Point
Plant Property

West Preferred Corridor

West Secondary Corridor
Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

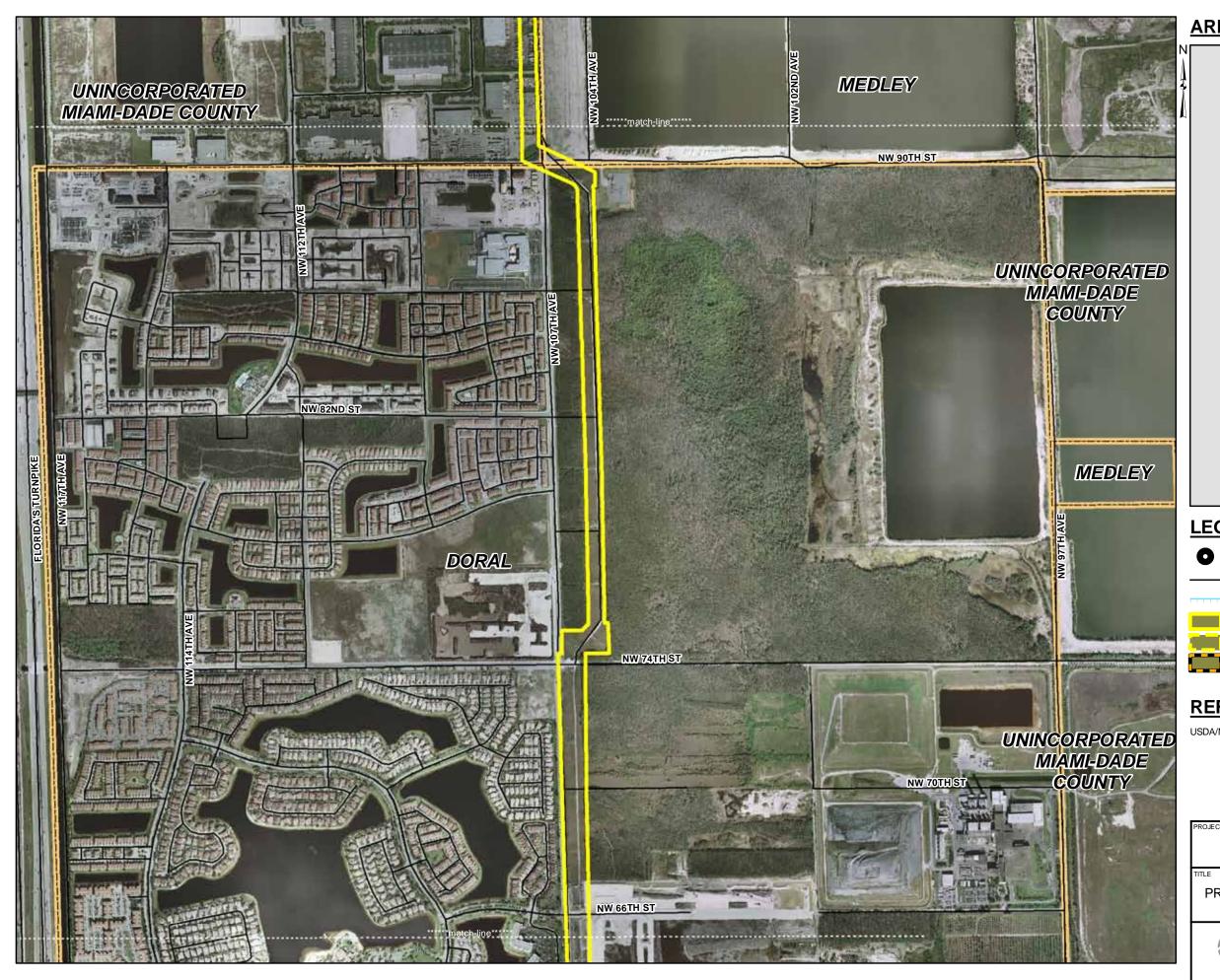


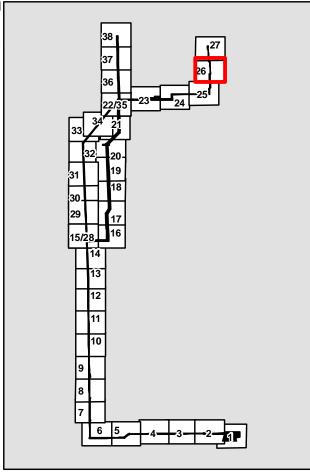
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

AERIAL PHOTOGRAPH OF WEST
PREFERRED AND SECONDARY CORRIDORS
SHEET 25 OF 38



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PLOT DATE	5/21/2009





LEGEND

FPL Substation

- Streets

Corridor Turkey Point Plant Property

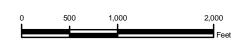
West Preferred Corridor

West Secondary Corridor

Access Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.



TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

PREFERRED AND SECONDARY CORRIDORS
SHEET 26 OF 38

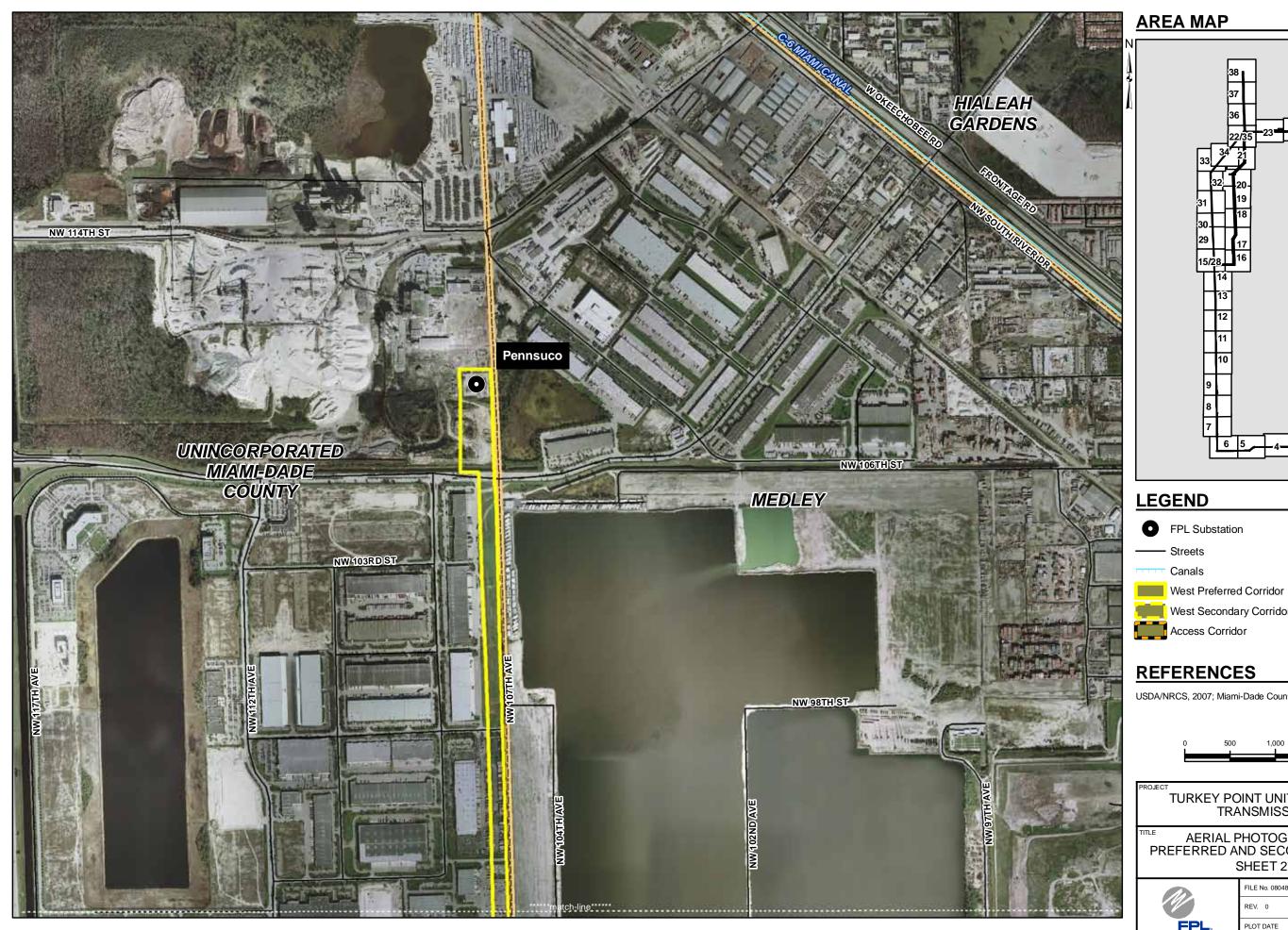


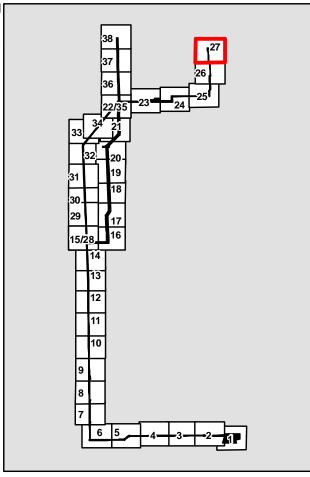
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PLOT DATE	5/21/2009

FIGURE W9.1.0-1

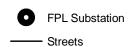
Municipal Boundary

Turkey Point Units 6 & 7 Site





LEGEND



Municipal Boundary Turkey Point Units 6 & 7 Site

Turkey Point Plant Property

West Secondary Corridor

REFERENCES

USDA/NRCS, 2007; Miami-Dade County, 2007, 2008.

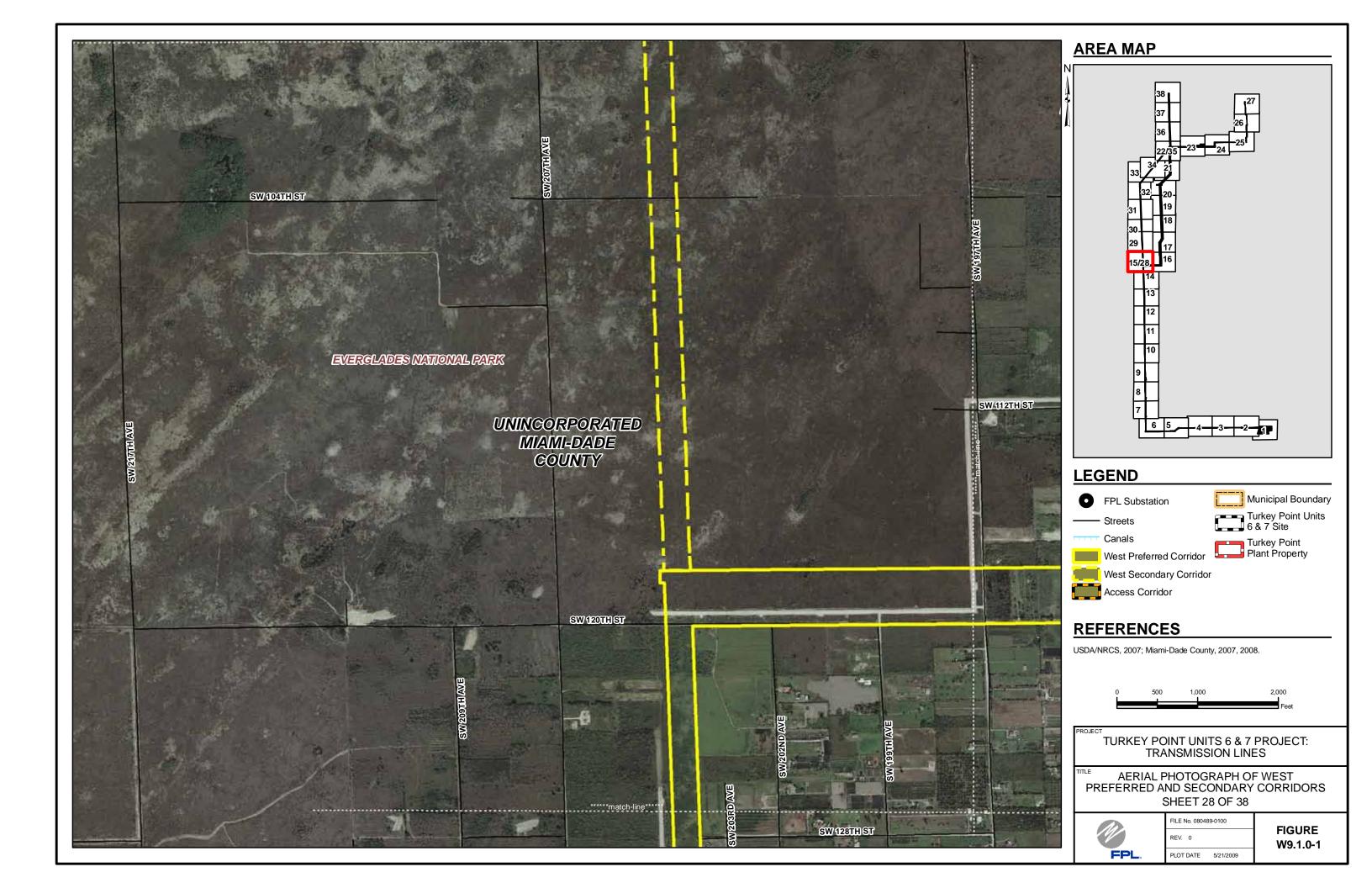


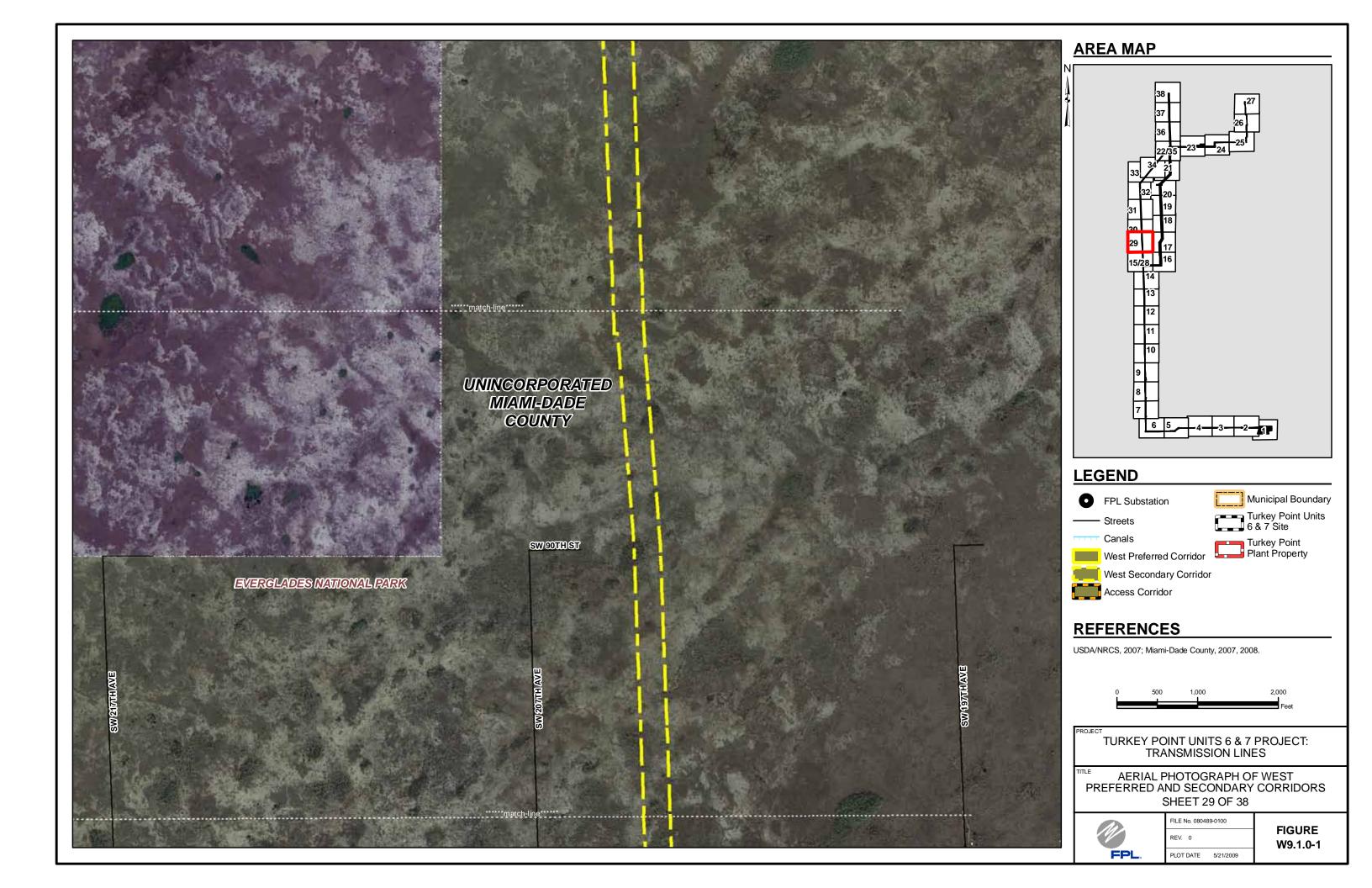
TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

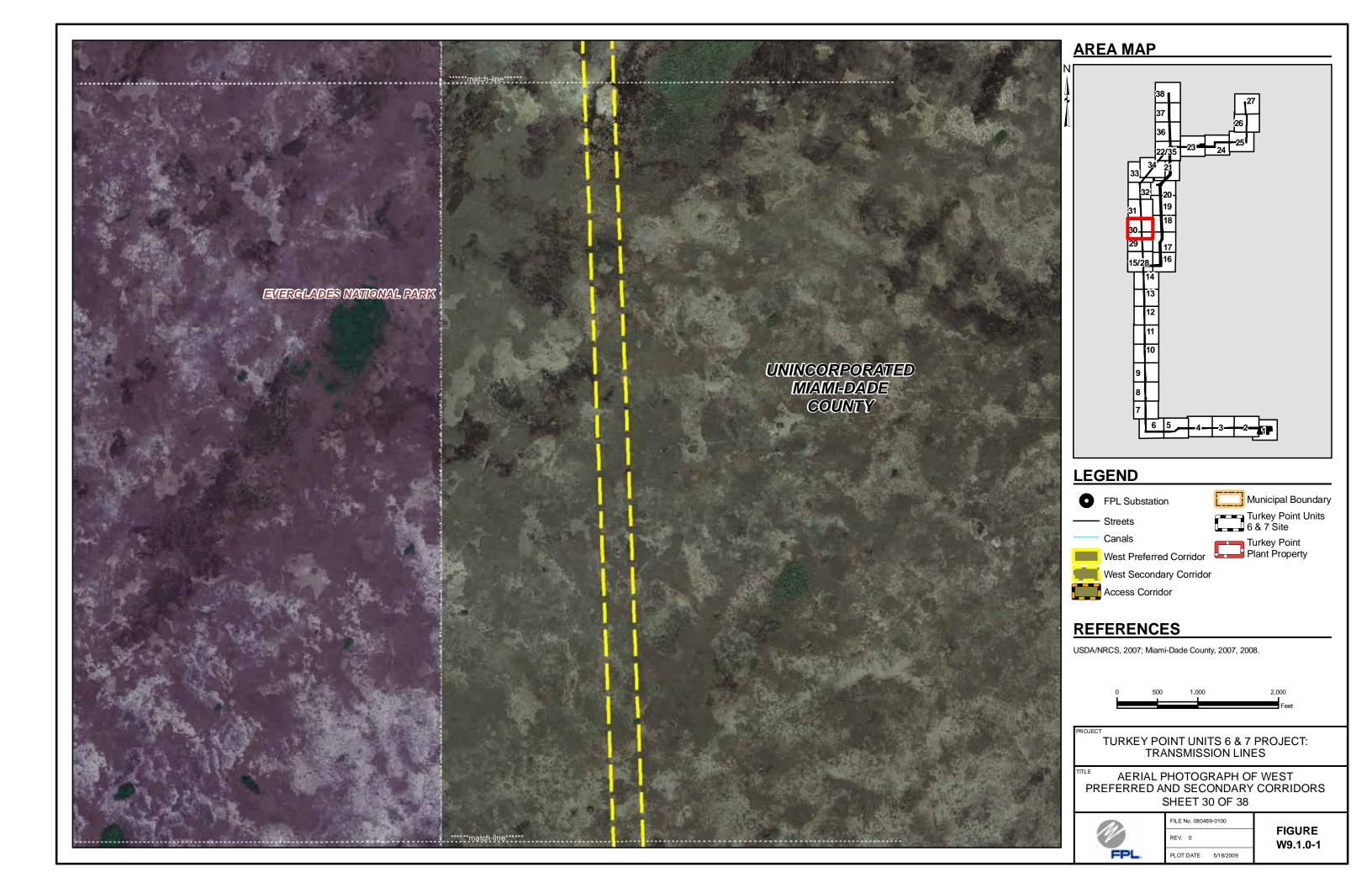
AERIAL PHOTOGRAPH OF WEST PREFERRED AND SECONDARY CORRIDORS SHEET 27 OF 38

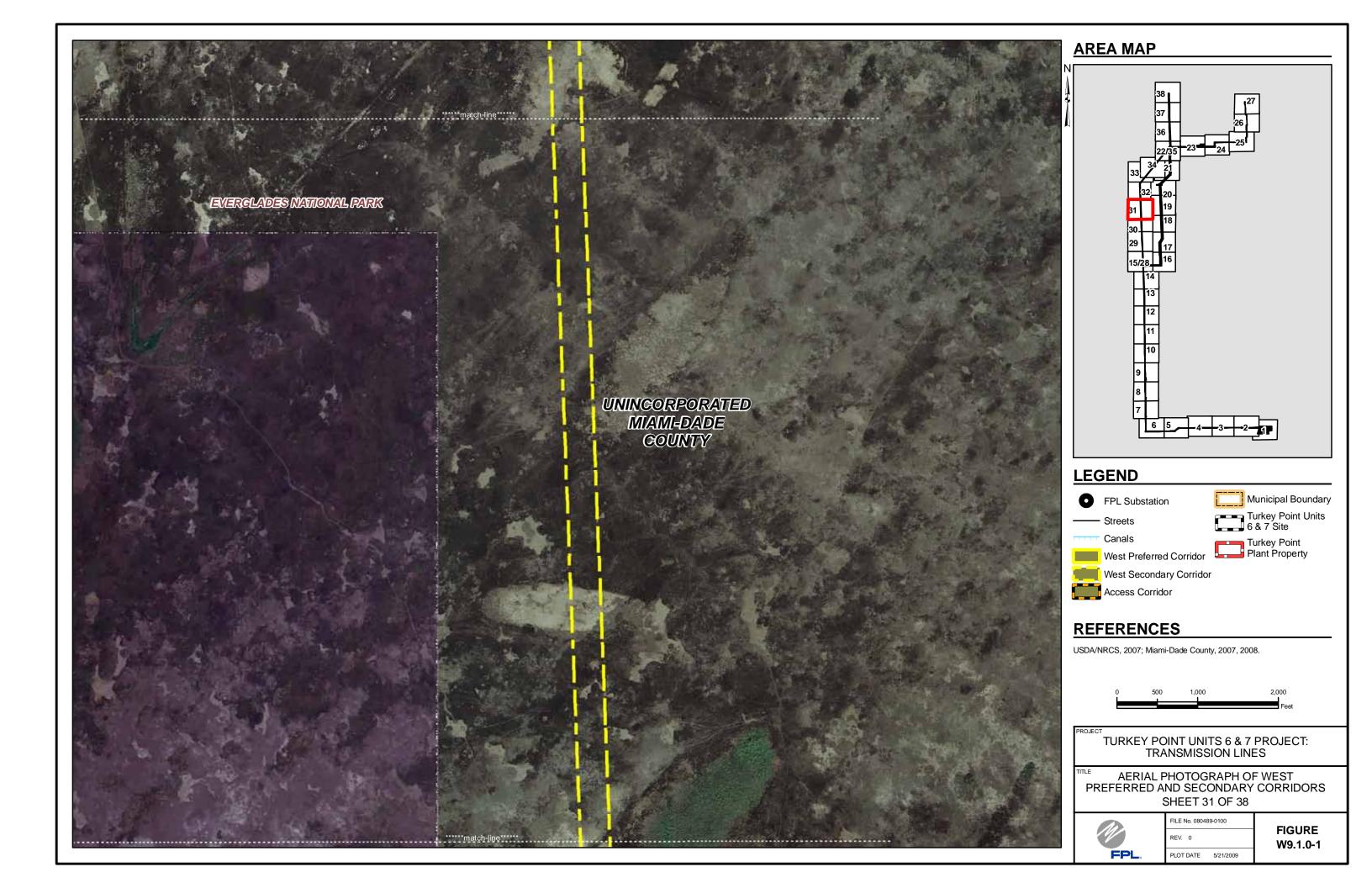


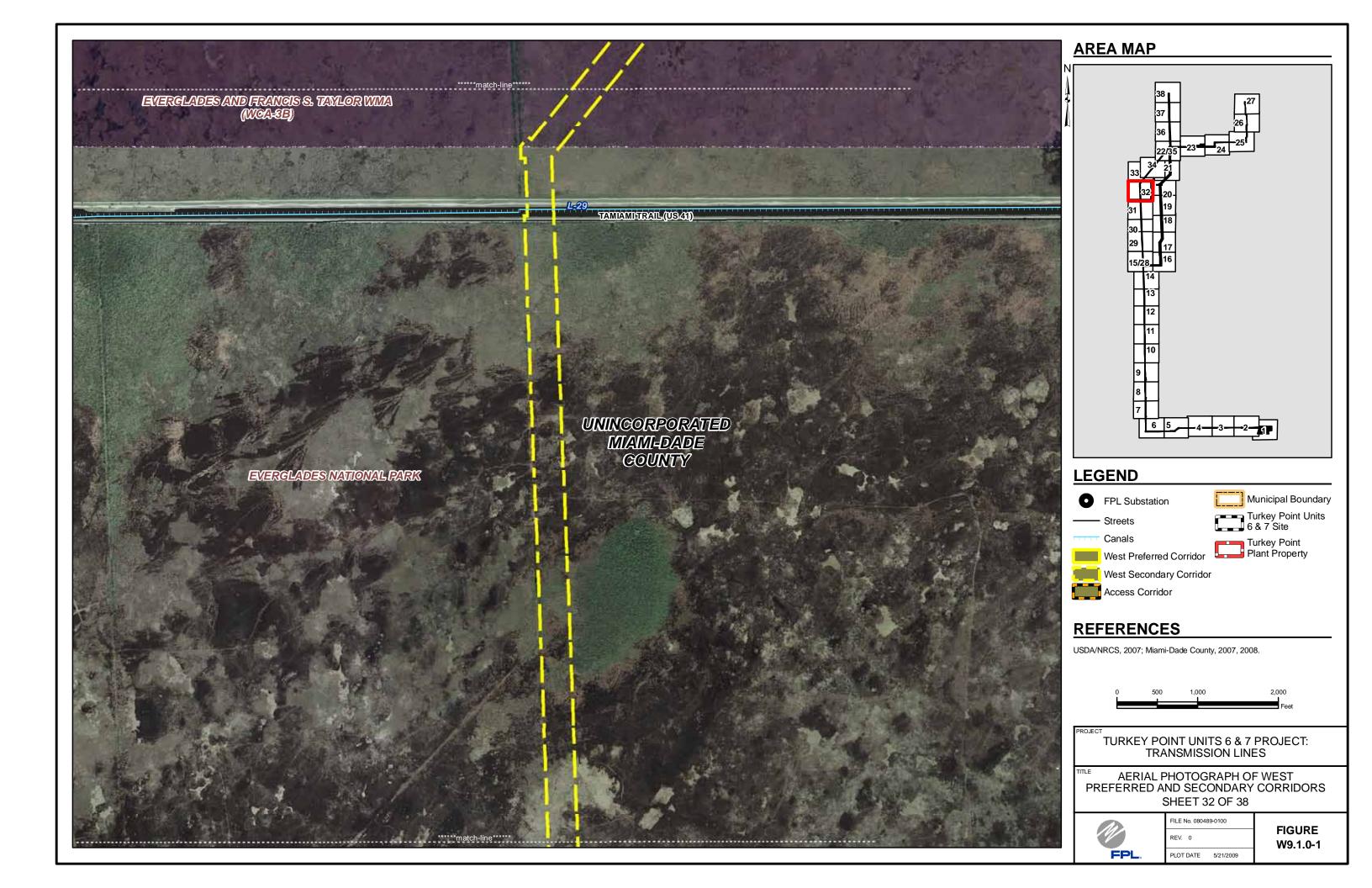
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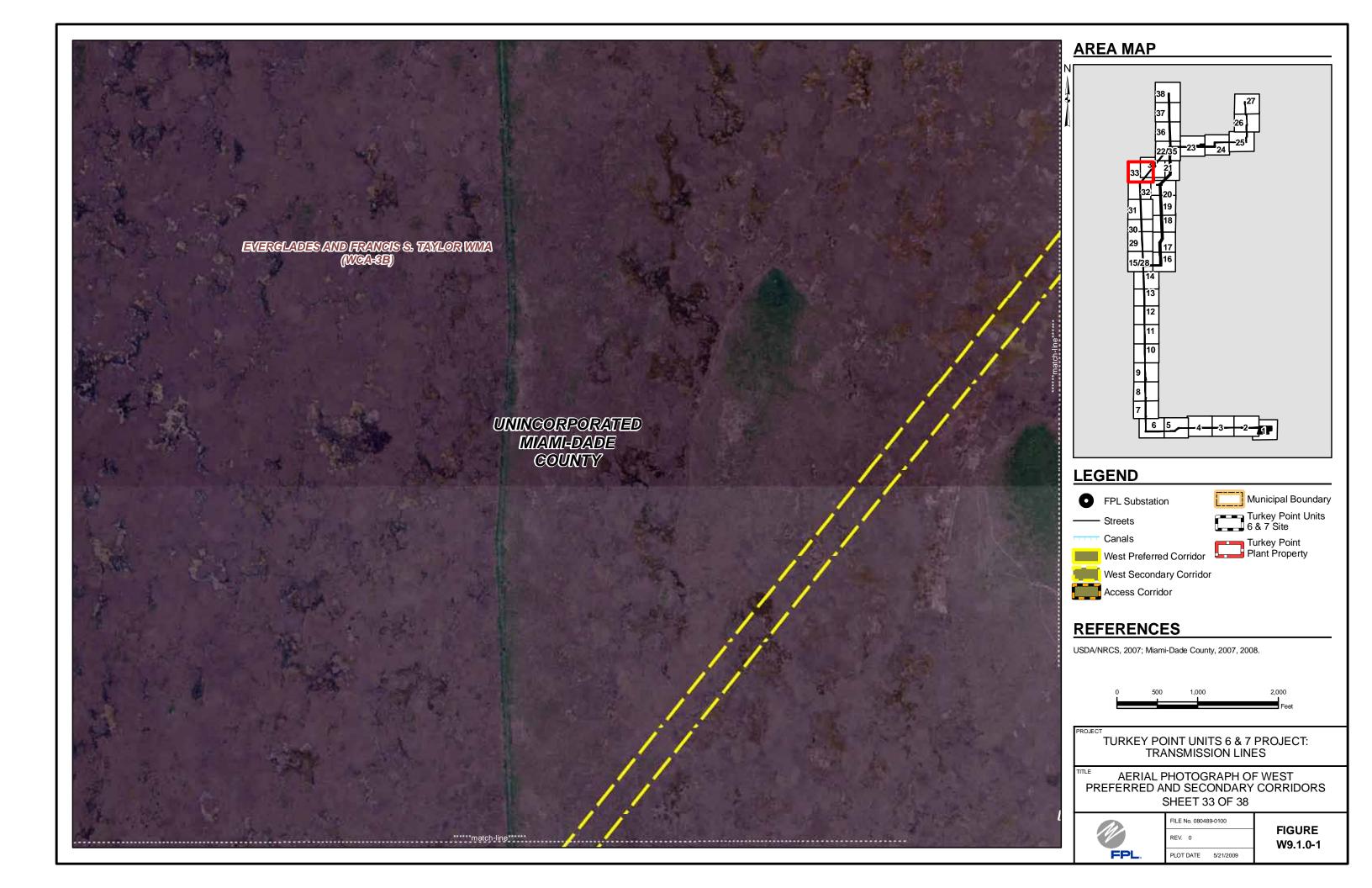


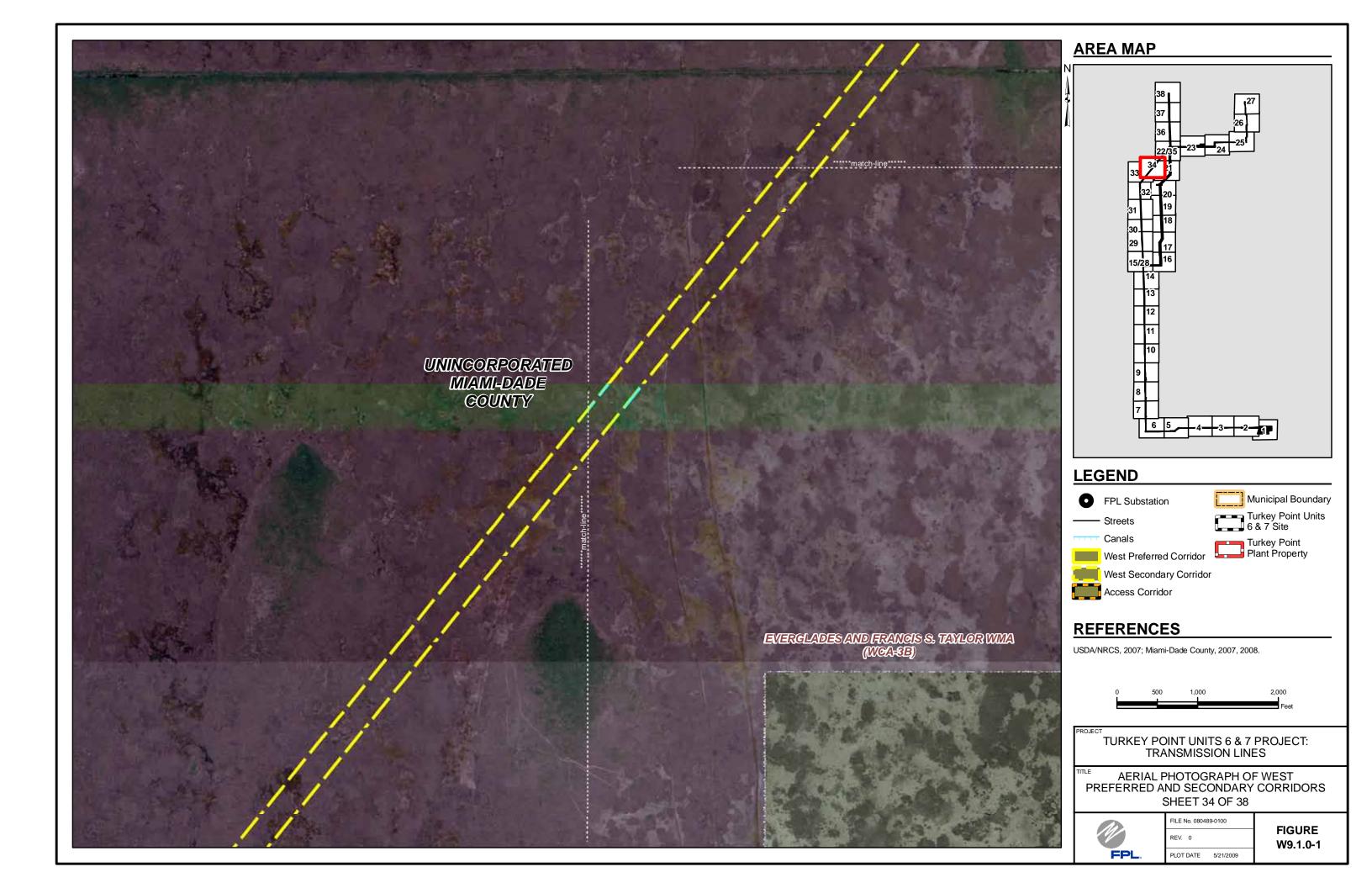


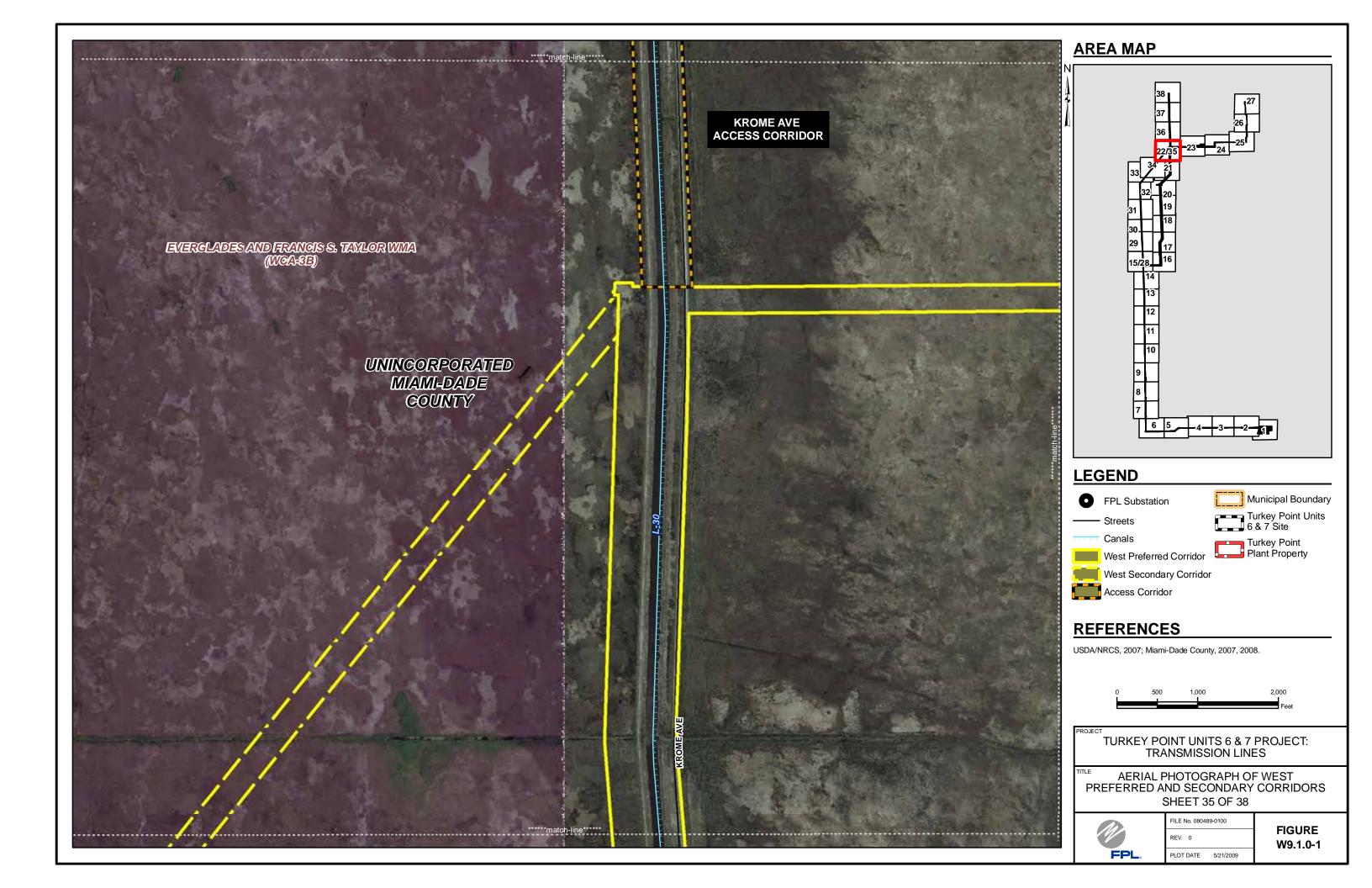


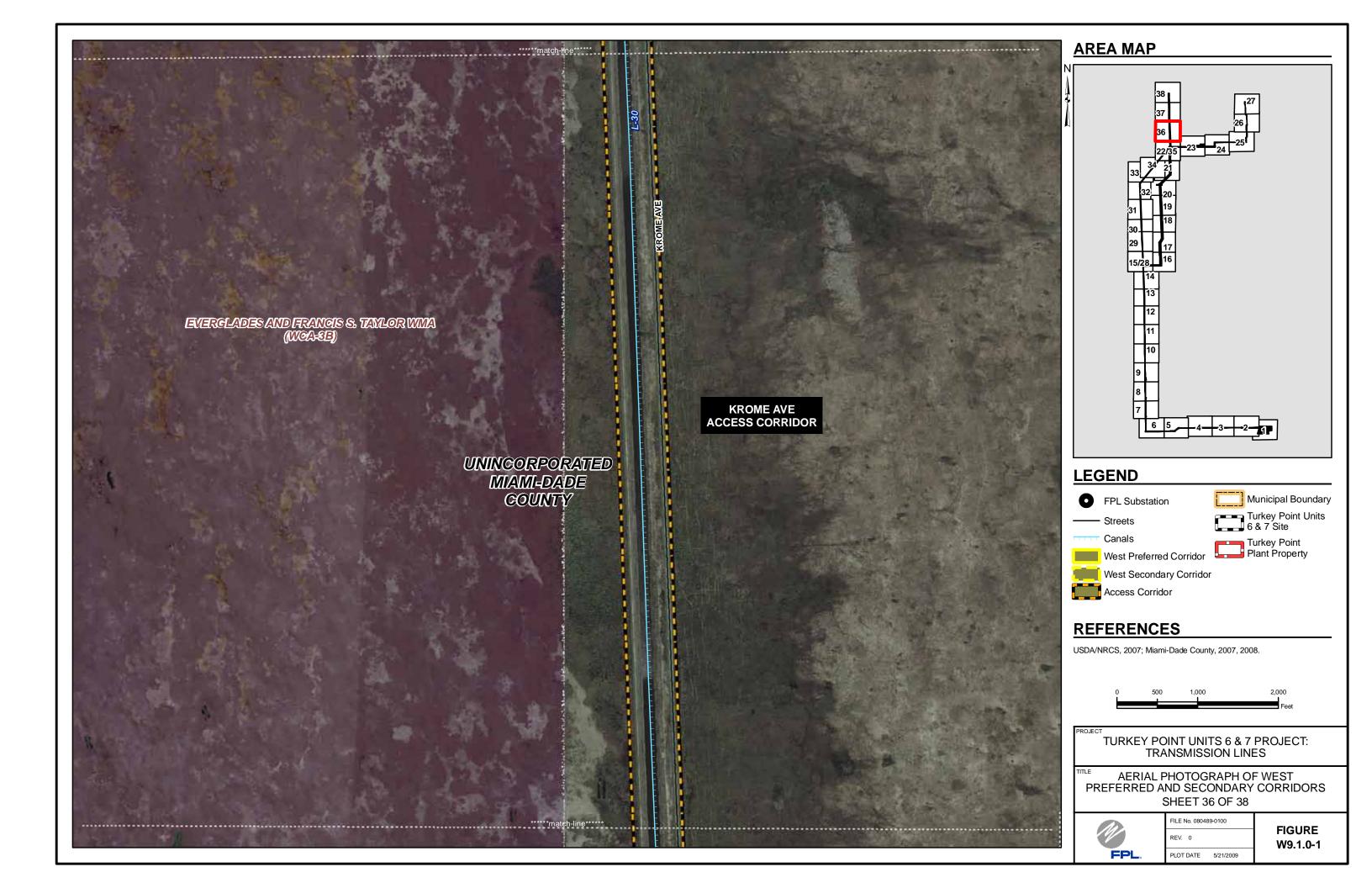


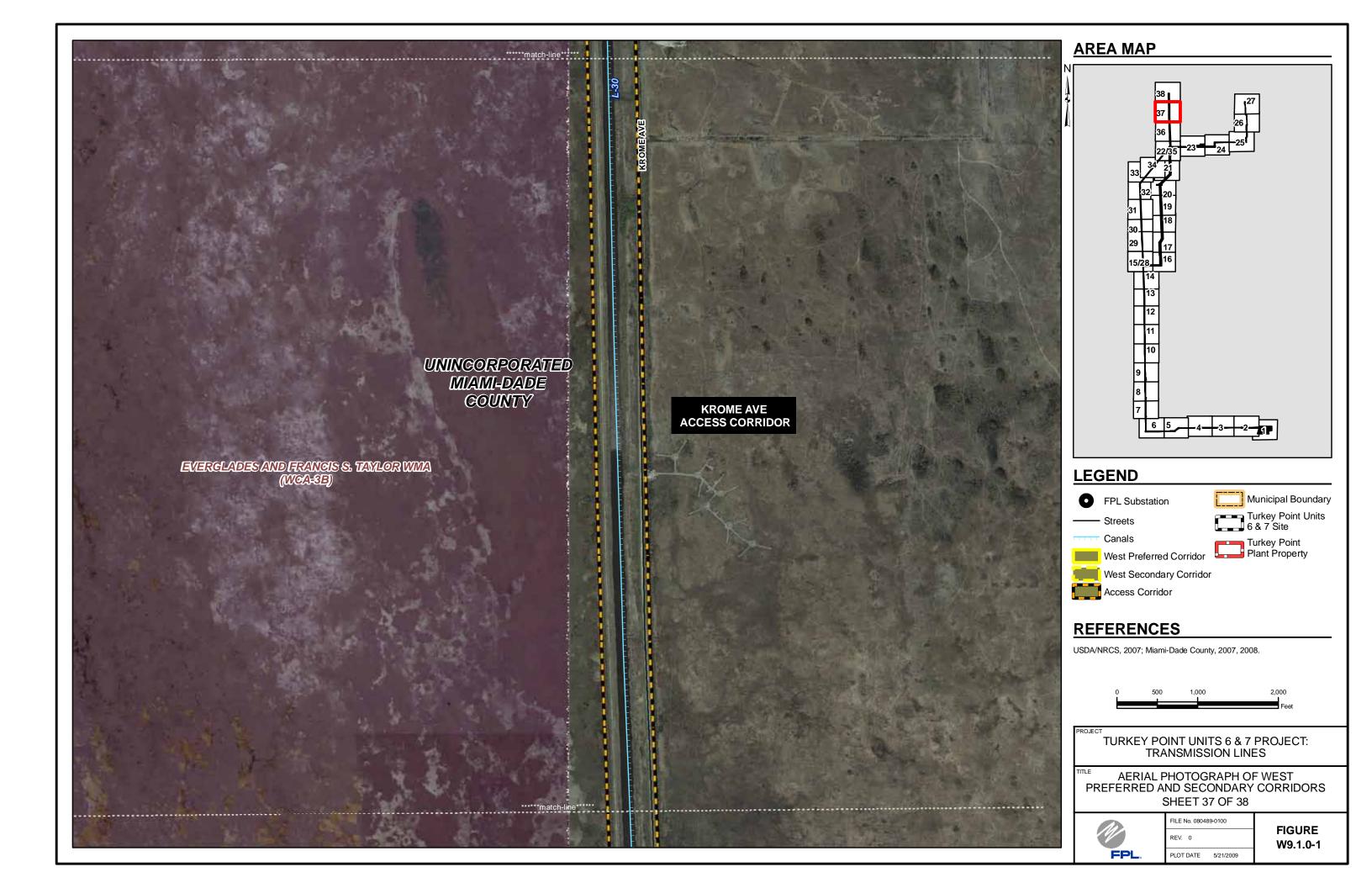




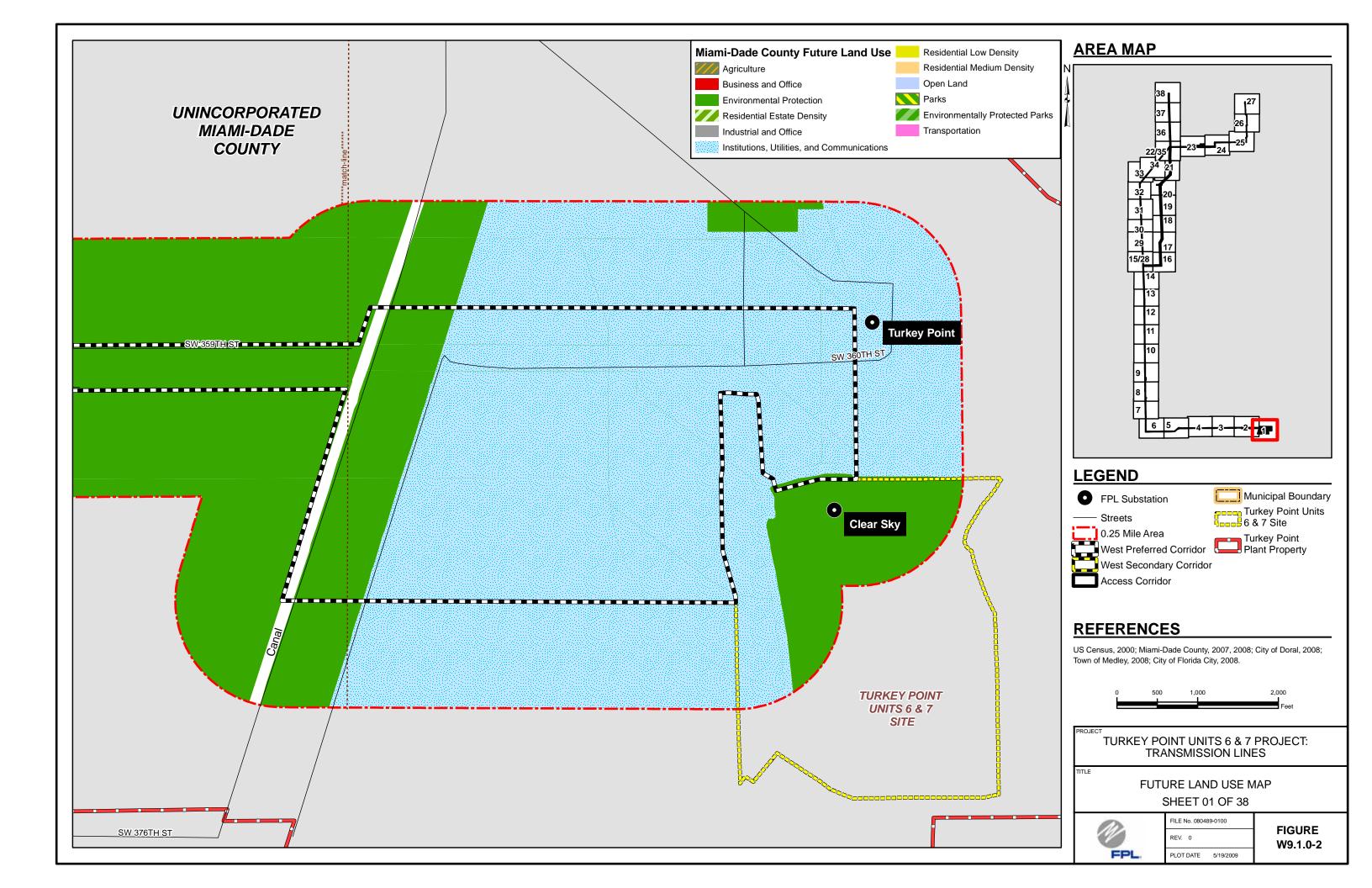


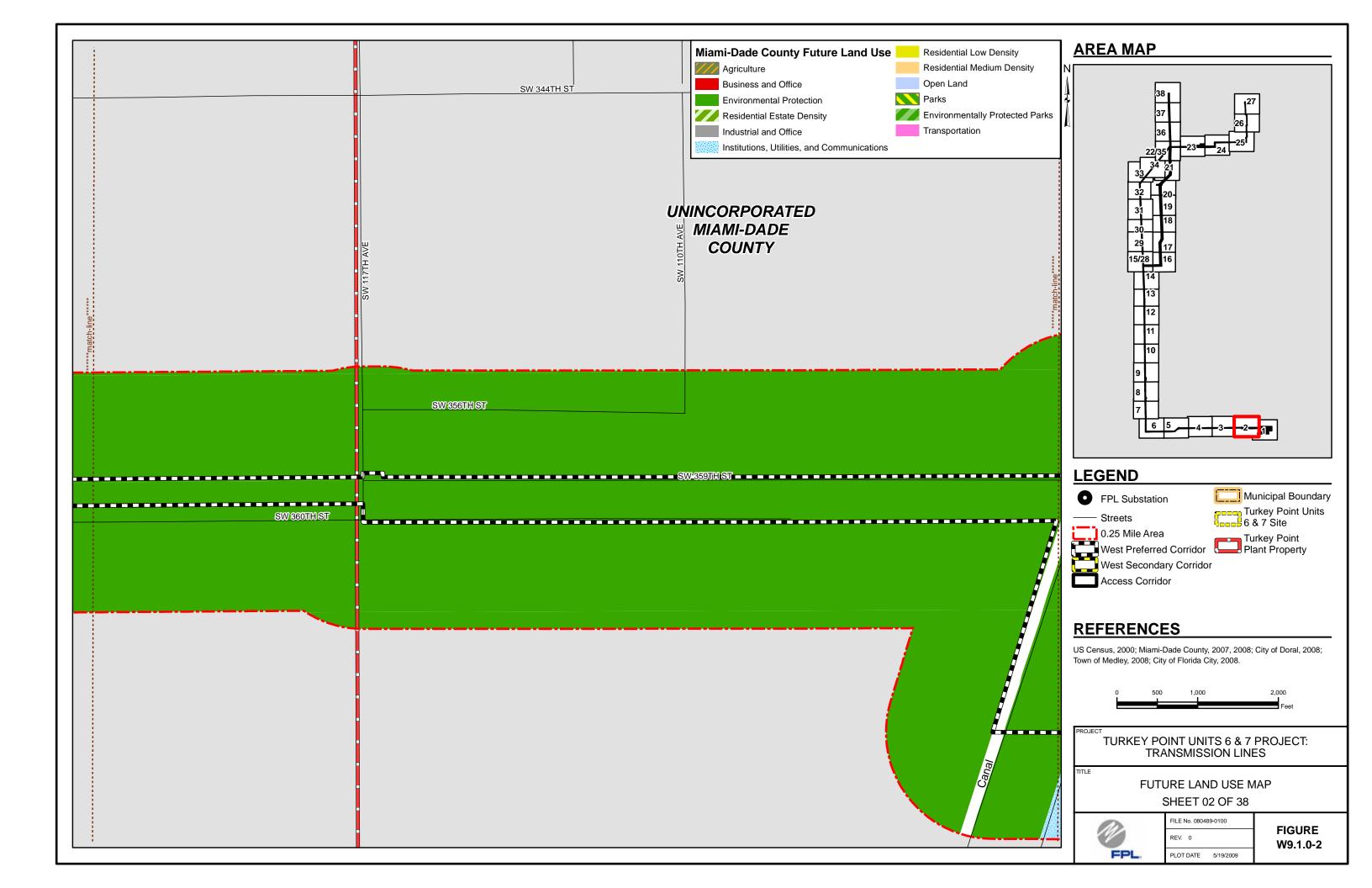


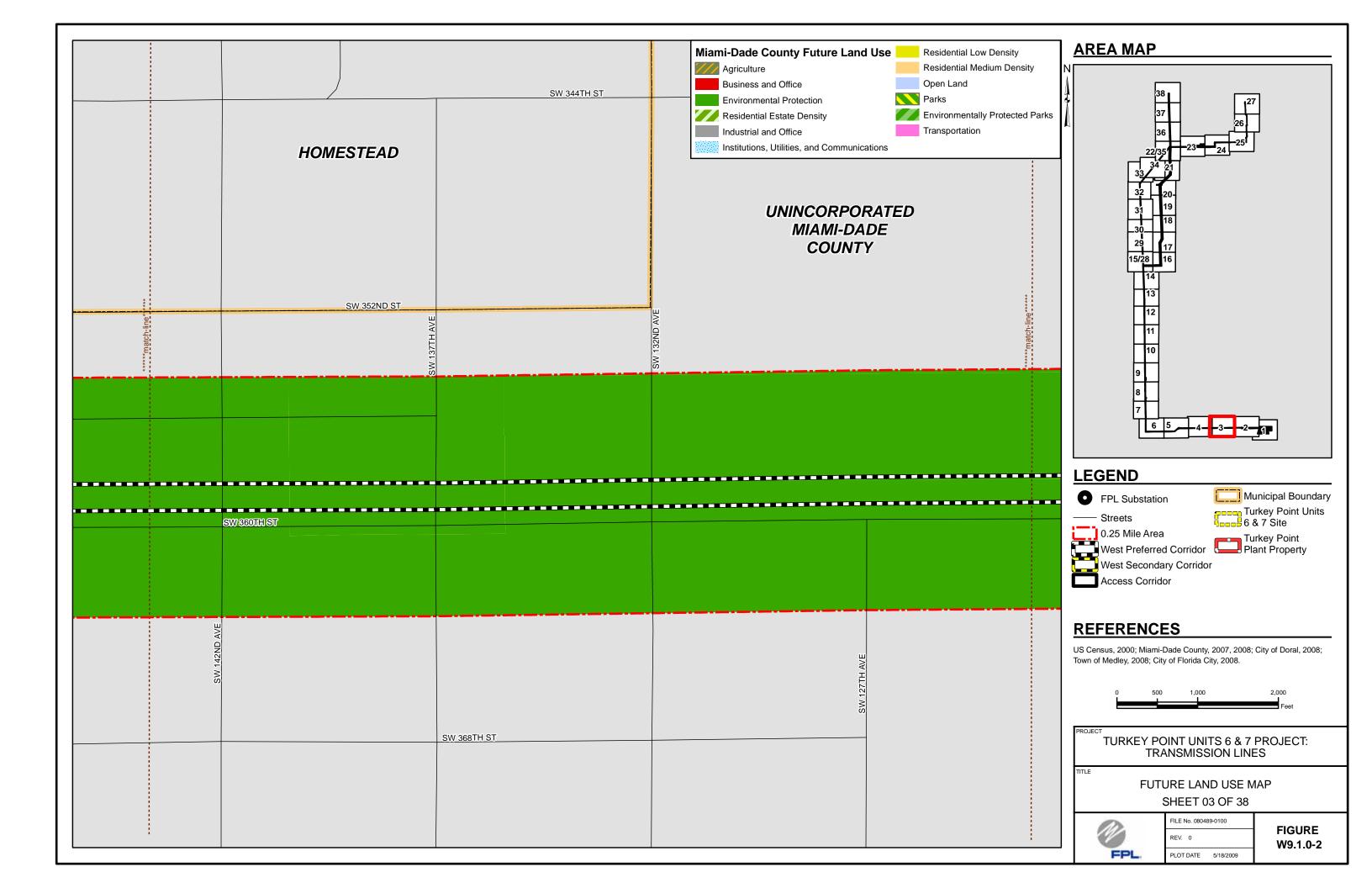


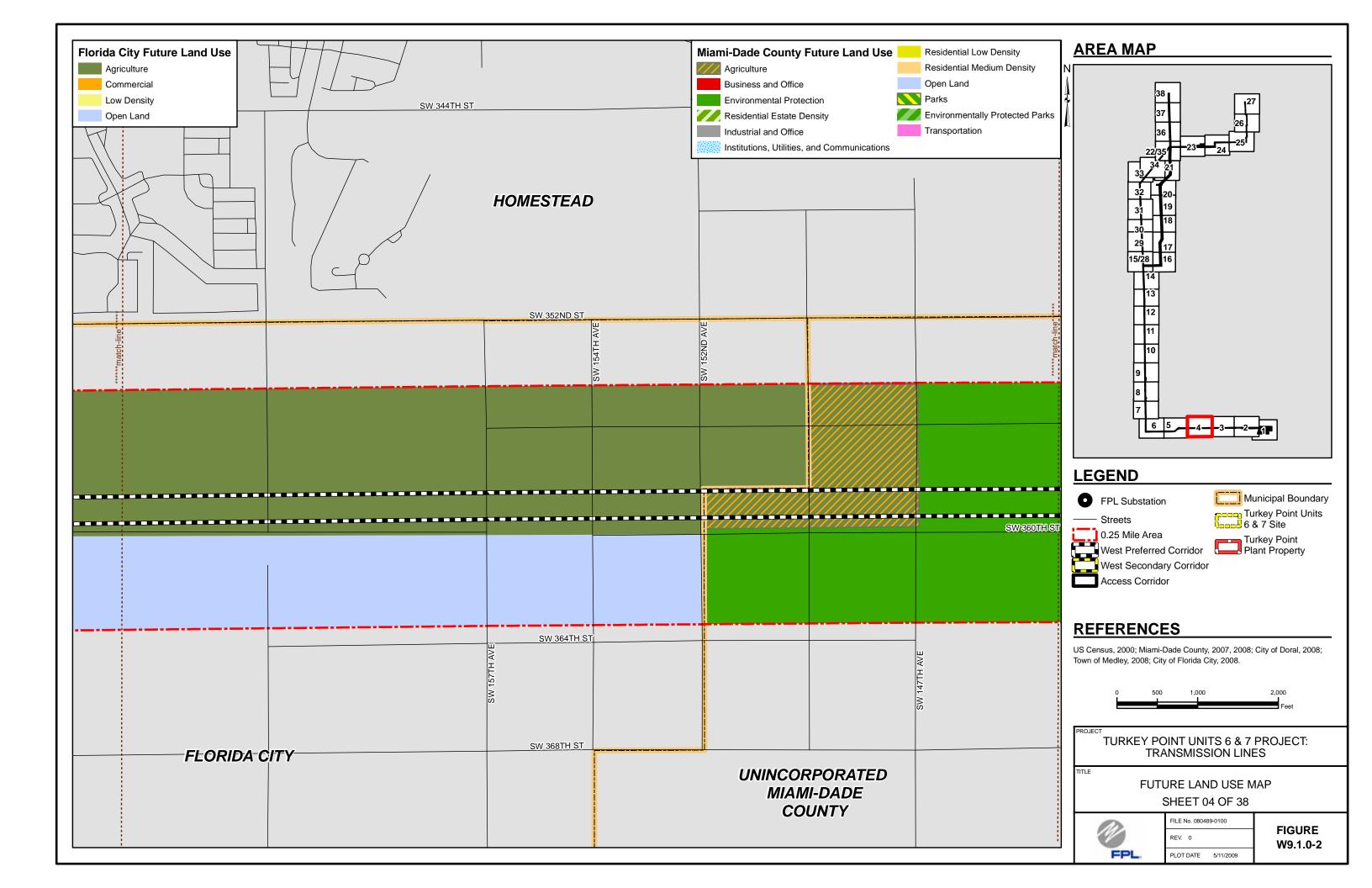


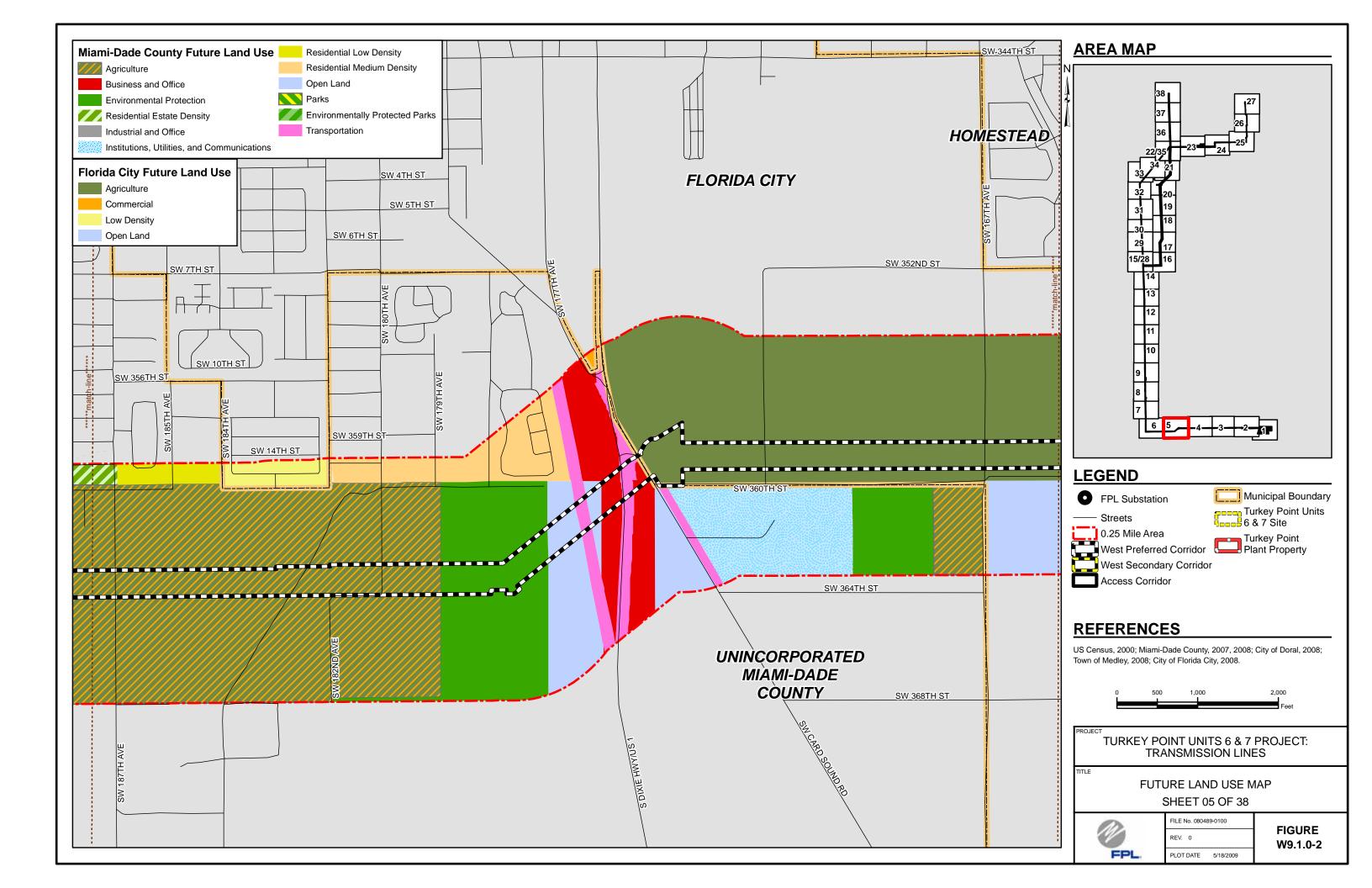


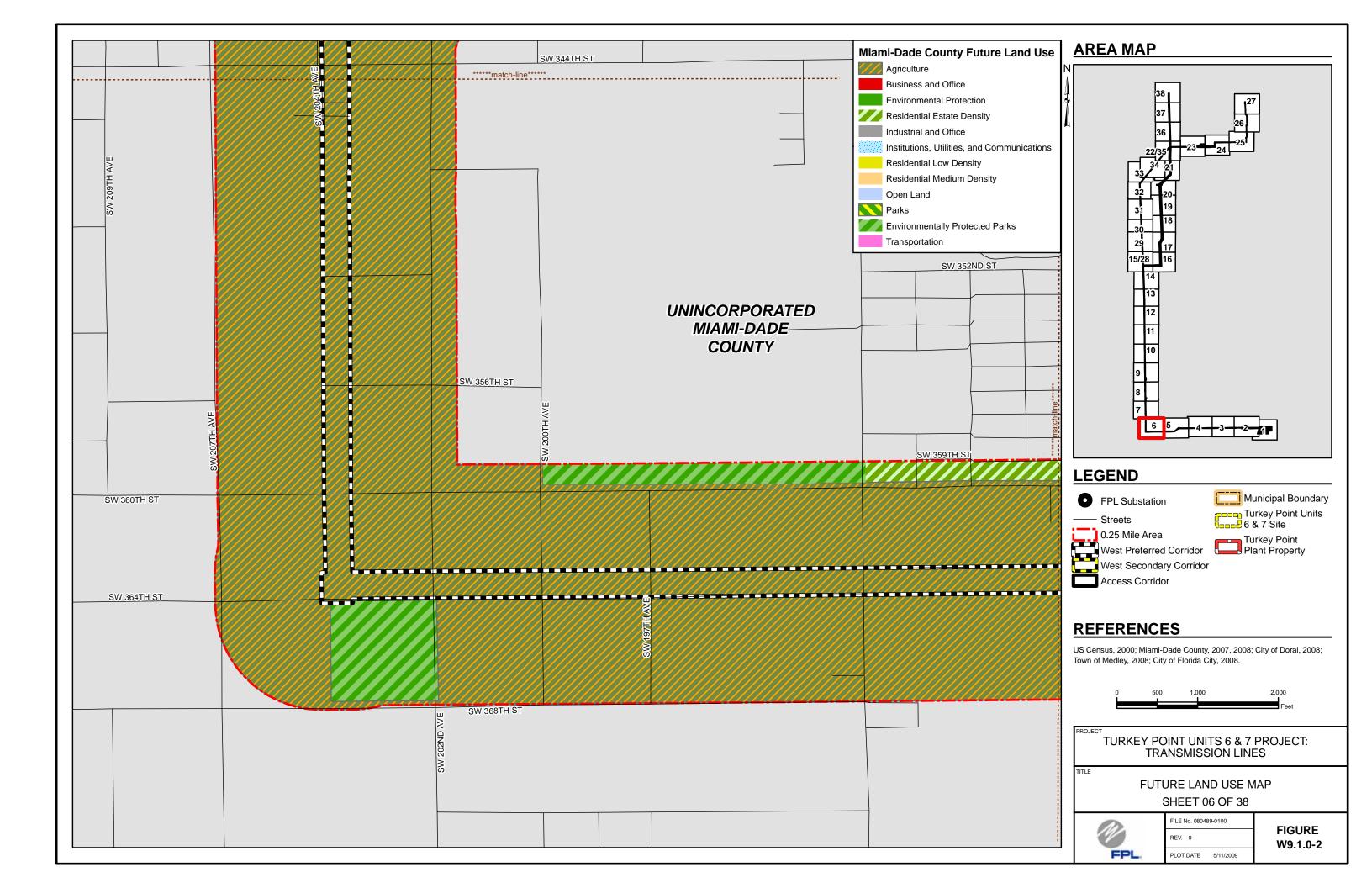


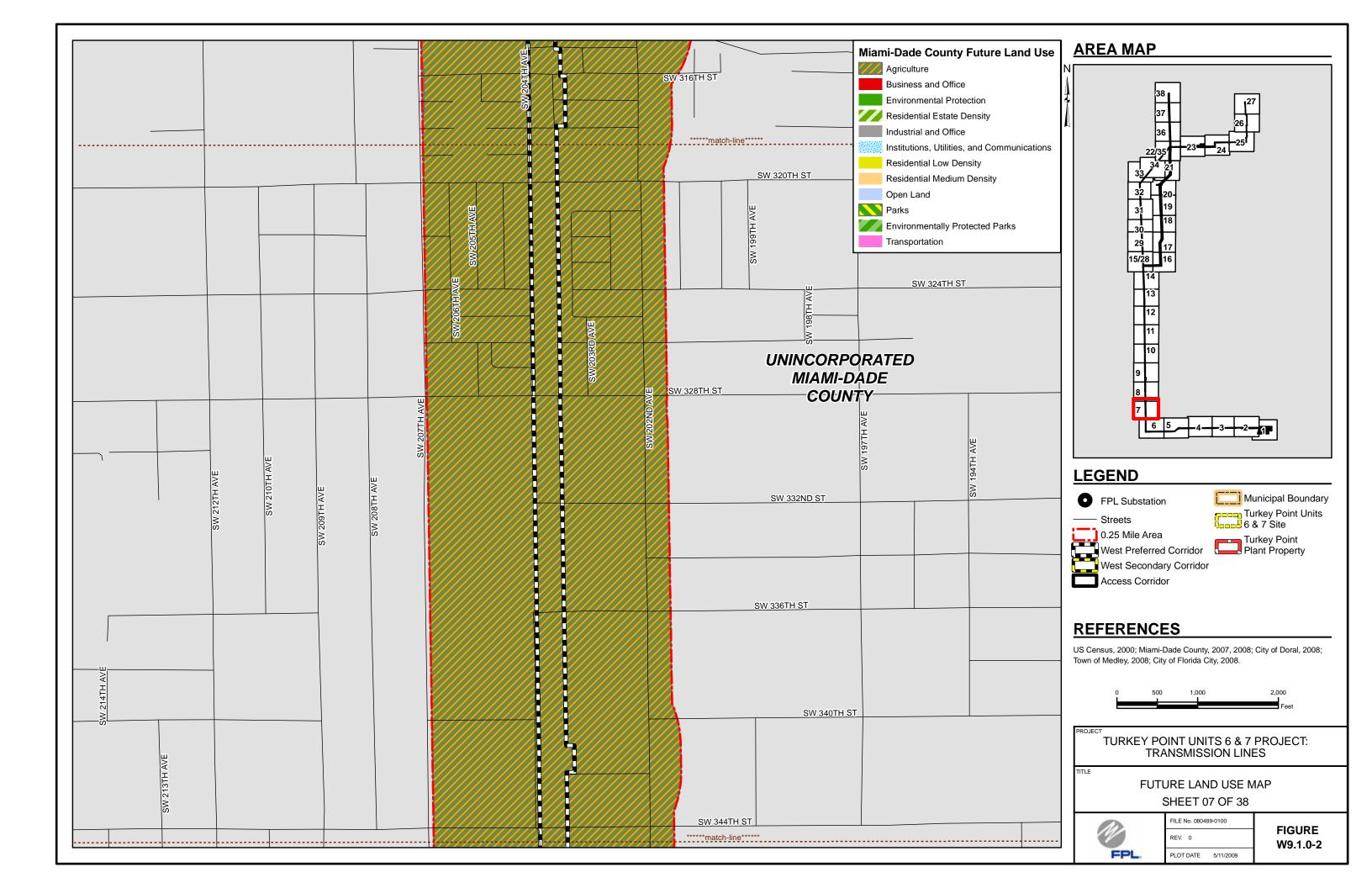


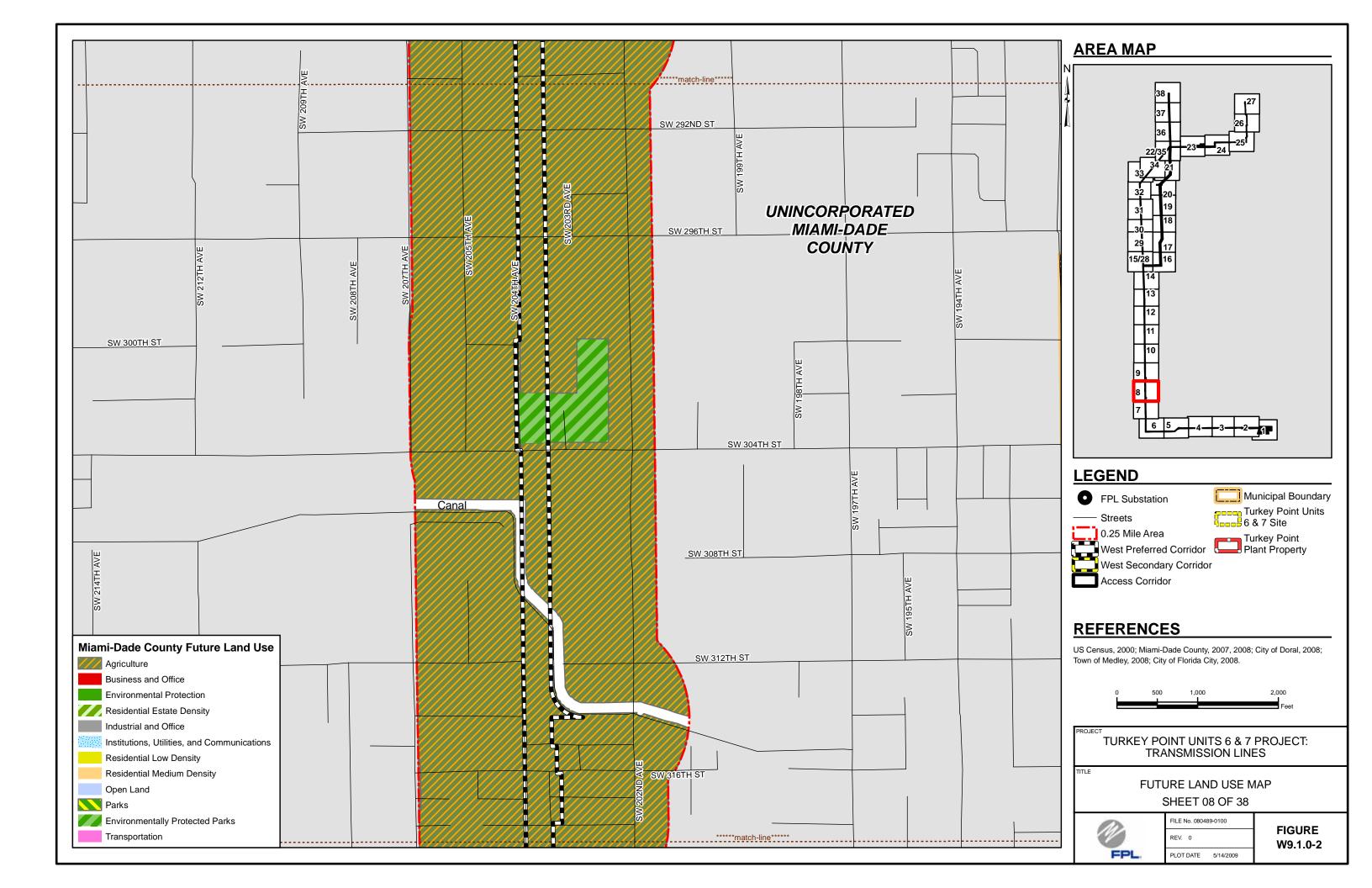


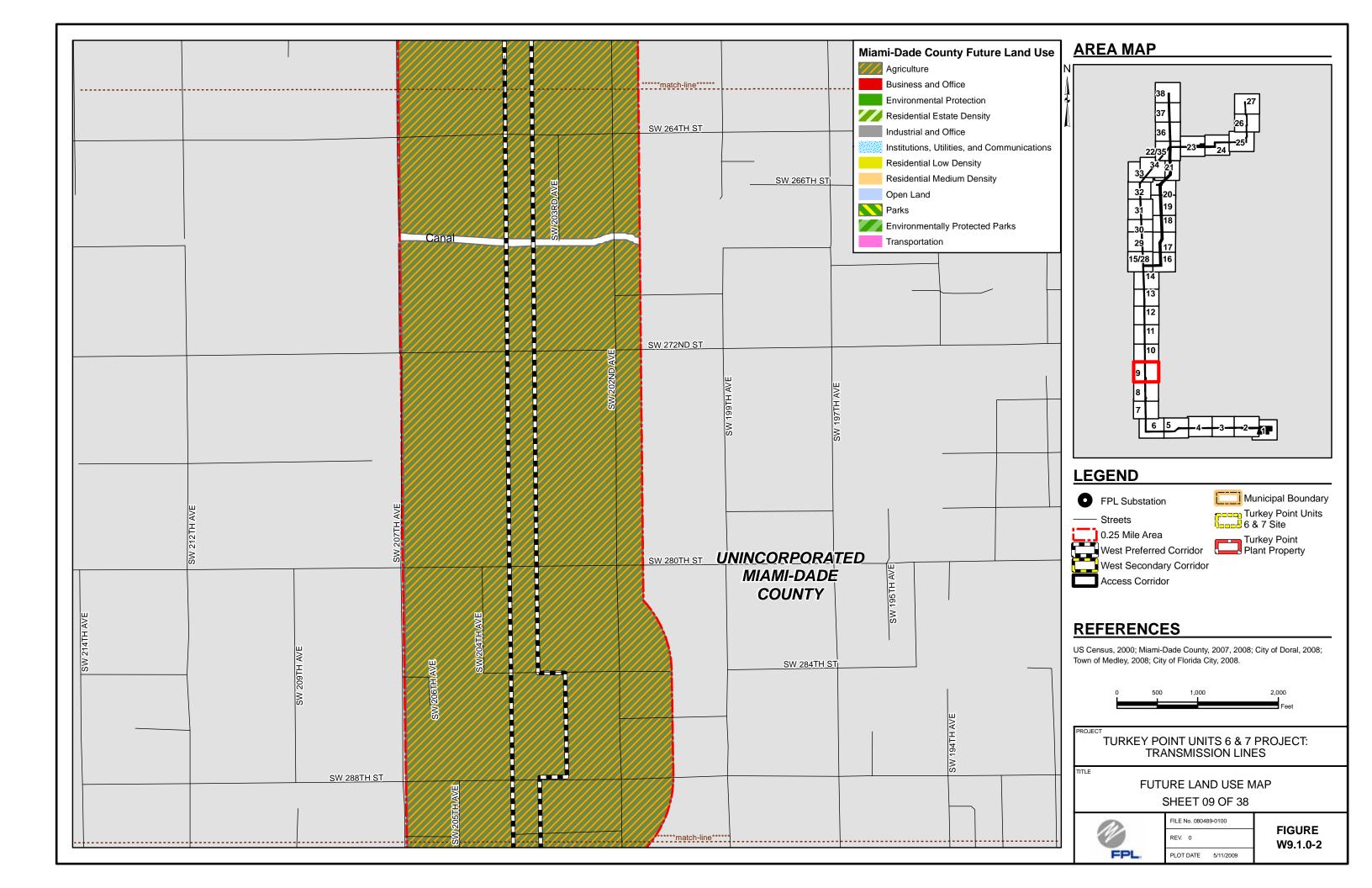


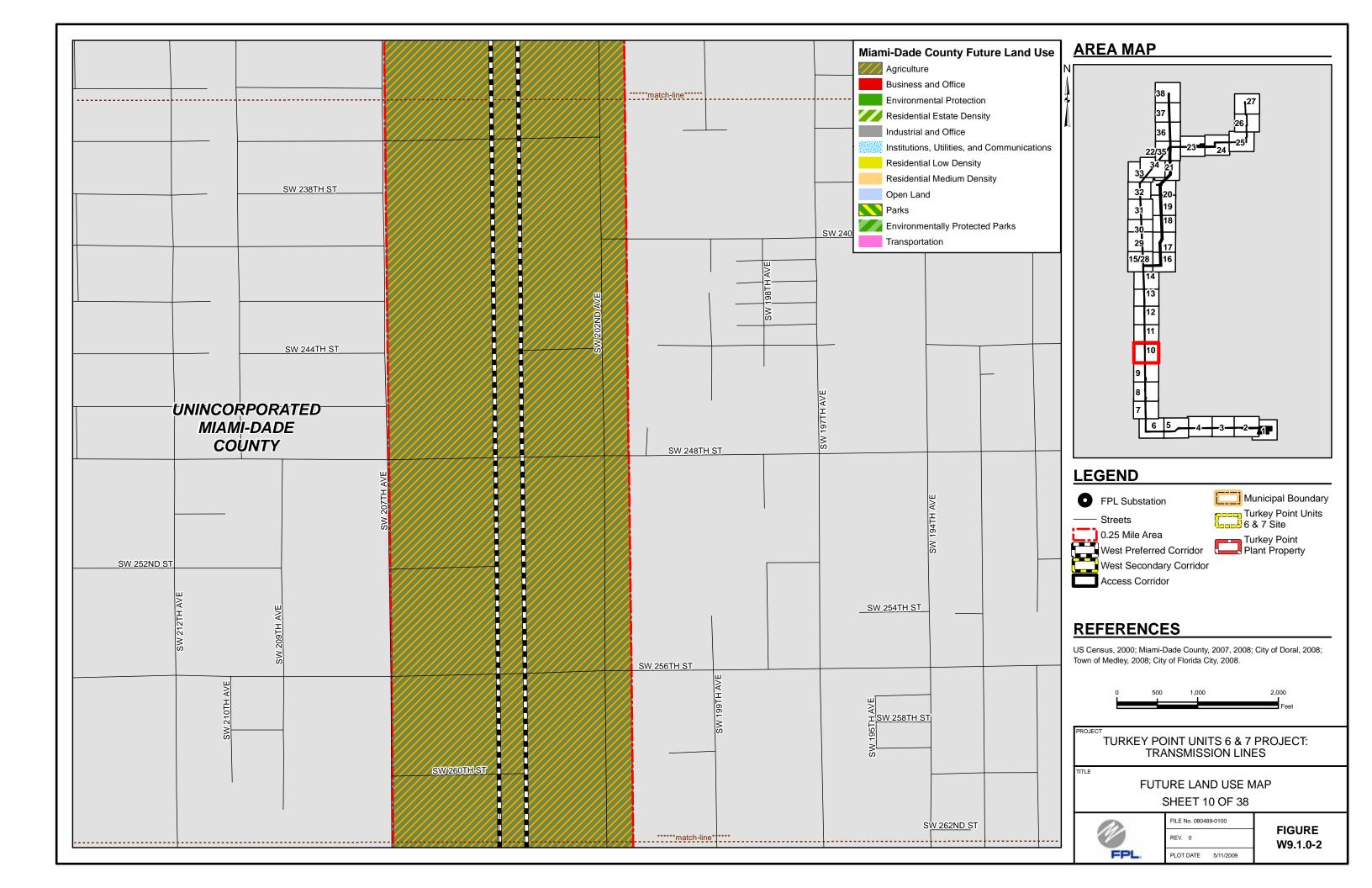


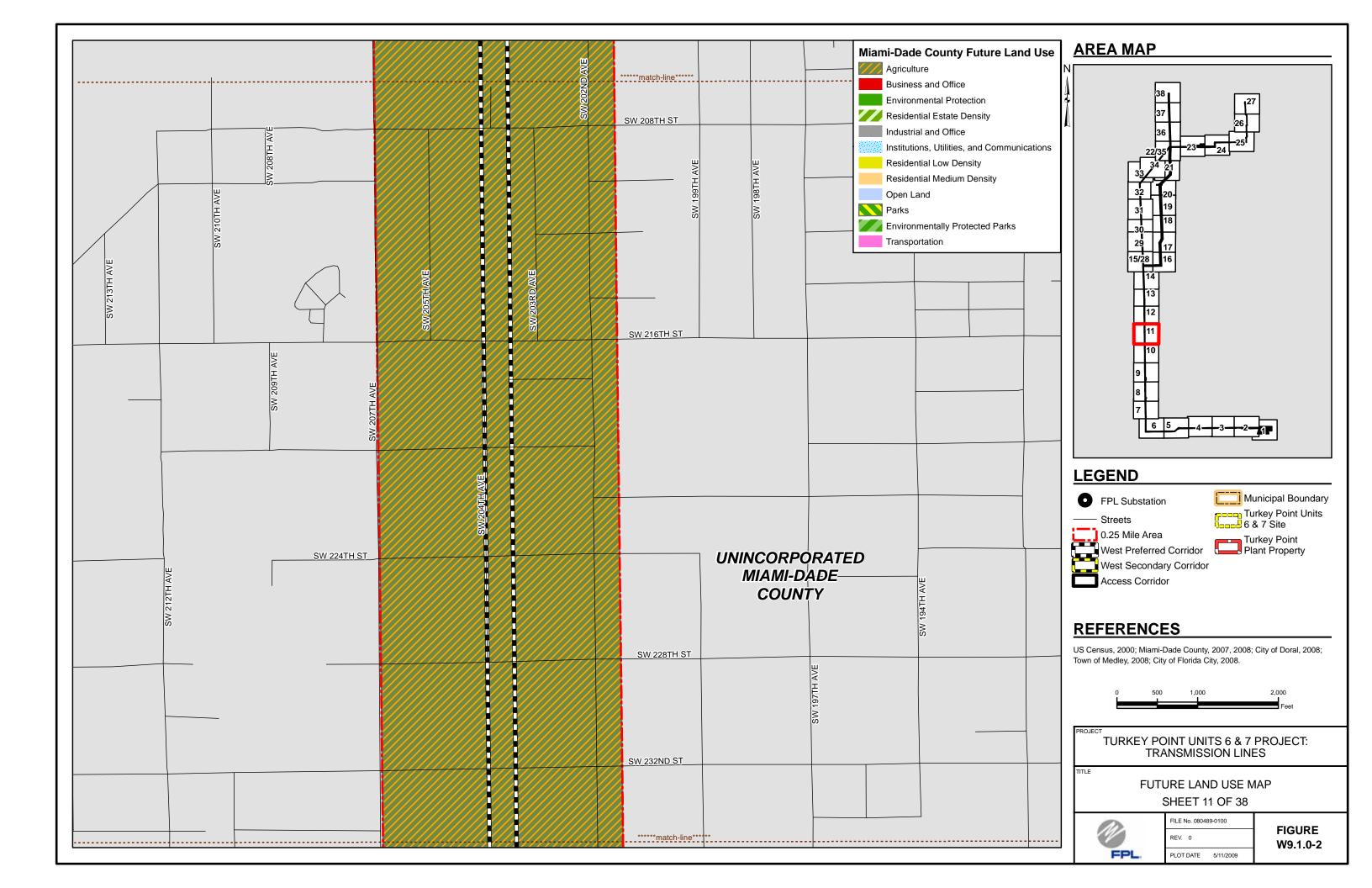


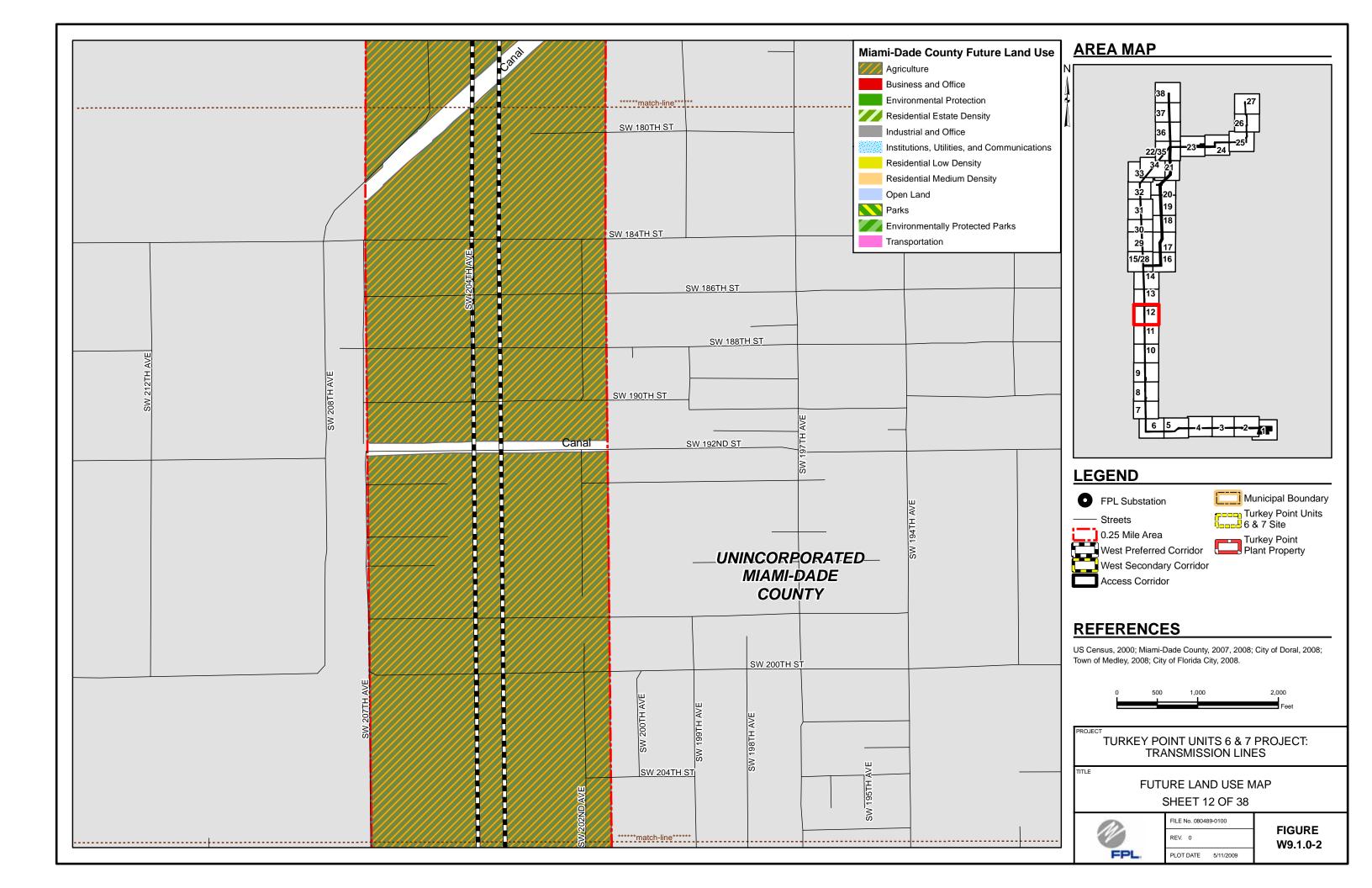


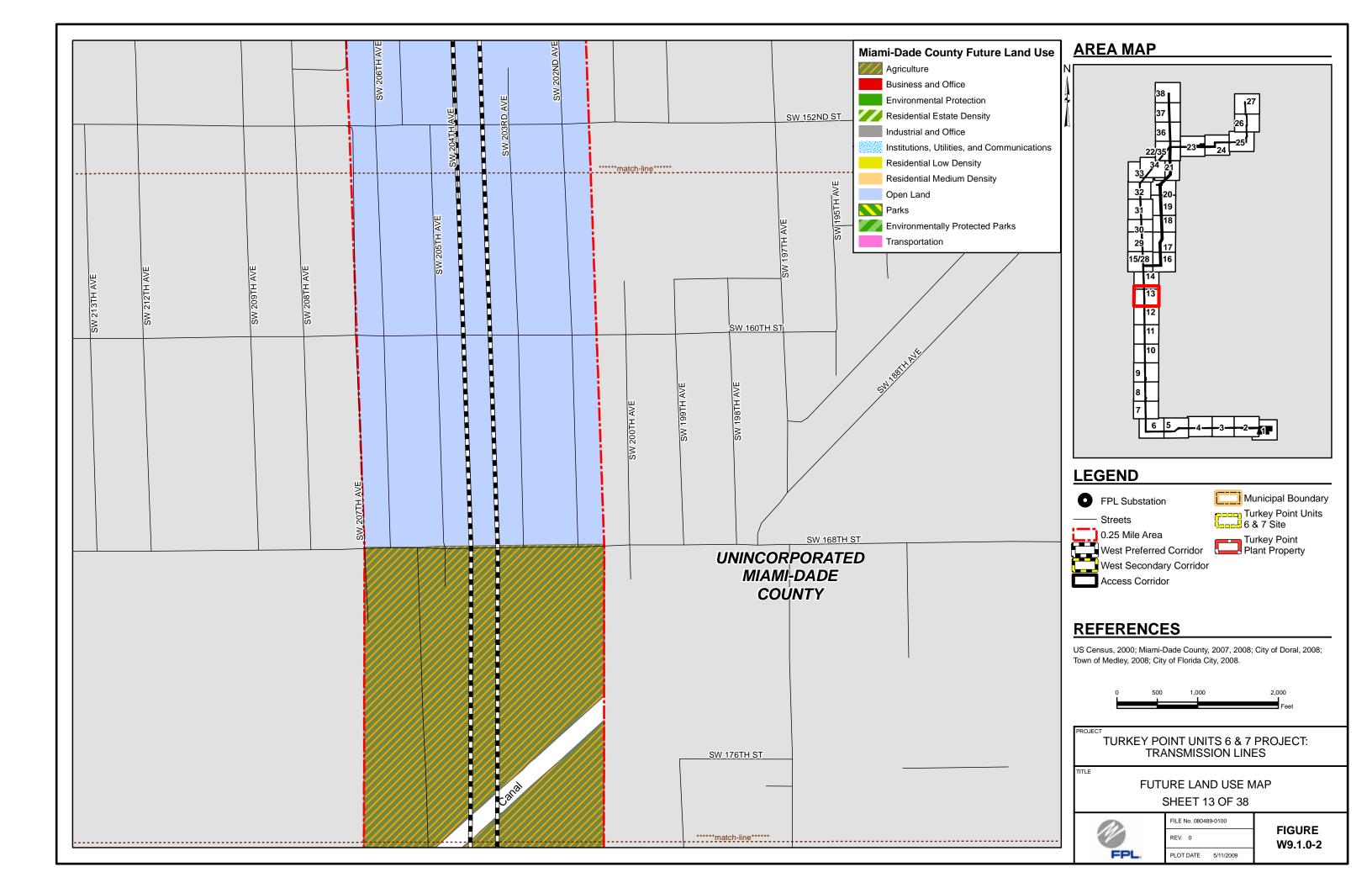


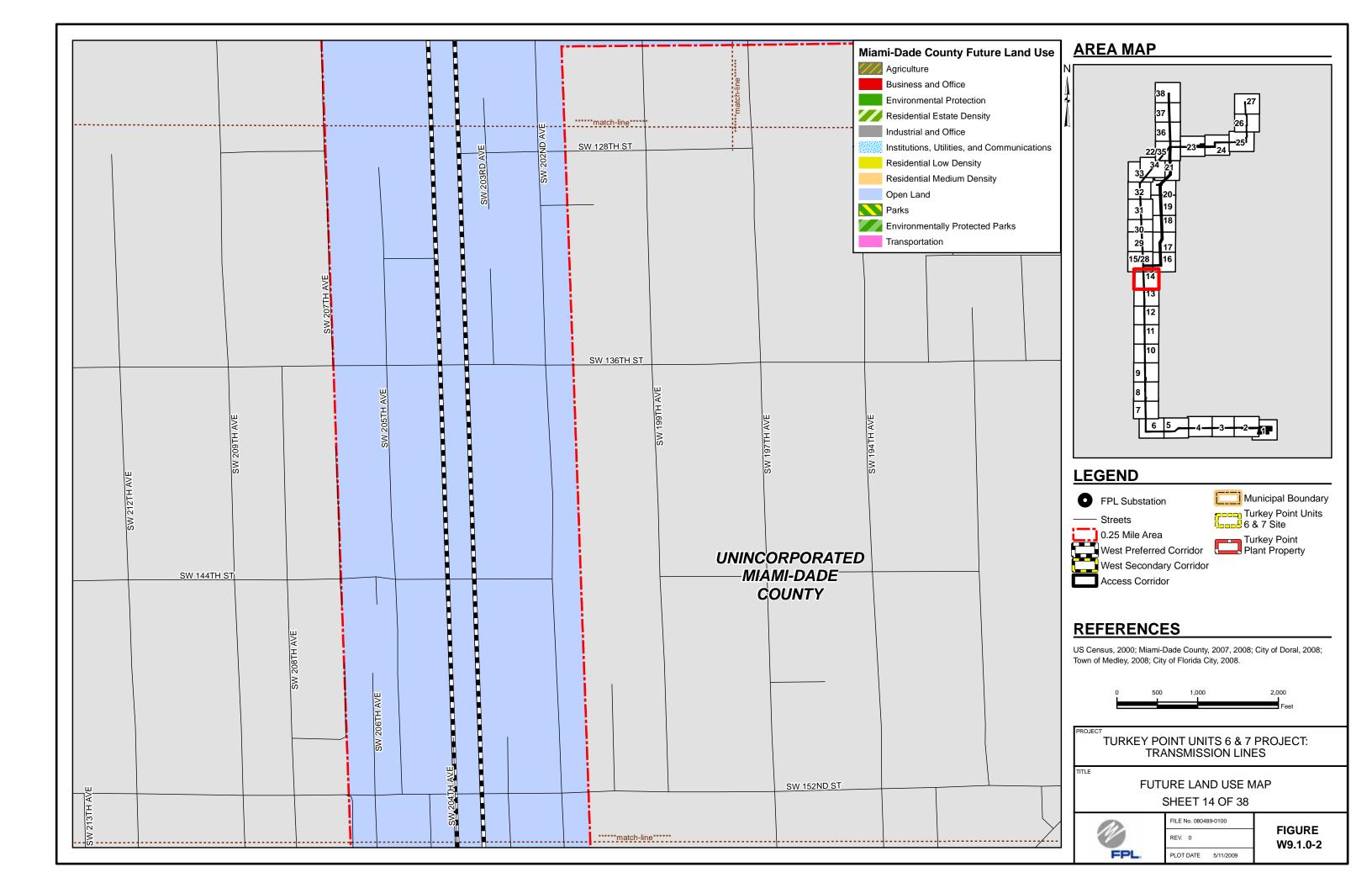


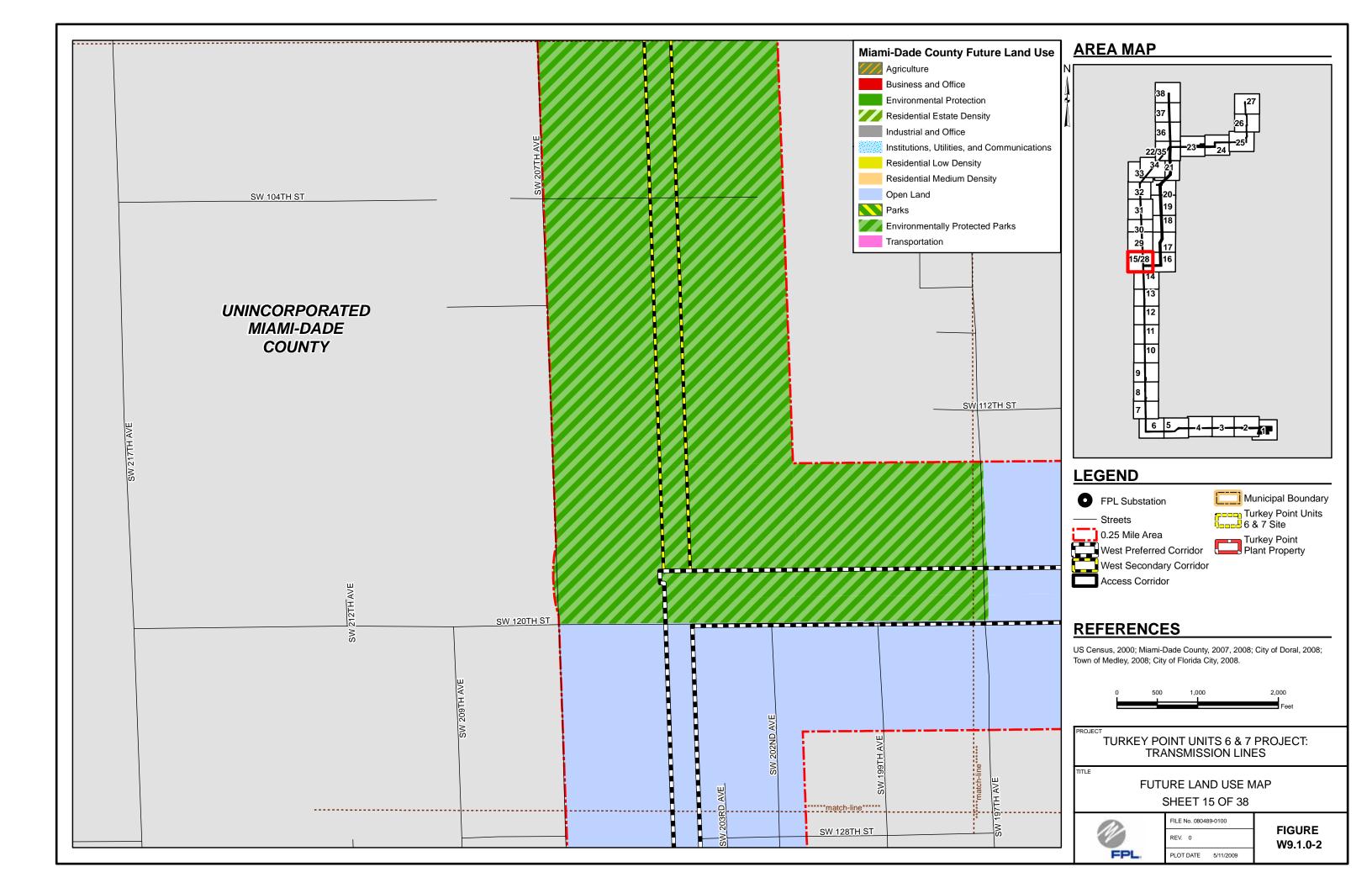


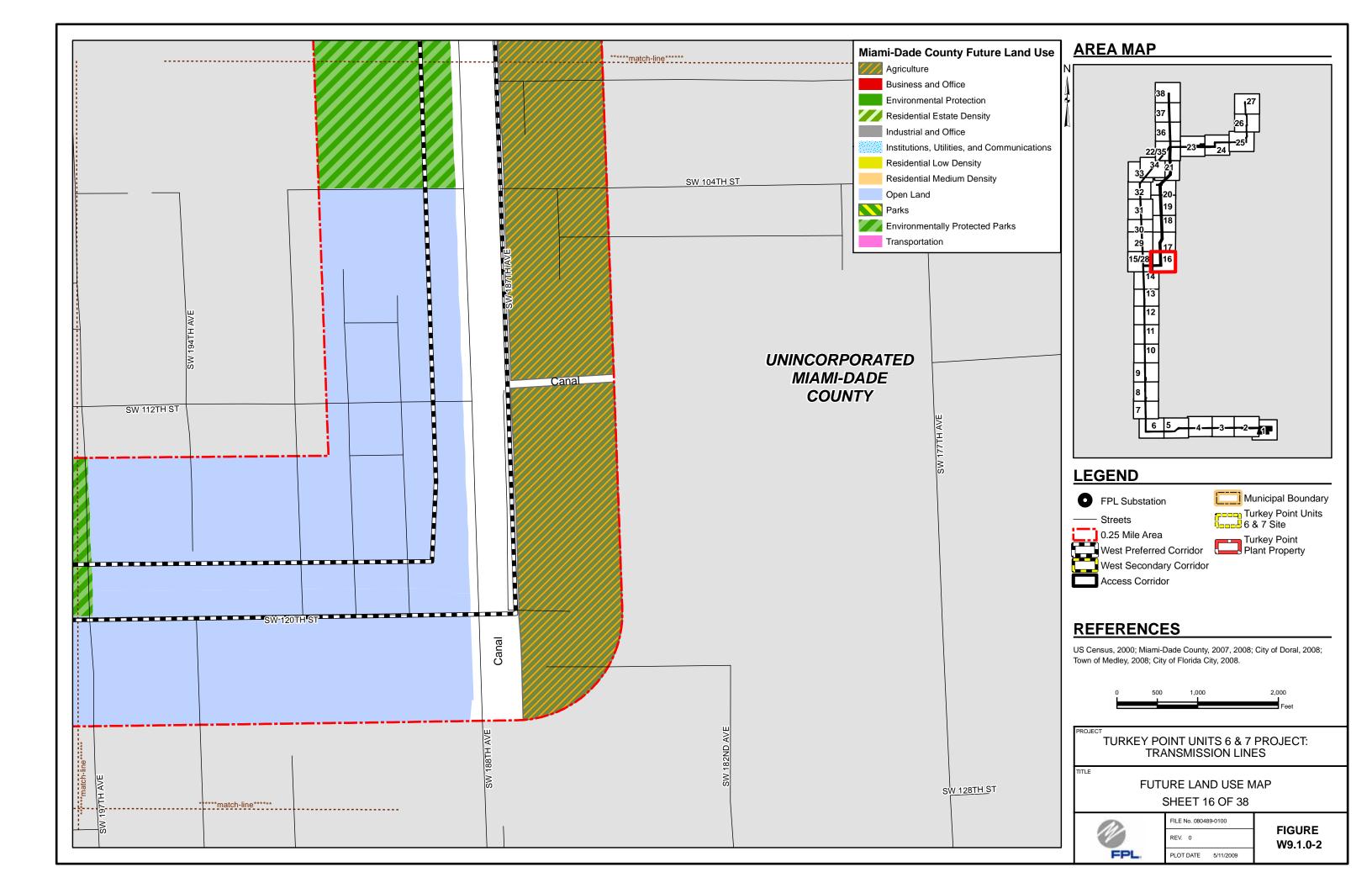


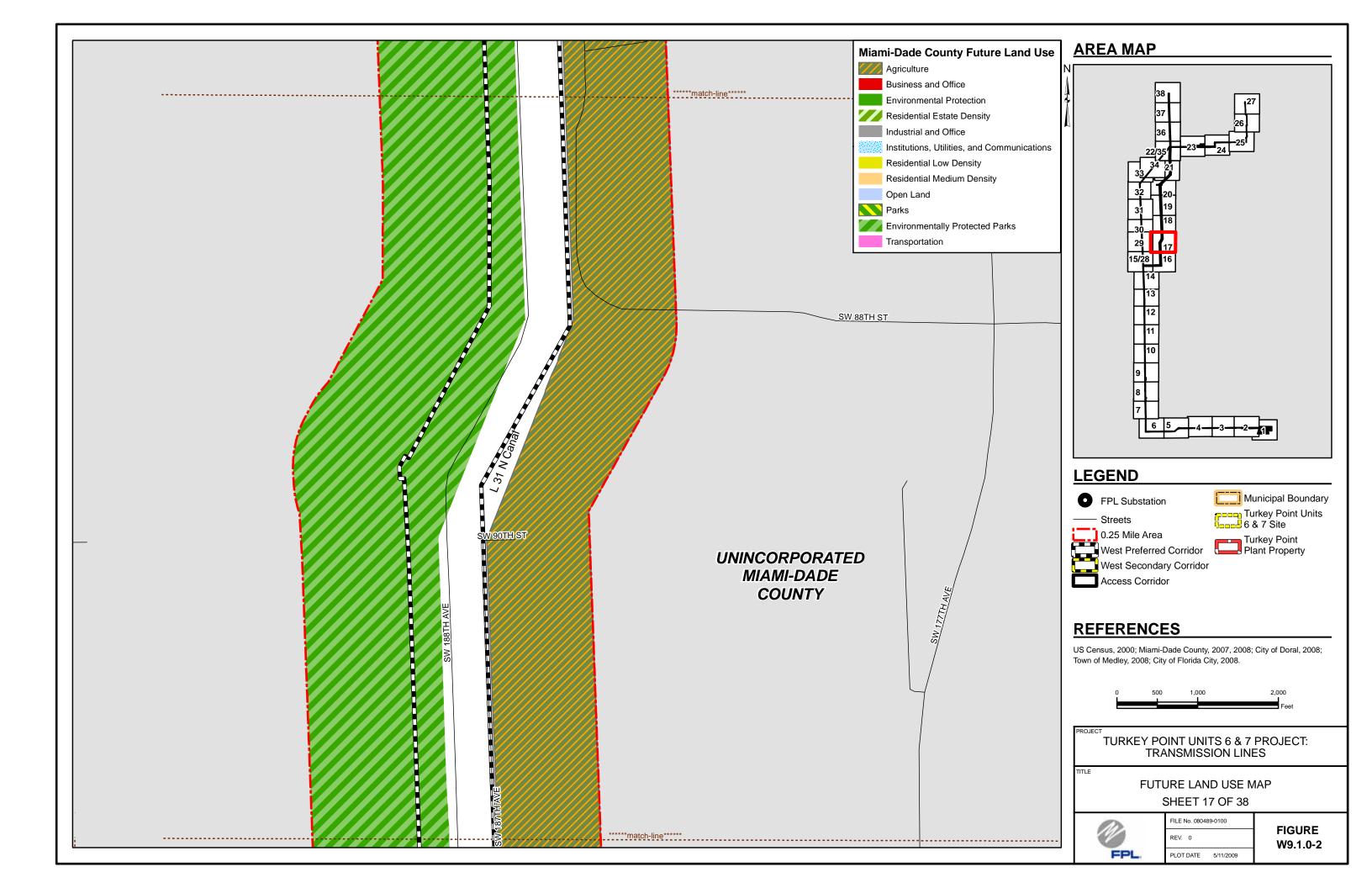


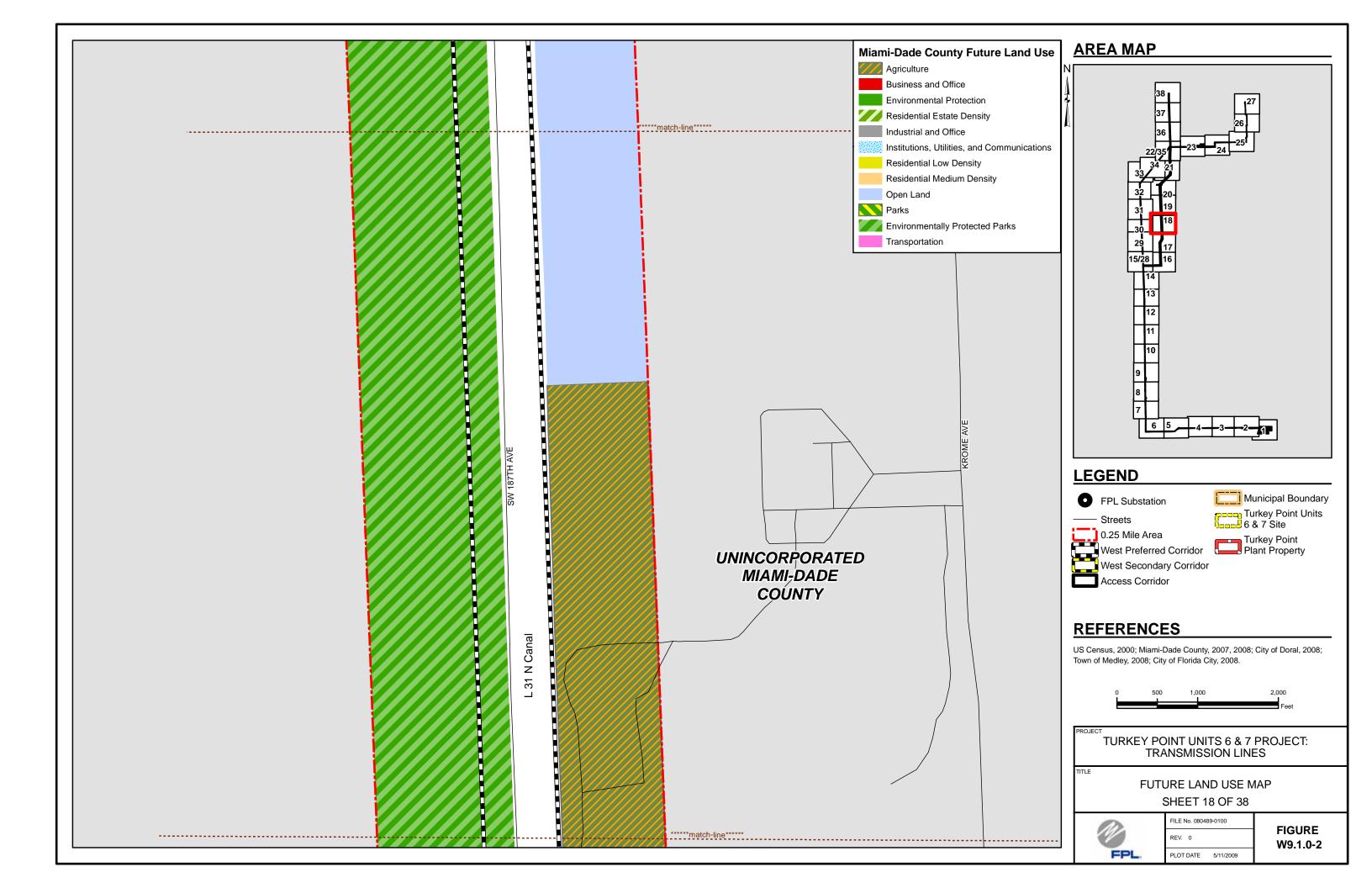


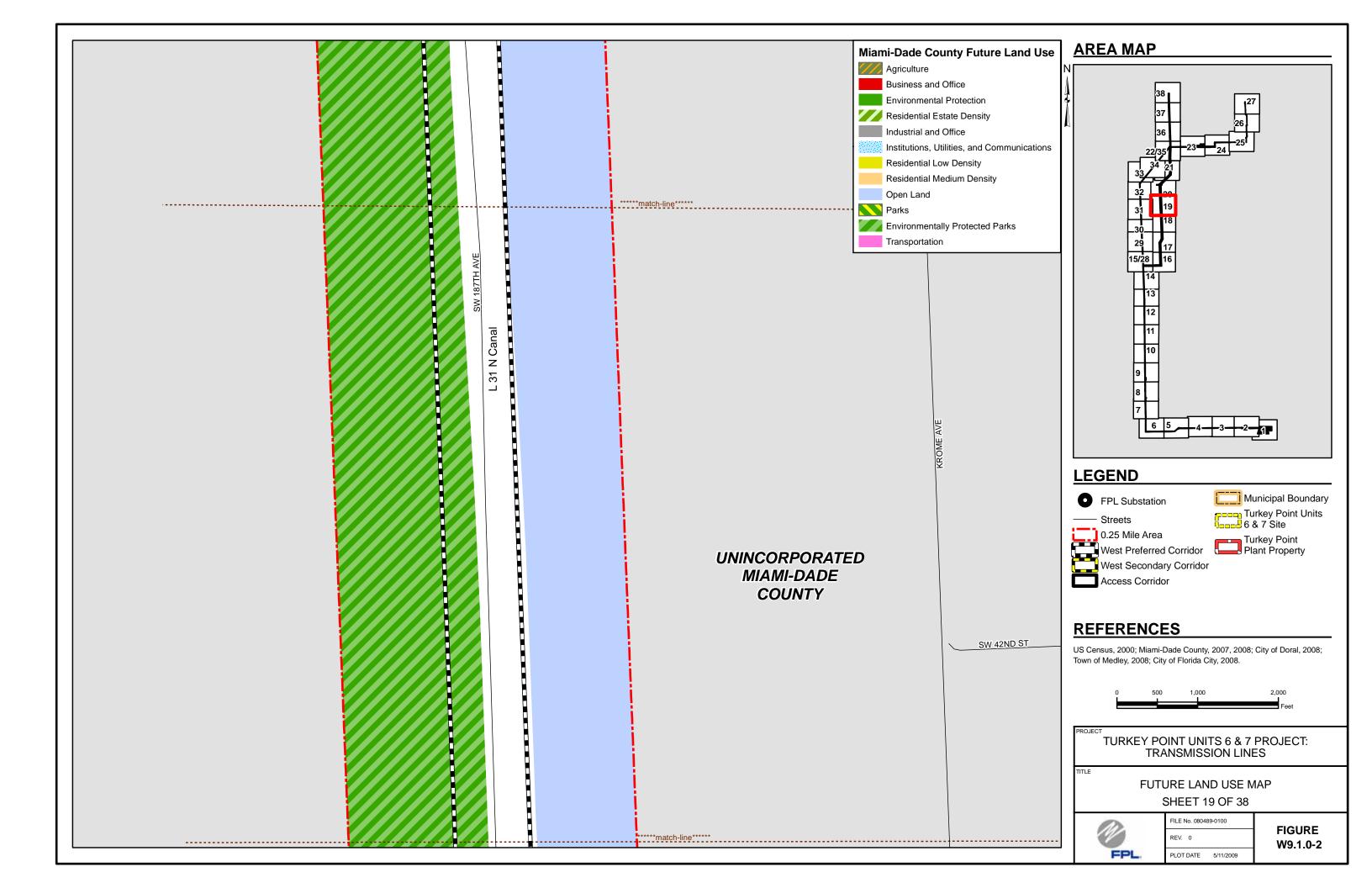


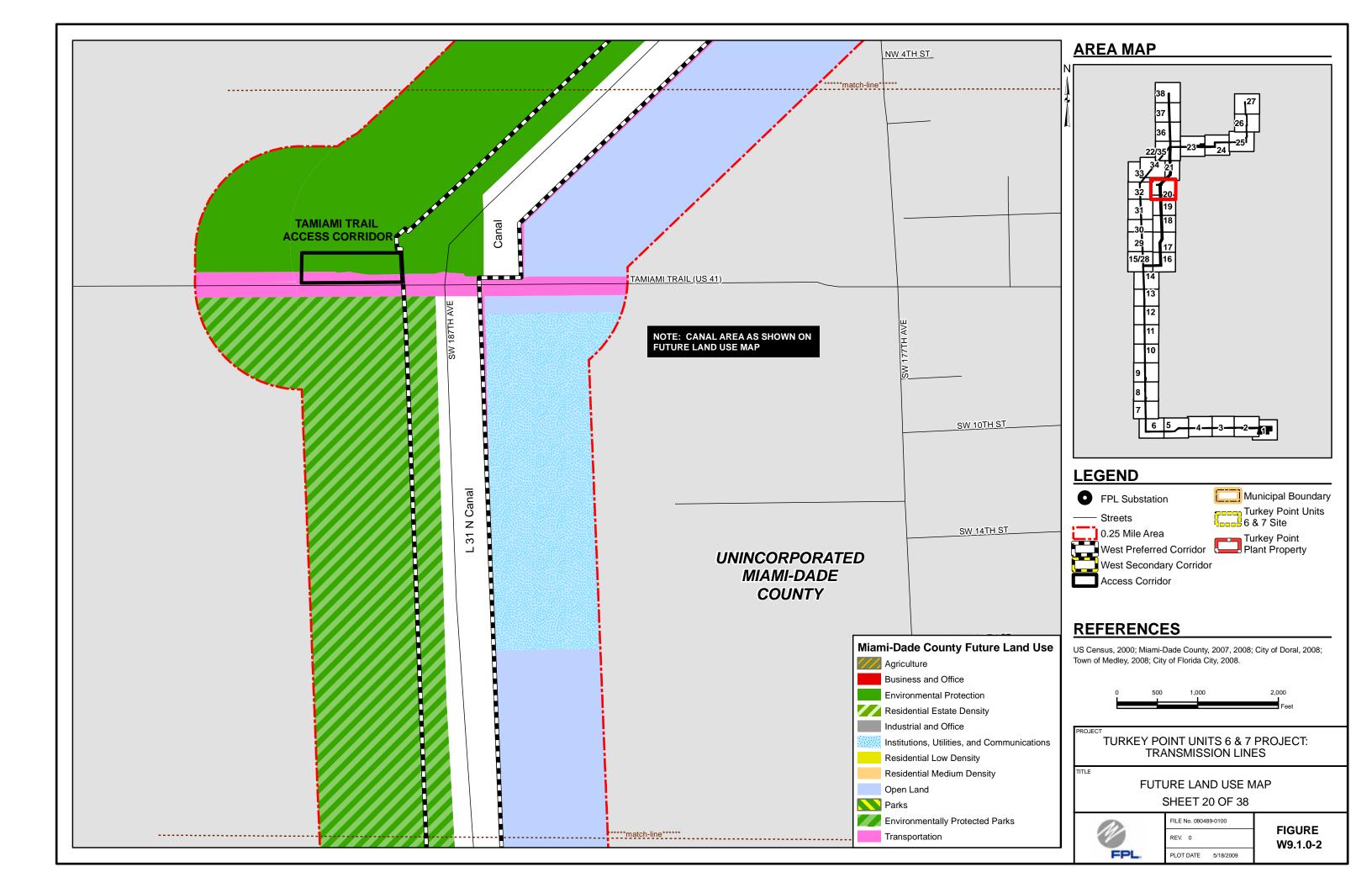


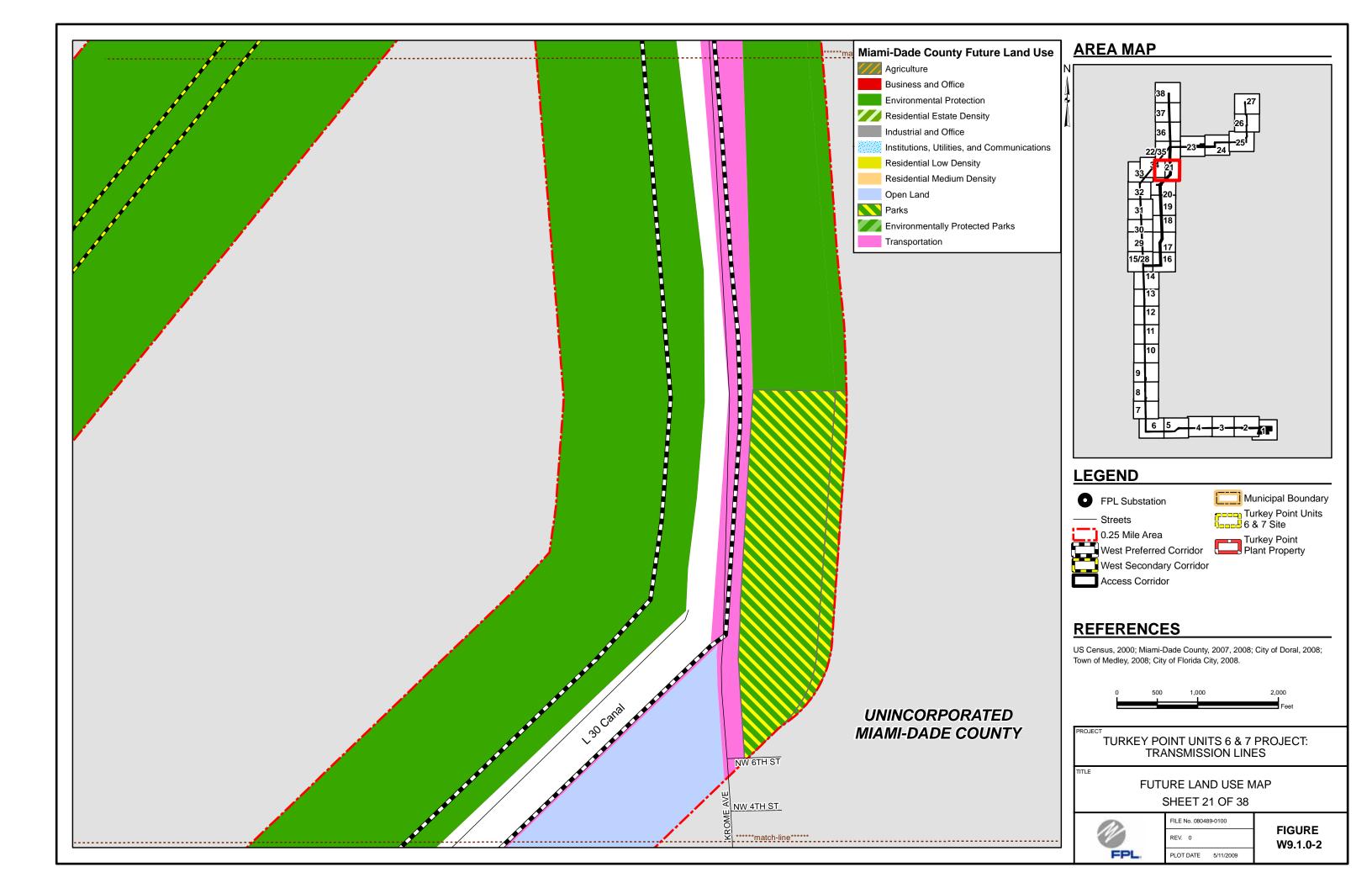


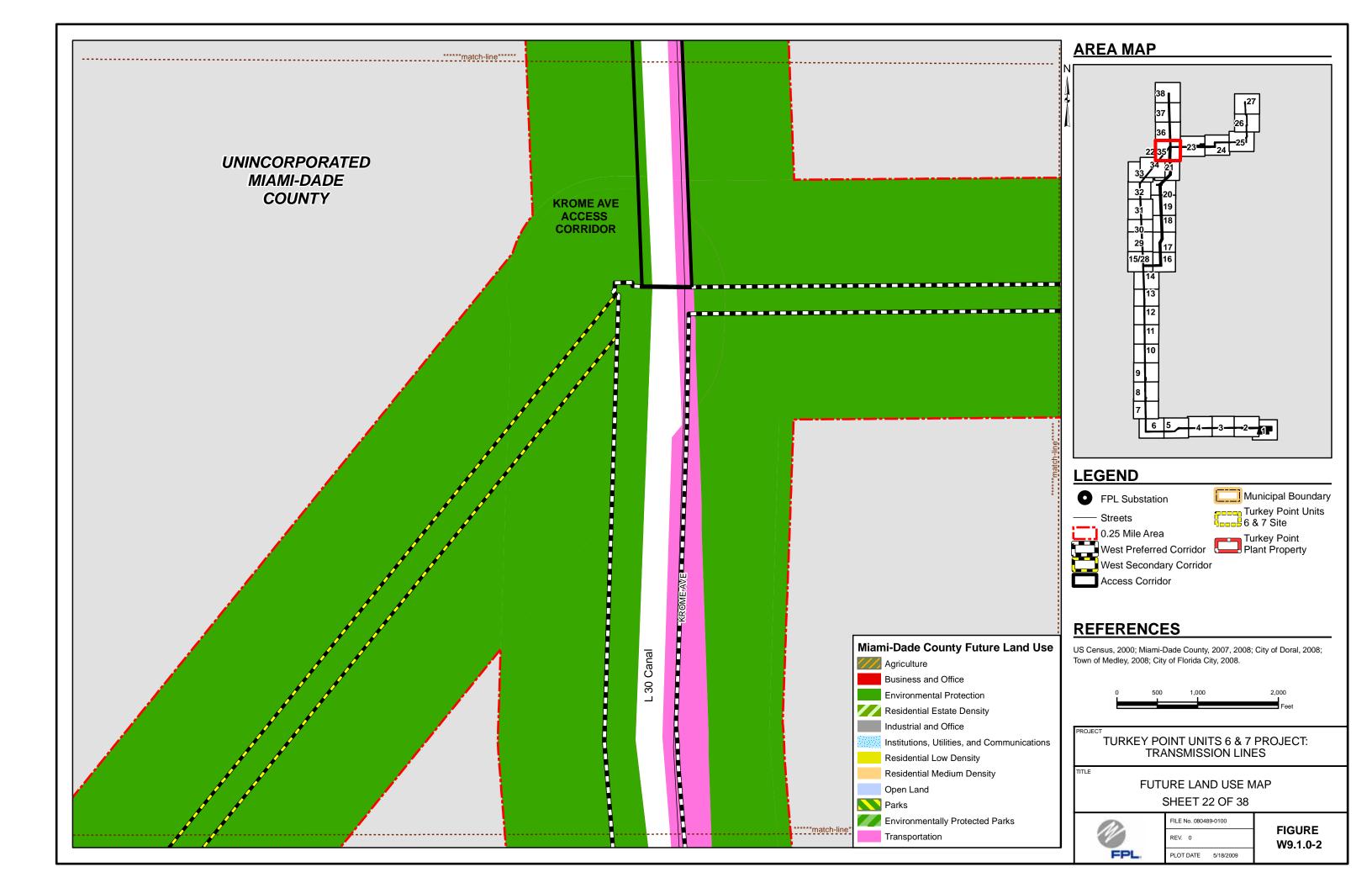


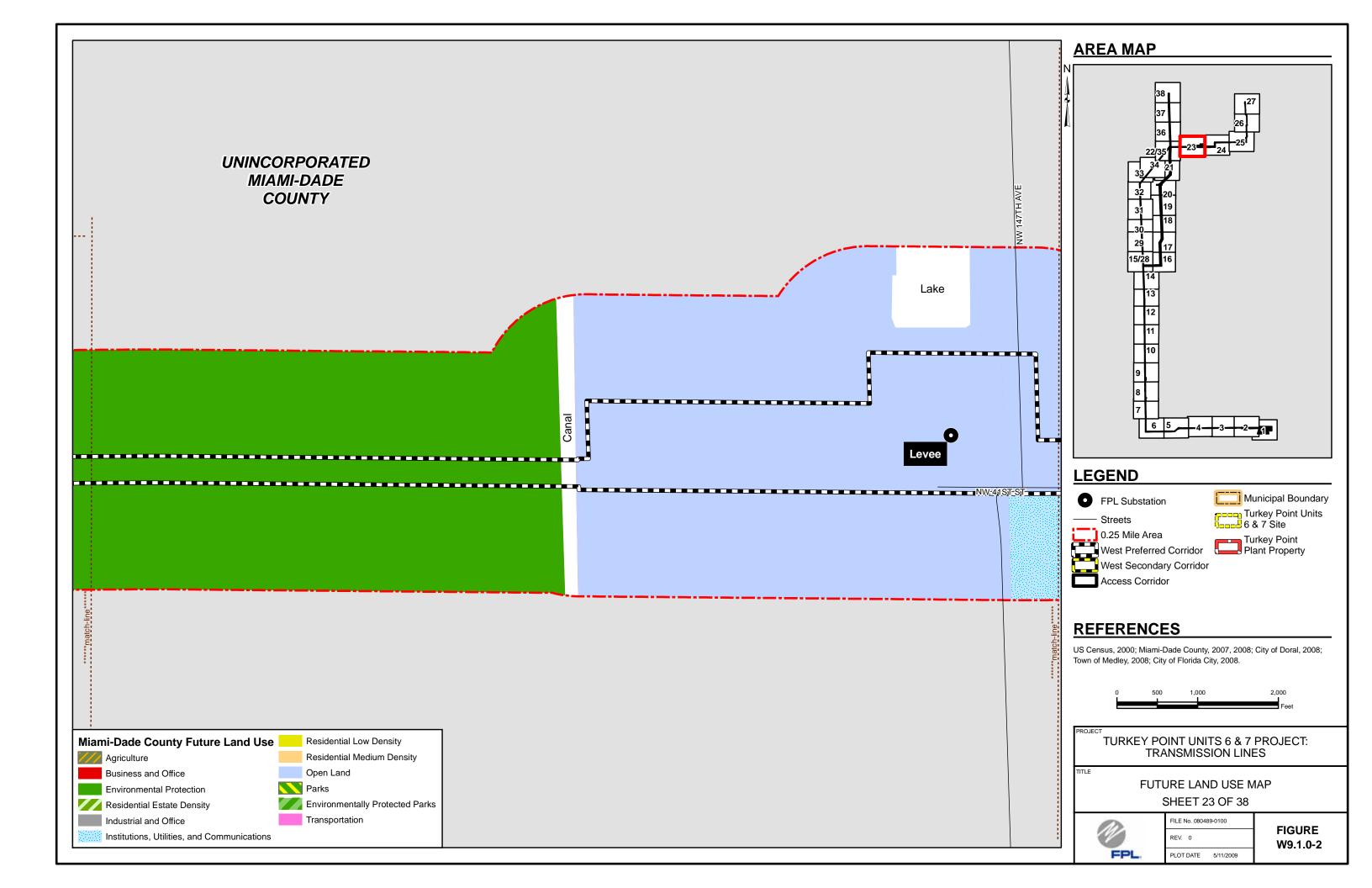


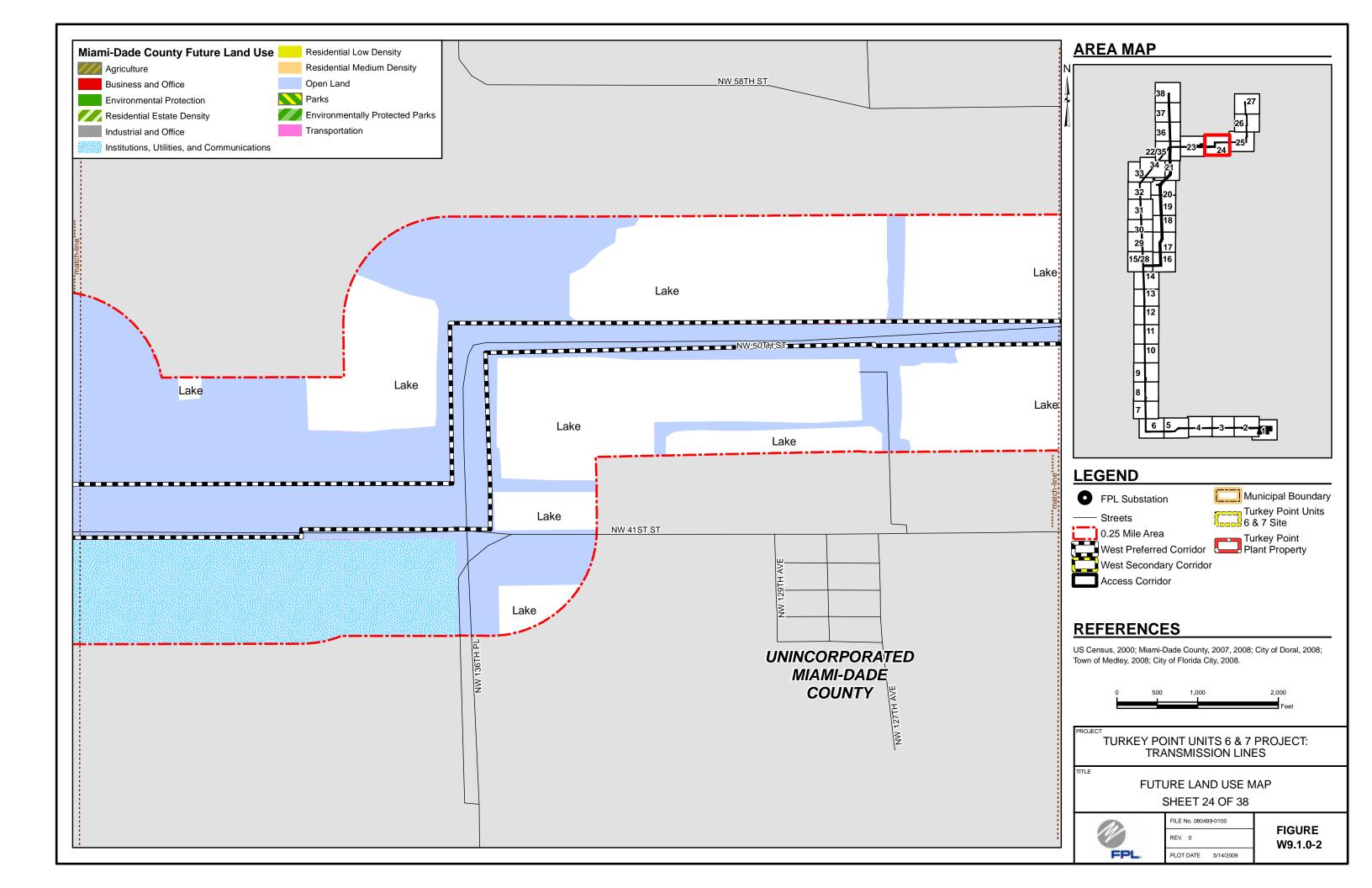


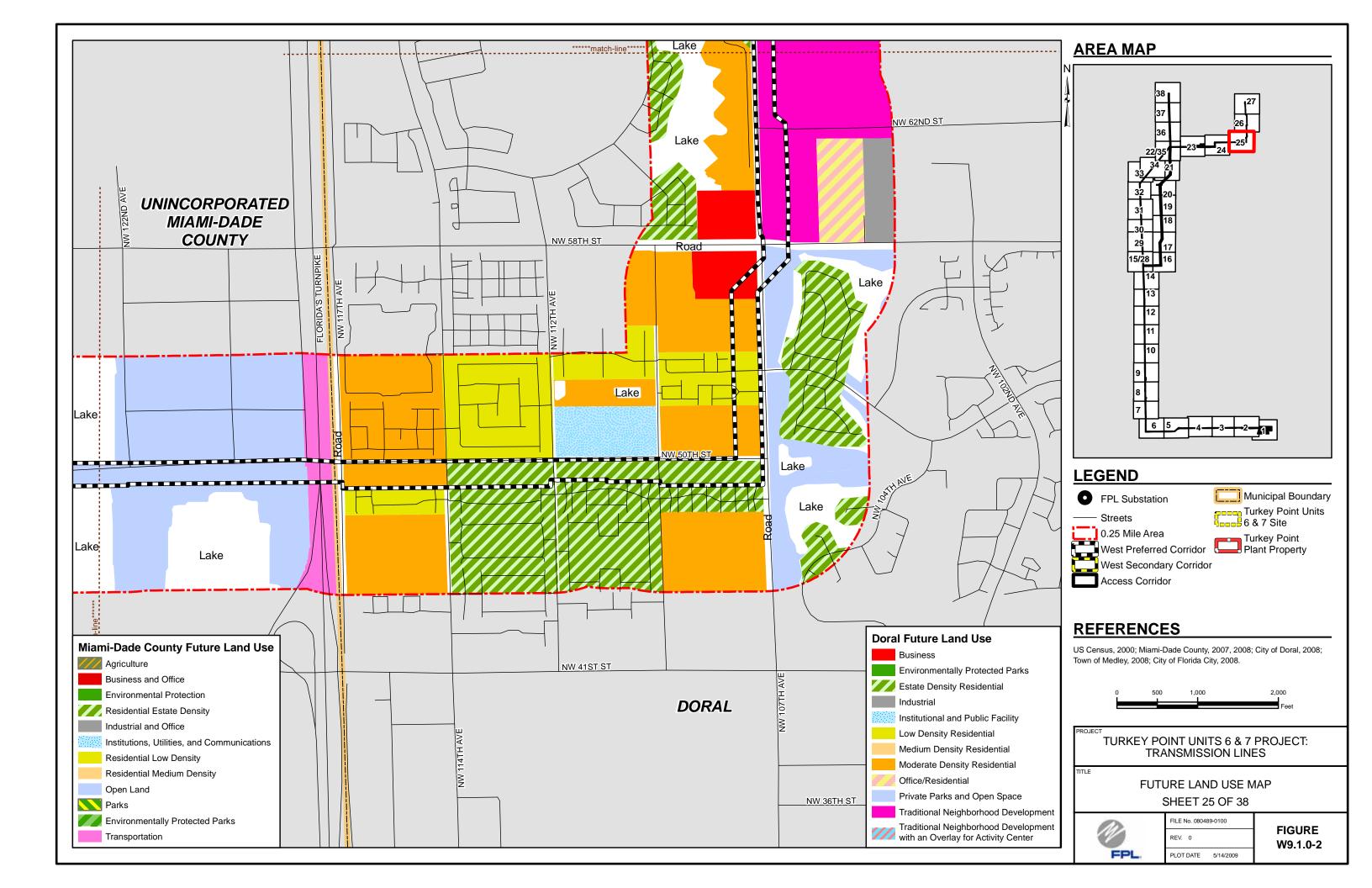


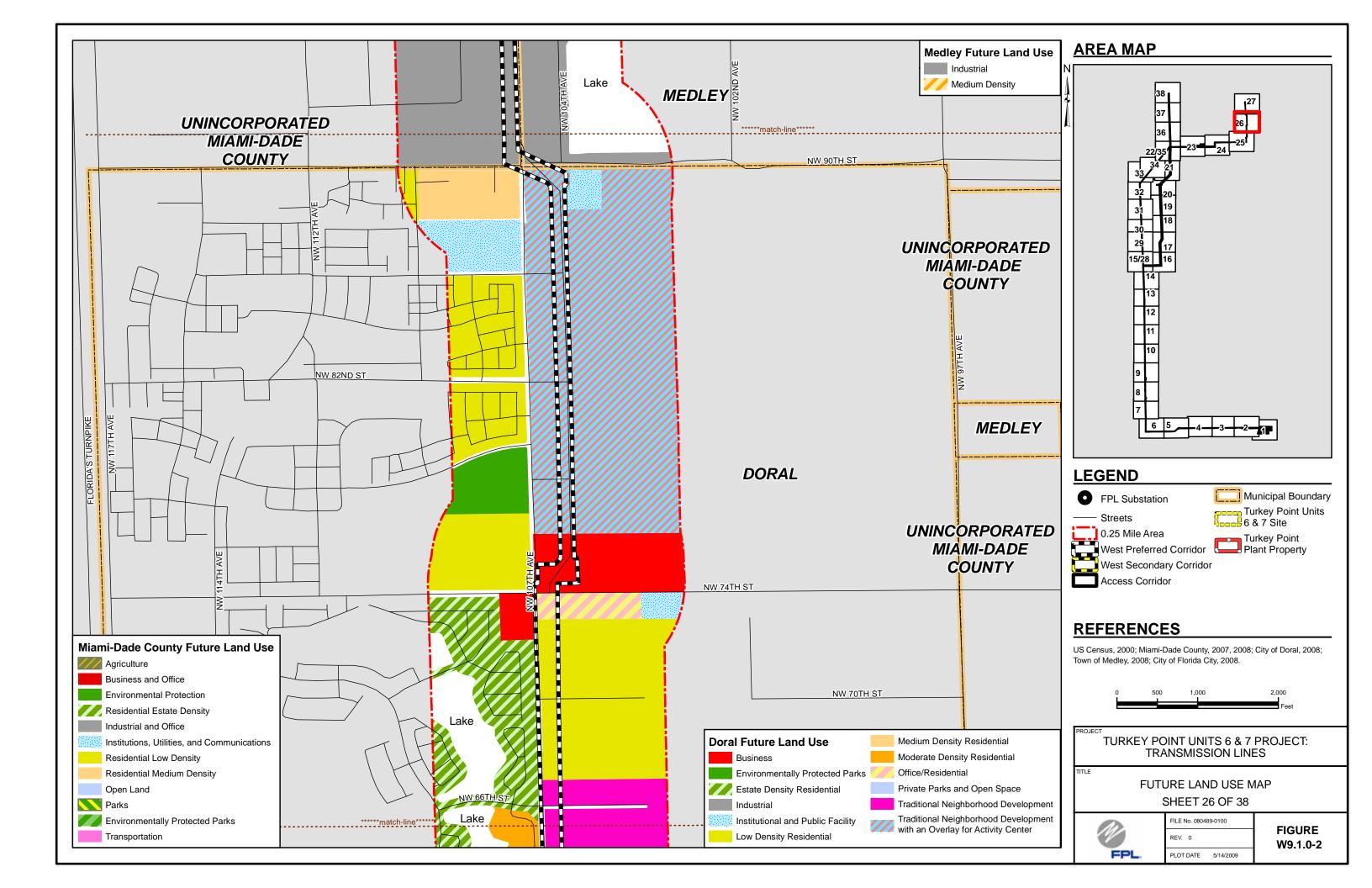


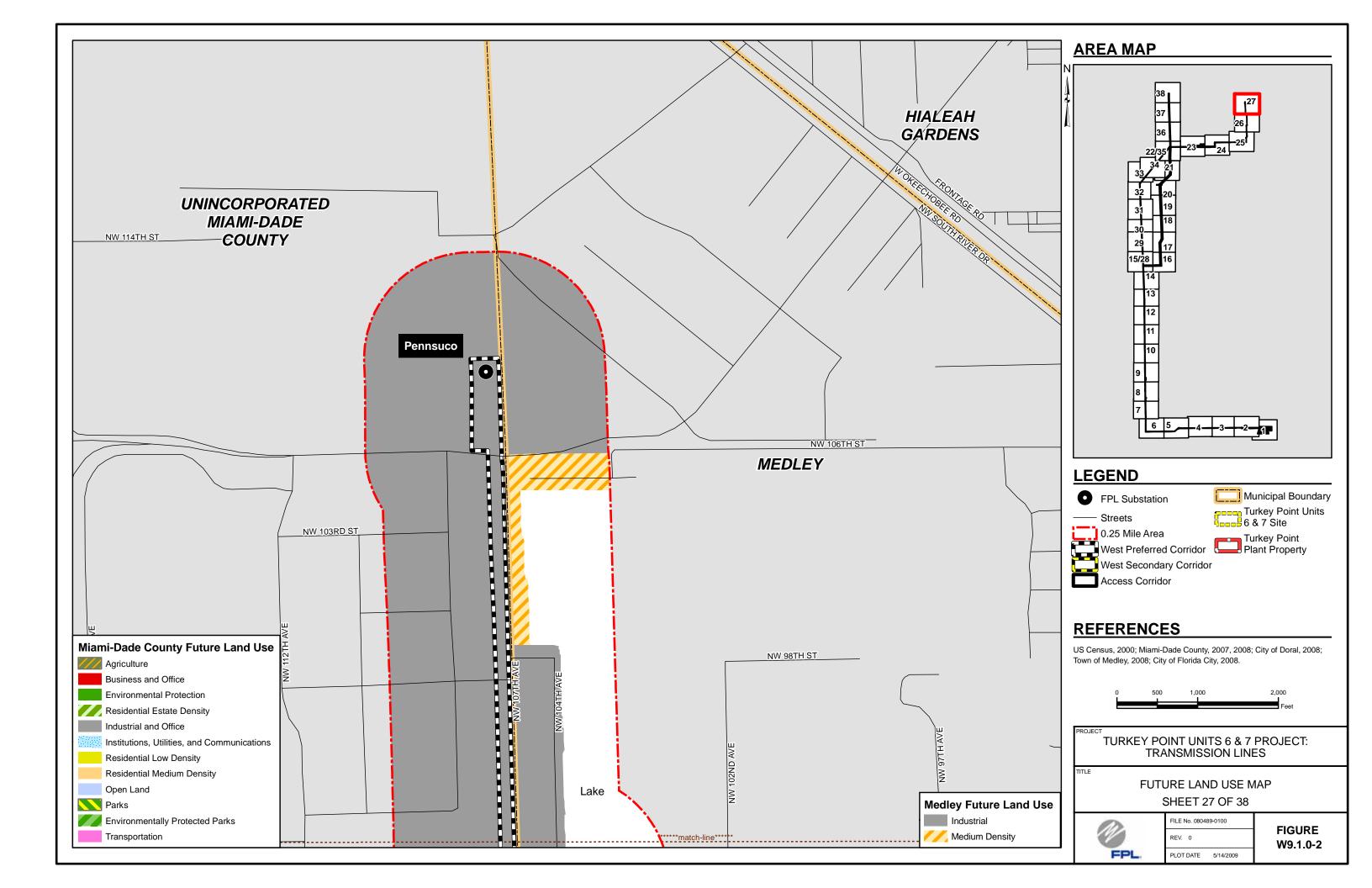


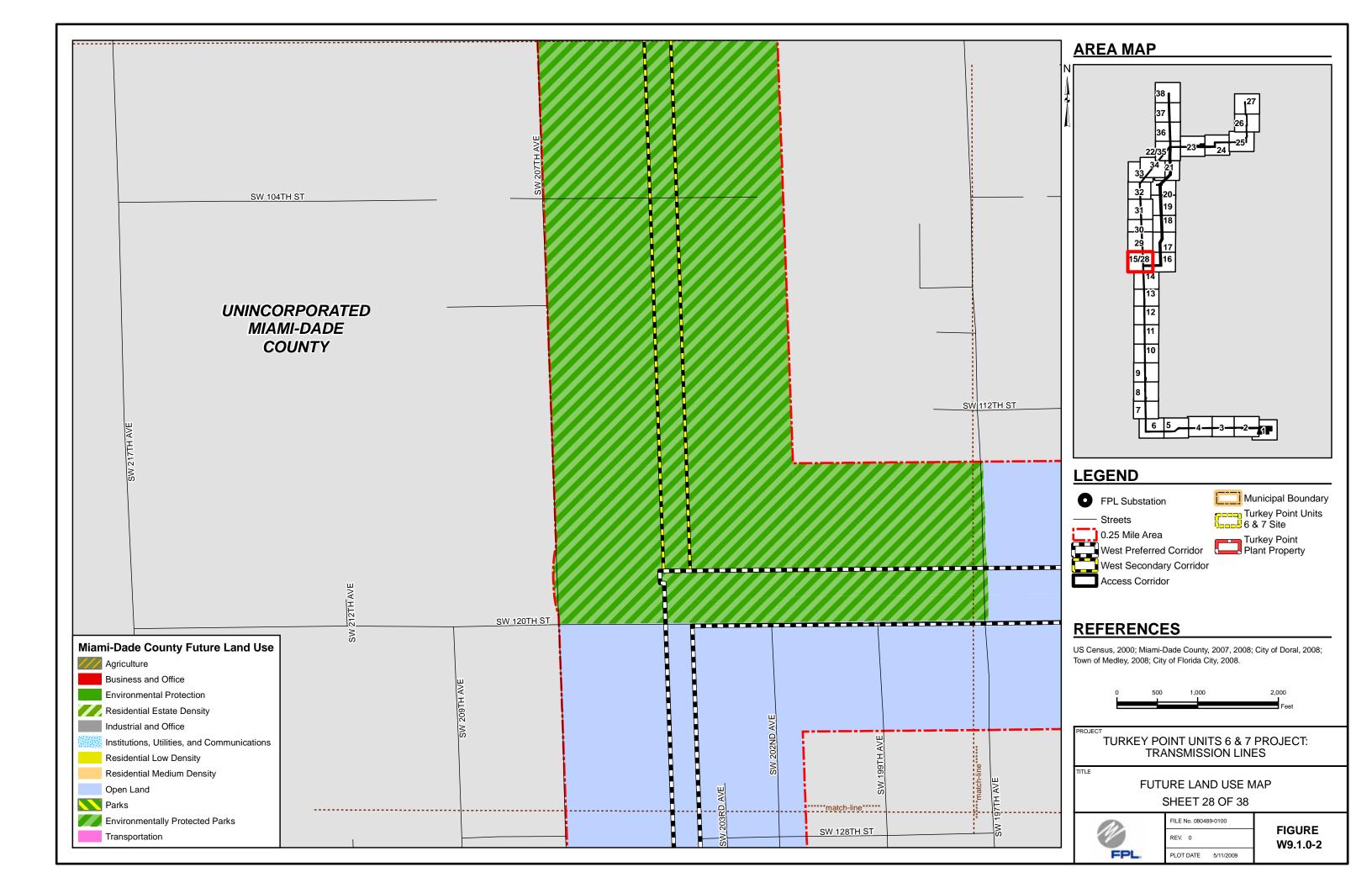




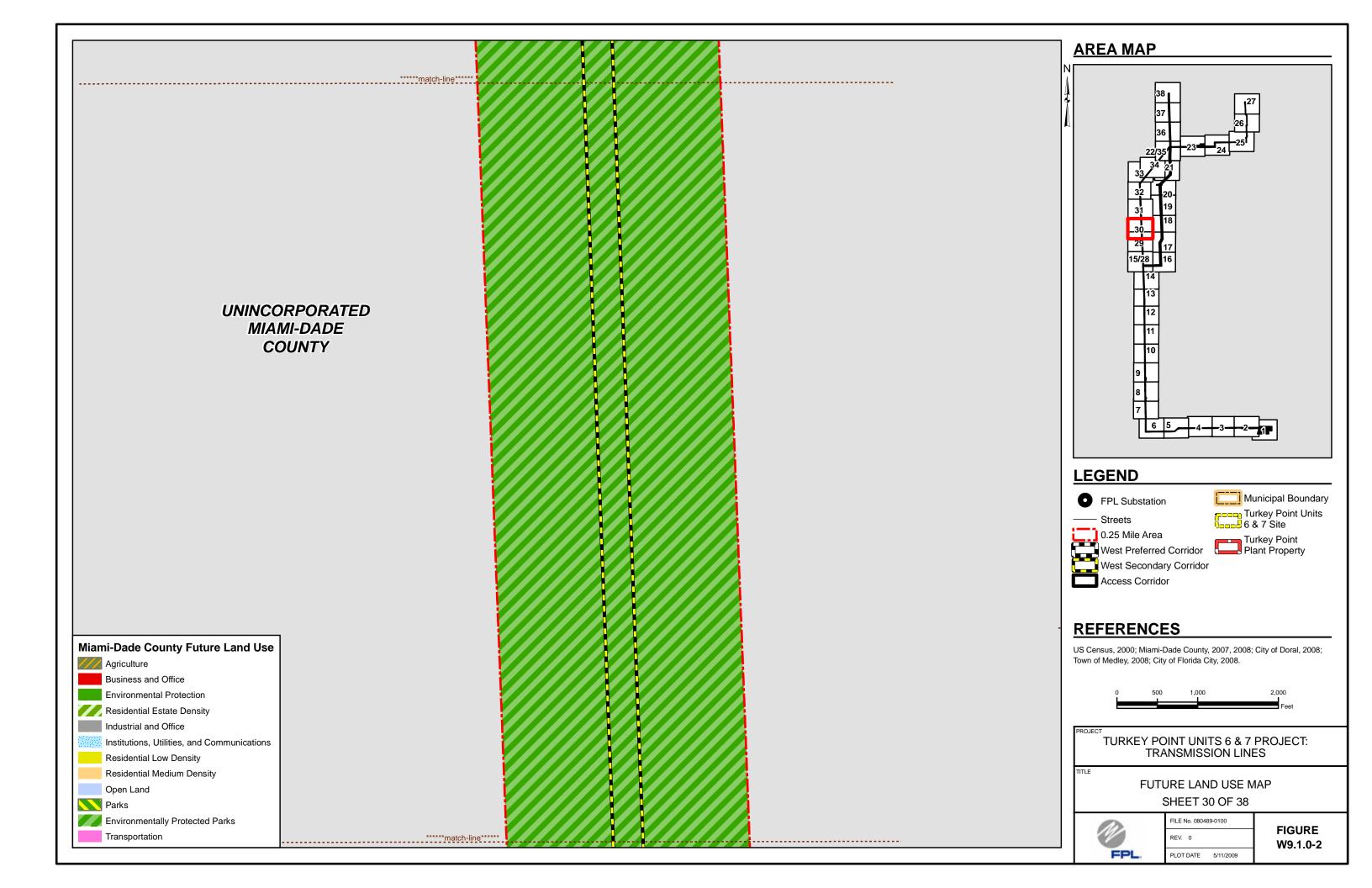


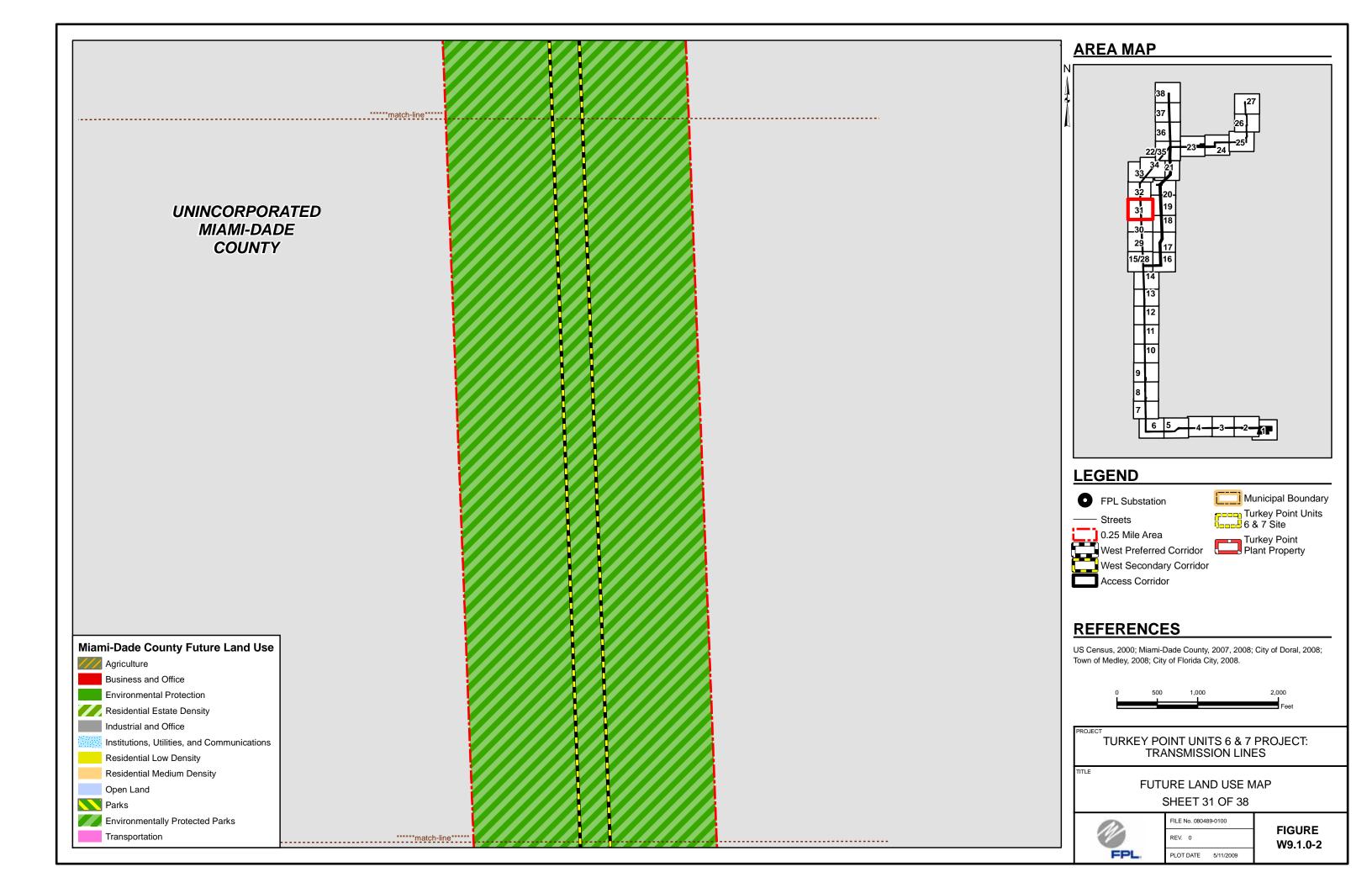


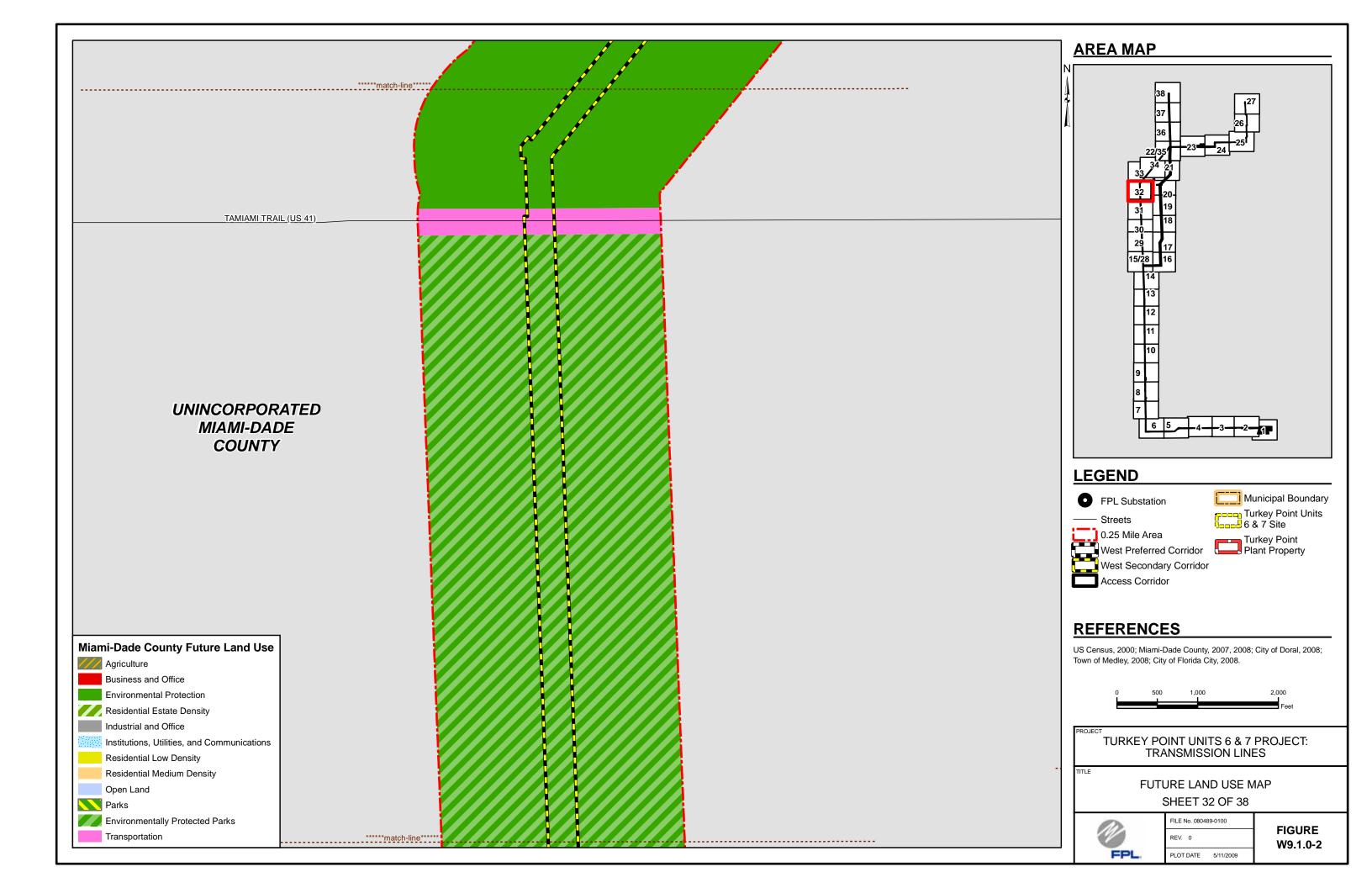


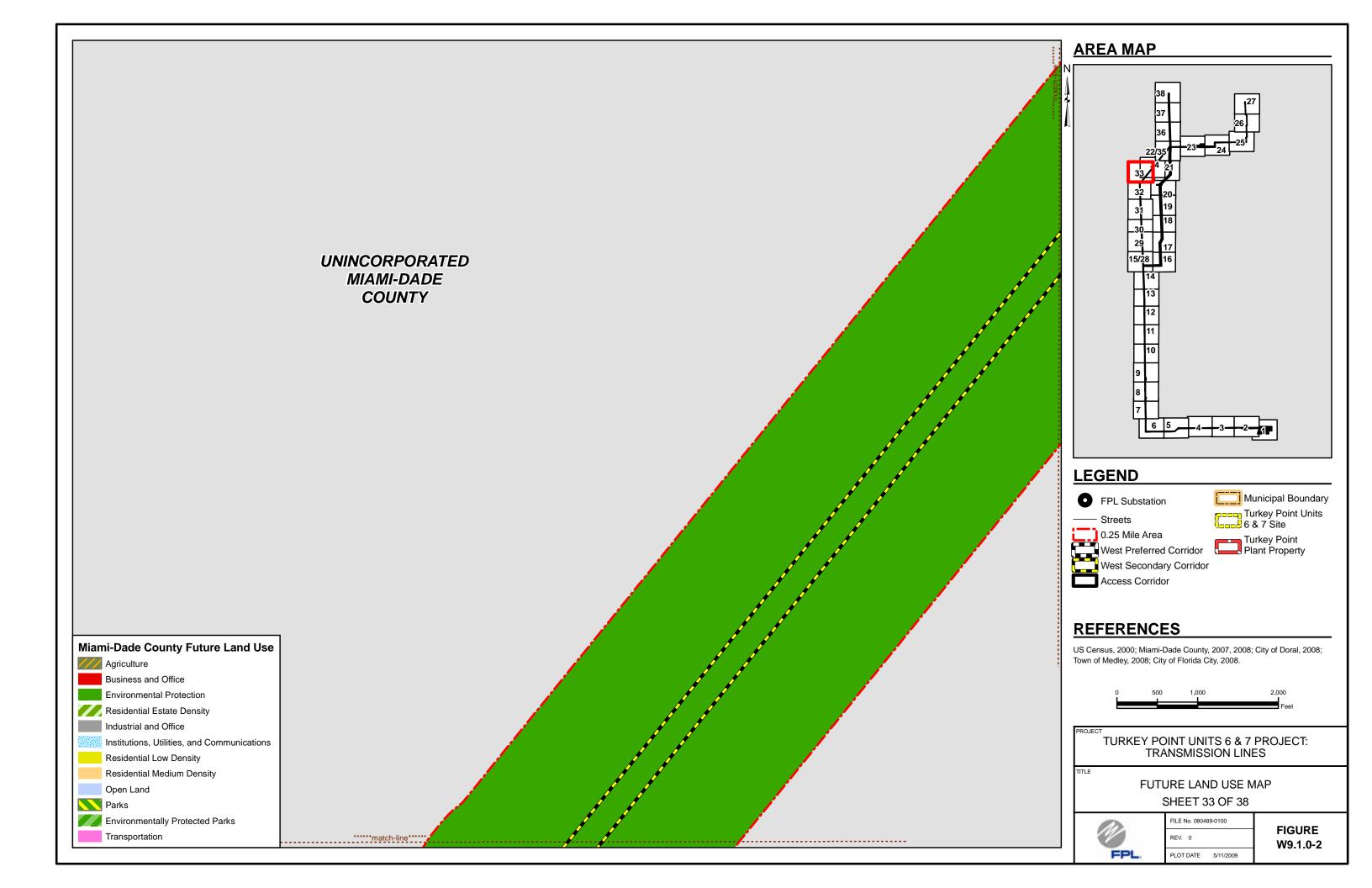


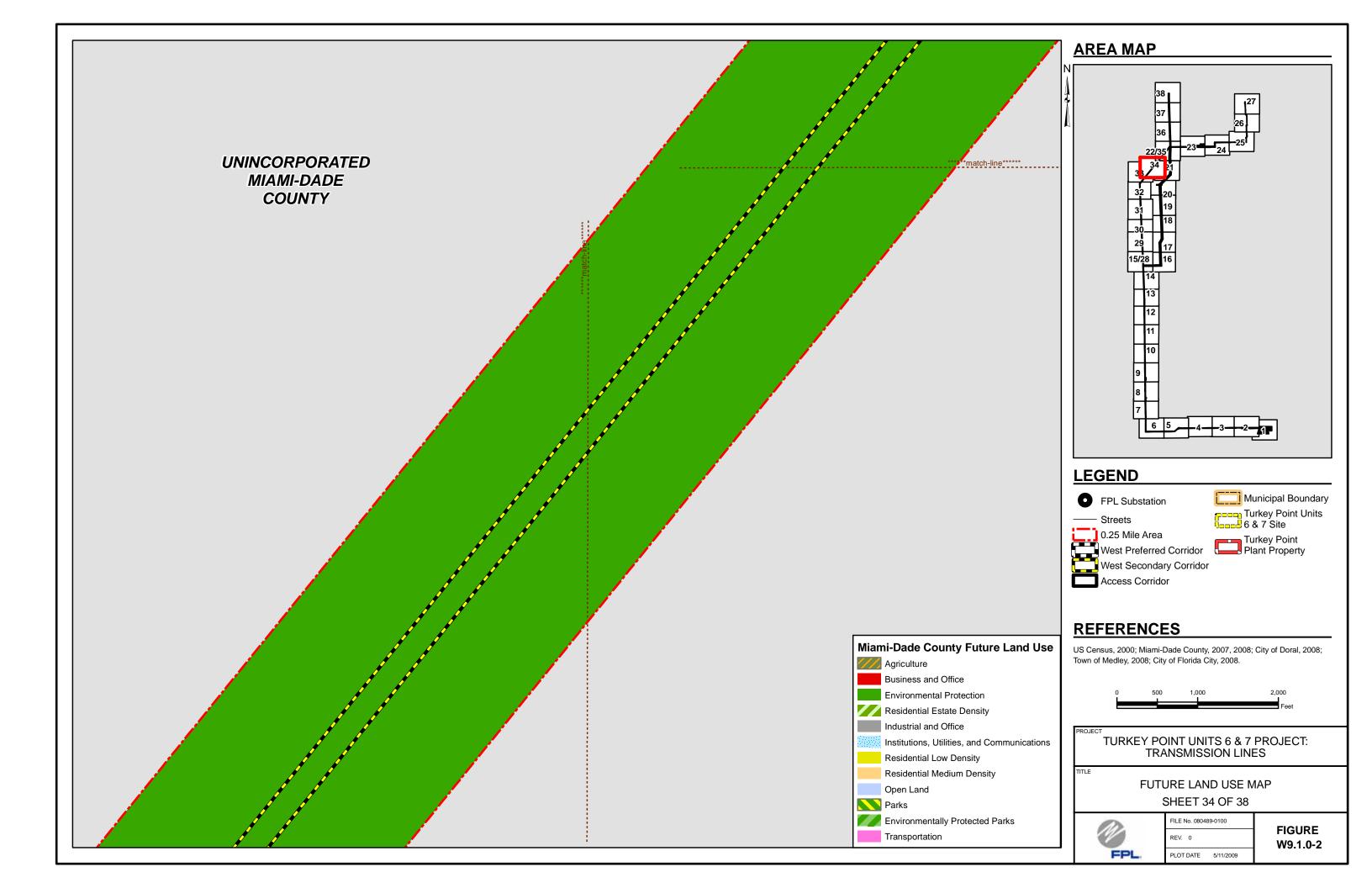


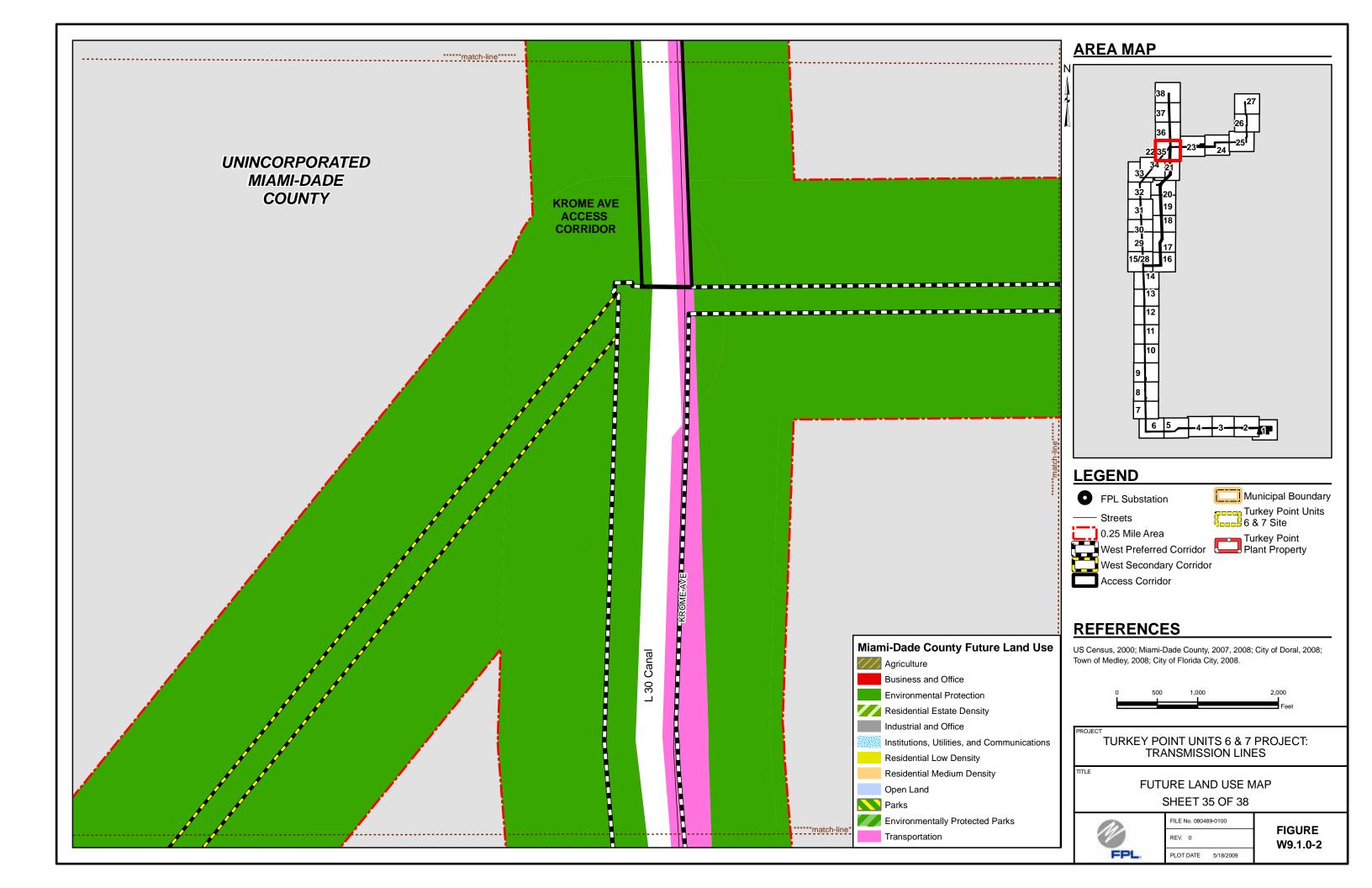


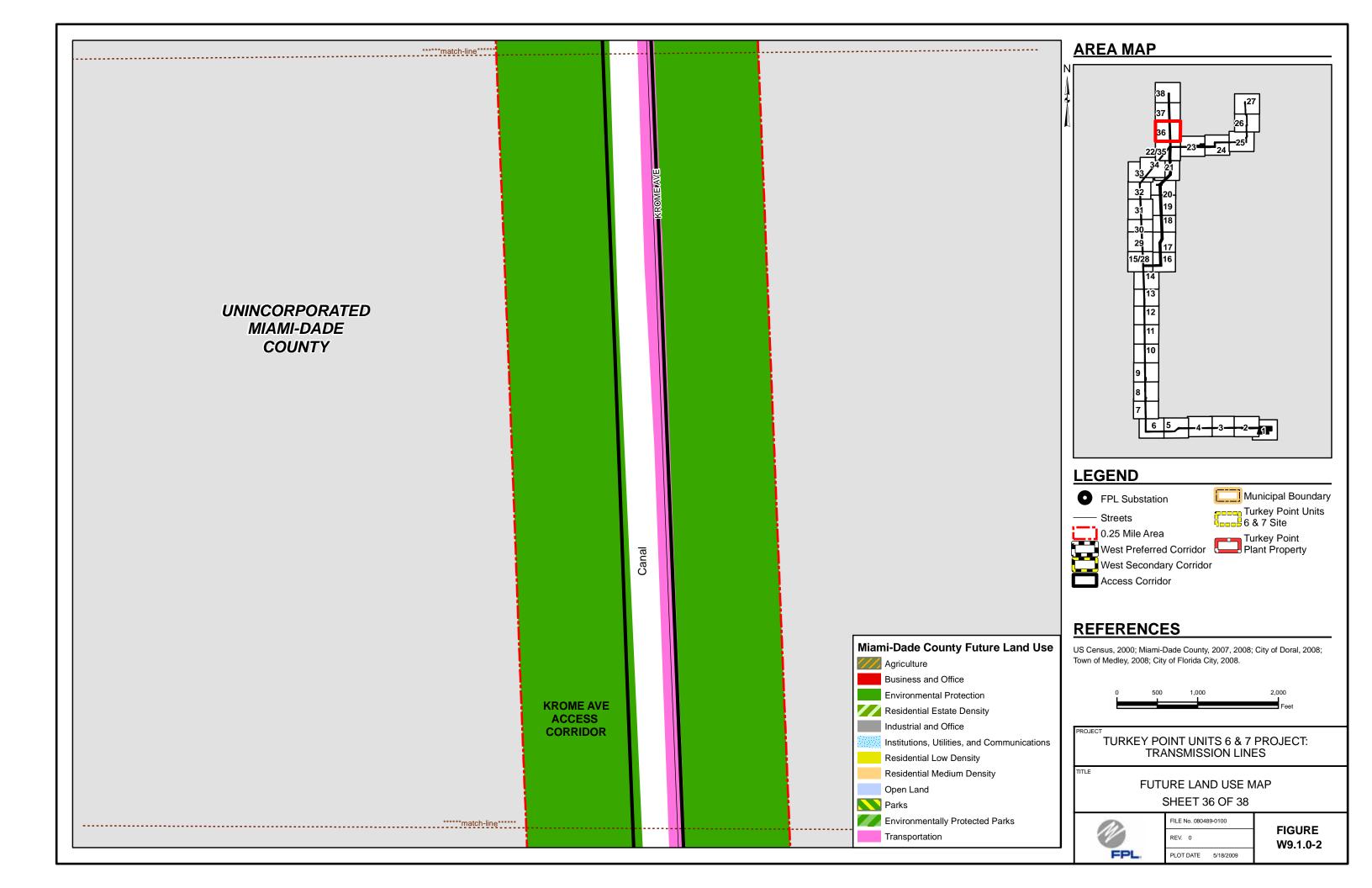


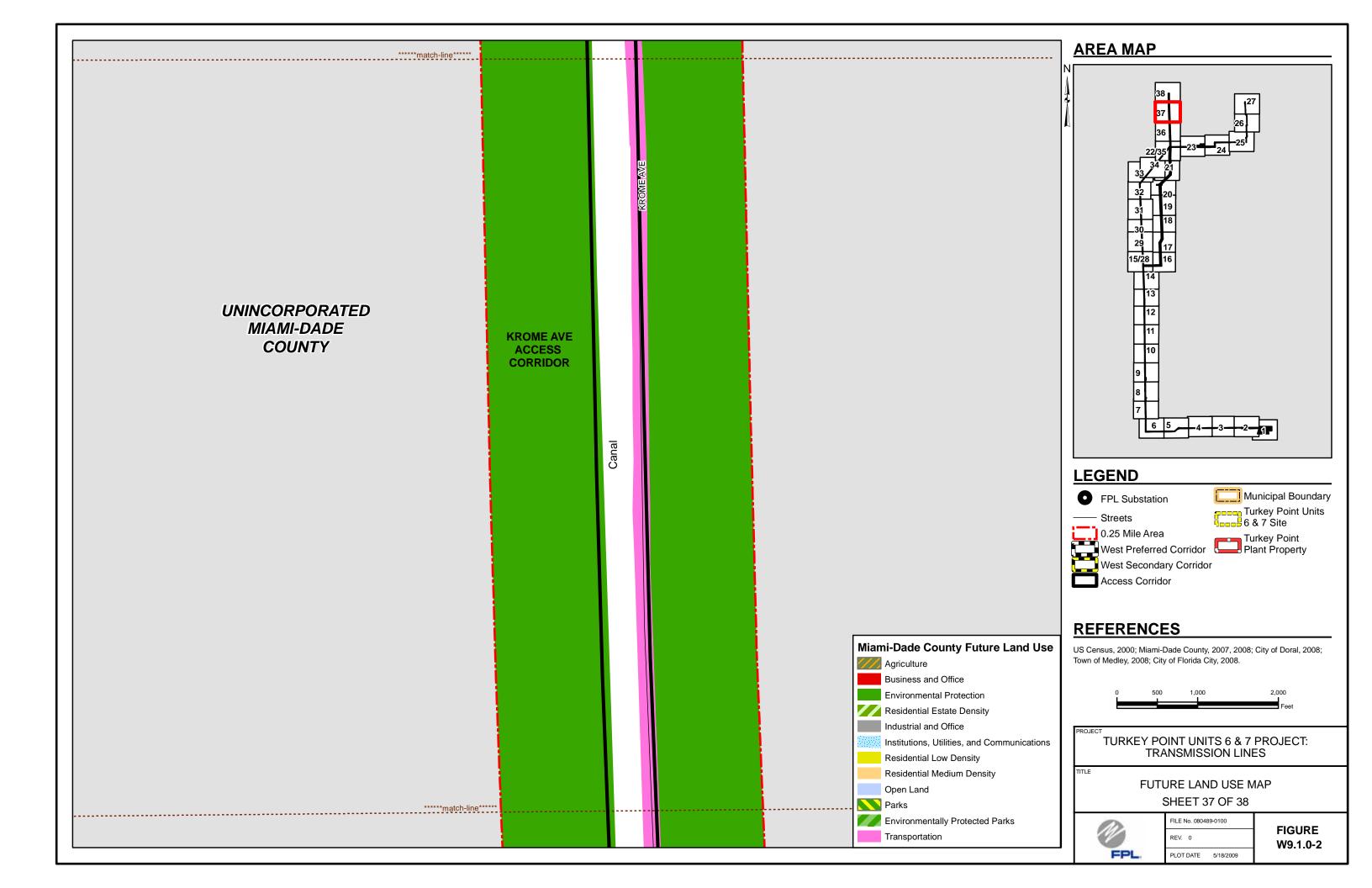


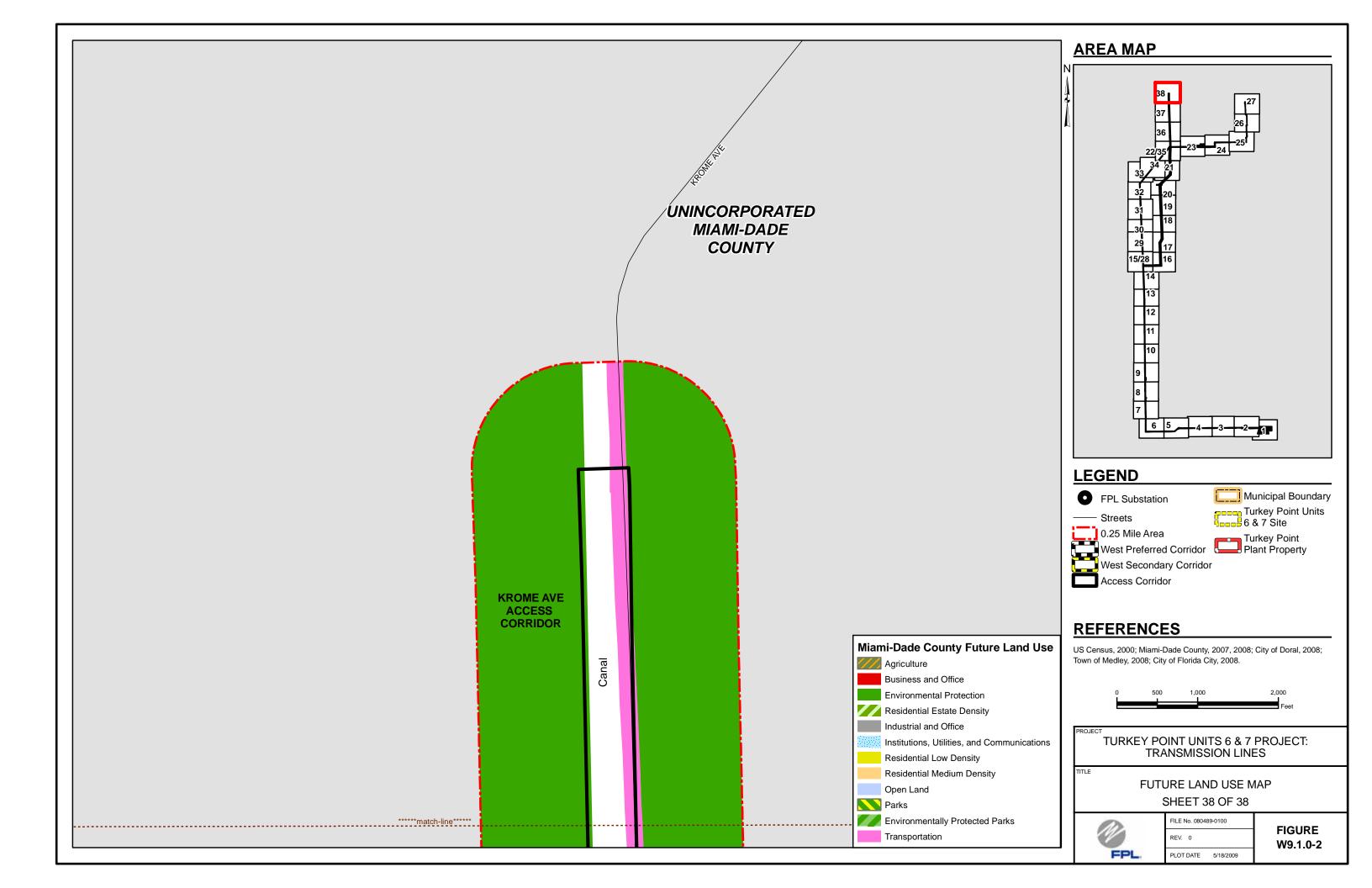


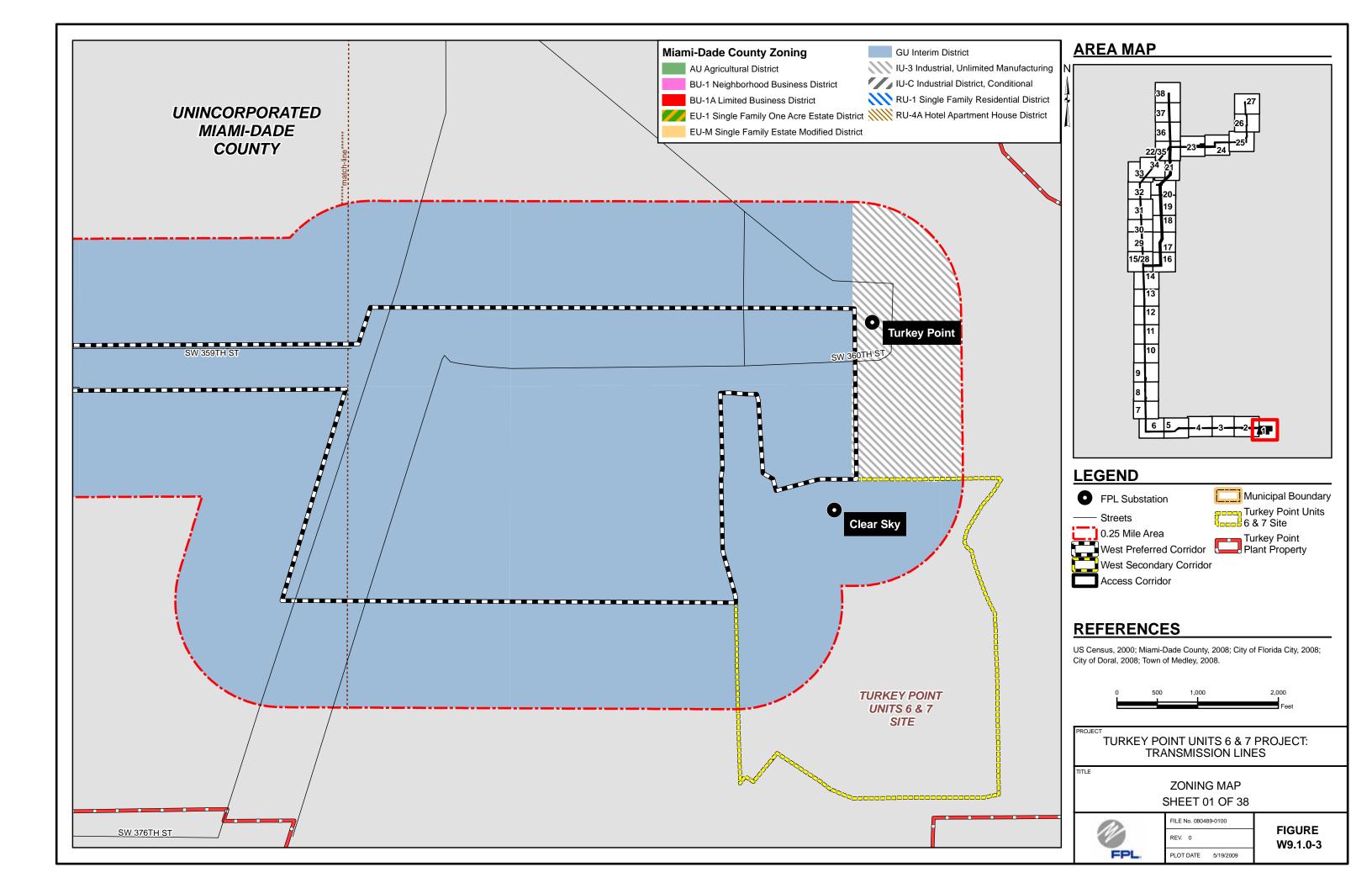


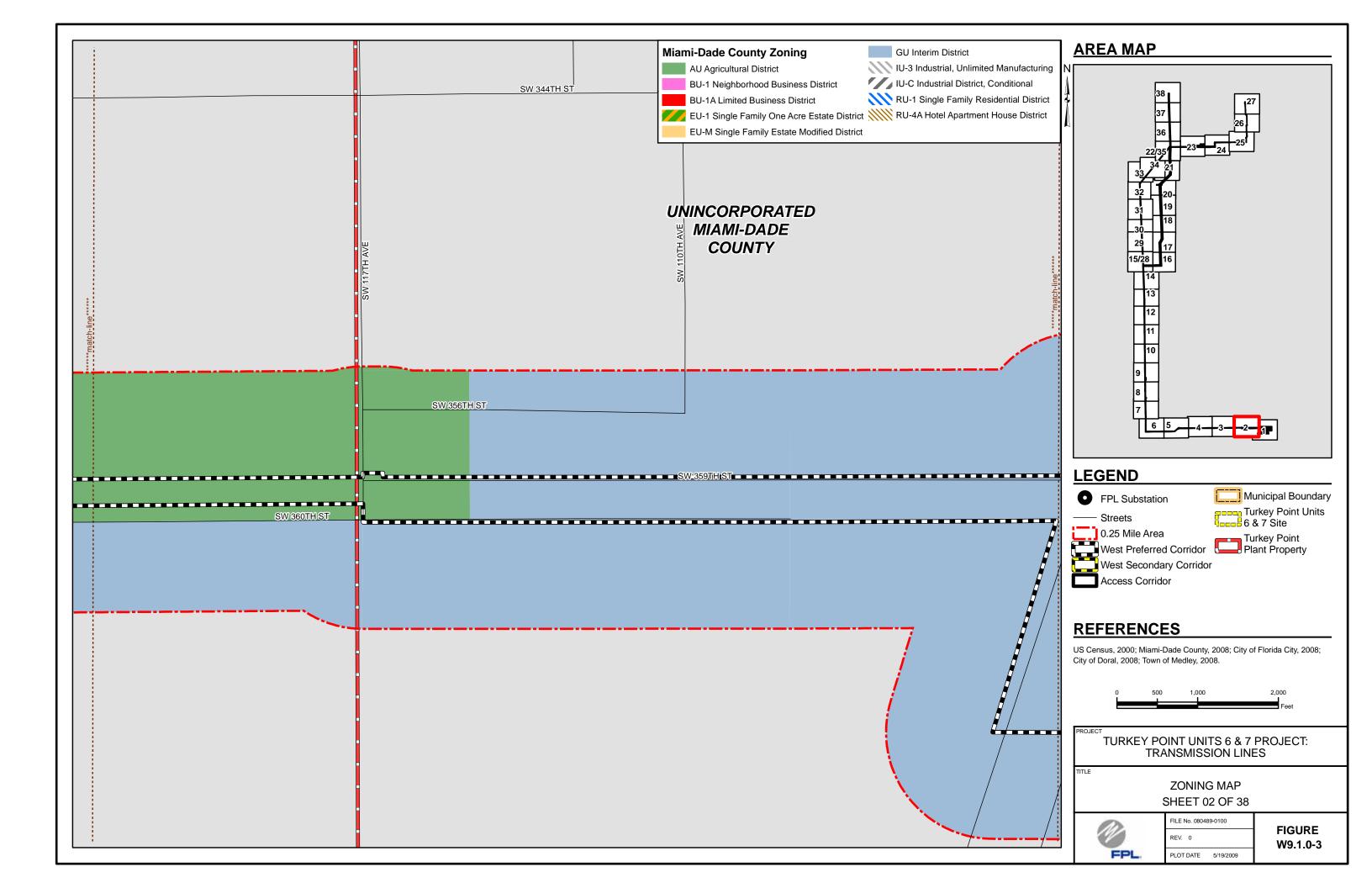


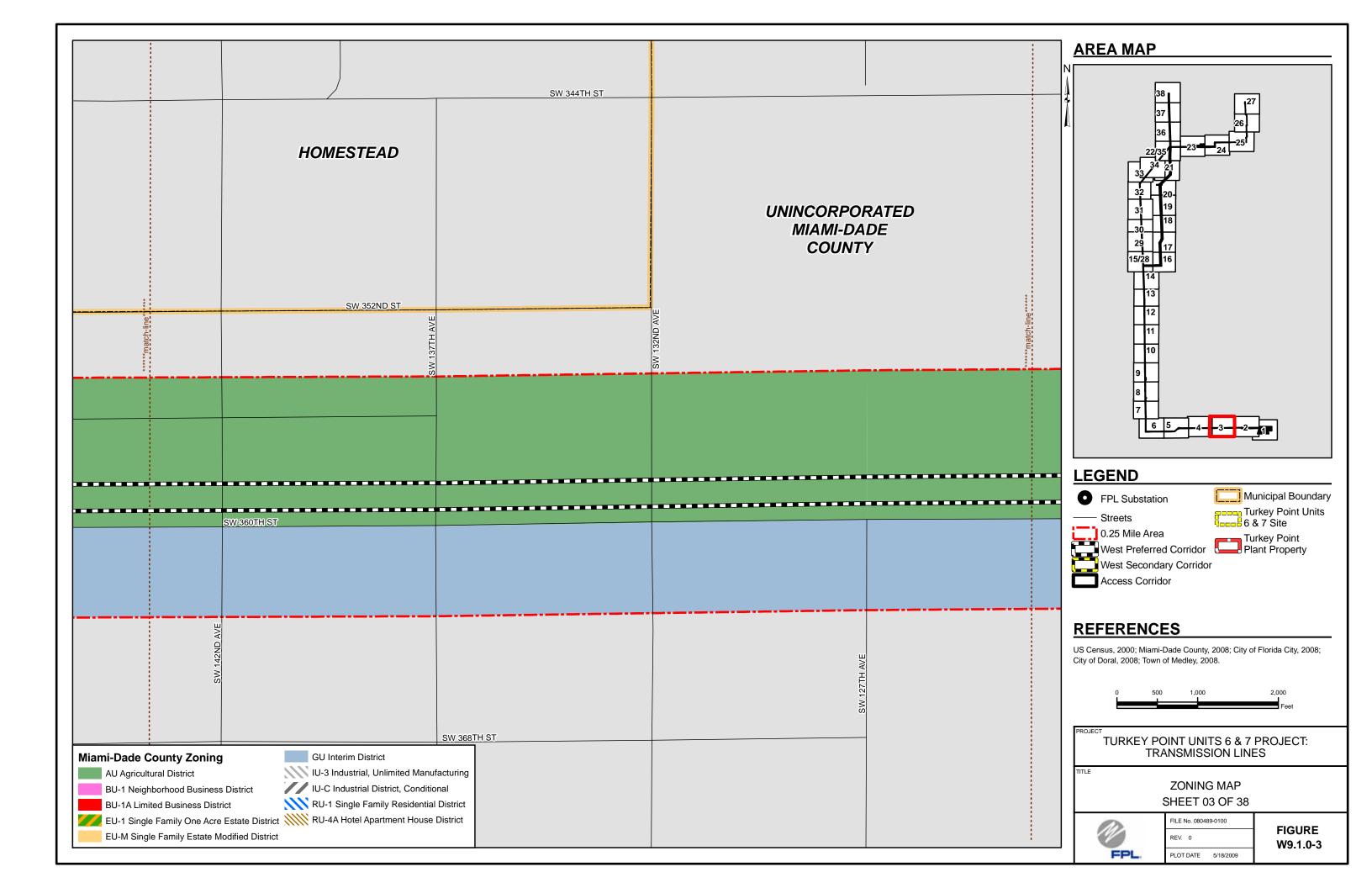


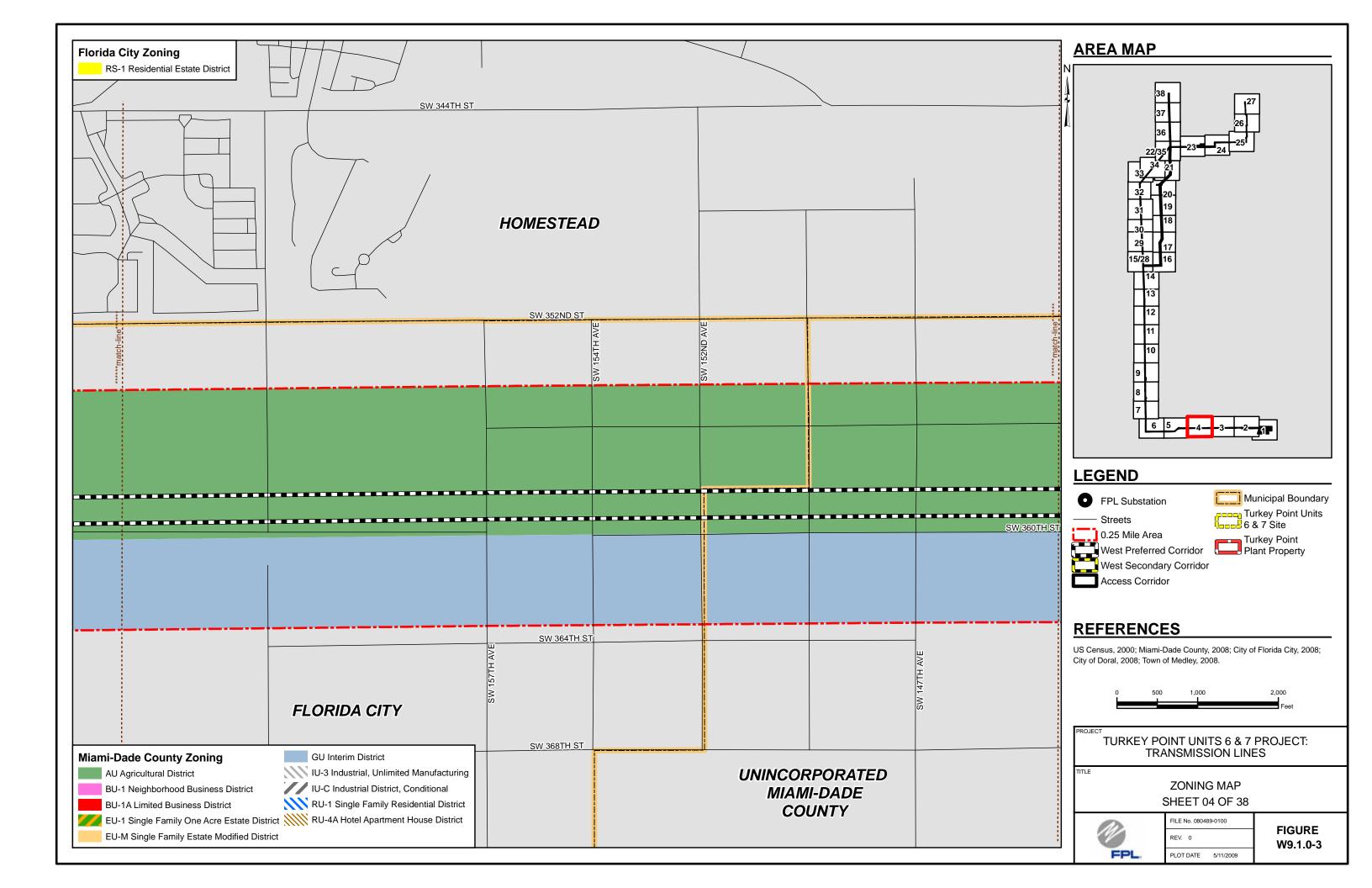


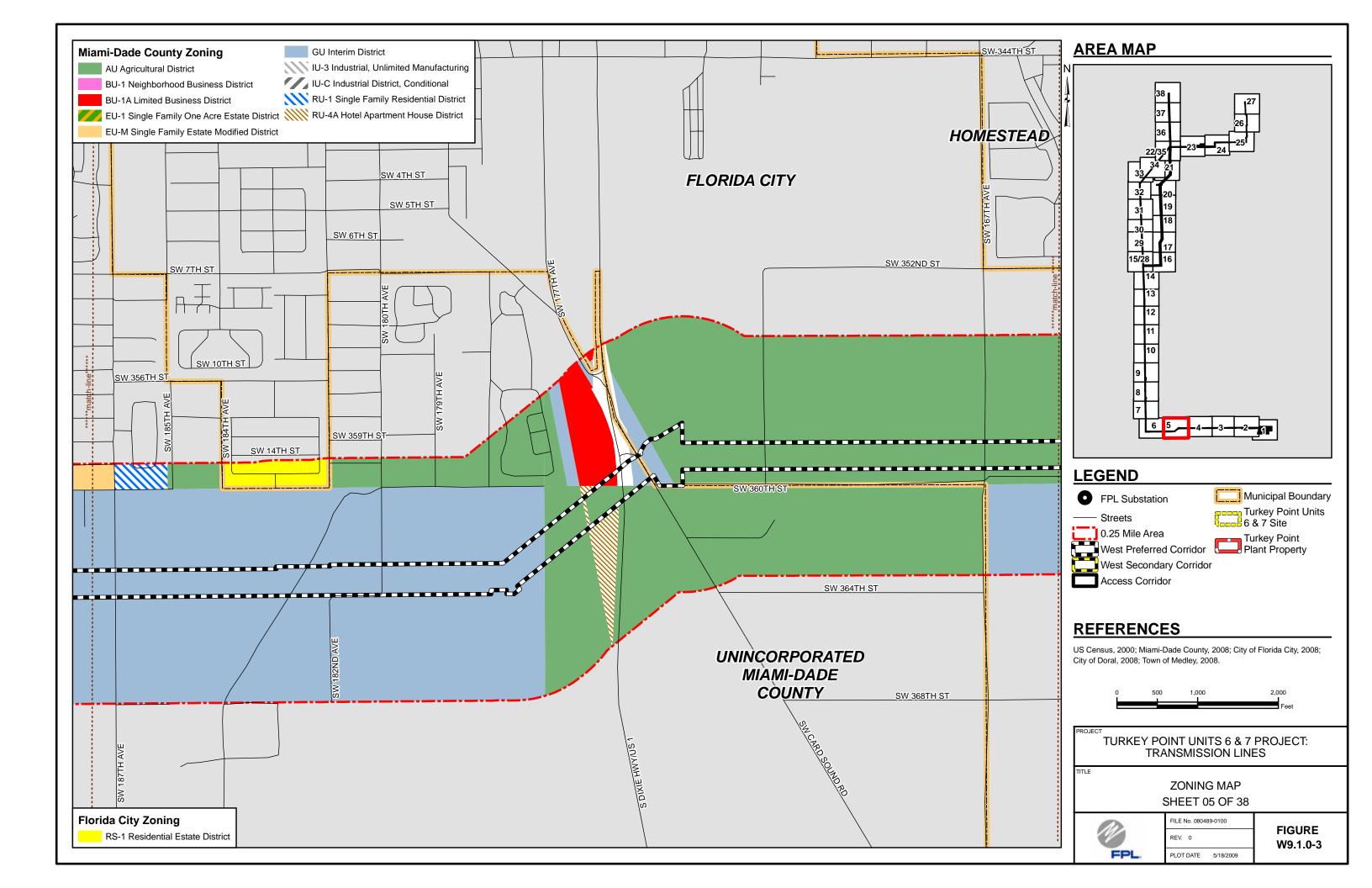


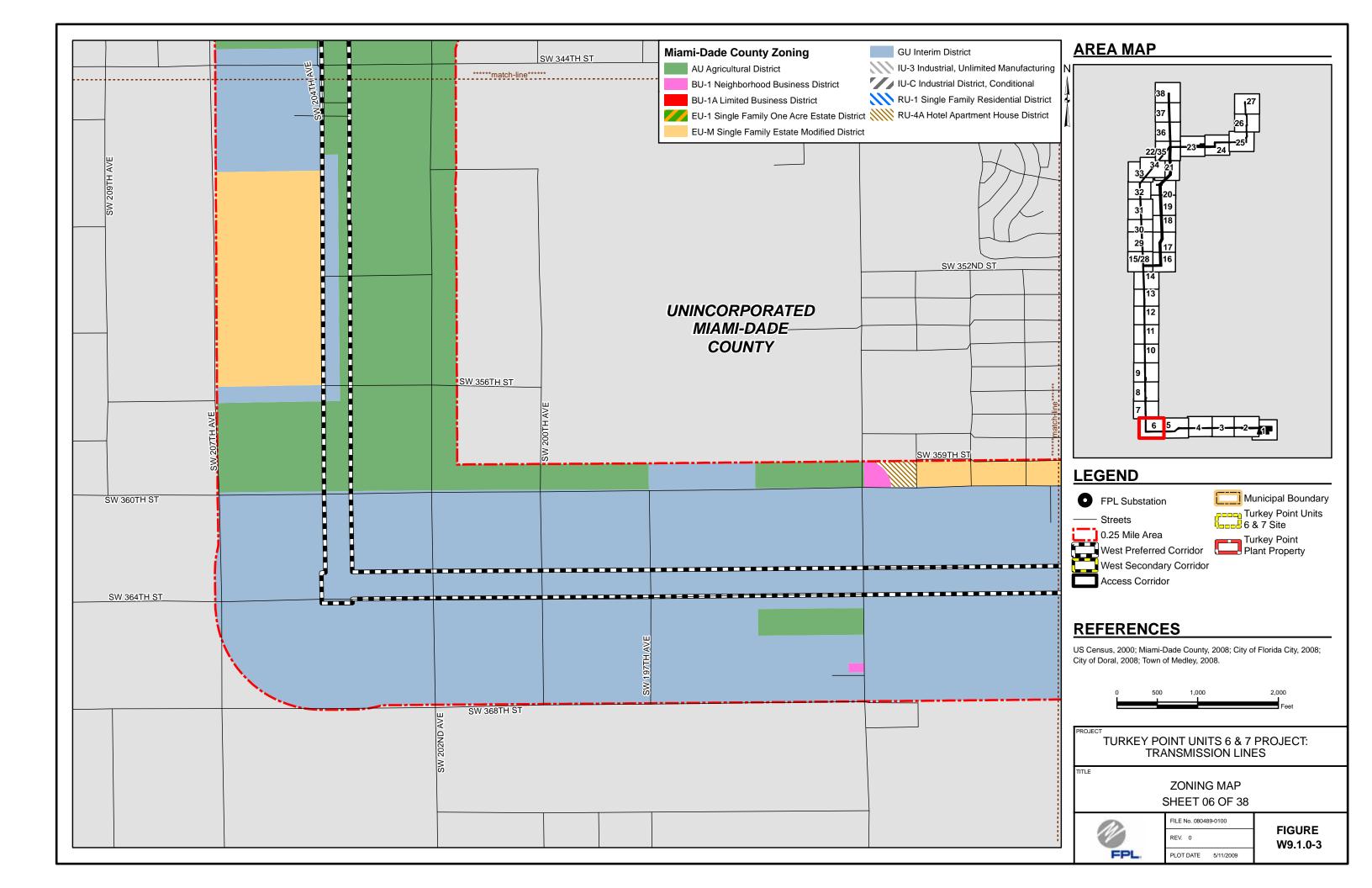


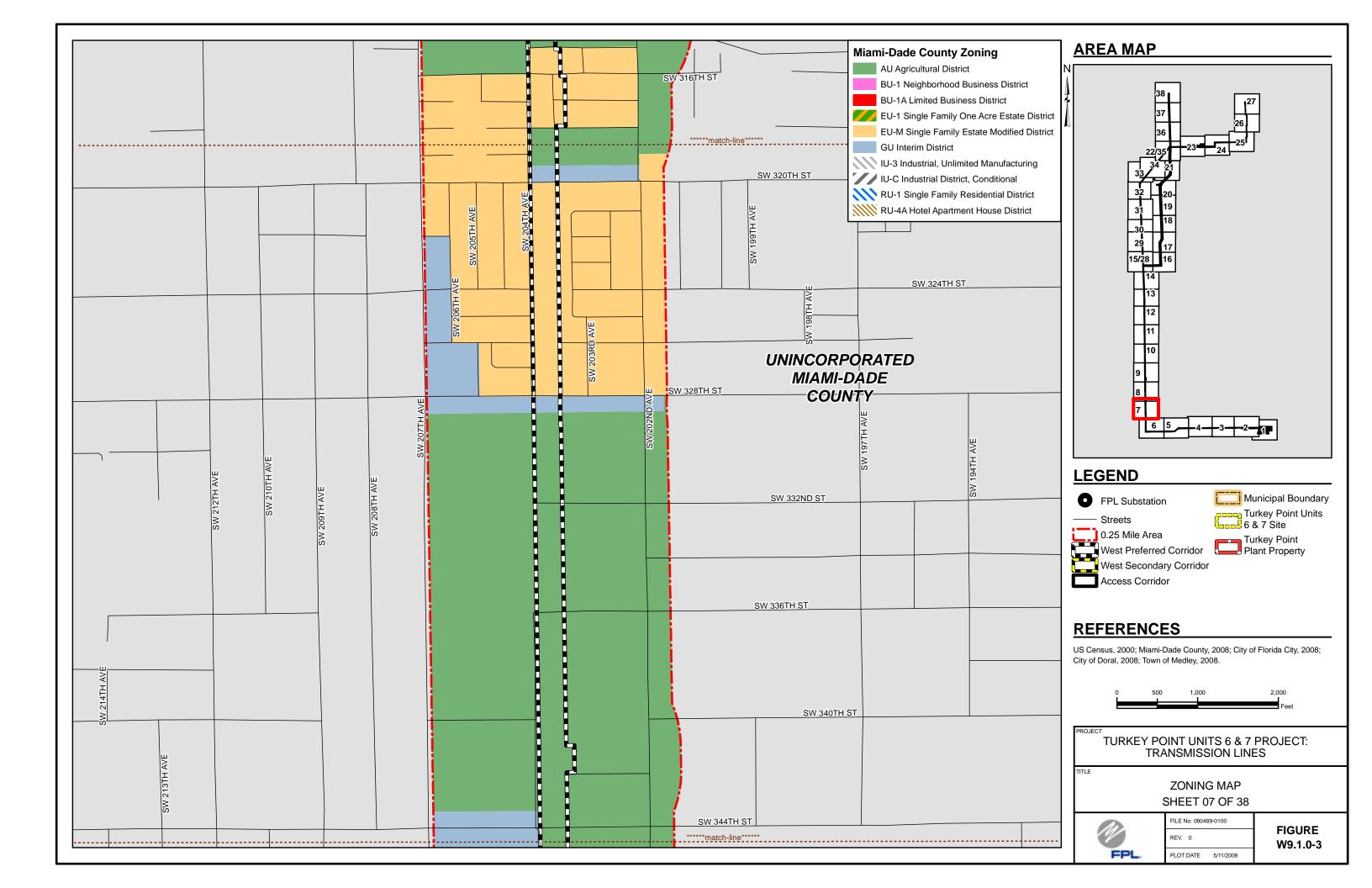


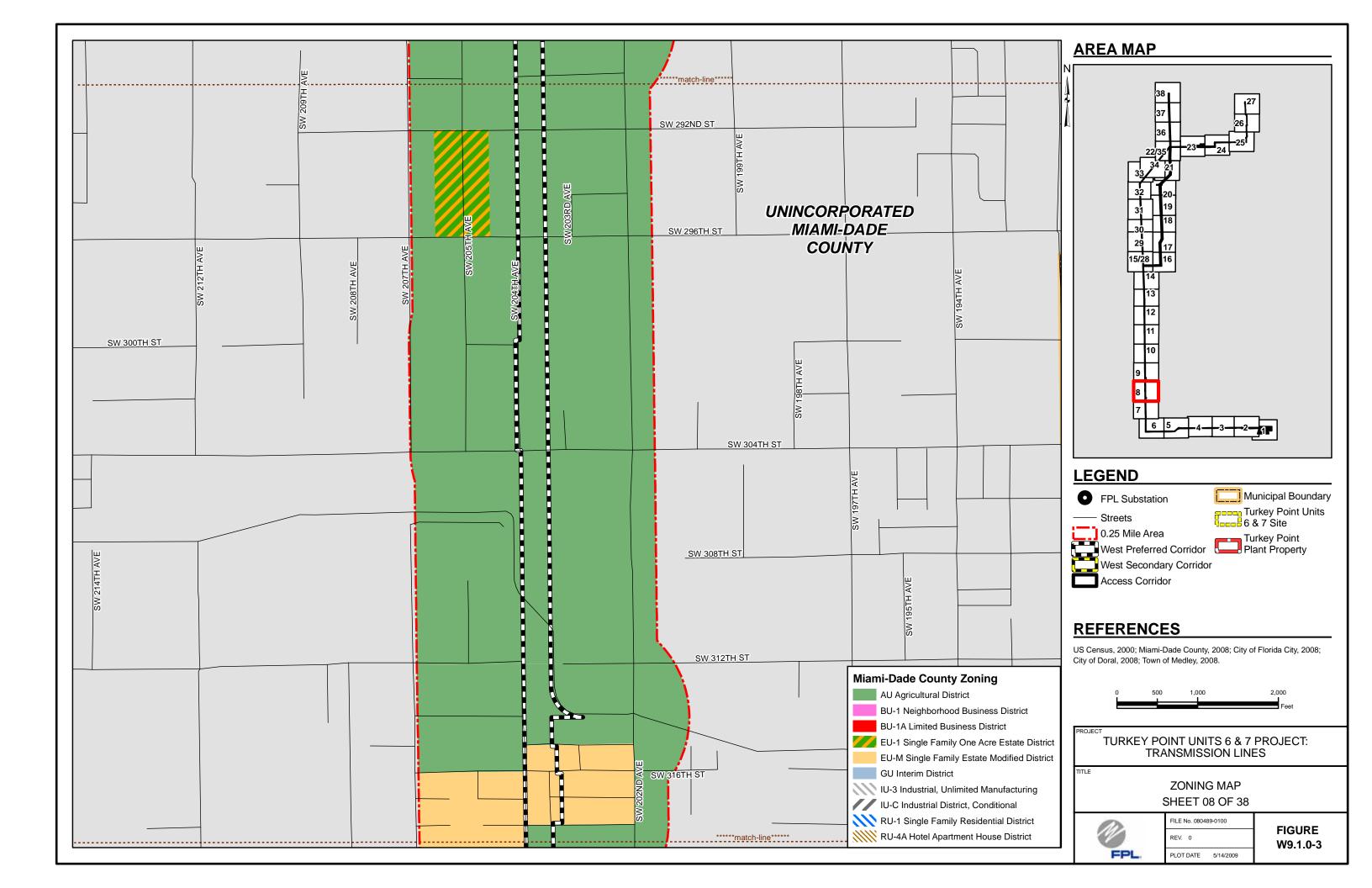


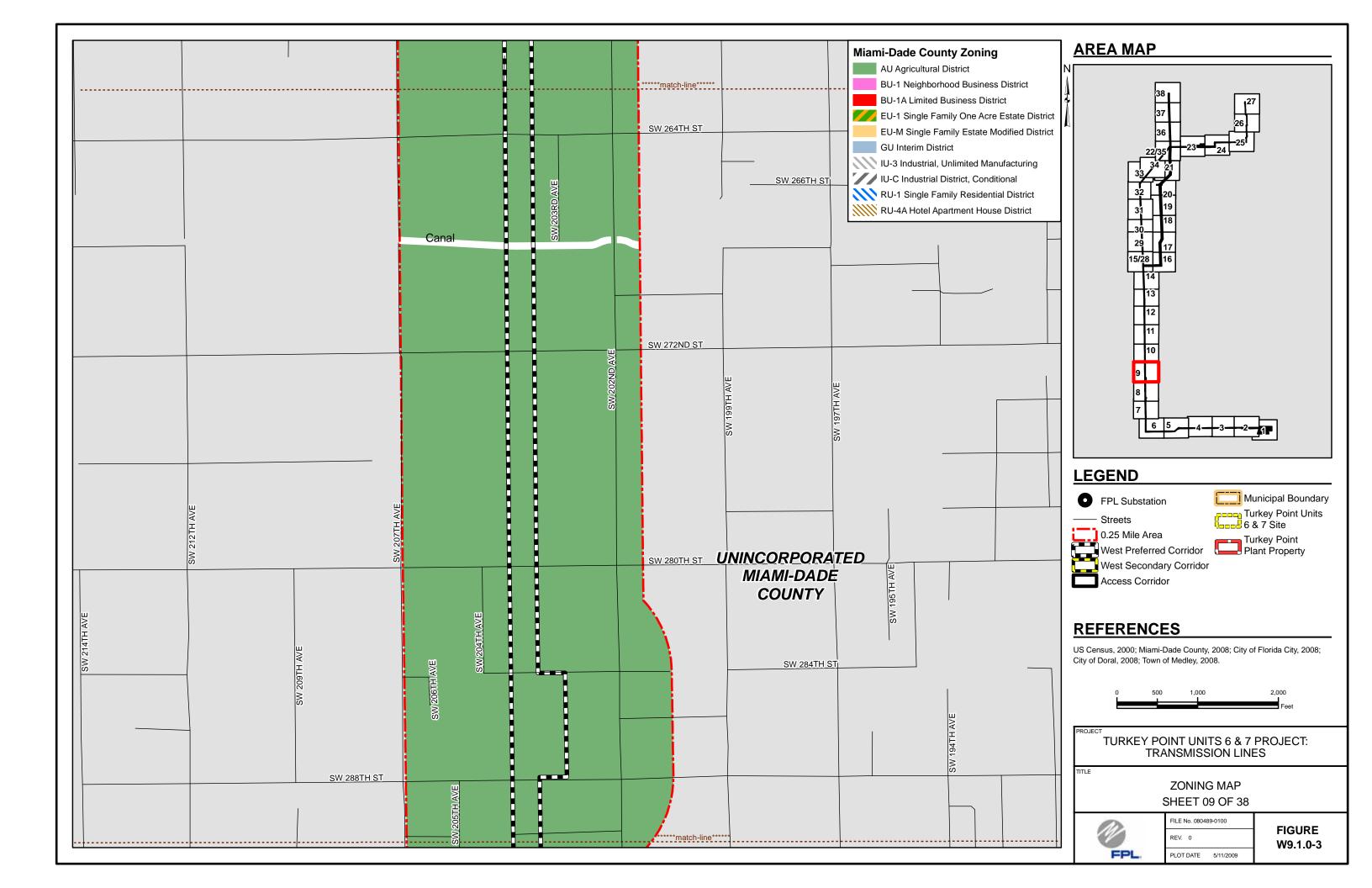


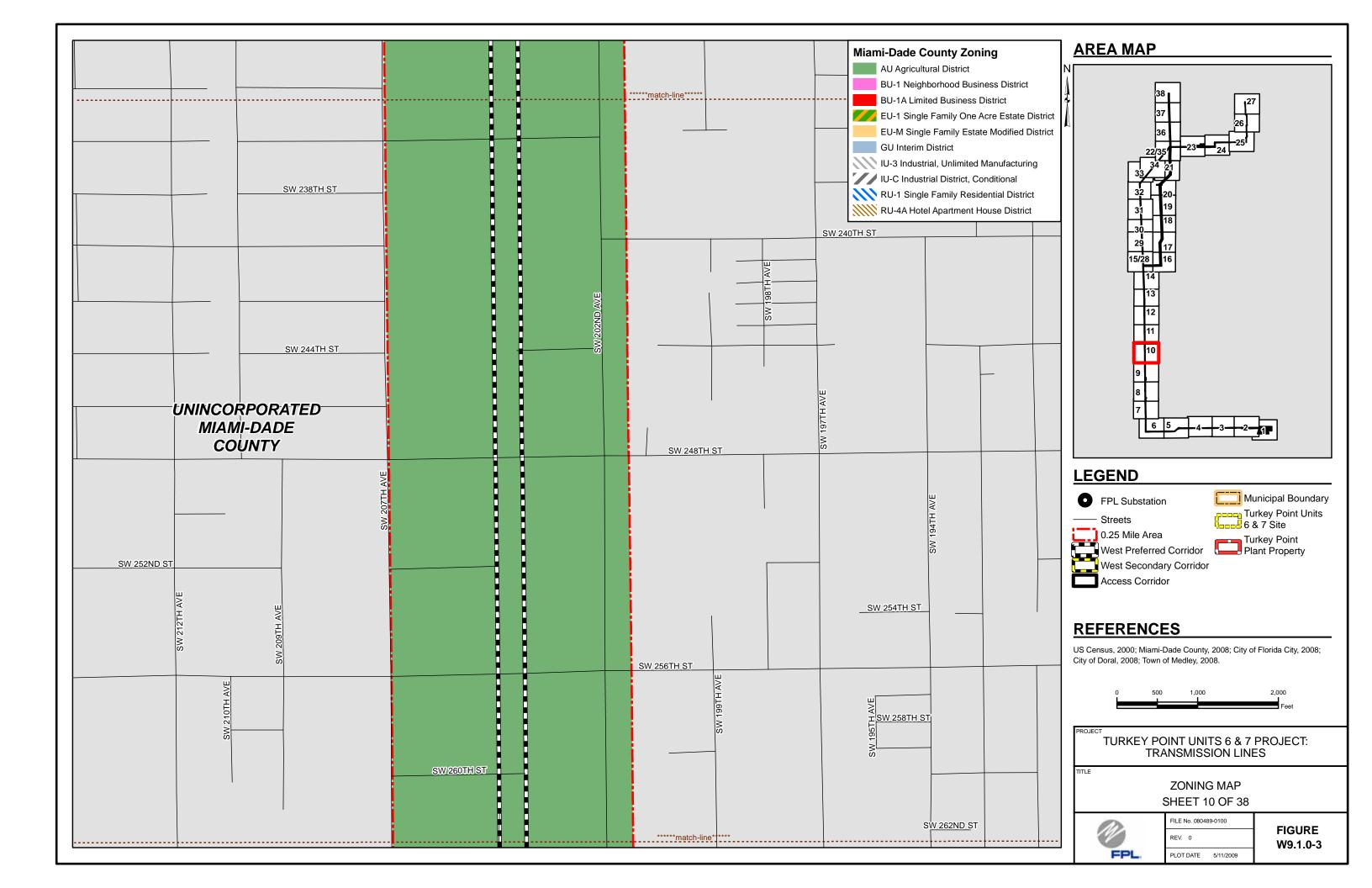


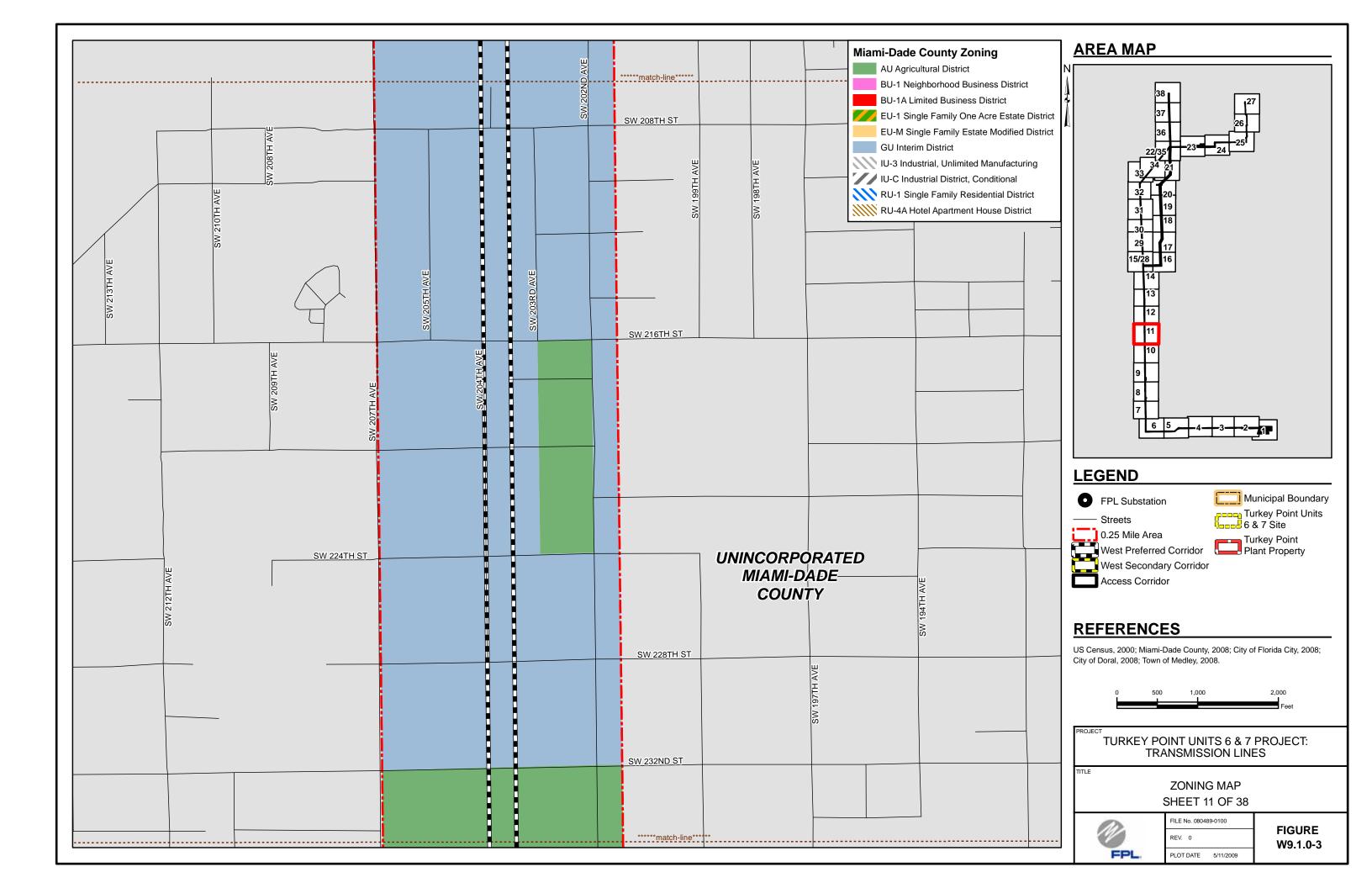


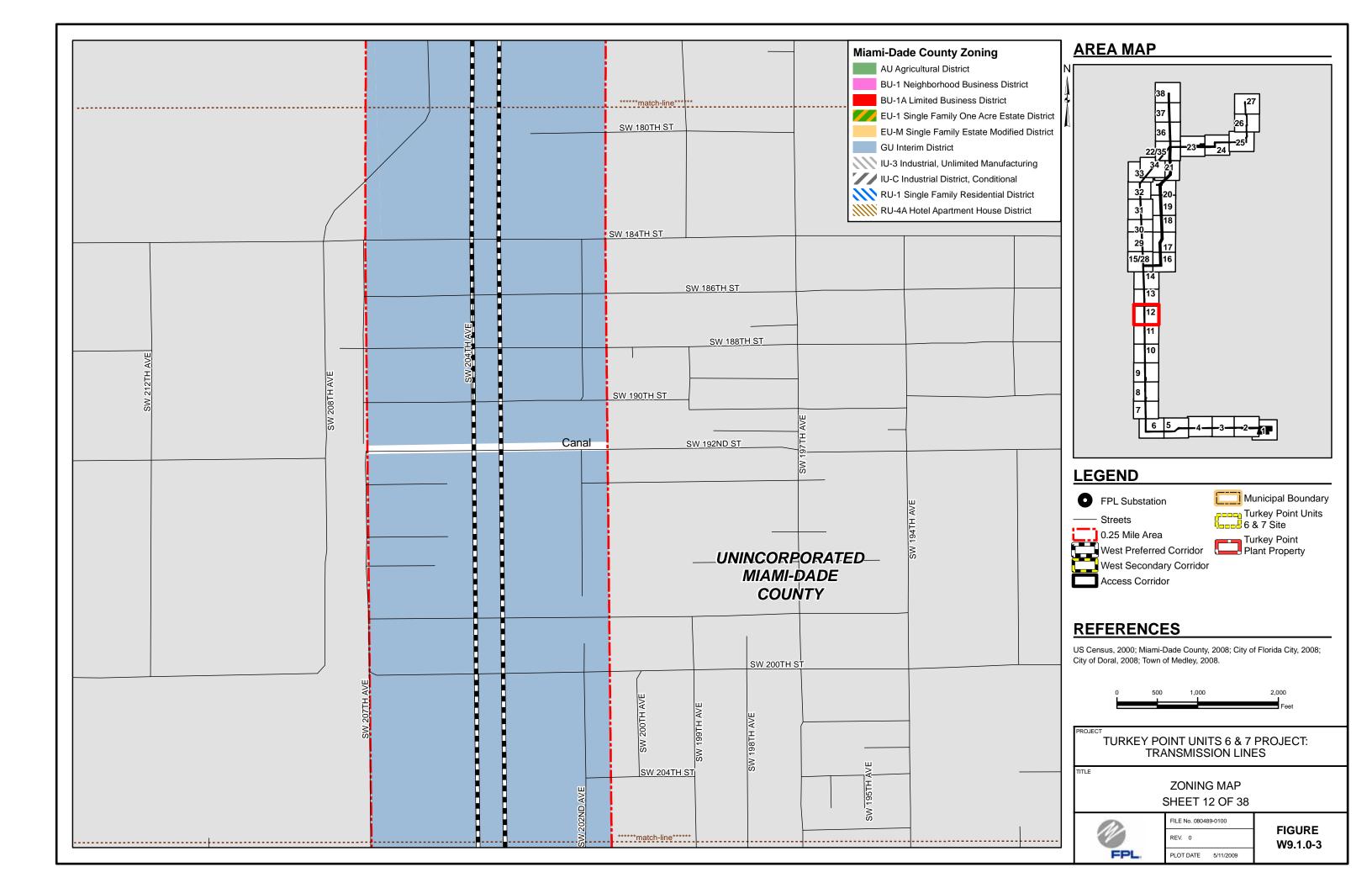


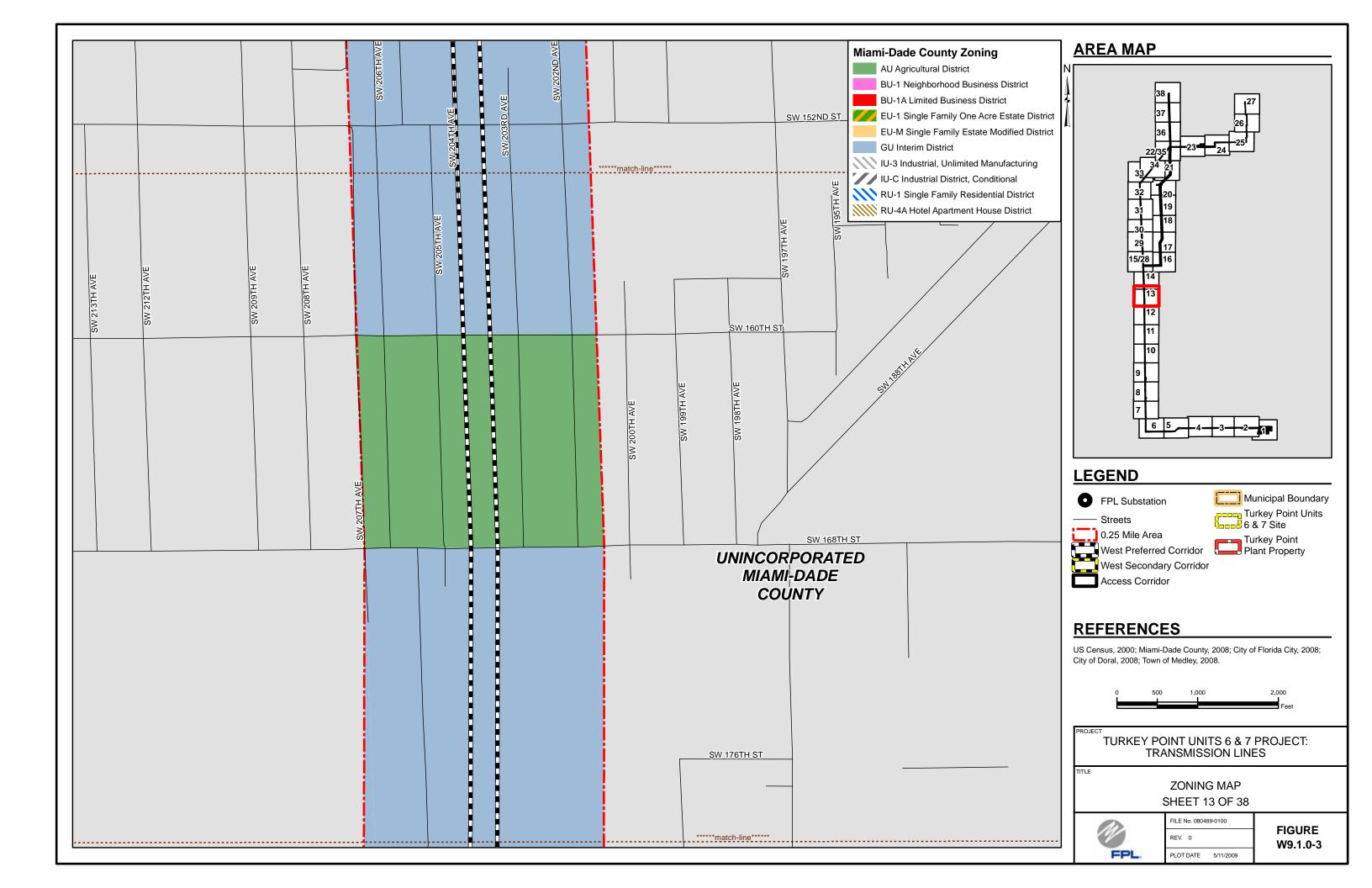


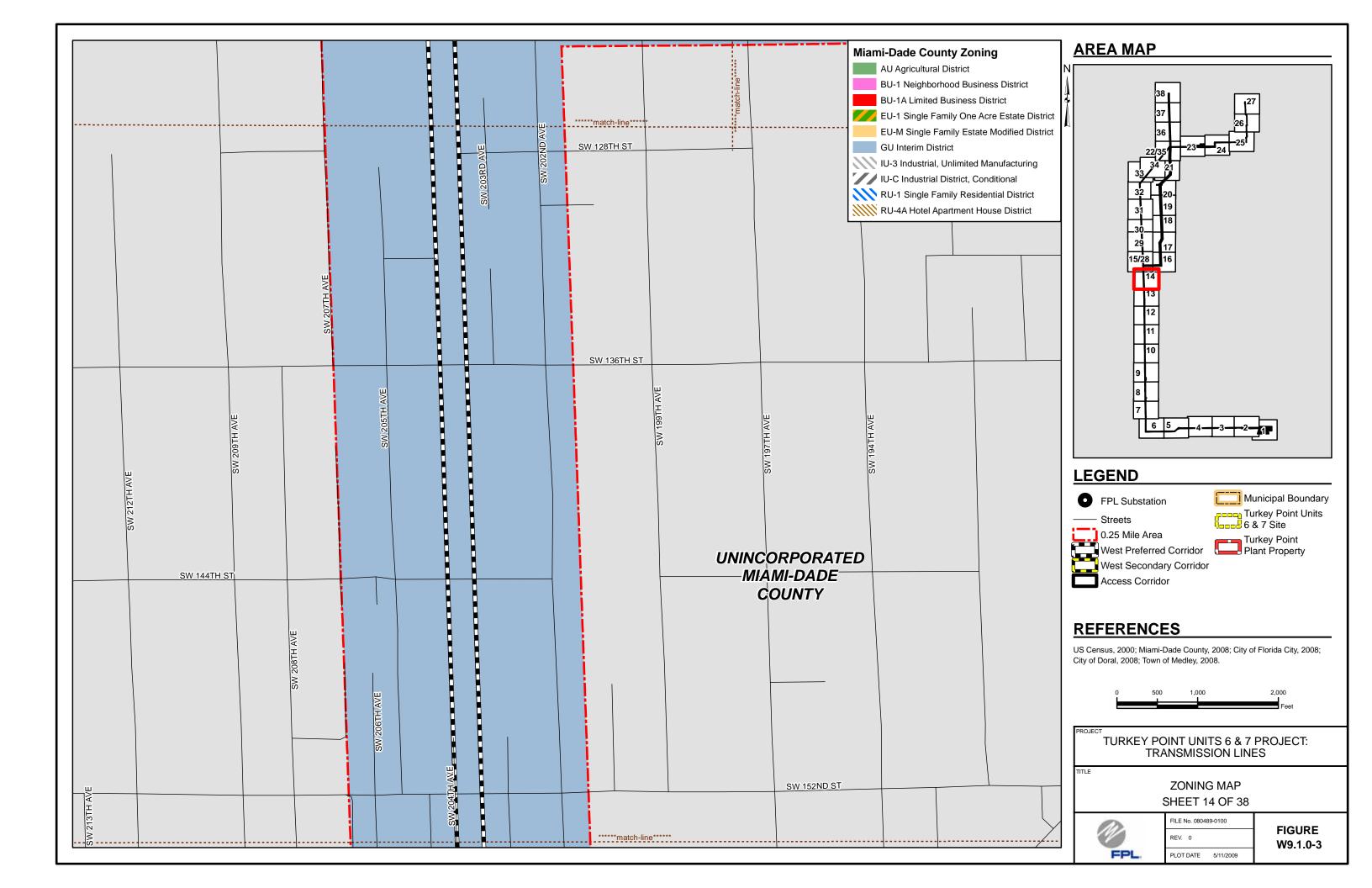


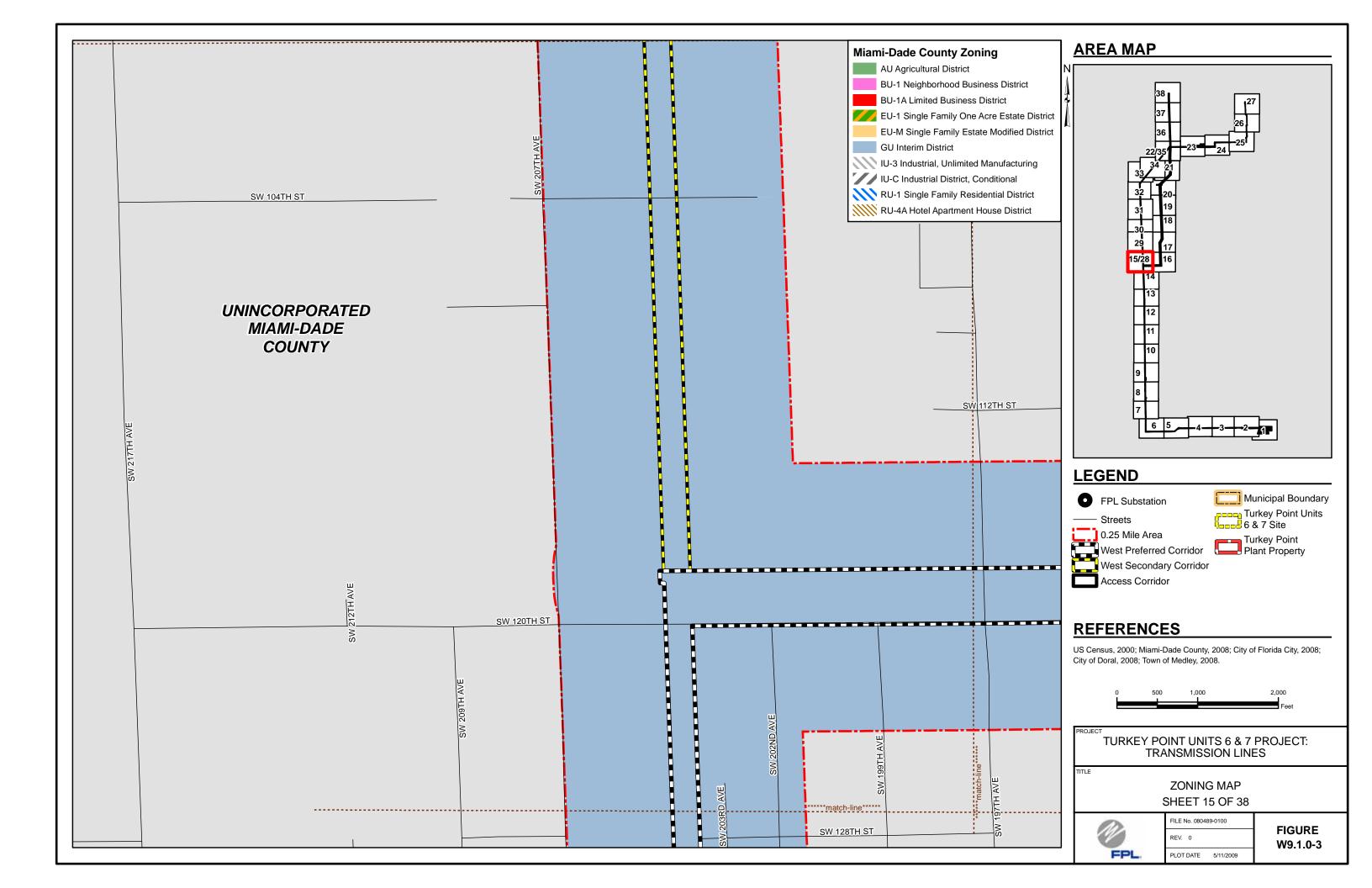


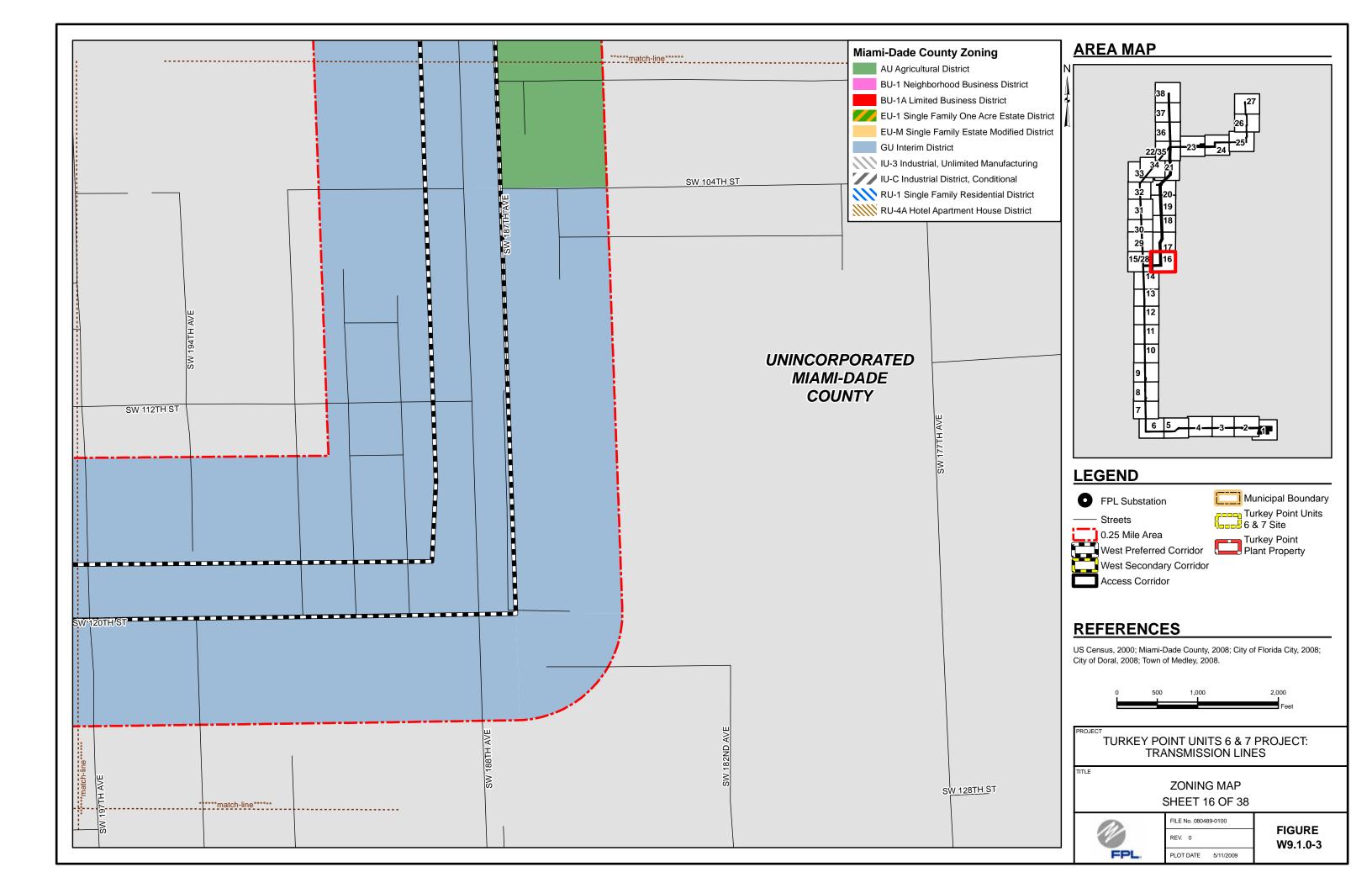


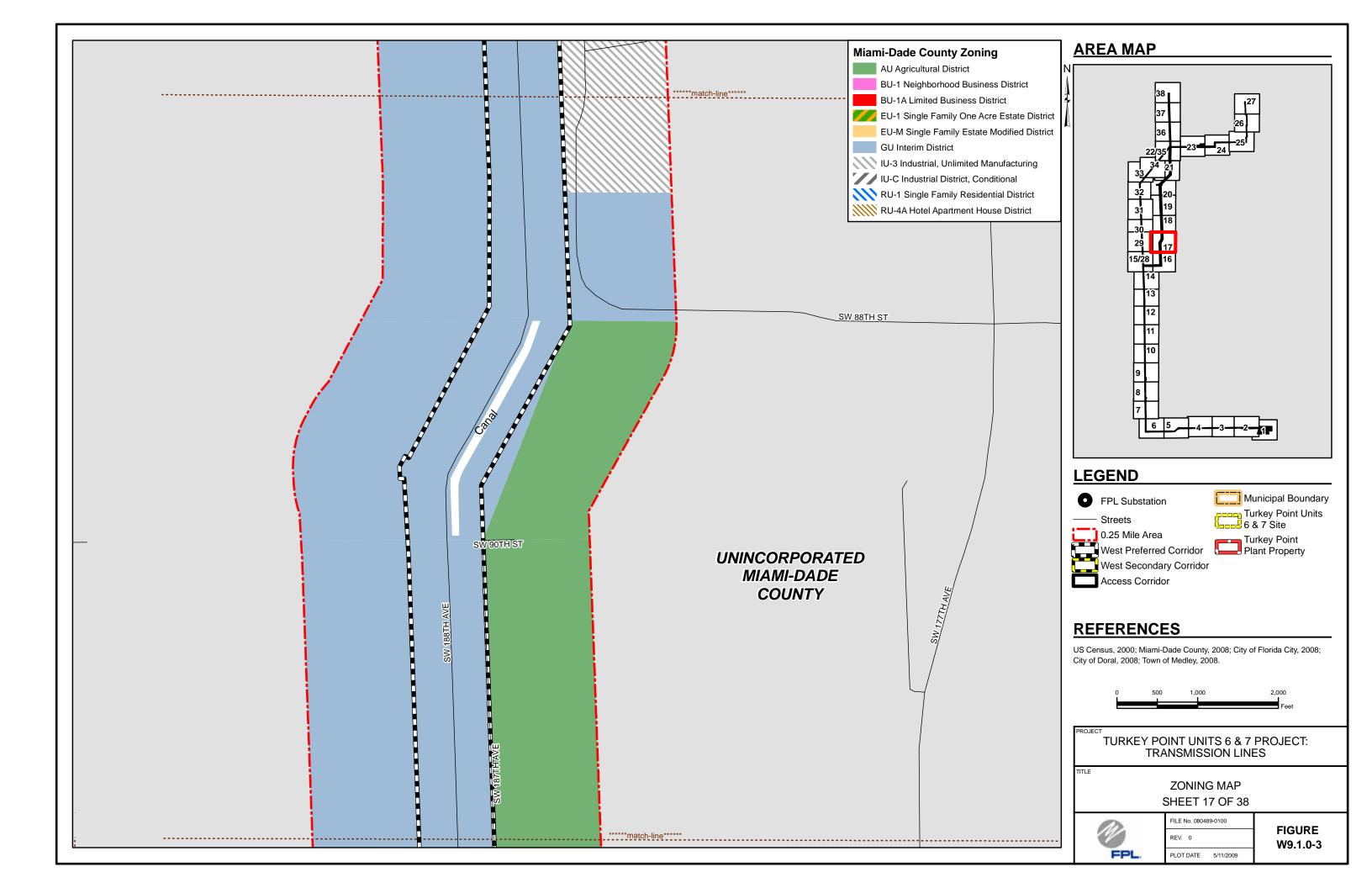


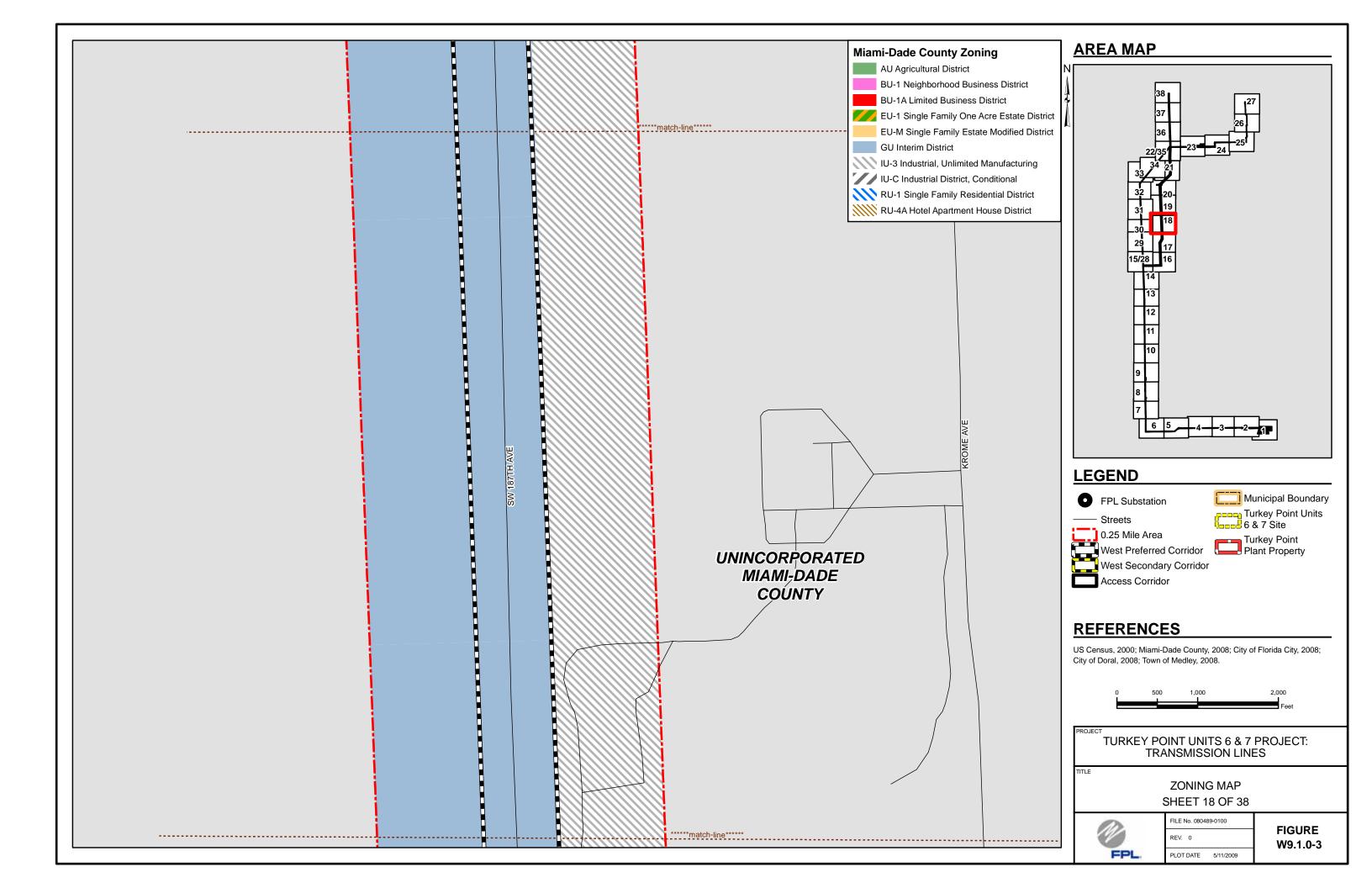


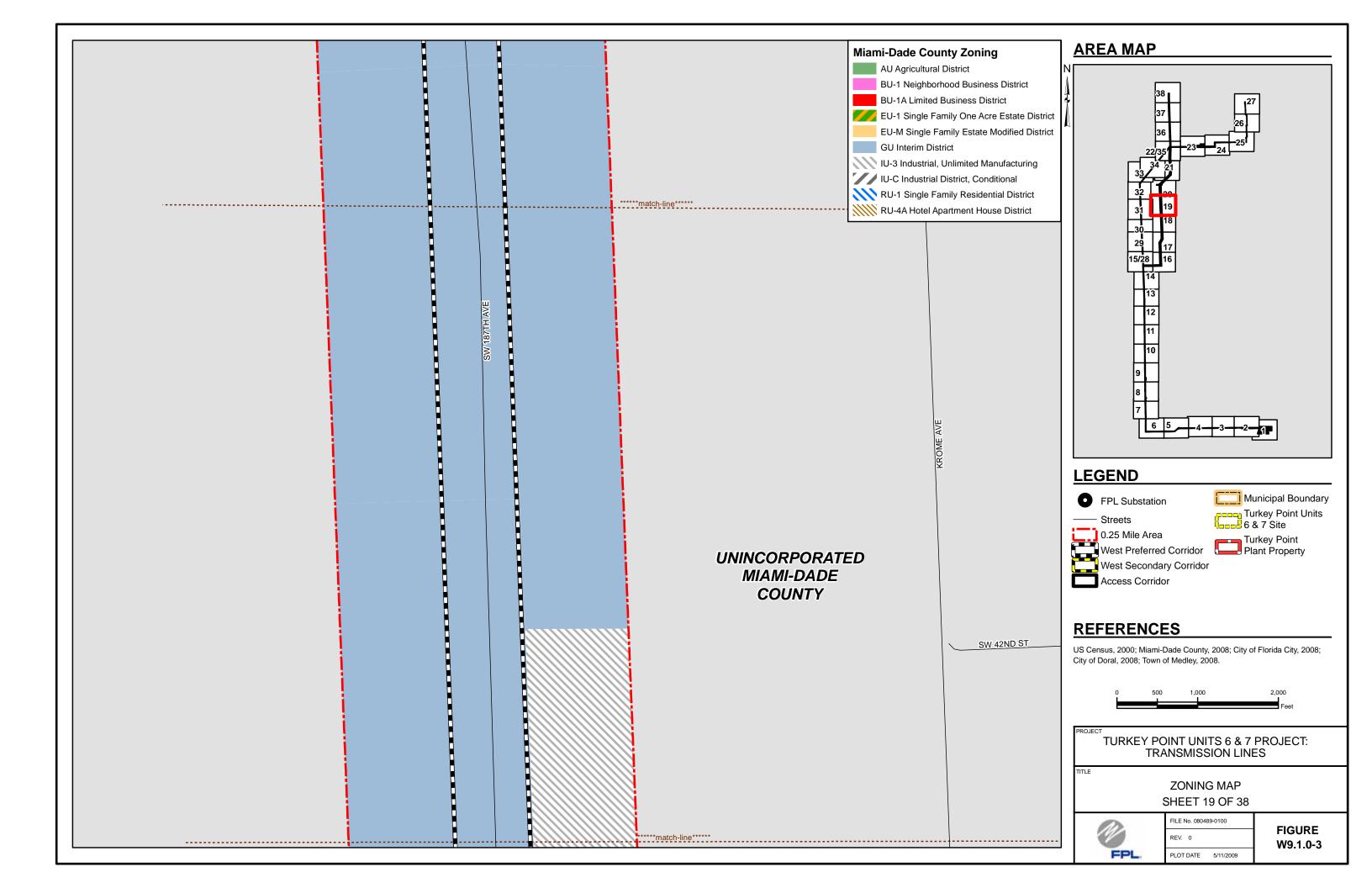


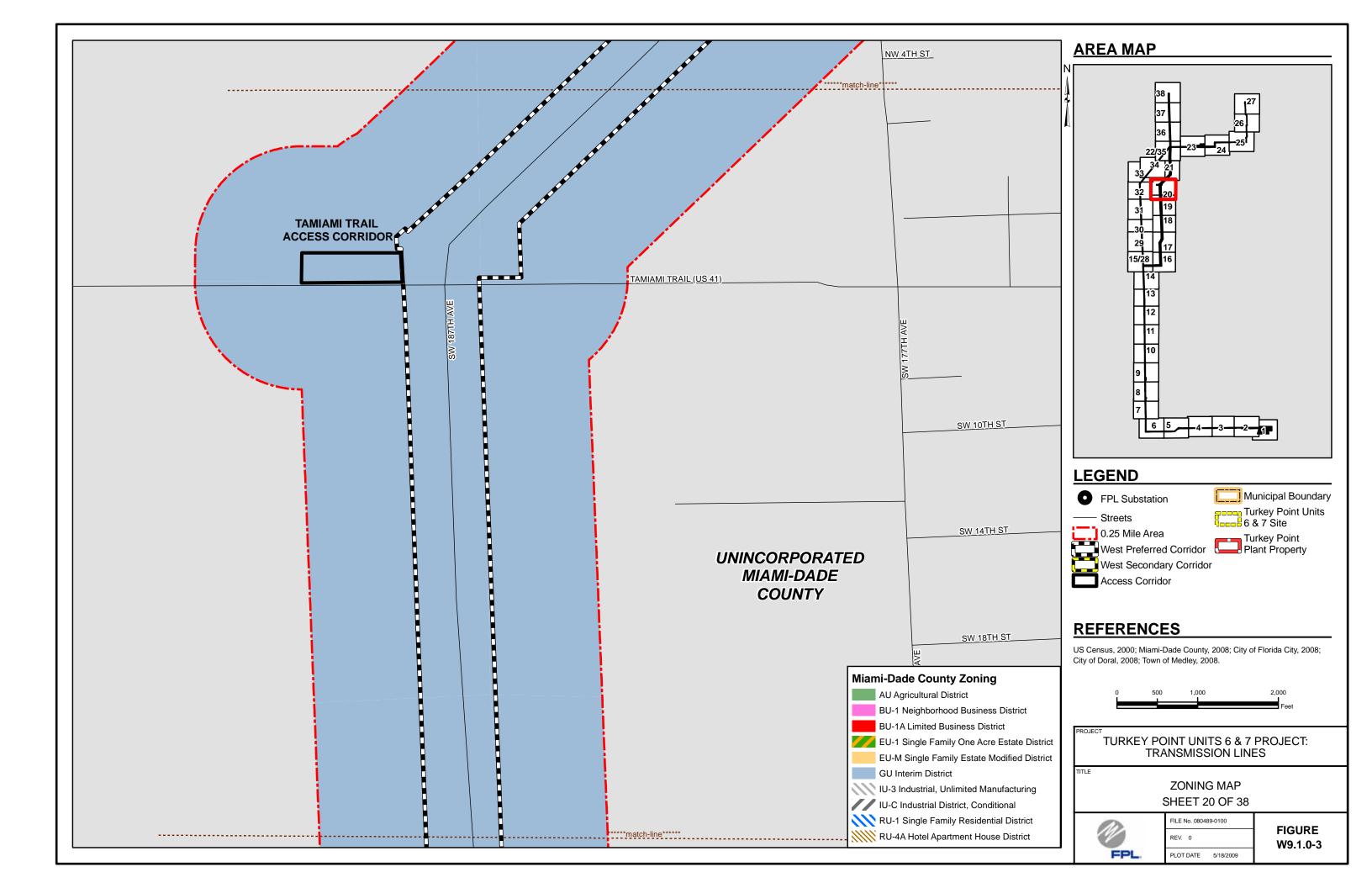


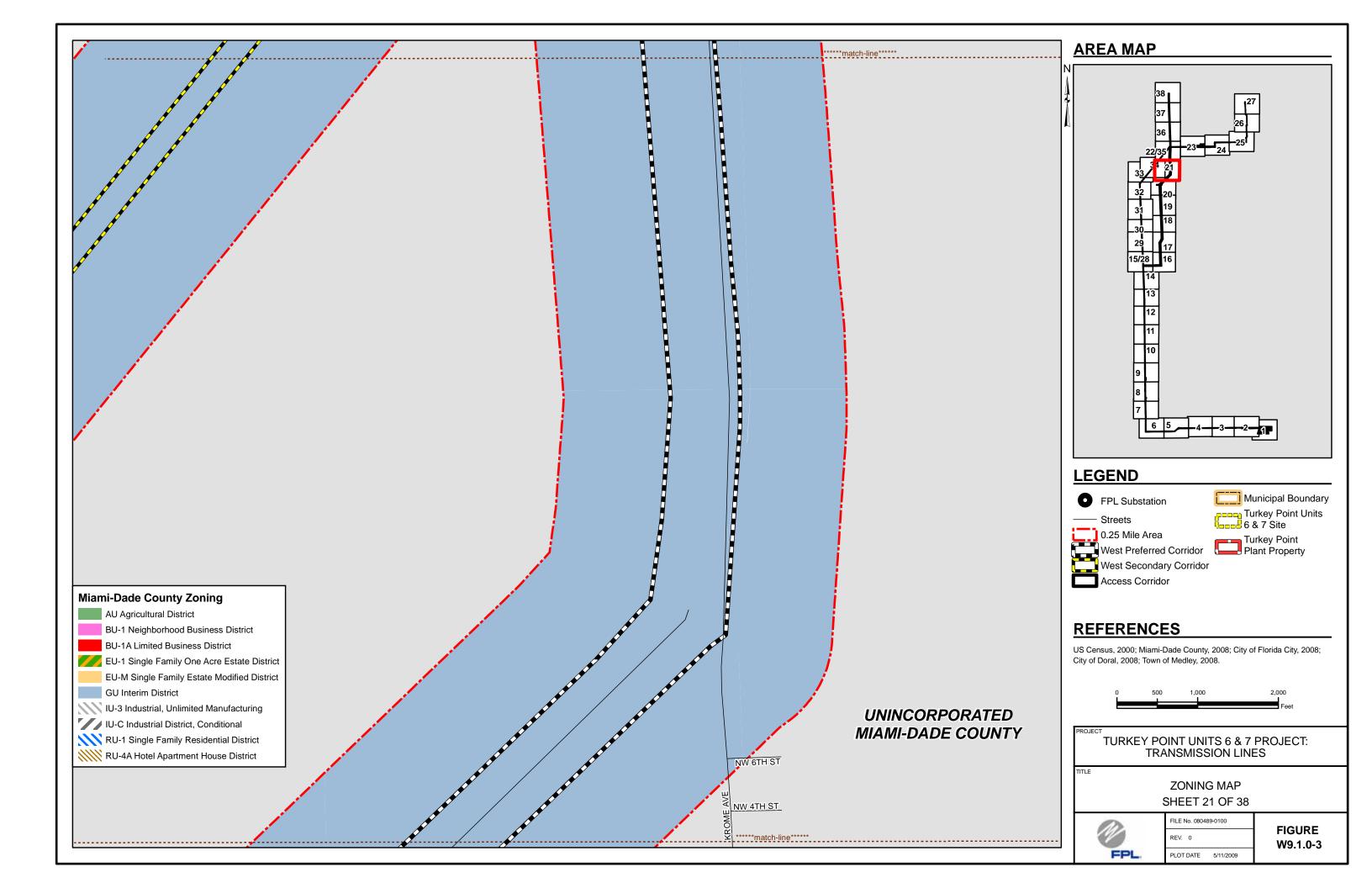


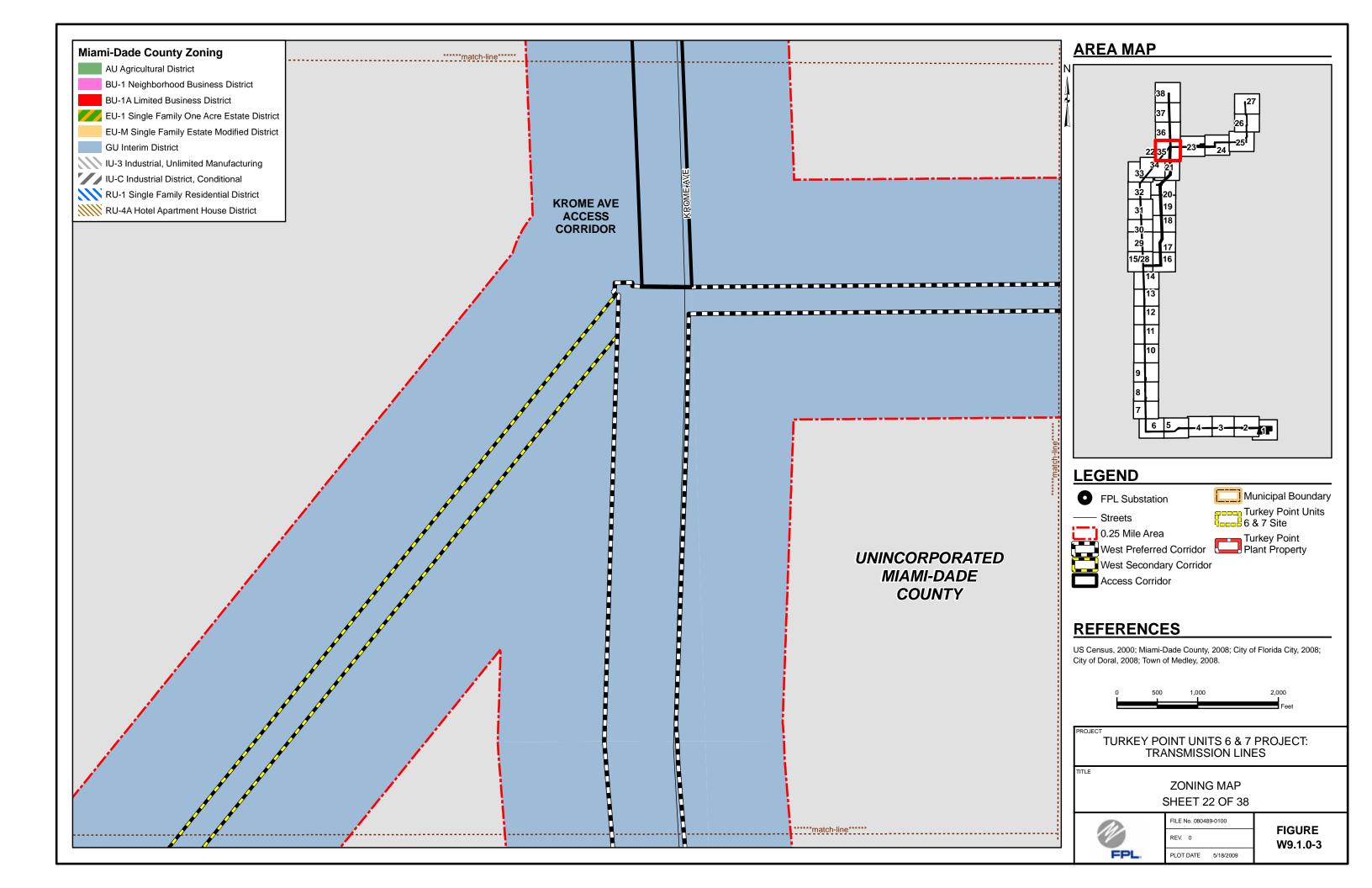


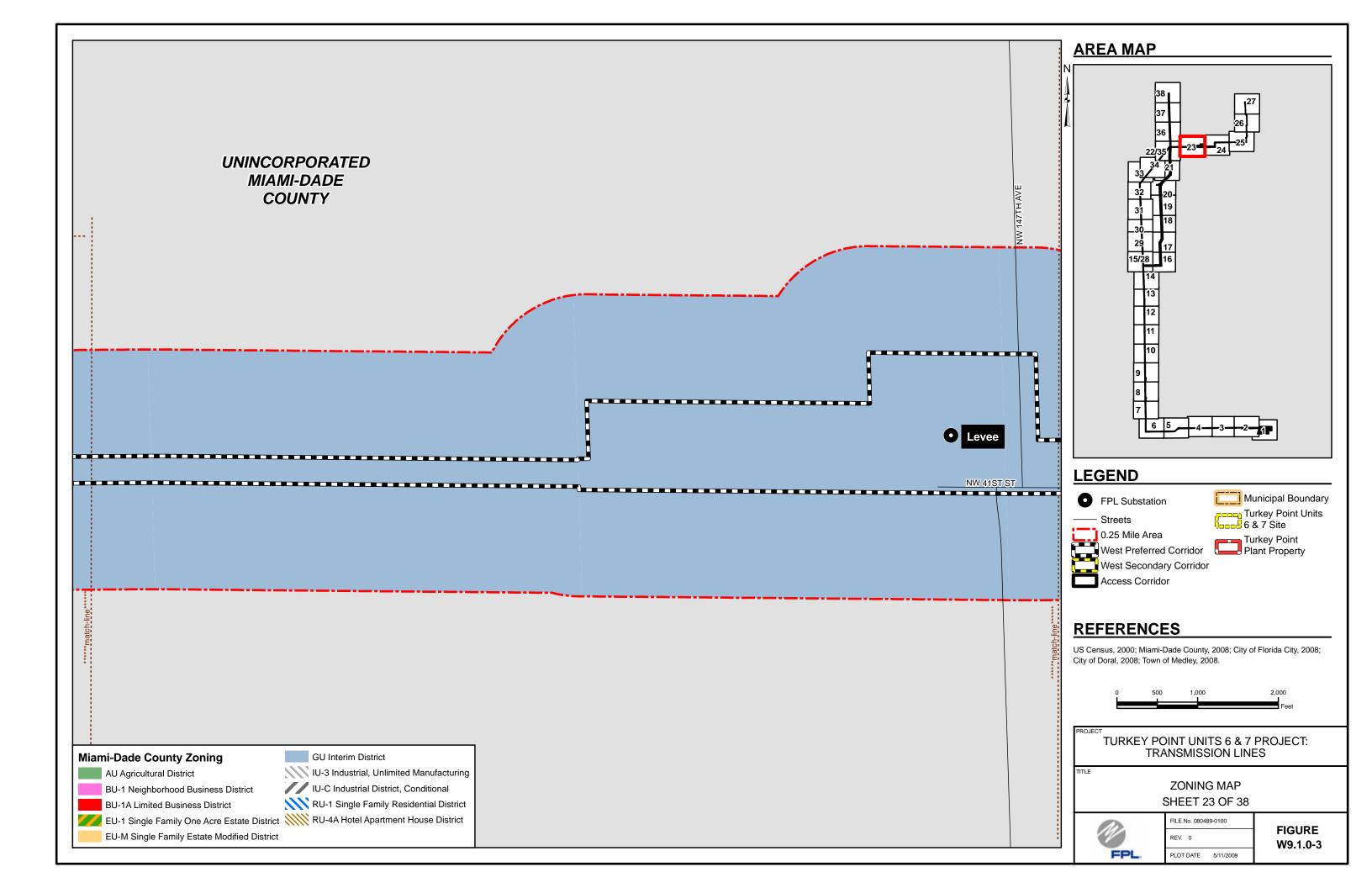


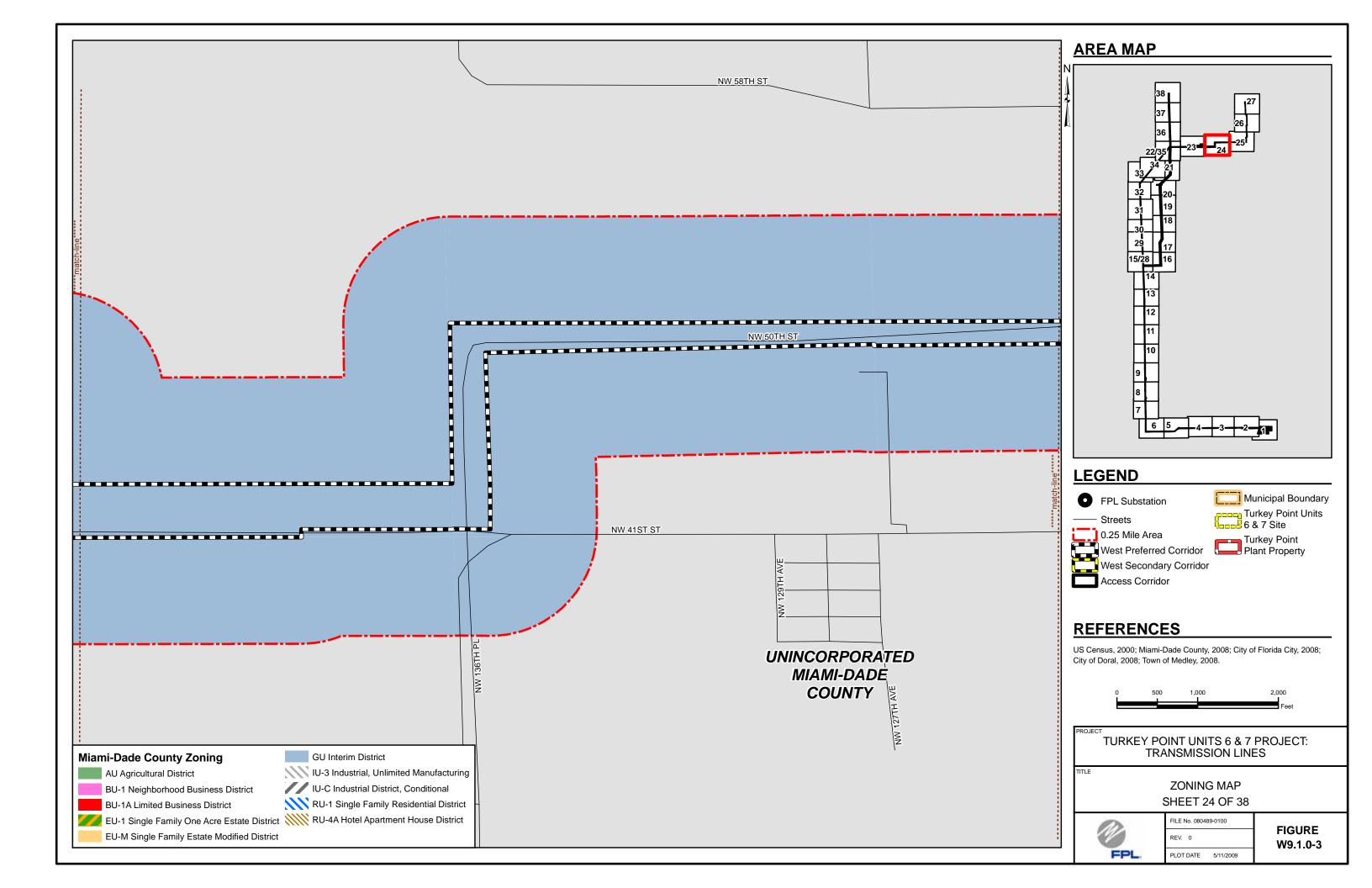


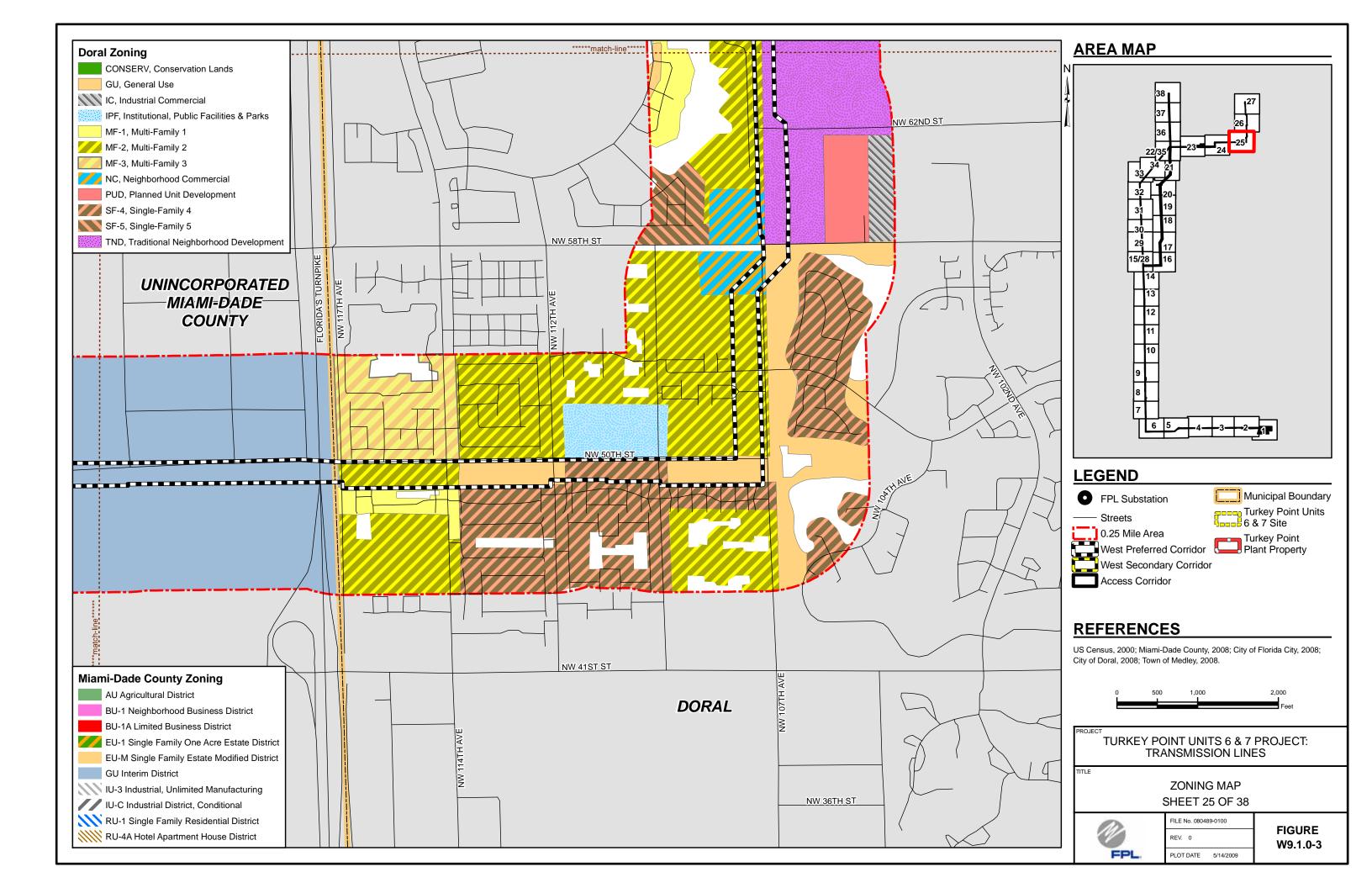


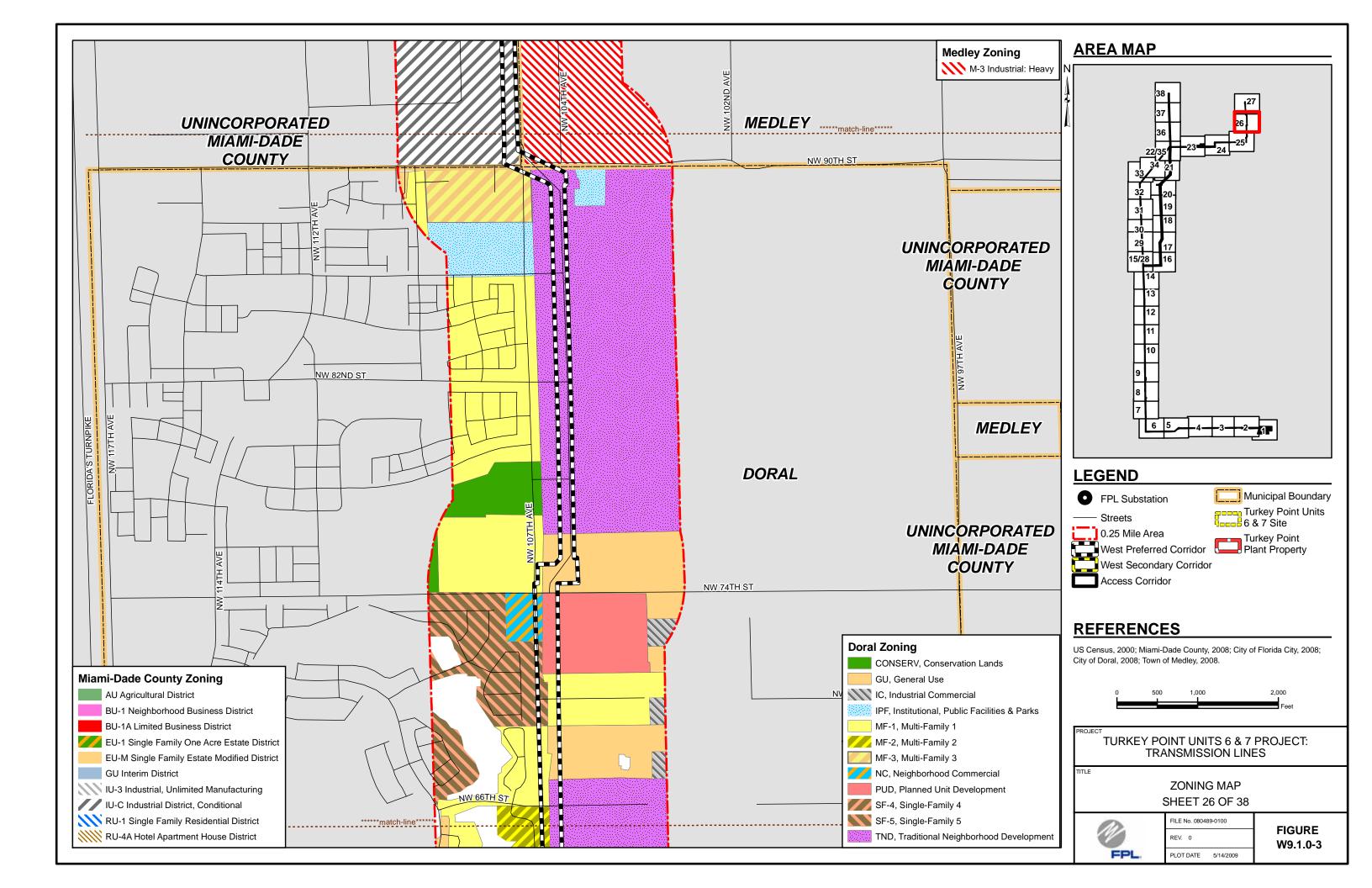


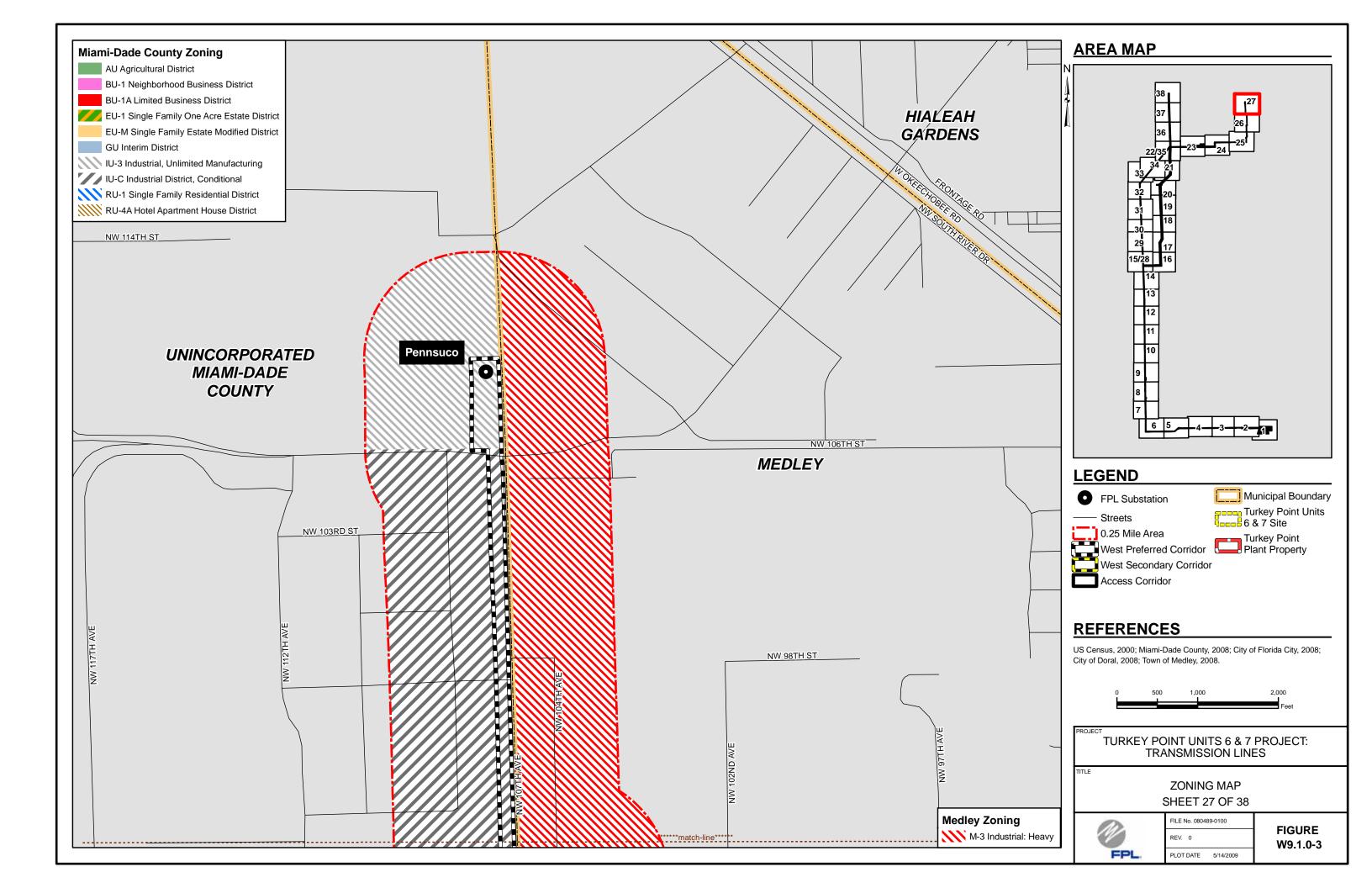


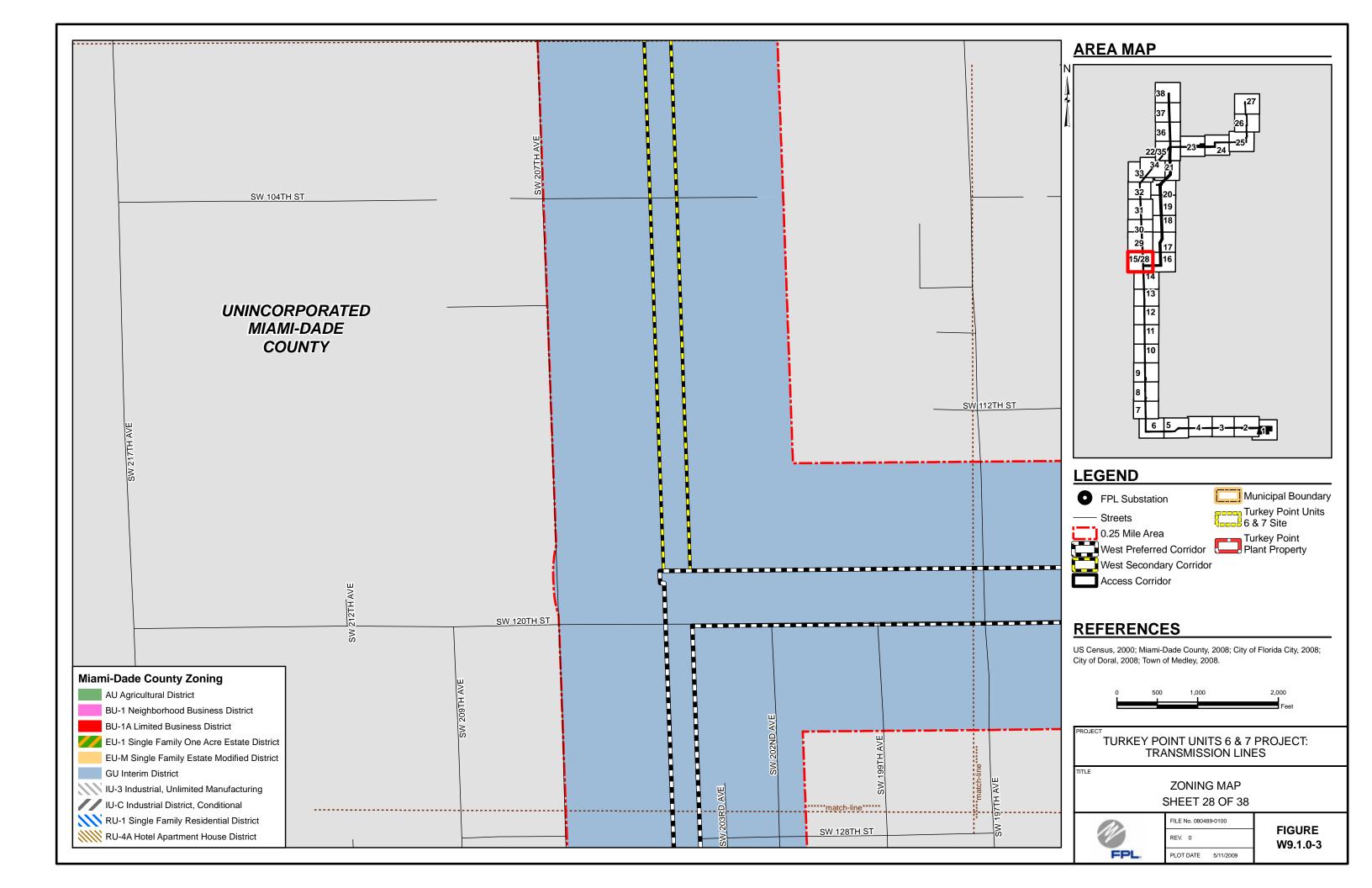


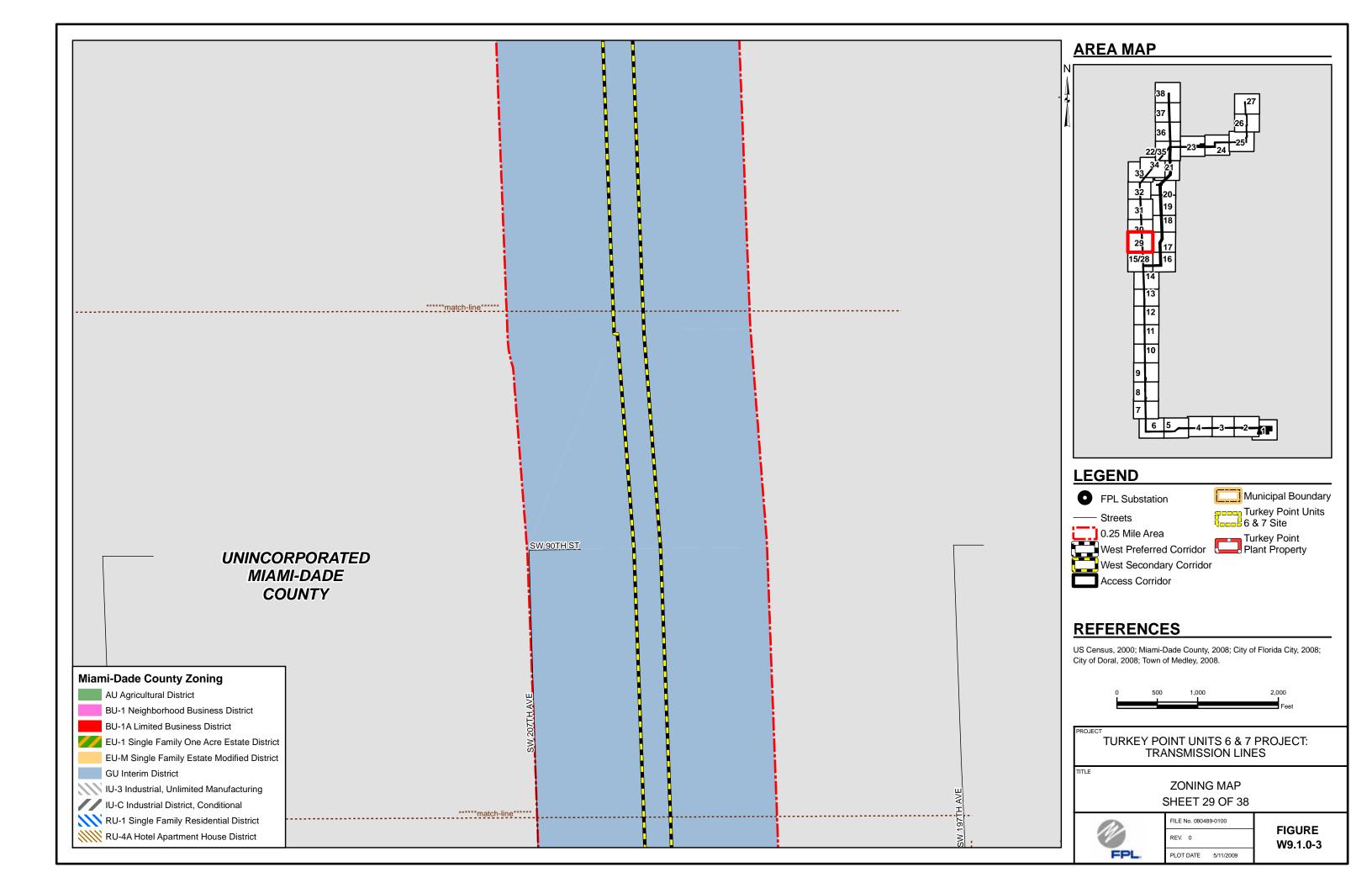


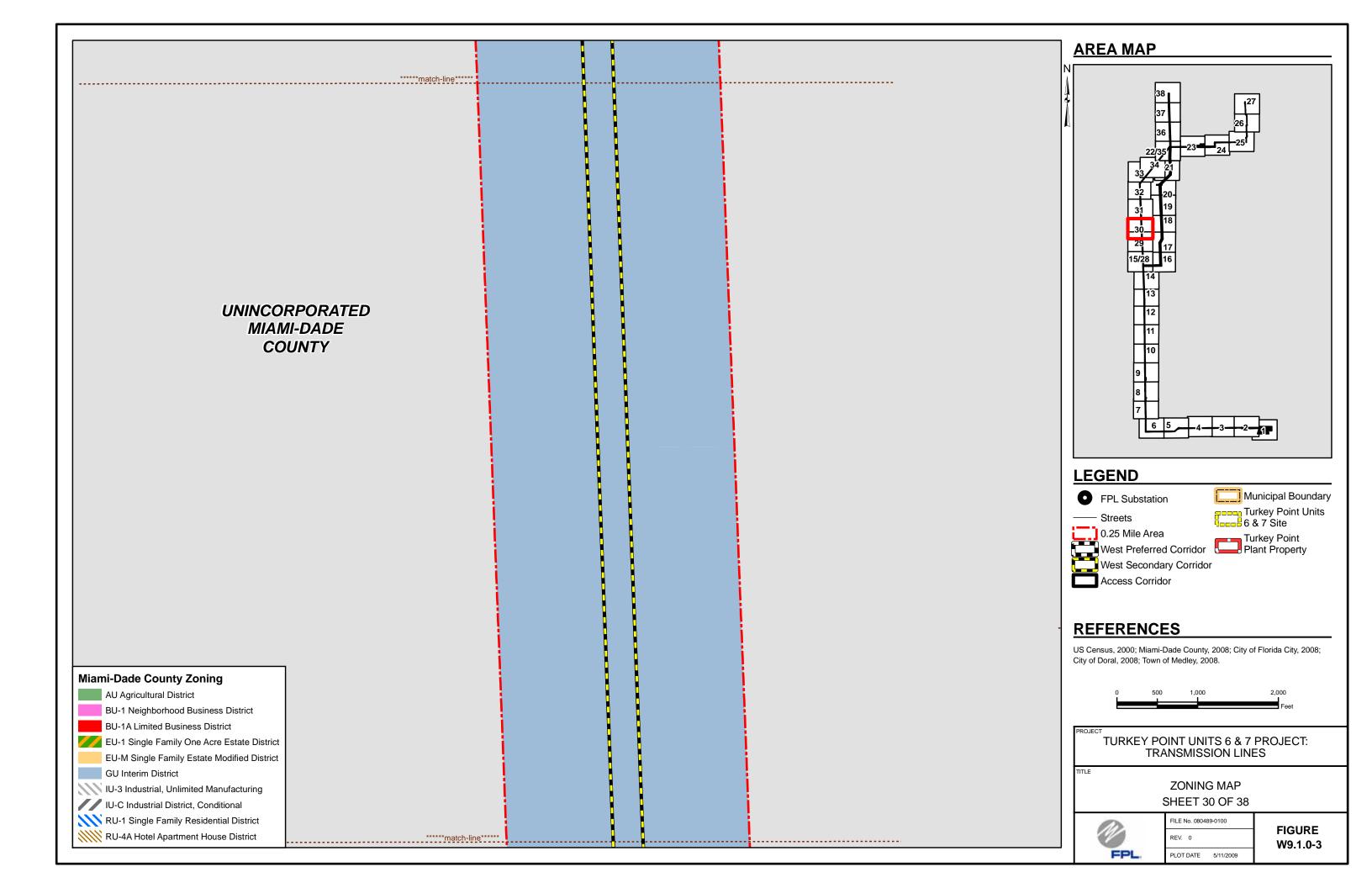


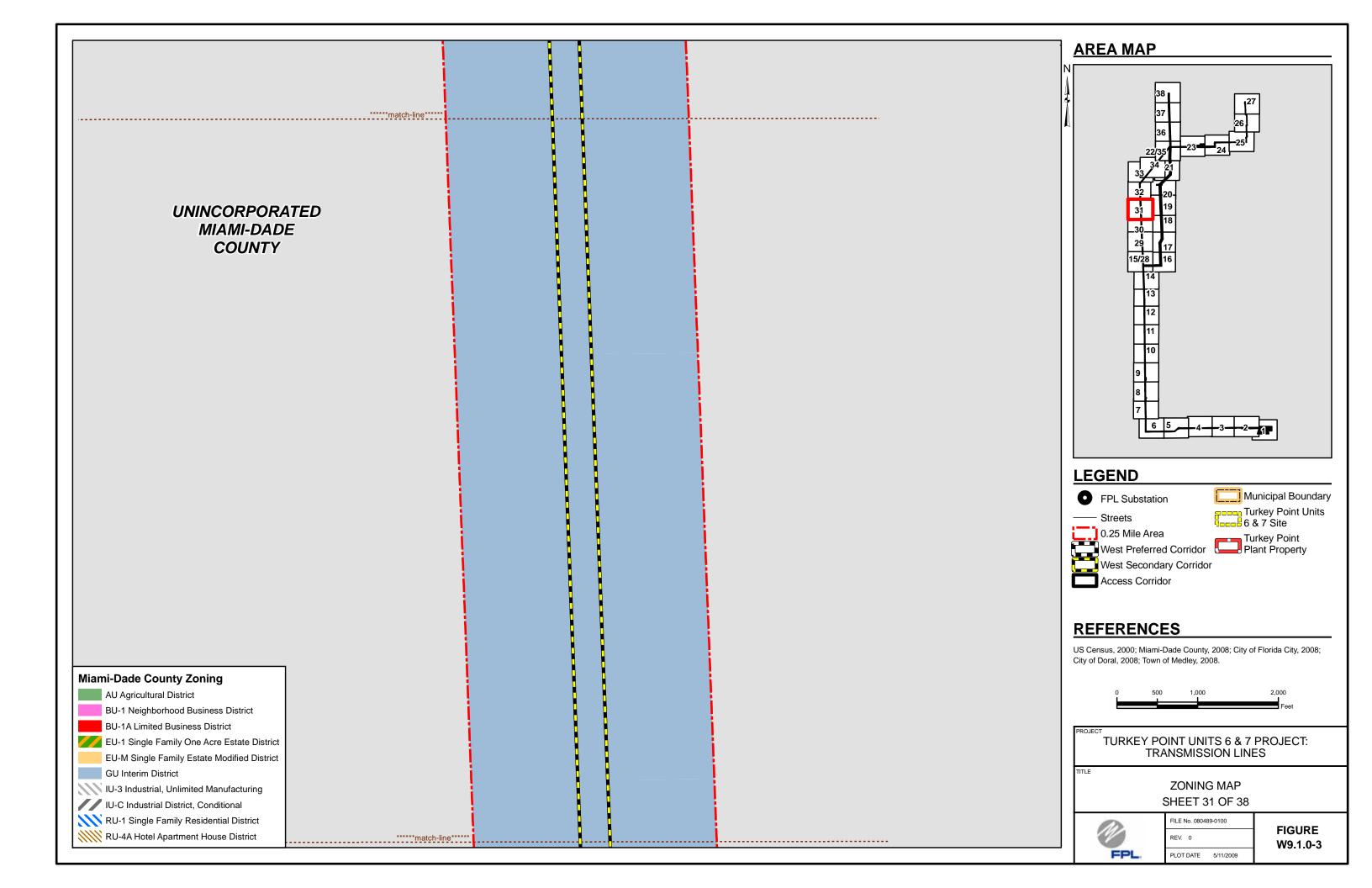


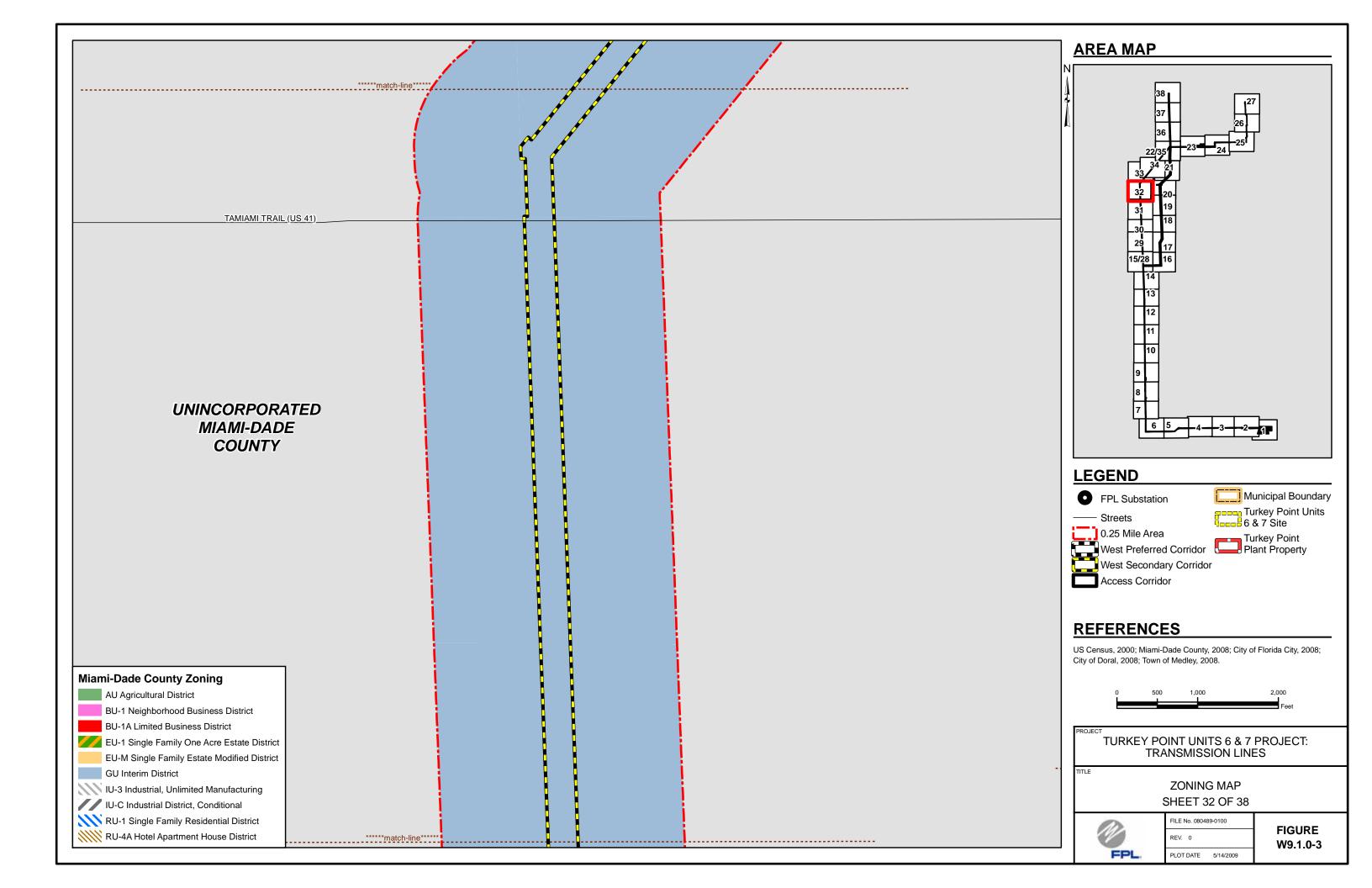


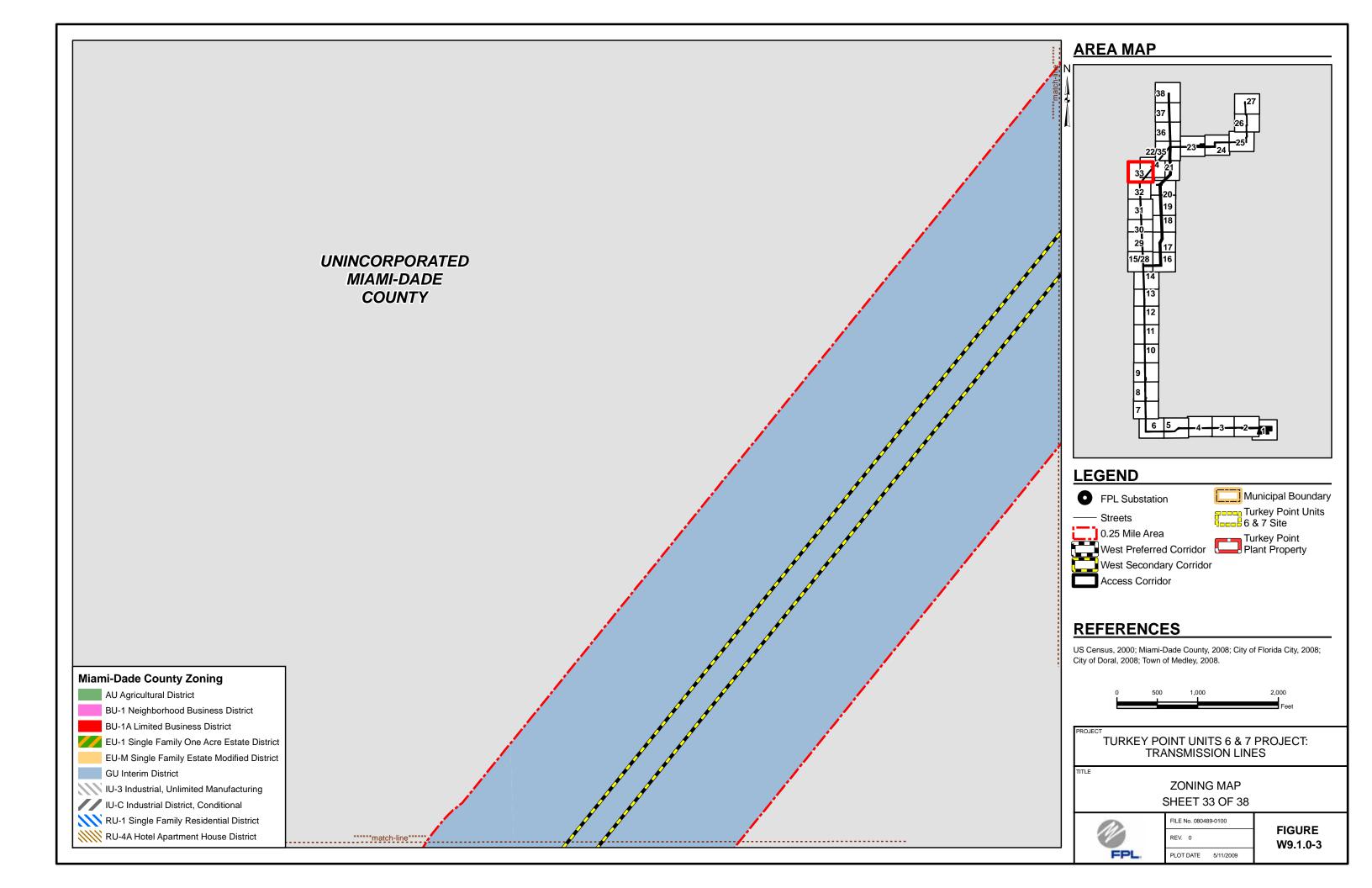


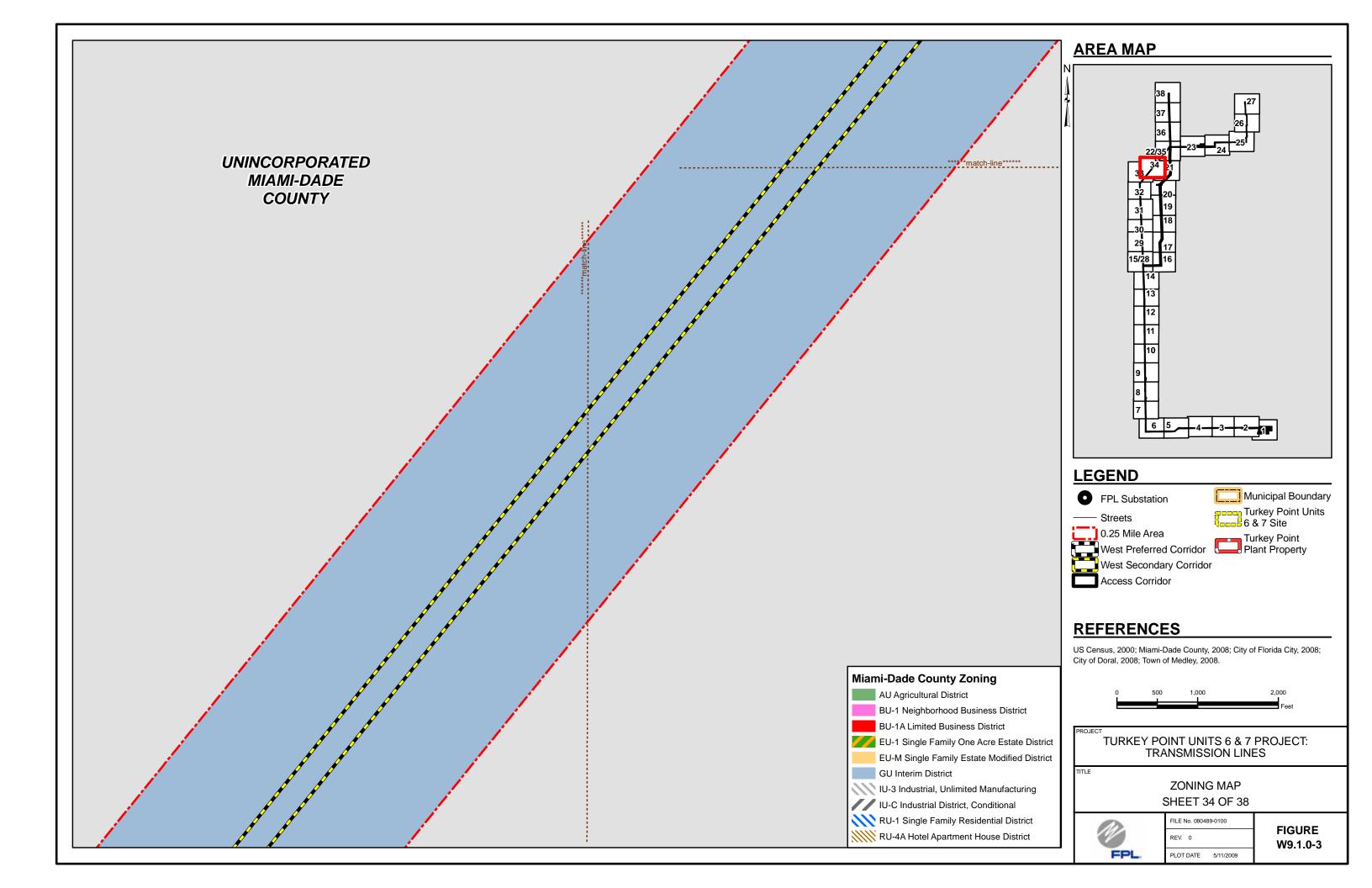


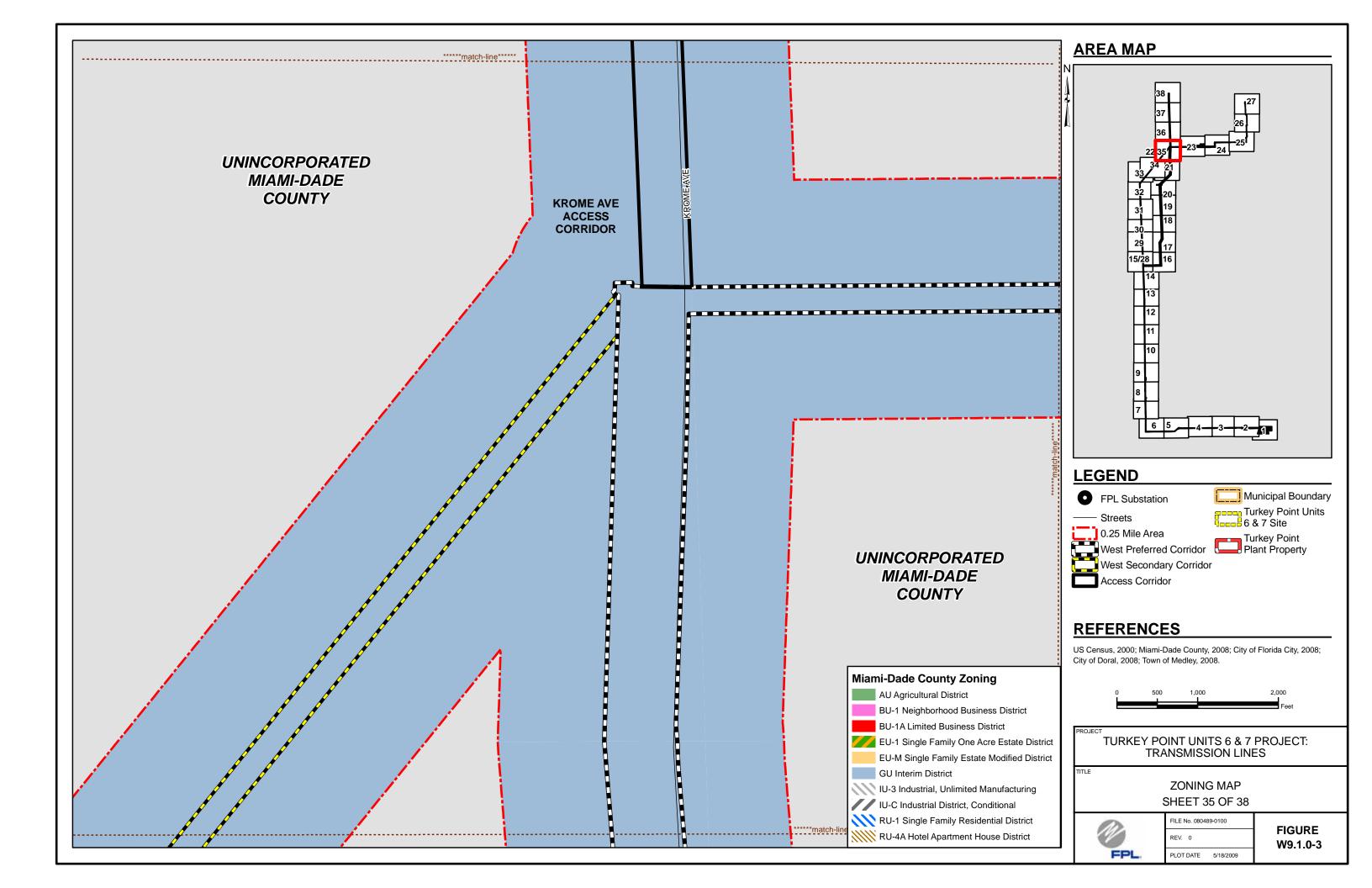


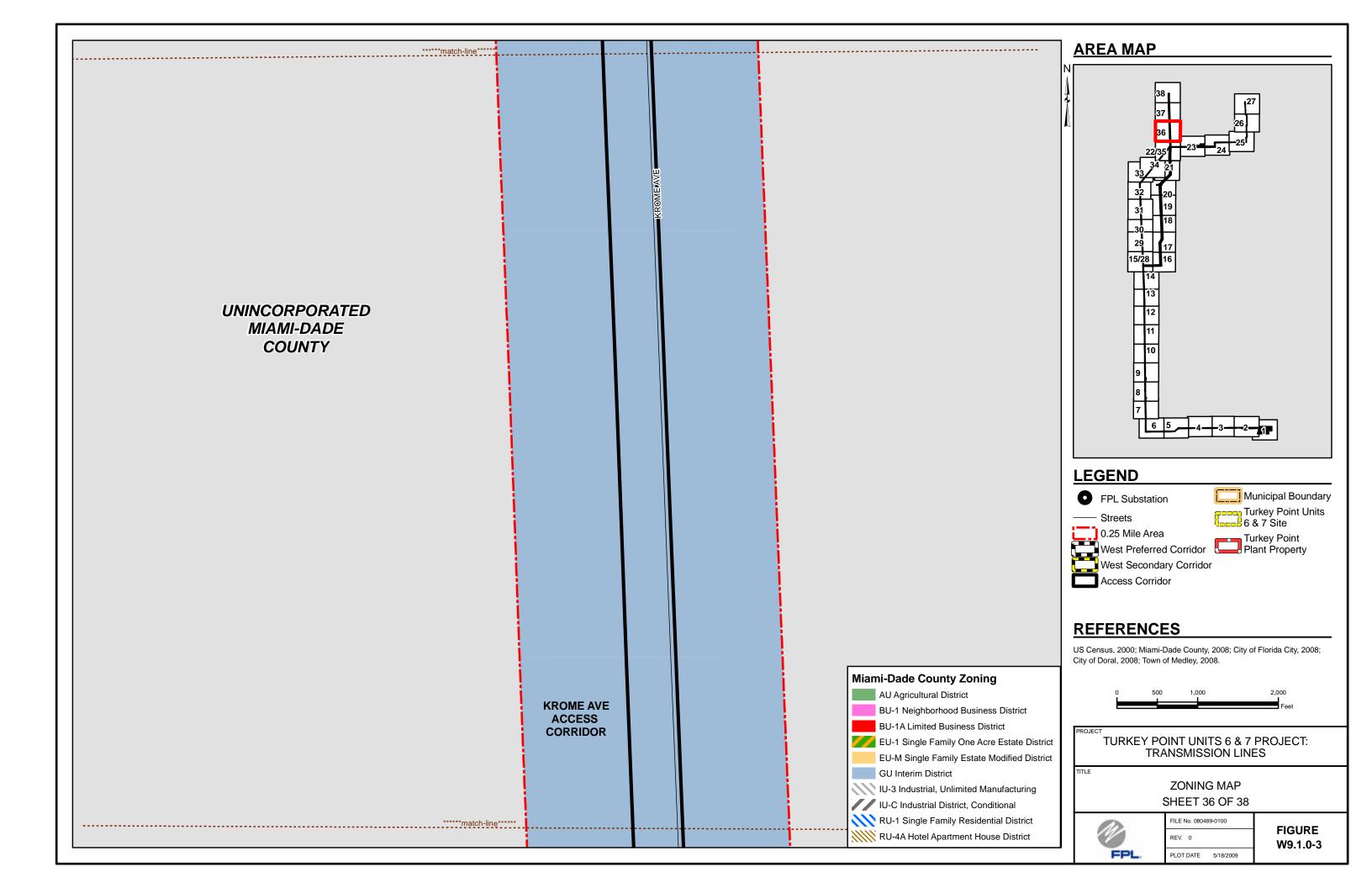


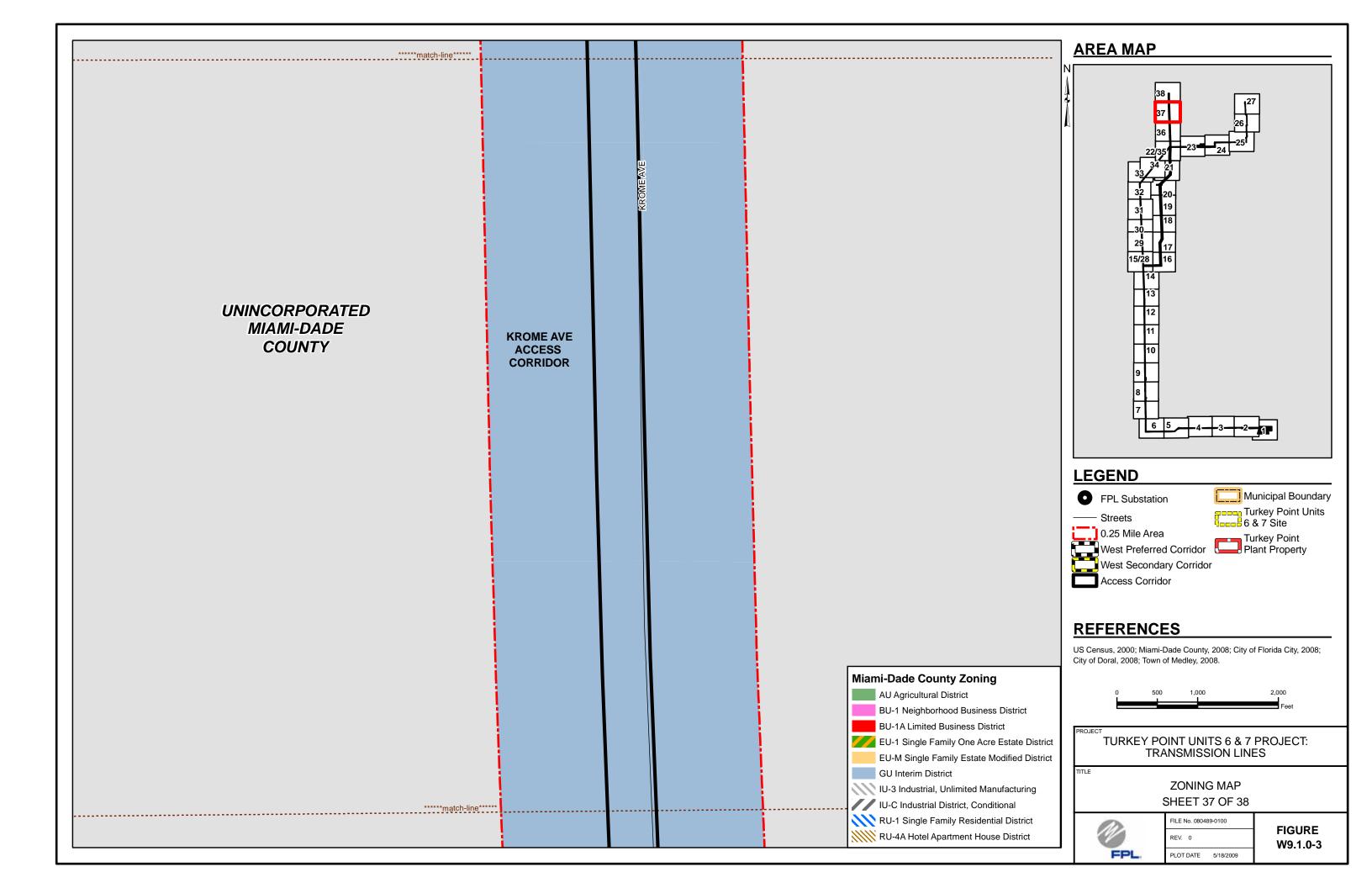


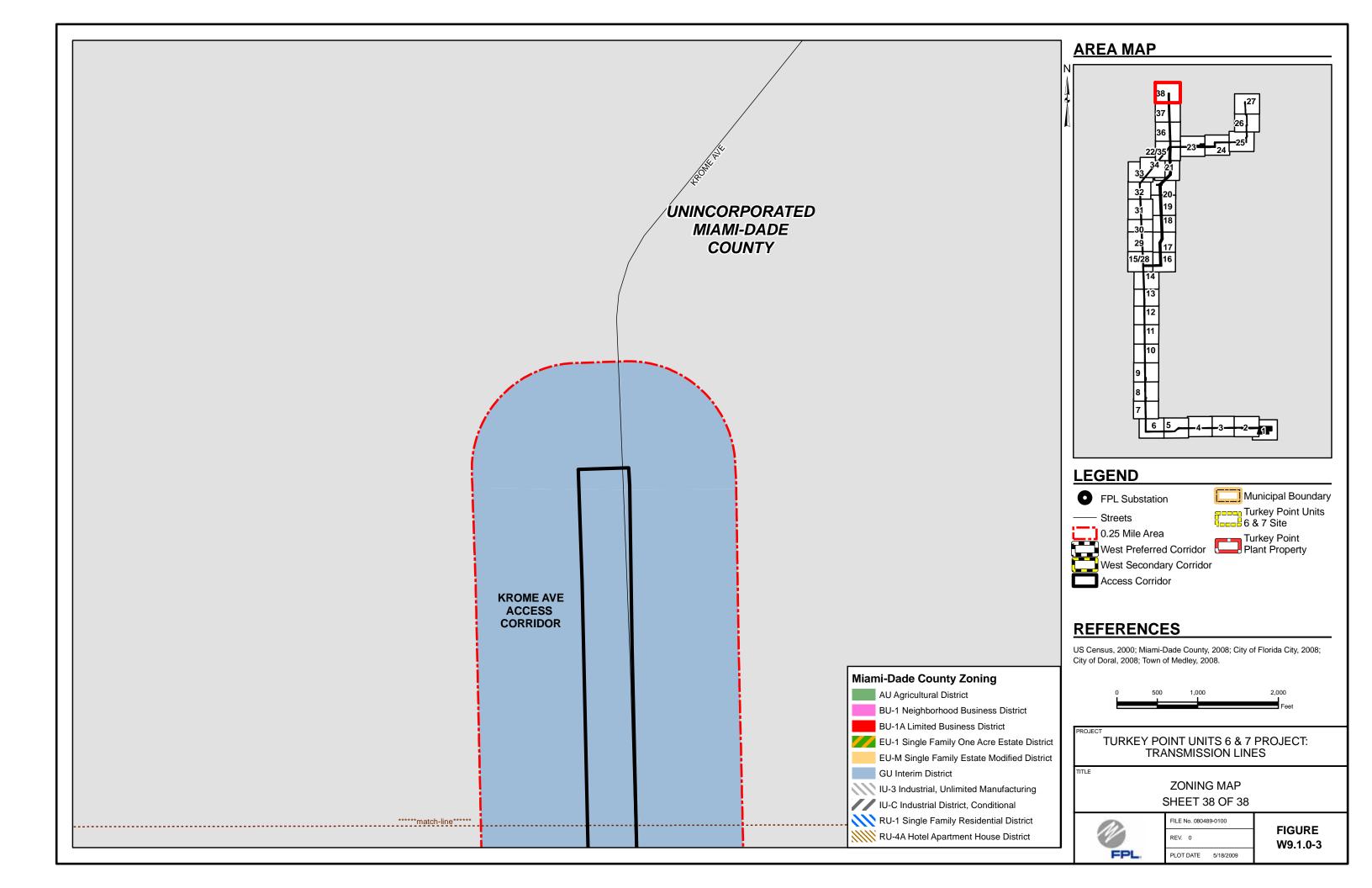








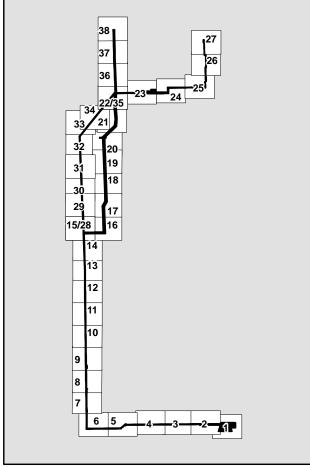




CODE	LEVEL3 FLUCFCS	CODE	LEVEL3 FLUCFCS
111	FIXED SINGLE FAMILY UNITS <less acre="" dwelling="" per="" than="" two="" units=""></less>	320	SHRUB AND BRUSHLAND
118	RURAL RESIDENTIAL	323	ABANDONED GROVES
121	FIXED SINGLE FAMILY UNITS <two-five acre="" dwelling="" per="" units=""></two-five>	330	MIXED RANGELAND
129	RESIDENTIAL, MEDIUM DENSITY UNDER CONSTRUCTION <two-five acre="" dwelling="" per="" units=""></two-five>	420	UPLAND HARDWOOD FORESTS
131	FIXED SINGLE FAMILY UNITS <six acre="" dwelling="" more="" or="" per="" units=""></six>	422	BRAZILIAN PEPPER
132	MOBILE HOME UNITS <six acre="" dwelling="" more="" or="" per="" units=""></six>	424	MELALEUCA
133	MULTIPLE DWELLING UNITS, LOW RISE <two less="" or="" stories=""></two>	434	HARDWOOD - CONIFEROUS MIXED
139	RESIDENTIAL, HIGH DENSITY UNDER CONSTRUCTION <six acre="" dwelling="" more="" or="" per="" units=""></six>	436	UPLAND SCRUB, PINE AND HARDWOODS
140	COMMERCIAL AND SERVICES	437	AUSTRALIAN PINES
141	RETAIL SALES AND SERVICES	510	CANALS
149	COMMERCIAL AND SERVICES UNDER CONSTRUCTION	511	DITCHES
150	INDUSTRIAL	512	CHANNELIZED RIVER, STREAM, WATERWAY
156	OTHER HEAVY INDUSTRIAL	530	RESERVOIRS
163	ROCK QUARRIES	534	RESERVOIRS < 10 ACRES
166	HOLDING PONDS	541	EMBAYMENTS OPENING DIRECTLY INTO THE GULF OF MEXICO OR THE ATLANTIC OCEAN
170	INSTITUTIONAL	611	BAY SWAMPS
171	EDUCATIONAL FACILITIES	612	MANGROVE SWAMPS
173	MILITARY	612-B	DWARF MANGROVES
176	CORRECTIONAL	617	MIXED WETLAND HARDWOODS
180	RECREATIONAL	619	EXOTIC WETLAND HARDWOODS
182	GOLF COURSES	619 / 641	EXOTIC WETLAND HARDWOODS / FRESHWATER MARSHES
183	RACE TRACKS	630	WETLAND FORESTED MIXED
185	PARKS AND ZOOS	641	FRESHWATER MARSHES
190	OPEN LAND	641 / 643	FRESHWATER MARSHES / WET PRAIRIES
211	IMPROVED PASTURES		SALTWATER MARSHES
214	ROW CROPS	643	WET PRAIRIES
215	FIELD CROPS	644	EMERGENT AQUATIC VEGETATION
220	TREE CROPS	650	NON-VEGETATED WETLANDS
221	CITRUS GROVES	651	TIDAL FLATS
222	FRUIT ORCHARDS	740	DISTURBED LAND
223	OTHER GROVES		FILL AREAS <highways-railways></highways-railways>
240	NURSERIES AND VINEYARDS	811	AIRPORTS
241	TREE NURSERIES	814	ROADS AND HIGHWAYS
243	ORNAMENTALS	820	COMMUNICATIONS
250	SPECIALTY FARMS	831	ELECTRIC POWER FACILITIES
251	HORSE FARMS	832	ELECTRIC POWER TRANSMISSION LINES
261	FALLOW CROP LAND	834	SEWAGE TREATMENT
310	HERBACEOUS (DRY PRAIRIE)	835	SOLID WASTE DISPOSAL

NOTE: SFWMD DATA USED WHERE UPDATED FPL SURVEYED DATA (GAI, 2009) ARE UNAVAILABLE

AREA MAP



REFERENCES

FDOT, 1999; SFWMD, 2004; USDA/NRCS, 2007; Miami-Dade County, 2007, 2008; GAI, 2009; FNAI, 2009.

PROJEC

TURKEY POINT UNITS 6 & 7 PROJECT: TRANSMISSION LINES

TITLE

LAND COVER/VEGETATION LEGEND



FILE No. 080489-0100

REV. 0 FIGURE W9.1.0-4

