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2.2 LAND

This section describes the land characteristics of the Units 6 & 7 plant area, the Turkey Point plant property, and vicinity; transmission corridors and offsite areas; and the region. Land use impacts are presented in [Sections 4.1](#) and [5.1](#).

2.2.1 THE SITE AND VICINITY

2.2.1.1 The Site

2.2.1.1.1 Turkey Point Plant Property

Units 6 & 7 would be collocated with two natural gas/oil steam electric generating units (Units 1 & 2), two pressurized water reactor nuclear units (Units 3 & 4), and one natural gas combined-cycle steam electric generating unit (Unit 5) on the approximately 11,000-acre Turkey Point plant property located in unincorporated Miami-Dade County, Florida. The location of the Turkey Point plant property in relation to Biscayne Bay, Card Sound, and the Atlantic Ocean is shown in [Figures 2.1-3](#) and [2.1-4](#). [Figure 2.2-4](#) shows the 50-mile region. [Figure 2.2-1](#) shows the location of the Turkey Point plant property boundary.

FPL is the owner of Units 1 through 5 and would be the owner of Units 6 & 7. All five existing units lie in the developed area of the Turkey Point plant property. Units 6 & 7 would be located in a previously undeveloped area of the plant property, south of Units 3 & 4. FPL directs land management activities for the Turkey Point plant property and is the NRC-licensed operator for Units 3 & 4. FPL would be the NRC-licensed operator for Units 6 & 7.

The Units 6 & 7 power blocks and associated infrastructure including mechanical draft cooling towers, makeup water reservoir, deep injection wells, substation, etc. would be located on an approximately 218-acre portion of the Turkey Point plant property, called the Units 6 & 7 plant area. The Units 6 & 7 plant area is south of Units 3 & 4 and is completely encircled by cooling canals of the industrial wastewater facility ([Figure 2.2-1](#)). Units 3 & 4 are south of Units 1 & 2. Unit 5 is located northwest of Units 1 & 2. The South Florida Water Management District Canal L-31E lies west of the Turkey Point plant property.

FPL owns most of the property within the Turkey Point plant property boundary, including the entire exclusion area, subject to certain encumbrances on portions of property within the exclusion area, specifically, certain canal, drainage, reclamation, oil, gas and mineral rights reservations held by the Trustees of the Internal Improvement Fund of the State of Florida and a canal reservation held by Miami-Dade County. Also, a small parcel of submerged land in the southeast and south-southeast portions of the exclusion area is located in the Biscayne Bay waterway. With the exception of the described submerged land, the site boundary entirely encompasses the designated exclusion area for Units 6 & 7. Because of the location of the

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submerged land, this portion of the exclusion cannot be reasonably accessed except through FPL property.

Units 1–4 use the cooling canals of the industrial wastewater facility, located south and southwest of the existing units, to cool heated noncontact water (water used for cooling that does not come into direct contact with any raw material, product, by-product, or waste) and to recirculate water for reuse. Unit 5 uses cooling towers for system cooling and releases blowdown water to the industrial wastewater facility. The industrial wastewater facility is an integral part of the existing units design and is not a water of the United States or the state. The industrial wastewater facility occupies an area of approximately 5900 acres, and contains 39 canals (32 discharge and 7 return). The canals are shallow, generally 1 to 3 feet deep, with the exception of the grand canal (main return canal), north discharge canal, south collector canal, and the east return canal, all of which extend to a depth of elevation (North American Vertical Datum [NAVD] 88) –18 feet. The canals undergo routine maintenance including removal of aquatic vegetation to minimize flow restriction and maintenance of the berms.

The Turkey Point plant property is located on the shore of Biscayne Bay, in an unincorporated area of Miami-Dade County, Florida, approximately 8 miles east of Florida City, 4.5 miles southeast of the municipal limits of Homestead, and 25 miles south of Miami. Most of Miami-Dade County is within 50 miles of the Units 6 & 7 plant area, as well as portions of Monroe County, Broward County, and Collier County ([Figure 2.1-4](#)).

The plant property, including the approximately 2- by 5-mile closed loop industrial wastewater facility, is located in portions of Sections 17–20 and 27–34 of Township 57S, Range 40E, and all of Sections 4, 9, 16-17, 20-21 and portions of Sections 5, 7-8, 18-19, and 28–30 of Township 58S, Range 40E. Units 6 & 7 would be located in portions of Sections 33 and 34 of Township 57S, Range 40E. The centerpoint of the Unit 6 reactor would be located at 25.424186 N latitude and -80.331961 W longitude (see [Figure 2.1-1](#)), using a geographic reference system of decimal degrees, North American Datum 1983 (NAD83); the centerpoint of the Unit 7 reactor would be located at 25.424186 N latitude and -80.334536 W longitude ([Figure 2.1-1](#)).

The only existing public access to the plant property is via SW 344th Street/Palm Drive. Palm Drive is a two-lane road for approximately one-half of its length from the plant to Florida City. Palm Drive intersects U.S. Highway 1 in Florida City, approximately 9 miles from the plant. Both Palm Drive and U.S. Highway 1 are four-lane roads in the area of intersection. Palm Drive narrows to two lanes at SW 137th Avenue/Speedway Boulevard.

The plant property is on the shore of Biscayne Bay with several miles of the shoreline north and east of the property that includes the Biscayne Bay Aquatic Preserve and the Biscayne National Park. The Biscayne National Park headquarters is located approximately 2.3 miles north of Units 6 & 7, adjacent to the Metropolitan Miami-Dade County Homestead Bayfront Park. The

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Everglades National Park is approximately 10 miles southwest of the plant property. Mangrove Point forms the dividing line between Biscayne Bay and Card Sound. The northern half of Mangrove Point is part of Biscayne National Park, and the southern half is state-owned. Land south and west of the Turkey Point plant property is the FPL-owned Everglades Mitigation Bank (EMB), comprised of approximately 13,000 acres of relatively undisturbed freshwater and estuarine wetlands. A mitigation bank is a wetland area that is created, restored, or enhanced for the purpose of providing compensatory mitigation of wetland losses elsewhere.

The plant property is located adjacent to Biscayne Bay and the Intracoastal Waterway, a 3000-mile waterway along the Atlantic and Gulf coasts of the United States. Some lengths of the coastline consist of natural inlets, saltwater rivers, bays, and sounds; others are man-made canals. Barge access is provided by an existing channel across Biscayne Bay for the delivery of heavy equipment and fuel oil.

A natural gas pipeline serving Units 1, 2, and 5, owned and operated by Florida Gas Transmission Company, LLC, terminates at Unit 5.

Figure 2.2-3 and Table 2.2-1 identify the U.S. Geological Survey (USGS) land use/land cover classifications within the Turkey Point plant property. The classification data, first developed by USGS, was updated in February 2000 by the National Oceanographic and Atmospheric Administration (NOAA) as part of the Coastal Assessment Framework for the Coterminous U.S. Current land use on the approximately 11,000-acre plant property includes 72 percent wetland, 21 percent forest land, 3 percent water, 3 percent urban or built-up land, and less than 1 percent agricultural land and barren land.

2.2.1.1.2 Units 6 & 7 Plant Area

The Units 6 & 7 plant area is an approximately 218-acre island that is a sparsely vegetated, hypersaline mudflat, partially buffered from tidal influence by cooling canals that encircle the plant area (Figure 2.4-2). The industrial wastewater facility isolates the plant area from normal access. A bridge located southeast of the Land Utilization building provides access to the Units 6 & 7 plant area. The cooling canals encircling the plant area are deep, primary return, water canals leading to the Units 1-4 cooling water intakes.

The Units 6 & 7 plant area is located outside of the 100-year floodplain, with an existing elevation of -2.4 to 0.8 feet (NAVD 88) and is generally flat. The eastern margins of the plant area slope gently to the return canal on the east perimeter, which is separated from Biscayne Bay by a 15 foot-high berm. The perimeter berms, along the west and north margins of the plant area, range in height from approximately 3 to 15 feet above natural ground surface. A berm is not present between the plant area and the eastern return canal, permitting inundation and sheetflow across the plant area when water levels rise in the cooling canals of the industrial wastewater

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facility. There are two remnant canals that cross the plant area from east to west; these remnant canals would be eliminated during construction of Units 6 & 7.

An ecological assessment of the Units 6 & 7 plant area and other areas on the Turkey Point plant property was conducted in 2008 to characterize the areas, including habitat description and surveys for threatened, endangered, and candidate species and species of concern (state). The results of the characterization are described below in general terms, with a more complete ecological description provided in [Section 2.4](#). Wetlands are the primary habitat types and non-wetland habitats make up the remainder.

Wetland habitats within the Units 6 & 7 plant area and adjacent laydown area include mudflats (188 acres), remnant and active canals (25 acres), dwarf mangrove (17 acres), open water (12 acres), mangrove heads (12 acres), and wetland spoil areas (10 acres) ([Figure 2.4-2](#)). Encircled by canals, the sparsely vegetated mudflats are inundated by water 3 to 4 months out of the year and a few hardy plant species, including saltwort, sea oxeye daisies, wood glasswort, and dwarf glasswort that can tolerate these conditions persist. Dwarf mangrove habitats contain the three locally abundant mangrove species, predominantly red mangrove with a few white and black mangrove, but the trees are stunted by high salinities and fluctuating water levels. The mangroves are located within the open water area on the western edge of the adjacent laydown area. The open water area joins the upper end of the cooling canals of the industrial wastewater facility. Harsh conditions in the open water area limit submerged aquatic vegetation to scattered patches of two seagrass species, widgeon grass and shoal grass. Mangrove heads, remnants of the original tidal creeks, contain primarily red mangrove, but white mangrove and black mangrove are also present. The connection between these creeks and Biscayne Bay were severed during construction of the cooling canals. Wetland spoil areas adjacent to the remnant canals are typically occupied by Australian pine, buttonwood, and mangrove.

Non-wetland areas within the Units 6 & 7 plant area and the adjacent laydown area to the west include approximately 20 acres of fill area/roadway habitat and approximately 8 acres of upland spoil piles ([Figure 2.4-2](#)). The former are limerock aggregate uplands filled for construction of access roads, parking areas, and research facilities. These areas are dominated by maintained grasses with wetland edges containing Brazilian pepper, buttonwood, and assorted herbaceous plants. Upland spoil piles were formed with spoil from the canal dredging operation. The vegetation in these areas is dominated by exotic species such as Brazilian pepper and Australian pine, as well as poisonwood, buttonwood, wild sage, ground orchid, and sea grape.

[Figure 2.2-1](#) shows the location of the Turkey Point plant property boundary. [Figure 2.2-3](#) shows the location of the exclusion area boundary (EAB) for Units 6 & 7 in relationship to the existing EAB for Units 3 & 4 (2009 acres) and the combined EAB (2070 acres) for all units. [Table 2.7-12](#) identifies the distance to the EAB from the Units 6 & 7 power block area in each of the 16 major compass directions. These distances were calculated to model potential dispersion effects from

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plant operations to offsite areas ([Section 2.7](#)). The minimum distance to the EAB is 1427 feet in the northeast direction.

There are no public roads, railroads or waterways within the EAB. There are no domestic residences within the plant property boundary, nor are there any residences within two miles of Units 6 & 7.

2.2.1.1.3 Other Areas

Additional facilities associated with Units 6 & 7 would be located outside of the Units 6 & 7 plant area but on the Turkey Point plant property including the FPL reclaimed water treatment facility and reclaimed water pipelines, radial collector wells and pipelines, nuclear administration and training buildings, parking areas, laydown areas, expanded equipment barge unloading area, security buildings, access and heavy haul roads, spoils areas, transmission infrastructure, and potable water supply pipelines. The locations of these facilities are presented in [Figure 3.9-1](#).

- An FPL reclaimed water treatment facility would be constructed on approximately 44 acres of wetland located at the northwest corner of the plant property between SW 344th Street/Palm Drive and the test canal system. The reclaimed water pipelines from the FPL reclaimed water treatment facility to Units 6 & 7 would be routed south along the eastern side of the cooling canals to the makeup water reservoir, traversing a dwarf mangrove stand and the laydown area on the western side of the Units 6 & 7 plant area.
- Four radial collector well caissons would be installed on the Turkey Point peninsula, east of the existing units, with laterals drilled horizontally in the subsurface beneath the floor of Biscayne Bay. The radial collector well water supply pipelines would be routed west from the caissons and south to the Units 6 & 7 cooling towers along the eastern side of the plant area.
- An approximate 32-acre area for location of a nuclear administration building, training building, and a parking area would be located on two adjacent parcels of land immediately north of the Units 6 & 7 plant area. These parcels of land are comprised of approximately 24 acres of mangrove swamp, 2 acres of willows, and 6 acres of fill areas and roads. Two smaller laydown areas, totaling approximately one acre, would be located on paved areas within the existing facilities area of the plant property.
- The existing barge turning basin located at Turkey Point connects Biscayne Bay to the Turkey Point plant property and would be used for Units 6 & 7 plant module and component delivery, the transport of which is planned to be accomplished by barge. The barge turning basin is a dead-end canal approximately 300 feet wide, 1200 feet long, and 18 feet deep. The turning basin, constructed in 1979 for transport of major equipment to the existing units, was designed to allow for the maneuvering of major equipment barges within the basin and not in

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the bay or the bay channel. The turning basin is currently used for fuel deliveries for Units 1 & 2. Water depths in the entrance channel to the turning basin are between 8 and 12 feet. The near shore shallow areas outside of the channel are generally less than 5 feet deep. The only flushing that occurs in the basin is from slight tidal action and rare westerly winds.

Fuel oil is delivered to the existing units by barge and tug from a fuel oil terminal at the Port of Miami on Dodge Island. The barge route is via the Intracoastal Waterway through Biscayne Bay using the existing barge channel. The barge channel is approximately 3.4 miles long and 90 feet wide with a depth of –11 feet NAVD (–9.37 feet mean low water) or more for the majority of its length. The fuel deliveries are currently made to the fuel oil unloading area near the head of the turning basin (southwest of the equipment barge unloading area; [Figure 3.9-1](#)) and would continue during the period of Units 6 & 7 module and component delivery; current fuel oil deliveries are typically 5–7 deliveries per week.

For each new unit, there would be approximately 80 round-trip barge deliveries of modules over an approximate six-year duration. The existing equipment barge unloading area, located on the north side of the turning basin ([Figure 3.9-1](#)), would be extended landward to approximately 60 feet by 100 feet and 9 feet deep, to facilitate heavy equipment and component unloading for construction of Units 6 & 7.

- The existing heavy haul road, originating at the equipment barge unloading area, would be improved and terminate at three locations at the Units 6 & 7 plant area, to facilitate unloading plant modules and components. The road from the equipment barge unloading area to the Units 6 & 7 plant area would be approximately 2 miles long and 24 feet wide. The road would start at the equipment barge unloading area and extend generally west between and around Unit 5 and Units 1 & 2. The road would then extend generally south and cross over two new heavy haul bridges, one at the main cooling discharge canal and the other at the main cooling return canal. The heavy haul road would then terminate at three locations of the plant area.
- A new entrance to the Turkey Point plant property would be constructed for access to Units 6 & 7, beginning with onsite construction activities. The new entrance would be SW 359th Street. The existing SW 359th Street and the existing service road at the northern end of the cooling canals/industrial wastewater facility would be joined by a new road segment, and improved to four lanes, two eastbound and two westbound, and a bridge constructed over the L-31E canal to handle the traffic to and from Units 6 & 7. The SW 359th Street improvements would extend offsite from the Turkey Point plant property westward to connect to SW 117th Avenue and SW 137th Avenue/Tallahassee Road that would also be improved.
- Spoils areas would be established on the Turkey Point plant property south of the Units 6 & 7 plant area to allow dewatering of materials during construction of Units 6 & 7 from activities

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such as clearing, grubbing, and excavation. Three separate spoils areas, denoted as "A," "B," and "C" would be established at the southern end of the industrial wastewater facility. Spoils areas "A" and "C" would be located on the western and eastern side of the main return canal, respectively, and each pile would be 4.6 to 5 miles long. Spoils area "B" would be established at the southern end of the industrial wastewater facility and would be approximately 1.8 miles in length. The total area for spoils area "A," "B," and "C" would be approximately 55 acres, 22 acres, and 122 acres, respectively, resulting in a total spoils capacity of approximately 2 million cubic yards. The height of the piles would be approximately 6 feet above existing grade.

- Existing transmission infrastructure on the Turkey Point plant property would be expanded to include: construction of the new 500/230 kV Clear Sky substation; construction of a single-circuit 230 kV transmission line between Clear Sky substation and the existing Turkey Point substation and six 230 kV underground connections with the new Units 6 & 7 transformers; and construction of the onsite portions of the new transmission lines from Clear Sky substation to the Levee and Pennsuco substations in the proposed West Corridor and from Clear Sky substation to the existing Davis substation, and then on to the Miami substation in the proposed East Corridor. Improvements at the Turkey Point substation would include a 0.9-acre expansion of the substation site to accommodate a new bay with two new 230 kV line terminals and enlargement of the existing relay vault building.
- Potable water pipelines, approximately 10 miles long, would be constructed to supply potable water for Units 6 & 7. The new water pipelines would deliver potable water from the Miami-Dade County Water and Sewer Department potable water source facility to the Units 6 & 7 plant area. Routing for the pipelines is identified in [Figure 3.9-1](#). The pipelines would enter the Turkey Point plant property at the intersection of SW 117th Avenue and SW 359th Street, following the new four-lane SW 359th Street to a position on the plant property and then south to Units 6 & 7.

Other supporting infrastructure for Units 6 & 7, including an FPL-owned fill source, transmission lines and expanded substations, portions of the reclaimed water and potable water pipelines, and access roads, would be located offsite of the Turkey Point plant property and are discussed in [Subsection 2.2.2](#).

2.2.1.1.4 Land Use

Laws adopted during 1984-1986 established Florida's growth management system, including adoption of a state comprehensive plan. The laws also required regional planning councils to prepare and adopt comprehensive regional policy plans consistent with the state comprehensive plan. Miami-Dade, Broward, and Monroe Counties are included in the South Florida Regional Planning Council, which works with the regional community to identify issues and opportunities

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that are regional in scope and create implementing strategies to achieve the desired future. The *Strategic Regional Policy Plan for South Florida* (SFRPC 2004) is the policy document that guides all of the Council's activities.

The Local Government Comprehensive Planning and Land Development Regulation Act (Chapter 163, Part II, Florida Statutes), also known as Florida's Growth Management Act, requires all of Florida's 67 counties and 410 municipalities to adopt local government comprehensive plans that guide future growth and development. The comprehensive plans contain chapters or "elements" that address future land use, housing, transportation, infrastructure, coastal management, conservation, recreation and open space, intergovernmental coordination, and capital improvements. A key component of the Act is its "concurrency" provision that requires facilities and services to be available concurrent with the impacts of development. The Act mandates that specific level of service standards for traffic, mass transit, parks, water, sewer, solid waste, and drainage be included in local comprehensive plans and that no development orders be issued when the adopted levels of service would not be met. The Act also requires consistency between the local plan, the applicable regional plan, and the state comprehensive plan, and all development regulations and orders must be consistent with the adopted local comprehensive plan.

Florida's Growth Management Act authorizes the Florida Department of Community Affairs, Division of Community Planning, to review comprehensive plans and plan amendments for compliance with the Act. Other review agencies, including the regional planning councils, water management districts, the Departments of State, Transportation, Environmental Protection, and Agriculture and Consumer Services, and the Florida Fish and Wildlife Conservation Commission, also review comprehensive plans and amendments and issue recommended objections. Local governments may amend their comprehensive plans twice per year.

Effective comprehensive planning has been a central focus of the Miami-Dade County government from its formation. The power to "prepare and enforce comprehensive plans for the development of the county" was one of 24 specified in the County Charter and a Department of Planning is one of the four departments required by it. Miami-Dade County developed its first land use plan in 1965 and has since enacted a series of increasingly more refined growth management plans and procedures.

The Miami-Dade County Comprehensive Development Master Plan (CDMP; MDC 2009) is adopted by ordinance by the Board of County Commissioners. This ordinance is codified at Chapter 12-114, Code of Miami-Dade County, Florida. The CDMP for Miami-Dade County, which is usually revised twice yearly, necessarily addresses both incorporated and unincorporated areas due to the many area-wide responsibilities of County government. Each of the 34 municipalities in Miami-Dade County is also required by Florida's Growth Management Act to adopt its own comprehensive plan for the area within its jurisdiction. The County CDMP

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emphasizes the regulation of land development in the unincorporated areas and the County's jurisdictional responsibilities in municipal areas.

The Miami-Dade County CDMP is organized into eleven Plan Elements preceded by a statement of legislative intent: Land Use; Housing; Conservation; Aquifer Recharge and Drainage; Water, Sewer, and Solid Waste; Recreation and Open Space; Coastal Management; Intergovernmental Coordination; Capital Improvements; Educational; and Economic.

Miami-Dade County has more than 2,000 square miles of land, of which almost 500 square miles have been developed for urban uses. The county-wide land use plan broadly defines land use categories, with the smallest distinguishable area of the land use map set at 5 acres. The land use portion of the CDMP includes a map for 2015-2025, which visually shows recommended future land uses by major categories, each of which is interpreted locally through zoning designations.

The Miami-Dade County CDMP has designated the location of Turkey Point, including the location of Units 6 & 7, as Environmental Protection Subarea F (Coastal Wetlands and Hammocks). These areas are low-lying, flood-prone, and characterized predominantly by coastal wetland communities. Accordingly, land use or site alteration proposals would be carefully evaluated case by case by federal, state, regional, and county agencies. In addition, necessary electrical generation and transmission facilities are permitted in this area. The approval of any new use, and the replacement or expansion of any existing use, would be conditioned upon its demonstrated consistency with the CDMP's adopted goals, objectives, and policies, and conformity with prevailing environmental regulations (MDC 2009).

All of Miami-Dade County is zoned, including the unincorporated portion of the county. According to the Miami-Dade County CDMP map, Units 1–5 have a future land use category which allows a full range of institutions, communications, and utilities. The Units 6 & 7 plant area is zoned as Interim District (GU). Nuclear reactors are a permitted use in this district with the approval of an Unusual Use by Miami-Dade County, as described below (MDC 2009).

After consultations with Miami-Dade County and its various agencies concerning application number Z07-207, the county's Developmental Impact Committee Executive Council issued its recommendation by concluding that the construction of two new nuclear reactors, with mitigation measures imposed through conditions of approval, would be consistent with the CDMP. The county issued its decision in 2007 to approve the Unusual Use to permit two new nuclear power stations and the associated facilities as well as the excavation and filling of the Units 6 & 7 plant area. The approval was issued by the Miami-Dade County Board of County Commissioners as Resolution Z-56-07, with identified conditions of approval.

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The NRC Office of Nuclear Reactor Regulation has issued guidance to its staff regarding compliance with the federal Coastal Zone Management Act. This guidance acknowledges that Florida has an approved Coastal Zone Management Program. Units 6 & 7 would be located within the Florida coastal zone.

2.2.1.2 The Vicinity

For the purposes of this environmental report, the vicinity is defined as the area within a 6-mile radius of the centerpoint between Units 6 & 7 (Figure 2.1-3).

The Turkey Point plant property and its immediate environs are located on the Floridan plateau, a partly submerged peninsula of the continental shelf. The topography of the area is flat and rises very gently from sea level to an approximate elevation of 10 feet (NAVD 88) at a point some 8 to 10 miles west of the plant property.

Biscayne Bay is immediately adjacent to the Turkey Point plant property (Figure 2.1-3) and the Units 6 & 7 plant area. To the east, 5 to 8 miles across Biscayne Bay, is a chain of offshore islands, comprising the northern part of the Florida Keys running in a northeast-southwest direction between the bay and the Atlantic Ocean, the largest of which, near the plant property, is Elliott Key. Figure 2.2-4 and Table 2.2-1 identify land use classifications in the vicinity of Turkey Point. The closest incorporated communities are Homestead and Florida City. Florida City is 8 miles west of the plant property and the municipal limits of Homestead are 4.5 miles west of the plant property. The nearest full-time residence is approximately 2.7 miles from the Units 6 & 7 plant area.

Land in the area surrounding the Turkey Point plant property is almost exclusively undeveloped. The FPL-owned EMB is adjacent to most of the western and southern boundaries of the plant property. The South Florida Water Management District Canal L-31E is also located to the west of the plant property. The eastern portions of the Turkey Point plant property are adjacent to the open waters of the Biscayne Bay Aquatic Preserve and Biscayne National Park. The southernmost eastern portion of the plant property is bounded by state-owned land located on Card Sound. Undeveloped land owned by Miami-Dade County is located to the north of the plant property and is part of Biscayne National Park.

There is one state-managed aquatic preserve, a wetlands habitat preserve, two national parks, and a national wildlife refuge in the vicinity of Units 6 & 7. Biscayne Bay Aquatic Preserve is a shallow, subtropical lagoon consisting of three separate areas of Biscayne Bay, located northeast, east, and southeast of the Turkey Point plant property (Figure 2.1-3). The northern part of the Preserve begins just south of Cape Florida on the east and south of Chicken Key on the west. The southern portion is in Card Sound. The Preserve is approximately 69,000 acres of submerged state land that has been designated as an Outstanding Florida Water, Class III. The

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Florida Department of Environmental Protection (FDEP), Office of Coastal and Aquatic Managed Areas manages the Preserve. The Preserve offers recreational and commercial on- and in-water activities, such as boating, water sports, and fishing.

The Model Lands Basin was a Save Our Rivers (SOR) land acquired for conservation by the South Florida Water Management District. The Model Lands are fragmented, with state, local, and private ownership west of the Turkey Point plant property and east of U.S. Highway 1. With the exception of a small segment of Canal L-31E, the closest Model Lands properties are approximately 3 miles from the plant property. The Model Lands Basin is comprised largely of fresh and salt-water wetlands that form a contiguous habitat corridor with the Everglades National Park, the Southern Glades SOR project located further to the southwest, the Biscayne National Park, and other designated lands in Miami-Dade County.

Biscayne National Park is immediately north and east (Figure 2.1-3). The park headquarters building is approximately 2.3 miles north of the Units 6 & 7 plant area. The Biscayne National Park was first established in 1968 as a National Monument and was expanded in 1980 to approximately 173,000 acres of water, coastal lands, and 42 keys. The park fulfills a multi-purpose mission by managing natural and historic resources, advocating responsible stewardship, and enabling visitors to experience scenic vistas and compatible recreational activities. Boating is the most prevalent activity in the park, and recreational and commercial fishing are allowed. Other recreational activities include snorkeling, diving, camping, picnicking, and hiking.

Everglades National Park is approximately 10 miles southwest of the plant property. Everglades National Park consists of 1,509,000 acres, including most of Florida Bay. The Ernest Coe Visitors Center in the park is located approximately 16 miles southwest of Units 6 & 7. The Crocodile Lake National Wildlife Refuge is approximately 10 miles south of the plant property. The Big Cypress National Preserve is approximately 35 miles northwest of the plant property.

Homestead Bayfront Park is located adjacent to Biscayne National Park, within about 1.5 miles of the Units 6 & 7 plant area (Figure 2.1-3). Homestead Bayfront Park is a large recreational park south of the North Canal on Biscayne Bay which also includes a marina.

The Homestead Air Reserve Base is approximately 4.5 miles northwest of the Units 6 & 7 plant area (Figure 2.1-3). The base encompasses 2938 acres. The U.S. Air Force determined that it would make available 717 acres at the base to Miami-Dade County for future mixed economic uses that could include commercial development as well as residential or recreational uses. However, the U.S. Air Force rejected a proposal for a civilian commercial airport at the base.

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The Homestead Miami Speedway is approximately 5 miles northwest of the Units 6 & 7 plant area. The speedway can seat 65,000 people in the grandstands, but has greater overall seating capacity and hosts various motor racing events throughout the year.

Land south and west of the plant property is the FPL-owned Everglades Mitigation Bank (EMB). The EMB comprises approximately 13,000 acres of relatively undisturbed freshwater and estuarine wetlands.

The predominant existing land uses in the immediate area surrounding the Turkey Point plant property are undeveloped land and protected areas (Figure 2.1-3). Land use adjacent to the Units 6 & 7 plant area comprises undeveloped land, Units 1 through 5, a gas pipeline, a potable water pipeline, and electric transmission infrastructure. The industrial wastewater facility is located to the immediate west and south of the Units 6 & 7 plant area.

Of the 38,607 acres of land area (excluding the waters of the Atlantic Ocean, Biscayne Bay, and Card Sound) within 6 miles of Units 6 & 7 (Figure 2.2-4 and Table 2.2-1), current land use consists of 61 percent wetland, 23 percent forest land, 9 percent agricultural land, 5 percent urban or built-up land, 2 percent water, and less than 1 percent barren land. Most of the area south and southwest consists primarily of marshland and glades, and contains no resident human population (Figures 2.1-3 and 2.2-4). The area west to northwest within 6 miles of Units 6 & 7 consists primarily of agricultural land (Figure 2.2-4).

Agricultural land comprises approximately 9 percent (3500 acres) of land use within the 6-mile vicinity of the Turkey Point plant property (Figure 2.2-4; Table 2.2-1). The land acreage with use/cover designation of agricultural in the vicinity is concentrated in an area adjacent to the west-northwest corner of the plant property within Miami-Dade County. An assessment of soil types in the area of the plant property indicated that no prime farmland, as defined in the Farmland Protection Act (7 U.S.C. Section 4201(b)), occurs on the Turkey Point plant property in the vicinity. In addition, there is no indication of unique farmland in the 6-mile vicinity. Further discussion of agriculture in the four-county region surrounding the Turkey Point plant property is provided in Section 2.3.

The closest population center of 25,000 residents or more, as defined in 10 CFR 100.3, is Homestead (Figure 2.1-4). Homestead had an estimated 2006 population of 53,767 (USCB 2009a). Homestead's political boundary is approximately 5 miles from Units 6 & 7 at its closest point. However, no resident population exists at this distance from Units 6 & 7. The nearest populated area of Homestead lies approximately 7 miles west of the Turkey Point plant property.

There are no hospitals located within 6 miles of Units 6 & 7. Homestead Hospital is the primary health care provider in the southeast portion of Miami-Dade County and is located approximately 9.6 miles northwest of Units 6 & 7. There are no existing public schools within 5 miles of

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Units 6 & 7. The closest public school is the Keys Gate Charter School, located approximately 6 miles west of the Units 6 & 7 plant area. There are no prisons within 6 miles of Units 6 & 7.

The Units 6 & 7 plant area is 10 miles east of the nearest rail line, which is owned by CSX (National Atlas 2008a), and is also located adjacent to a navigable waterway—Biscayne Bay. There is a U.S. Naval Reservation 7 miles southwest of the plant area (National Atlas 2008b).

There are two industrial facilities located within 6 miles of the Units 6 & 7 plant area, the RMC Florida Group Ltd. which mines limestone, and the Homestead Air Reserve Base.

Most of Miami-Dade County is underlain by Miami limestone. An area of past, present, or future mineral extraction is located within 4 miles of the Units 6 & 7 plant area (MDC 2009). There is an active limestone mine 6 miles west of the plant area (the RMC Florida Group Ltd. facility identified above) as well as an abandoned quarry 6 miles north of the plant area (MSHA 2008).

2.2.2 TRANSMISSION CORRIDORS AND OFFSITE AREAS

The existing transmission corridors are described in [Subsection 2.2.2.1](#). Proposed transmission lines would be constructed in these corridors and are described in [Subsection 2.2.2.2](#). Other offsite areas required to construct or operate the new units are identified in [Subsections 2.2.2.3 through 2.2.2.6](#).

2.2.2.1 Existing Circuits

Existing transmission lines are identified in [Figure 2.2-5](#). There are two 230 kV substations on the Turkey Point plant property—the 1-acre McGregor substation and the approximately 6-acre Turkey Point substation. The McGregor substation is approximately 0.25 miles west of the Turkey Point substation and is connected via one 230 kV circuit.

Seven 230 kV transmission circuits depart from Turkey Point substation and proceed northward to the Davis substation near the town of Three Lakes. These lines are within the Turkey Point-Davis transmission corridor. This corridor is typically 330 feet wide, 19 miles long, and typically contains four sets of transmission line structures. Three of the structure sets carry two outgoing 230 kV circuits each, and the fourth carries a single 230 kV circuit. The first 6 miles of the existing corridor pass through and alongside Biscayne National Park.

Currently, a single transmission circuit is located in the Turkey Point-Levee corridor. This corridor proceeds west, continues for approximately 7 miles, and turns north toward the Levee substation for approximately 16 miles. This corridor is nominally 330 feet wide.

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In total, the corridors carrying the eight 230 kV transmission circuits from the Turkey Point plant property extend a distance of approximately 27 miles, and occupy approximately 1111 acres of land. They are contained in Miami-Dade County.

2.2.2.2 Proposed Circuits

Units 6 & 7 would require new transmission facilities to provide reliable interconnection and integration of approximately 2200 MW of new electricity generation into the FPL transmission system. Existing linear features would generally be followed where available, within two proposed corridors, a West Preferred or Secondary Corridor and an East Preferred Corridor, from the Units 6 & 7 plant area to existing substations (Figure 2.2-5).

Units 6 & 7 would be connected to a new 500/230kV substation known as Clear Sky substation, which would be constructed in the Units 6 & 7 plant area. The connection would be to the 230kV section of the substation via underground transmission facilities. The Clear Sky substation would have two 500 kV transmission lines, approximately 43 miles long, connecting it to the existing Levee 500kV substation in a proposed transmission West Preferred Corridor. A second new 230kV line, approximately 52 miles long, would be constructed in the same West Preferred Corridor between Clear Sky substation and a new 230kV bay position at the existing Pennsuco substation; the line would share the same right-of-way with the two new 500kV lines between Clear Sky and Levee substations.

In addition to the proposed new transmission lines in the West Preferred Corridor, a new 230 kV line, approximately 19 miles long, would be constructed to connect the Clear Sky substation to a new 230 kV bay position at the existing Davis substation in a proposed transmission East Preferred Corridor. In addition, a new 230 kV line, approximately 18 miles long, would be constructed (in a largely collocated existing right-of-way or other linear/transportation corridors) to connect the Davis substation to a new 230 kV bay position at Miami substation.

As described in Chapter 1, routing of the new 500 kV and 230 kV transmission lines requires certification through the Florida Power Plant Siting Act (PPSA) site certification application process. In addition, installation of these lines would require easement acquisition. Various approvals and agency notifications would be required for each of the required transmission lines and would be acquired as part of the PPSA process. Table 2.2-2 summarizes the major land uses along each corridor/option. Table 2.2-3 summarizes the major land uses along the Clear Sky to Levee preferred and secondary corridor options.

West Preferred or Secondary Transmission Corridor

The proposed transmission West Corridor includes two options, a West Preferred Corridor option and a West Secondary Corridor option. The proposed West Corridor, with either option, would include two 500 kV single-circuit transmission lines connecting the new Clear Sky substation to

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the existing Levee substation and one 230 kV single-circuit transmission line connecting the Clear Sky substation to the existing Pennsuco substation.

From the Clear Sky substation, the two 500 kV and single 230 kV transmission lines would extend west and north to the Levee substation located in an area of unincorporated Miami-Dade County east of Krome Avenue (SR 997) and north of U.S. Highway 41 (Tamiami Trail). FPL currently has available right-of-way, either in fee or easement, for a significant portion of this distance. The total length of the line to Levee substation would be approximately 43 miles, of which approximately 13 miles would be a proposed relocation (preferred corridor option) of an existing right-of-way (secondary corridor option) partially located within Everglades National Park. The existing Levee substation would be expanded to accommodate the two new 500 kV lines.

Current land use for the total West Preferred Corridor between Clear Sky and Levee substations is 58 percent wetland, 31 percent agricultural land, 7 percent forest land, 3 percent urban or built-up land, 1 percent rangeland, and less than 1 percent barren land (Table 2.2-3). Current land use for the total West Secondary Corridor between Clear Sky and Levee substations is 52 percent wetland, 32 percent agricultural land, 10 percent forest land, 4 percent urban or built-up land, 1 percent rangeland, and less than 1 percent barren land (Table 2.2-3). The differences between the two corridors relate to differences in current land use of the second leg of the corridor. The West Preferred corridor (preferred option; Table 2.2-2), which runs along the eastern boundary of Everglades National Park, has a current land use distribution of 82 percent wetland, 17 percent agricultural land, and 1 percent rangeland. The West Secondary corridor (secondary option; Table 2.2-2), which runs through Everglades National Park, has a current land use distribution of 100 percent wetland.

The single 230 kV transmission line (maximum current rating of 2990 amps) would extend from the Clear Sky substation to the Levee substation using the same transmission corridor, but would not connect to but bypass the Levee substation and follow largely an existing 230 kV transmission easement for approximately 8 miles to connect to the existing Pennsuco substation. The Pennsuco substation would be expanded to accommodate the single 230 kV line.

Current land use for the transmission corridor between Levee and Pennsuco substations is 71 percent wetland, 17 percent rangeland, 10 percent urban or built-up land, and 2 percent water (Table 2.2-2).

All three transmission lines would be constructed within a single right-of-way of approximately 330 feet in width within either of the proposed West Corridors to the Levee substation. From Levee to Pennsuco, the single 230 kV line would be constructed largely in an existing right-of-way.

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Two access-only corridors would be constructed as part of the West Preferred/Secondary Corridor alignments. These corridors would be used to access the transmission corridor and eventual right-of-way. No transmission structures would be built in these access corridors, although access roads or road improvements may be required. The two access corridors are:

- Tamiami Trail Corridor
- Krome Avenue Corridor

Current land use for the transmission line access corridor at Tamiami Trail is 100 percent wetland (Table 2.2-4).

Current land use for the transmission line access corridor at Krome Avenue is 98 percent wetland and 2 percent urban or built-up land (Table 2.2-4).

East Preferred Transmission Corridor

The proposed East Preferred Corridor would include a single-circuit 230 kV transmission line. This line would provide connection from the Clear Sky substation to the existing Davis substation (maximum current rating of 2990 amps) and then connection from the Davis substation to the existing Miami substation (maximum current rating of 2300 amps), both substations located in Miami-Dade County. The Davis substation is located at the intersection of SW 136th Street and SW 127th Avenue. The Miami substation, located within the city limits of Miami, is at the intersection of SW 2nd Avenue and SW 3rd Street along the Miami River. There would be improvements made to both substations to accommodate the new 230 kV line.

The Clear Sky-Davis portion of the East Preferred Corridor would use an existing, 19-mile-long, multicircuit FPL transmission line right-of-way. This right-of-way has the ability to accommodate the proposed single-circuit 230 kV line without the need for additional right-of-way. However, for a portion of the Davis to Miami corridor, new rights-of-way would be required, but much of the proposed corridor includes existing transportation rights-of-way (e.g., U.S. Route 1, Metrorail). The Davis-Miami portion of the East Preferred Corridor is approximately 18 miles long.

Current land use for the transmission corridor between Clear Sky and Davis substations is 38 percent urban or built-up land, 22 percent agricultural land, 20 percent wetland, 19 percent forest land, and less than 1 percent barren land (Table 2.2-2).

Current land use for the transmission corridor between the Davis and Miami substations is 98 percent urban or built-up land, 2 percent forest land, and less than 1 percent barren land and water (Table 2.2-2).

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Also included as part of the East Preferred Corridor is another single-circuit 230 kV transmission line that would connect the Clear Sky substation to the Turkey Point substation on the plant property (maximum current rating of 2990 amps) that are approximately 0.4 miles apart. Improvements would be made to the Turkey Point substation to accommodate the new 230 kV line from Clear Sky substation.

In some portions of the proposed Davis-Miami transmission line section, it would be collocated with other transmission lines on the existing right-of-way. In some of the locations, to accommodate both power lines on one pole, the transmission line would be constructed using double-circuit concrete poles directly embedded in the ground. An additional, short portion of the Davis-Miami line section, located at the crossing of the Miami River adjacent to the existing Miami substation, would be constructed as an underground extruded dielectric cable system using cross-linked polyethylene (XLPE) insulating cables.

In some cases along the proposed transmission line routes, the new lines may also be designed to provide for other attachments such as electric distribution lines, communication facilities, or other utility equipment. The typical span lengths between structures along the three proposed transmission lines would range from approximately 200 to 750 feet, depending on site-specific right-of-way widths and other design considerations.

Transmission Substations

In addition to the new and modified transmission lines discussed above, the interconnection and integration of new Units 6 & 7 generating capacity would include one new substation and upgrades and expansions of the following existing substations ([Figure 2.2-5](#)): Turkey Point, Miami, Levee, Davis, and Pennsuco. Improvements at the Turkey Point, Levee, and Davis substations would require site expansions on existing FPL property in previously disturbed areas. Work at the Pennsuco substation would require acquisition of additional property for expansion on a previously disturbed area. Acreages and current land use for the areas of substation expansion are identified in [Table 2.2-5](#).

The Clear Sky substation would be a new 500/230 kV switchyard constructed in the Units 6 & 7 plant area utilizing 230 kV underground facilities to connect Units 6 & 7 transformers for a total of six 230 kV underground connections. The two new 500 kV transmission lines to the Levee substation would be connected to the 500 kV section of the Clear Sky substation and three new 230 kV transmission lines, one each to the Davis, Pennsuco, and Turkey Point substations, would be connected to the 230 kV section of the Clear Sky substation.

The Turkey Point substation would be expanded by 0.9 acre to accommodate a new bay with two new 230 kV line terminals and enlargement of the existing relay vault building. The new bay would be rated at 3000 amps and include new pulloff towers, breakers, line switch, disconnect

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switches and all associated bus work, cable trench, foundations, conduits, and grounding. Current land use of the 0.9 acre area of expansion for the Turkey Point substation is 100 percent urban or built-up land.

The existing Levee substation, located at NW 41st Street and NW 147th Avenue, would be expanded by 2.3 acres to accommodate a new bay with two 500 kV line terminals. The interconnection work at the Levee substation would include filling, grading, and rocking an expansion area of approximately 130 x 850 feet to the north of the existing 500 kV yard for construction of a new bay and associated equipment. In addition, a new stormwater retention system would be constructed. Current land use of the 2.3 acres area of expansion for the Levee substation is 100 percent wetland.

The existing Pennsuco substation, located at 10800 NW 107th Avenue, would be expanded by 0.65 acres to accommodate addition of a stormwater retention system and installation of new equipment including a new 230 kV line terminal; new breakers and conversion/reconfiguration of existing buses, relocation of distribution transformers, and installation of a new pulloff structure and disconnect switches. Current land use of the 0.65 acres area of expansion for the Pennsuco substation is 100 percent urban or built-up land.

The existing Davis substation, located at 12701 SW 136th Street, would be expanded by 1.21 acres to accommodate addition of two new 230 kV line terminals and installation of a switchable inductor to control power flow for the line connecting to the Miami substation. Current land use of the 1.21 acres area of expansion for the Davis substation is 9 percent urban or built-up land and 91 percent forest land.

The Miami substation, located at 122 SW 3rd Street, would be modified to expand the 230 kV section to a double bus configuration, add a new 230 kV line terminal for connection of the line from the Davis substation, and replace the autotransformer to match the long-term emergency rating of the Miami substation autotransformer all within the existing fence line.

2.2.2.3 Makeup and Potable Water Systems

Makeup water for the Units 6 & 7 cooling system would consist of both reclaimed water and saltwater. As described in [Sections 3.4](#) and [3.9](#), reclaimed water pipelines would require approximately 9 miles of pipeline corridor between the FPL reclaimed water treatment facility on the plant property and the Miami-Dade Water and Sewer Department South District Wastewater Treatment Plant to the north ([Figure 2.2-5](#)). For about 6.5 miles of their length, the pipelines would be collocated with the existing Clear Sky-to-Davis transmission line right-of-way and adjacent road and canal rights-of-way, although most of the route is classified as wetland habitat. The remaining 2.5 miles would be located along new pipeline corridor. The reclaimed water pipelines from the FPL reclaimed water treatment facility would be routed south along the eastern

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side of the cooling canals to the makeup water reservoir, traversing a dwarf mangrove stand and the laydown area on the western side of the Units 6 & 7 plant area (Figure 3.9-1).

Current land use within the reclaimed water pipeline corridor is described in Table 2.2-6 and consists of 60 percent wetland, 35 percent forest land, 3 percent barren land, and 2 percent agricultural land.

Saltwater would be supplied by four radial collector wells drawing water from below Biscayne Bay. The wells would be located on the Turkey Point peninsula, east of the existing units. Each radial collector well would consist of a central reinforced concrete caisson extending below the ground level with horizontal laterals projecting up to a distance of 900 feet from the caisson in the subsurface beneath the floor of Biscayne Bay. The radial collector well locations are shown on Figure 3.1-3. The radial collector well pipelines would be routed west from the caissons and south to the Units 6 & 7 cooling towers along the eastern side of the plant area (Figure 3.9-1).

Potable water pipelines, approximately 10 miles long, would be constructed to supply potable water for Units 6 & 7. The new water pipelines would deliver potable water from the Miami-Dade County Water and Sewer Department potable water source facility to the Units 6 & 7 plant area. Routing for the pipelines is identified in Figure 3.9-1. Approximately 2.5 miles of the pipeline corridor (origination at SW 288th Street and SW 137th Avenue/Tallahassee Road to SW 328th Street/N. Canal Drive) would require new land disturbance. The major land categories disturbed would be 41 percent agricultural land, 38 percent urban or built up land, and 22 percent forest land. The remaining pipeline route would be along roadways that would be improved.

2.2.2.4 Fill Material

An estimated 8.9 million cubic yards of fill would be required to raise the elevation of the Units 6 & 7 plant area to a final elevation of 19 to 26 feet above sea level. As described in Section 3.9, fill material would be obtained from a combination of an FPL-owned fill source, other regional sources, or reused material.

The FPL-owned fill source is located approximately 4 miles northwest of the Turkey Point plant property (Figure 3.9-1). The fill source land, which is approximately 300 acres, is located northwest of the intersection of SW 107th Avenue and SW 312th Street. The land is currently used for agriculture, predominantly palm tree nurseries that use approximately 244 acres of the total acreage of the tract. The land surface elevation in this area is approximately 3-4 feet NGVD. The land is nearly flat, with a slope of 1-2 feet per mile to the east. Water levels in this area range from approximately 2 feet in the wet season to 1 foot in the dry season. The upper 4-5 feet of soil is a mixture of marl, peat, and fills. Rock (Miami oolite) is generally encountered 4-5 feet below land surface (bls). The Fort Thompson Formation and Key Largo Limestone (interbedded) are

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found between 9 and 74 feet bls. Surface drainage in the area is currently through swales and roadside ditches to Military or Mowry Canals and then east toward Biscayne Bay.

The aggregate mining operation at this location to obtain fill material for construction of Units 6 & 7 would create a lake in the deep cut areas. There would be a shallow (maximum 3-4 feet deep) littoral zone around the shoreline with 4:1 slopes. The final depth of the lake in the deep cut areas would be based on Miami-Dade County Department of Environmental Resources criteria for rock mining, which require a 10 foot vertical buffer between the bottom of the mine and the 250 mg/L chloride level in the aquifer.

2.2.2.5 Emergency Operations Facility

The existing emergency operations facility for Units 3 & 4 would also be used for Units 6 & 7. This facility is located offsite in Miami-Dade County at the intersection of West Flagler Street and SW 92nd Avenue. The facility is not further considered in this environmental report.

2.2.2.6 Roads and Highways

The roads and highways in the area surrounding the Turkey Point plant property and providing potential access to the property and the Units 6 & 7 plant area include U.S. and interstate highways, multilane divided state highways, and local streets. The major federal highways in Miami-Dade County are U.S. Highway 1, which bisects the county from north to south and continues south to the Florida Keys, and Interstates 75 and 95, which also have a north-south direction but terminate in Miami.

Two of the major state highways in Miami-Dade County are Florida's Turnpike and State Road 997. Florida's Turnpike is a multilane, divided toll road that traverses much of Florida, linking Interstate 75 in the interior south of Ocala to Miami. The Homestead extension of Florida's Turnpike terminates at U.S. Highway 1 north of Florida City. State Road 997 connects U.S. Highway 1 in Homestead with U.S. Highway 27, which fringes the western edge of metropolitan Miami and terminates in Homestead, becoming Krome Avenue. Krome Avenue continues south and terminates at U.S. Highway 1, south of Florida City.

The existing access road for the Turkey Point plant property is SW 344th Street/Palm Drive. SW 344th Street/Palm Drive intersects with U.S. Highway 1 and State Road 997. It is a four-lane road that narrows at its intersection with SW 137th Avenue/Tallahassee Road to two lanes as it leads to the Turkey Point plant property. Access to the plant property and the Units 6 & 7 plant area from U.S. Highway 1 could also be made using SW 328th Street/N. Canal Drive, which parallels SW 344th Street/Palm Drive to the north. This road is linked to SW 344th Street/Palm Drive by cross streets such as the four-lane SW 137th Avenue/Tallahassee Road and the two-lane SW 117th Avenue. Access to the site from Florida's Turnpike could be made via the exit at SW 312th Street/Campbell Drive or via the Turnpike terminus at U.S. Highway 1. SW 312th

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Street/Campbell Drive is a four-lane road that parallels SW 344th Street/Palm Drive to the north. A connecting road is SW 137th Avenue/Tallahassee Road. The functional class for each of these roads is presented in [Table 2.5-14](#).

Road improvements are planned to allow access to the Turkey Point plant property for construction and operations. As described in [Section 3.9](#), the improvements include the widening of three existing roadways and the development of existing unpaved roads to four paved roadways.

Acreages and current land use for the areas of road improvements are identified by road in [Table 2.2-7](#) and summarized below:

- SW 117th Avenue North — 2.9 acres: 75 percent forest land and 25 percent wetland
- SW 117th Avenue South — 8.7 acres: 63 percent forest land and 37 percent wetland
- SW 328th Street — 9.6 acres: 91 percent agricultural land and 9 percent forest land
- SW 137th Avenue — 5.8 acres: 100 percent forest land
- SW 359th Street East — 20.0 acres: 79 percent forest land and 21 percent wetland
- SW 359th Street West — 18.8 acres: 71 percent forest land and 29 percent wetland

2.2.3 THE REGION

The region is defined as the area within a 50-mile radius of the centerpoint between Units 6 & 7, but excluding the plant property and vicinity described in [Subsection 2.2.1](#). All or parts of four counties are located within 50 miles: Broward, Collier, Miami-Dade, and Monroe. [Figure 2.2-6](#) shows the 50-mile radius bounded by the four counties. Major land use classifications and waterways in the region are shown on [Figure 2.2-6](#). Major highways and rail lines are shown on [Figure 2.2-5](#).

In determining what regional land use information would be relevant to [Subsection 2.2.3](#), the construction and operational impacts of the new units on regional land use were evaluated. Land use impacts identified were limited to the Turkey Point plant property, 6-mile vicinity, and those counties in the region that would receive the bulk of new residents and taxes. There are county land use plans for the four counties within the region (Broward 2009, Collier 2007, MDC 2009, and Monroe 2009). The plan that is most directly relevant to new Units 6 & 7 is the Miami-Dade CDMP, which is addressed in [Subsection 2.2.1.1](#).

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As summarized in [Table 2.2-8](#), the region within 50 miles encompasses 2,027,530 acres of land (excluding the Atlantic Ocean, Gulf of Mexico, Biscayne Bay, Card Sound, and Florida Bay). Of that, 69 percent is wetland, 18 percent urban or built-up land, 5 percent agricultural land, 4 percent forest land, 2.5 percent water, 2 percent rangeland, and less than 1 percent barren land.

Within the region there are many federal, state, county, and city public lands that offer both recreational and educational services. Parks include Everglades National Park, Crocodile Lake National Wildlife Refuge, Biscayne National Park, Biscayne Bay Aquatic Preserve, and Homestead Bayfront Park among others.

There are two nearby major roadways. U.S. Highway 1, the closest major roadway to the plant property, intersects Palm Drive in Florida City. The southernmost access to Florida's Turnpike is from U.S. Highway 1, approximately 0.25 miles north of the U.S. Highway 1 intersection with Palm Drive. Other access/entrances to both U.S. Highway 1 and Florida's Turnpike are provided from various local roads that can be accessed from Palm Drive. Road access to the plant property is provided by SW 344th Street/Palm Drive, which extends from the Turkey Point plant entrance through the intersection with U.S. Highway 1.

Two Indian reservations are located within the region ([Figure 2.5-25](#)). The Miccosukee Indian Reservation is located 50 miles from the plant area. The Seminole Indians have a reservation north of Hollywood named Seminole Paradise.

In accordance with NUREG 1555, principal agricultural products, crop areas, and average annual yields are addressed below by county, along with other county-specific information. The most recent data available is from 2007. [Table 2.2-9](#) presents information for farms and harvested lands in the region for the period 1997 to 2007.

2.2.3.1 Broward County

Broward County is bounded on the north by Palm Beach County, on the northwest by Hendry County, on the west by Collier County, on the east by the Atlantic Ocean, and on the south by Miami-Dade County. Primary access routes in Broward County include Interstates 95, 75, and 595, Florida's Turnpike, and State Road 869 (Sawgrass Expressway).

Broward County consists of 1197 square miles, of which 787 square miles is conservation area and 410 square miles is developable area (Broward Aug 2003). Elevations range from sea level to 25 feet above sea level, with most of the county below 10 feet elevation.

As shown in [Table 2.2-9](#), there were 547 farms totaling approximately 8737 acres in Broward County in 2007 (NASS 2007). The 2007 numbers reflect an increase from 347 farms in 1997 but a decrease in the total acreage of farms from 30,897 acres in 1997 (AgCensus 2004a).

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In 2007, approximately 29 percent (2577 acres) of the 8737 acres of total farmland in Broward County was used as harvested cropland and 47 percent (4141 acres) as pastureland (NASS 2007). The chief agricultural products of Broward County are cattle, orchard crops, vegetables, poultry, hogs and pigs, and hay. In 2007, the yields of agricultural products for Broward County were:

- 1253 head of cattle and calves
- 347 acres of land in orchards
- 768 acres of vegetables for harvest
- 938 head of poultry (layers)
- 8 head of hogs and pigs
- 272 tons of hay

2.2.3.2 Collier County

Collier County is on the Gulf coast of Florida between the cities of Bonita Springs and the mainland component of Monroe County. Collier County is bordered on the north by Lee and Hendry counties, on the west by the Gulf of Mexico, on the south by Monroe County, and east by Miami-Dade and Broward Counties. The county seat of Collier County is located in East Naples, and is accessible by major roadways including Interstate 75 and U.S. Route 41.

The total area of Collier County is 2025 square miles (USCB 2009b). The elevation across the county ranges between sea level and 40 feet above sea level (Collier Apr 2005).

As shown in [Table 2.2-9](#), the number of farms in Collier County increased from 235 in 1997 to 322 farms in 2007. However, farm acreage decreased from 277,279 acres in 1997 to 109,934 acres in 2007 (AgCensus 2004b, NASS 2007).

In 2007, 32 percent (35,288 acres) of the 109,934 acres of total farmland in the county were devoted to harvested cropland and 58 percent (63,612 acres) to pastureland (NASS 2007). Cattle and calves, poultry, orchards crops, vegetables, hogs and pigs, and hay are the chief agricultural products. In 2007, the yields of the primary agricultural products in Collier County were:

- 10,458 head of cattle and calves
- 21,622 acres of land in orchards

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- 12,982 acres of vegetables for harvest
- 849 head of poultry (layers)
- 358 head of hogs and pigs
- 150 head of sheep and lambs
- 566 tons of hay

2.2.3.3 Miami-Dade County

Miami-Dade County is on the Atlantic Ocean coastline and is bounded on the north by Broward County, on the east and the south by Biscayne Bay, on the west by Collier County, and on the west and south by Monroe County. The county seat is the City of Miami, the county's largest municipality. Miami-Dade County is accessible by major roadways including Interstates 395, 75, 95 and 195, and U.S. Routes 1, 27, 41, and 441.

The total land area of Miami-Dade County is 1946 square miles (USCB 2009c). The elevation across the county ranges from 8 feet to 15 feet above sea level (MDC 2009).

In 2007, the county had 2498 farms covering 67,050 acres, representing an increase in the number of farms from 1576, but a decrease in total acreage from 85,093 in 1997 (AgCensus 2004c, NASS 2007).

Of the 67,050 acres of total farmland in the county in 2007, 73 percent (49,065 acres) were devoted to harvested cropland and 14 percent (9108 acres) to pastureland (NASS 2007). Cattle and calves, poultry, orchards crops, vegetables, hogs and pigs, sheep and lambs, sweet potatoes (most of the reported Florida crop), and hay are the chief agricultural products. In 2007, the yields of the primary agricultural products in Miami-Dade County were:

- 3385 head of cattle and calves
- 11,365 acres of land in orchards
- 33,451 acres of vegetables for harvest
- 7755 head of poultry (layers)
- 135 head of hogs and pigs
- 972 head of sheep and lambs

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- 541 tons of hay (for the year 2002; 2007 data not reported)
- 2825 acres of sweet potatoes

2.2.3.4 Monroe County

Monroe County is the southernmost county in Florida and consists of both mainland and island components. The county is located at the intersection of the Gulf of Mexico and the Atlantic Ocean and includes a large tract of land along the southwestern most part of mainland Florida, a small strip of land between Florida City and the U.S. Highway 1 causeway to Key Largo and all of the island chain known as the Florida Keys. Virtually all the Monroe County population (more than 99.9 percent) lives in the Florida Keys. Monroe County is bounded on the north by Collier County and Miami-Dade County, on the east by Miami-Dade County, on the east and south by the Atlantic Ocean, on the south and west by the Gulf of Mexico and on the north, south and west by the Florida bay. The county seat of Monroe County is in Key West, and is accessible by major roadway U.S. Highway 1.

Two-thirds of the large Monroe County mainland area south of Collier County (mainland Monroe) is protected by virtue of being part of the Everglades National Park, and the remainder by the Big Cypress National Preserve in the northeastern interior. The area is virtually uninhabited. The total land area of Monroe County is 997 square miles (USCB 2009d). Most of the Monroe County land area makes up the southwestern corner of the state of Florida. Two-thirds of Monroe County mainland is part of the Everglades National Park, while the remainder is part of the Big Cypress National Preserve and the islands of the Florida Keys.

In 2007, the county had 23 farms covering 187 acres, an increase from 18 farms in 2002, and an increase in acreage from 102 in 2002 (NASS 2007).

Cropland is the predominant use comprising 83 percent (156 acres) of the 187 acres of farmland in the county. Pastureland comprises 6 percent (12 acres) of farmland use in the county. In 2007, the yields of the primary agricultural products in Monroe County were not disclosed.

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Table 2.2-1
Major Land Use Acreages Within the Turkey Point Plant Property and 6-Mile Vicinity

Land Use Category (LU Group No.)	Turkey Point Plant Property		6-Mile Vicinity ^(a)	
	Acres	Percent	Acres	Percent
Urban or Built-up Land (10)	338	2.9	1861	4.8
Agricultural Land (20)	66	0.6	3513	9.1
Rangeland (30)	0	0	0	0
Forest Land (40)	2409	20.9	8856	22.9
Water (50)	347	3.0	679	1.8
Wetland (60)	8356	72.4	23,673	61.3
Barren Land (70)	24	0.2	24	0.1
Total^(b)	11,540	100	38,607	100

- (a) Land use coverage did not extend to the Gulf of Mexico or Atlantic Ocean (including Biscayne Bay and Card Sound); therefore, acreage and percentage calculations for the 6-mile vicinity did not include these water bodies and the total area of land use in the 6-mile vicinity radius boundary does not total 100%.
- (b) Due to rounding, table values may not exactly sum to the total acres and percentages.

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Table 2.2-2
Major Land Use Acreages Along the Proposed Transmission Corridors

Land Use Category (LU Group No.)	Clear Sky to Davis Corridor		Davis to Miami Corridor		Clear Sky to Levee Corridor, First Leg		Clear Sky to Levee Corridor, Second Leg, Preferred Option		Clear Sky to Levee Corridor, Second Leg, Secondary Option		Clear Sky to Levee Corridor, Third Leg		Levee to Pennsuco Corridor	
	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total
Urban or Built-Up Land (10)	331	38.4	979	97.9	92	5.7	0	0	0	0	0	0	30	9.7
Agricultural Land (20)	189	21.9	0	0	762	47.7	238	16.8	0	0	0	0	0	0
Rangeland (30)	0	0	0	0	24	1.5	16	1.2	0	0	0	0	54	17.2
Forest Land (40)	161	18.7	16	1.6	237	14.8	4	0.3	0	0	<1	0.1	0	0
Water (50)	0	0	1	0.1	0	0	0	0	0	0	0	0	6	1.8
Wetland (60)	177	20.5	0	0	479	29.9	1155	81.8	499	100.0	252	99.9	223	71.3
Barren Land (70)	4	0.5	4	0.4	5	0.3	0	0	0	0	0	0	0	0
Total^(a)	862	100	1000	100	1599	100	1413	100	499	100	252	100	312	100

(a) Due to rounding, table values may not exactly sum to the total acres and percentages.

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Table 2.2-3
Major Land Use Acreages Along Two Optional Routes for the Clear Sky to Levee Transmission Corridor

Land Use Category (LU Group No.)	Total Clear Sky to Levee Corridor including Second Leg, Preferred Option		Total Clear Sky to Levee Corridor including Second Leg, Secondary Option	
	Acres	% of Total	Acres	% of Total
Urban or Built-Up Land (10)	92	2.8	92	3.9
Agricultural Land (20)	1000	30.6	762	32.4
Rangeland (30)	40	1.2	24	1.0
Forest Land (40)	241	7.4	237	10.1
Water (50)	0	0	0	0
Wetland (60)	1886	57.8	1230	52.3
Barren Land (70)	5	0.1	5	0.2
Total^(a)	3264	100	2350	100

(a) Due to rounding, table values may not exactly sum to the total acres and percentages.

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Table 2.2-4
Major Land Use Acreages Along Transmission Line Access Corridors

Land Use Category (LU Group No.)	Tamiami Trail Corridor		Krome Avenue Corridor	
	Acres	% of Total	Acres	% of Total
Urban or Built-Up Land (10)	0	0	8.3	2.3
Agricultural Land (20)	0	0	0	0
Rangeland (30)	0	0	0	0
Forest Land (40)	0	0	0	0
Water (50)	0	0	0	0
Wetland (60)	10.5	100	356.4	97.7
Barren Land (70)	0	0	0	0
Total^(a)	10.5	100	364.7	100

(a) Due to rounding, table values may not exactly sum to the total acres and percentage.

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Table 2.2-5
Major Land Use Acreages for Areas of Expansion of Transmission Substations

Land Use Category (LU Group No.)	Levee Substation		Pennsuco Substation ^(a)		Davis Substation		Turkey Point Substation	
	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total
Urban or Built-Up Land (10)	0	0	2.4	100	0.1	9	0.9	100
Agricultural Land (20)	0	0	0	0	0	0	0	0
Rangeland (30)	0	0	0	0	0	0	0	0
Forest Land (40)	0	0	0	0	1.0	91	0	0
Water (50)	0	0	0	0	0	0	0	0
Wetland (60)	2.3	100	0	0	0	0	0	0
Barren Land (70)	0	0	0	0	0	0	0	0
Total^(b)	2.3	100	2.4	100	1.1	100	0.9	100

(a) A 2.4-acre parcel would be acquired, of that, 0.65 acres would be used for substation expansion.

(b) Due to rounding, table values may not exactly sum to the total acres and percentages.

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Table 2.2-6
**Major Land Use Acreages Along the Reclaimed Water Pipeline to the FPL Reclaimed
Water Treatment Facility**

Land Use Category (LU Group No.)	Acres	% of Total
Urban or Built-Up Land (10)	0	0
Agricultural Land (20)	3	2.2
Rangeland (30)	0	0
Forest Land (40)	48	34.9
Water (50)	0	0
Wetland (60)	83	60.1
Barren Land (70)	4	2.7
Total^(a)	137	100

(a) Due to rounding, table values may not exactly sum to the total acres and percentages.

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Table 2.2-7
Major Land Use Acreages in the Areas of the Access Road Improvements

Land Use Category (LU Group No.)	117 th Avenue North		117 th Avenue South		328 th Street		137 th Avenue		359 th Street East		359 th Street West	
	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total
Urban or Built-Up Land (10)	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural Land (20)	0	0	0	0	8.8	91	0	0	0	0	0	0
Rangeland (30)	0	0	0	0	0	0	0	0	0	0	0	0
Forest Land (40)	2.1	75	5.4	63	0.9	9	5.8	100	15.8	79	13.4	71
Water (50)	0	0	0	0	0	0	0	0	0	0	0	0
Wetland (60)	0.7	25	3.2	37	0	0	0	0	4.2	21	5.4	29
Barren Land (70)	0	0	0	0	0	0	0	0	0	0	0	0
Total^(a)	2.9	100	8.7	100	9.6	100	5.8	100	20.0	100	18.8	100

(a) Due to rounding, table values may not exactly sum to the total acres and percentages.

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Table 2.2-8
Major Land Use Acreages Within the 50-Mile Region

Land Use Category (LU Group No.)^(a)	Acres	%
Urban or Built-Up Land (10)	353,955	17.5
Agricultural Land (20)	107,371	5.3
Rangeland (30)	33,354	1.6
Forest Land (40)	77,208	3.8
Water (50)	50,326	2.5
Wetland (60)	1,400,231	69.1
Barren Land (70)	5085	0.3
Total^(b)	2,027,530	100

- (a) Land use coverage did not extend to the Gulf of Mexico or Atlantic Ocean (including Biscayne Bay and Card Sound); therefore, acreage and percentage calculations did not include these water bodies and the total area of land use in the 50-mile region radius boundary does not total πr^2 .
- (b) Due to rounding, table values may not exactly sum to the total acres and percentages.

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Table 2.2-9
Farms and Harvested Land in Broward, Collier, Miami-Dade, and Monroe Counties

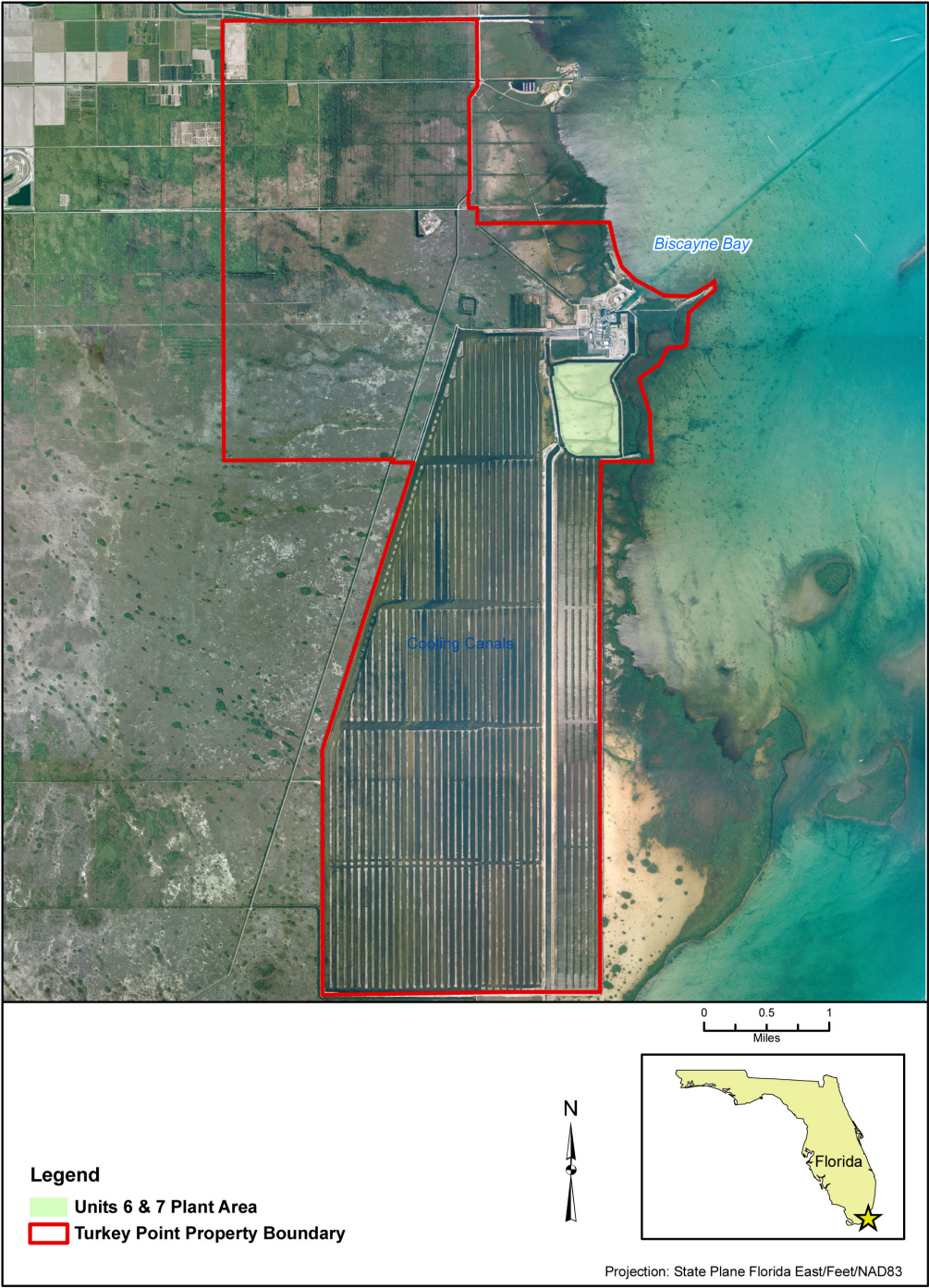
Item	Broward County			Collier County		
	1997	2002	2007	1997	2002	2007
Approximate land area (square miles)	1,197	1,197	1,197	2,025	2,025	2,025
Land in farms (acres)	30,897	23,741	8,737	277,279	180,852	109,934
Number of farms	347	494	547	235	273	322
Average size farm (acres)	89	48	16	1,180	662	341
Harvested land (acres)	3,737	4,385	2,577	55,213	NA ^(a)	35,288
Item	Miami-Dade County			Monroe County		
	1997	2002	2007	1997	2002	2007
Approximate land area (square miles)	1,946	1,946	1,946	997	997	997
Land in farms (acres)	85,093	90,373	67,050	NA ^(a)	102	187
Number of farms	1,576	2,244	2,498	NA ^(a)	18	23
Average size farm (acres)	54	40	27	NA ^(a)	6	8
Harvested land (acres)	62,693	55,142	49,065	NA ^(a)	NA ^(a)	NA ^(a)

(a) Information not available (NA) in source references, or information considered to be inaccurate.

References: AgCensus 2004a, b, c, d; Broward Aug 2003; NASS 2002a, b, c, d; NASS 2007; USCB 2009b, c, d.

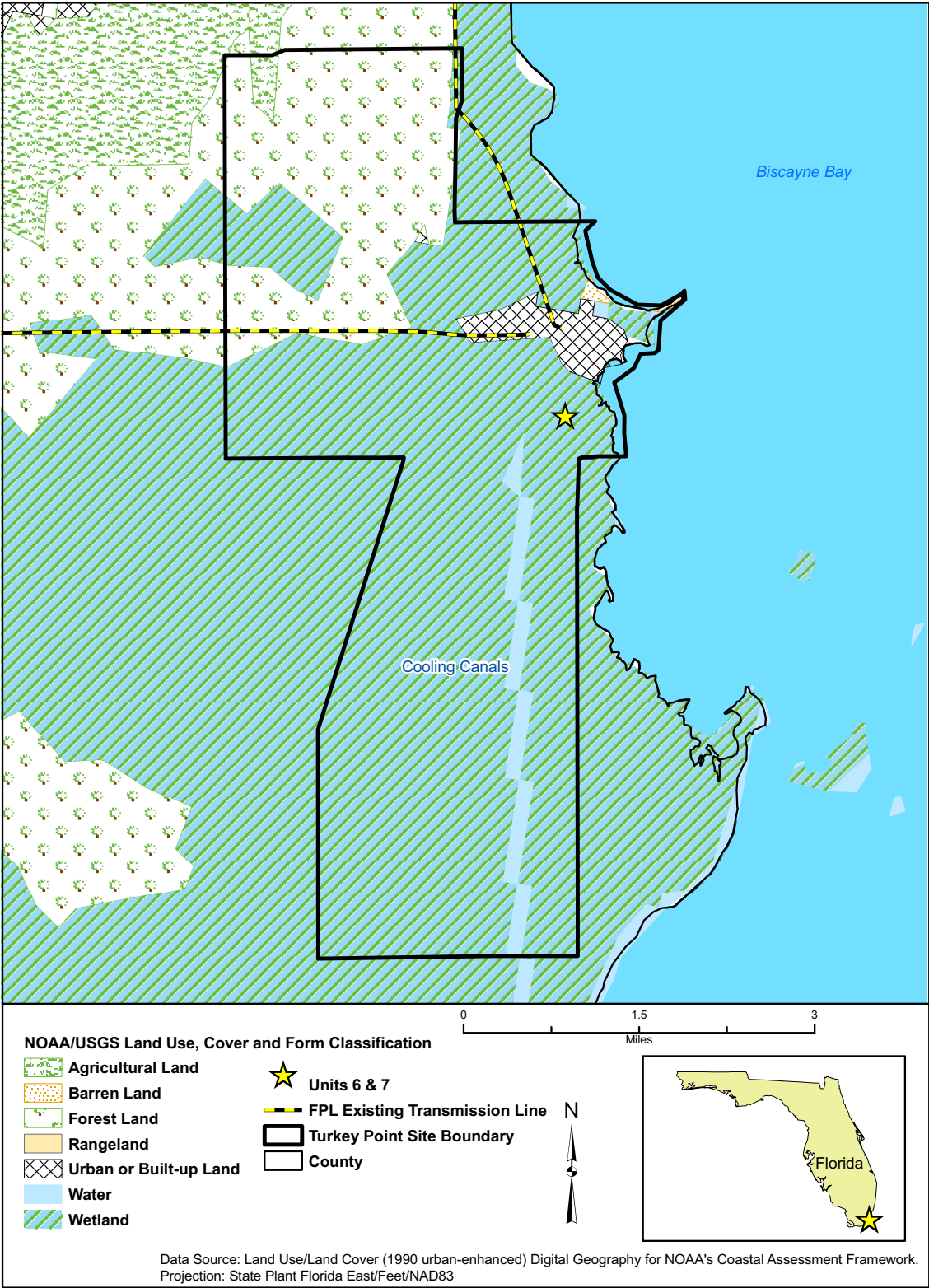
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Figure 2.2-1 Turkey Point Units 6 & 7



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Figure 2.2-2 Land Use



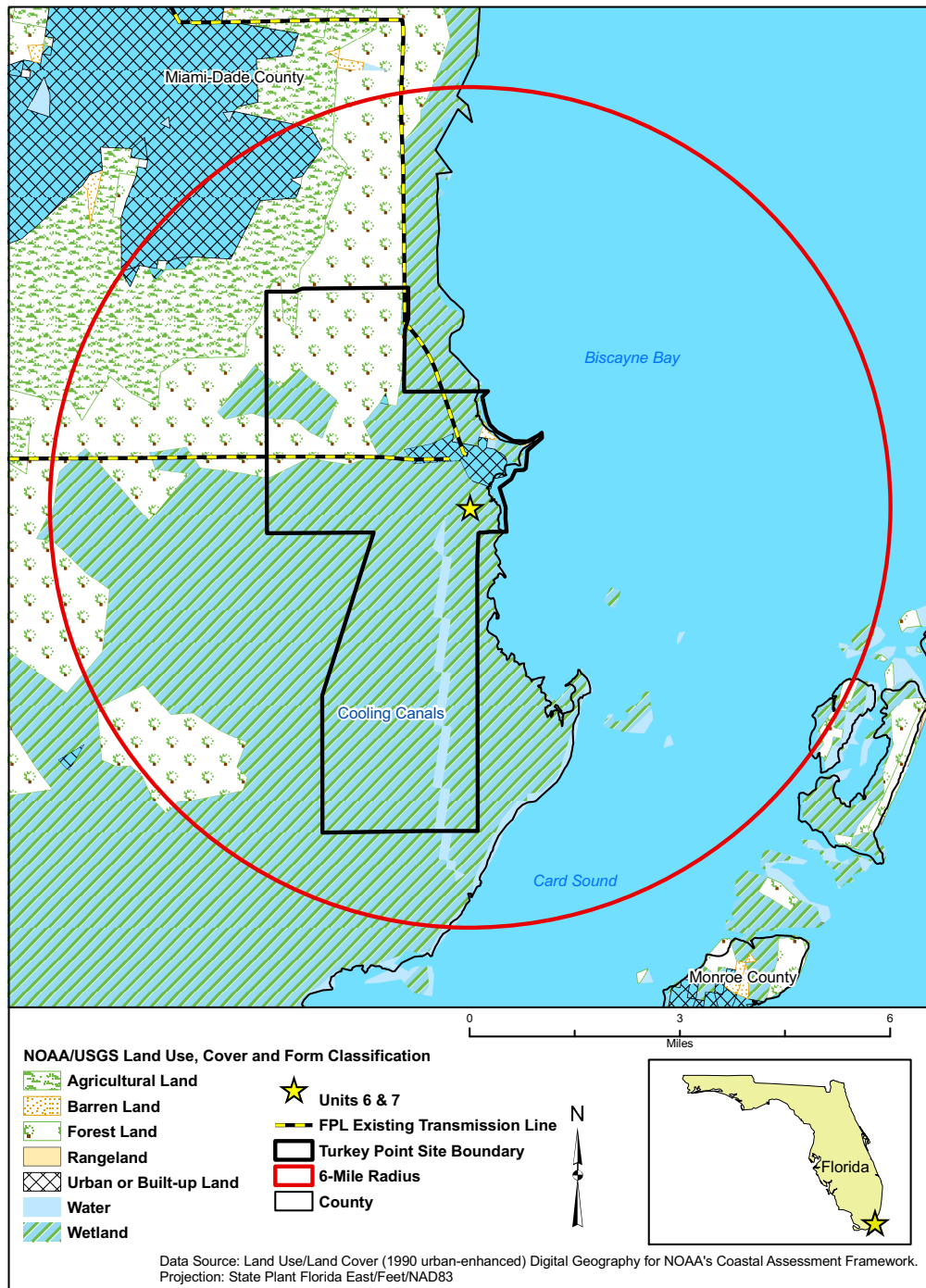
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Figure 2.2-3 Turkey Point Exclusion Area Boundary



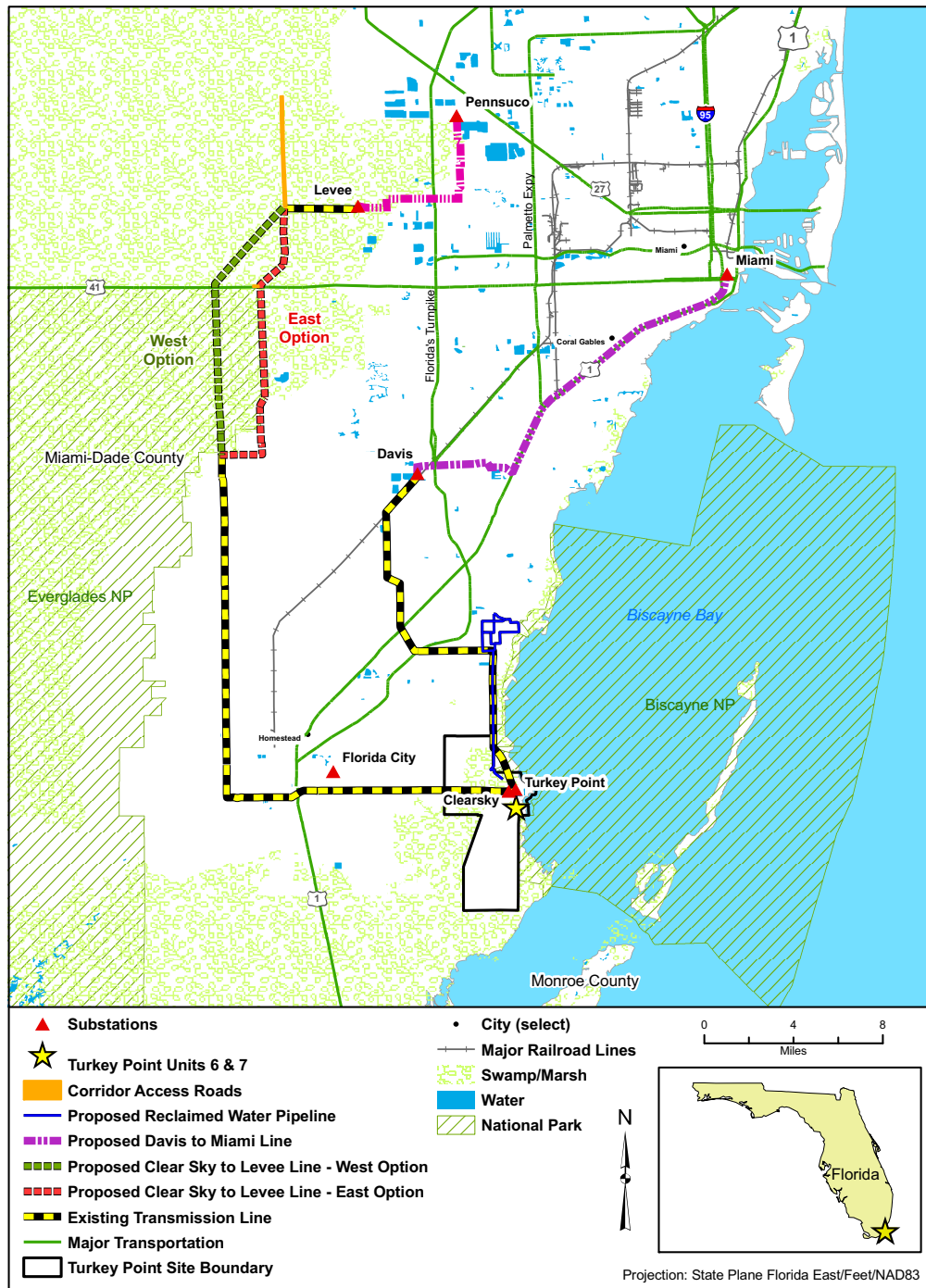
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Figure 2.2-4 6-Mile Land Use



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Figure 2.2-5 Transmission System and Reclaimed Water Pipelines Route



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Figure 2.2-6 50-Mile Land Use

