Levy Nuclear Plant Units 1 and 2
COL Application
Part 3, Environmental Report

CHAPTER 2
ENVIRONMENTAL DESCRIPTION

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

LIST OF TABLES

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF TABLES (CONTINUED)

LIST OF FIGURES

LIST OF FIGURES (CONTINUED)

LIST OF FIGURES (CONTINUED)

LIST OF FIGURES (CONTINUED)

LIST OF FIGURES (CONTINUED)

LIST OF FIGURES (CONTINUED)

LIST OF FIGURES (CONTINUED)

LIST OF FIGURES (CONTINUED)

LIST OF FIGURES (CONTINUED)

LIST OF APPENDIXES

ACRONYMS AND ABBREVIATIONS

#/100m³	number per 100 cubic meters
=	analyte analyzed for and detected at the concentration shown
°	degree
°C	degree Celsius
°F	degree Fahrenheit
AADT	average annual daily traffic
ac.	acre
ALWR	advanced light water reactor
ANS	American Nuclear Society
ANSI	American National Standards Institute
AO	Archaeological Occurrence
AP1000	Westinghouse Electric Company, LLC, AP1000 Reactor
APE	Area of Potential Effect
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute
ASOS	Automated Surface Observing System
BBW	Brookridge Substation to Brooksville West Substation
BEBR	Bureau of Economic and Business Research
bgs	below ground surface
BMP	best management practice
BOC	Board of County Commissioners
BOD	biological oxygen demand; biochemical oxygen demand
BTOC	below top of casing

ACRONYMS AND ABBREVIATIONS (CONTINUED)

CAB-1	Charles A. Black I (Water Treatment Facility)
CAB-2	Charles A. Black II (Water Treatment Facility)
$CaCO_3$	calcium carbonate
CB	CREC 500-kV switchyard to Brookridge Substation
CCRE	proposed Citrus Substation to the Crystal River East Substation
CD	compact disc
CFBC	Cross Florida Barge Canal
CFG	Marjorie Harris Carr Cross Florida Greenway
CFG-IIT	Cross Florida Greenway – Inglis Island Trail
CFR	Code of Federal Regulations
cm	centimeter
cm/sec	centimeter per second
cm^2/sec	square centimeter per second
cm^3	cubic centimeter
CO	carbon monoxide
CO_2	carbon dioxide
COD	chemical oxygen demand
COFTE	capital outlay full-time equivalent
COLA	Combined License Application
CPUE	Catch per Unit Effort
CREC	Crystal River Energy Complex
CSX	CSX Transportation, Inc.
CWA	Clean Water Act

ACRONYMS AND ABBREVIATIONS (CONTINUED)

CWIS	cooling water intake structure
D	data
D/Q	relative deposition
DCD	Westinghouse Electric Company, LLC, AP1000 Design Control Document for the certified design as amended
DO	dissolved oxygen
du	dwelling unit
E	east
EAB	exclusion area boundary
EDR	State of Florida Office of Economic and Demographic Research
E-F	Enhanced-Fujita
EFH	essential fish habitat
EHSS	Environmental Health and Safety Services
EIS	Environmental Impact Statement
EPZ	emergency planning zone
ER	Environmental Report
ESA	Endangered Species Act of 1973
ESO	Environmental Support Organization
ESRI	Environmental Systems Research Institute
ETE	Evacuation Time Estimate
EWD	Engineering Weather Data
F.A.C.	Florida Administrative Code
F.S.	Florida Statute

ACRONYMS AND ABBREVIATIONS (CONTINUED)

FAAQS	Florida Ambient Air Quality Standards
FAS	Floridan aquifer system
FDAC	Florida Department of Agriculture and Consumer Services
FDCA	Florida Department of Community Affairs
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FFWCC	Florida Fish and Wildlife Conservation Commission
FGT	Florida Gas Transmission Company
FHWA	Federal Highway Administration
FIPS	Federal Information Processing Standards
FLUCCS	Florida Land Use and Cover Classification System
FLUM	Future Land Use Map
FMSF	Florida Master Site File
FNAI	Florida Natural Areas Inventory
FPSC	Florida Public Service Commission
FSAR	Final Safety Analysis Report
ft.	foot
$ft.^2$	square foot
ft/day	foot per day
ft^2/day	square foot per day
ft^3/day	cubic foot per day
ft^3/sec	cubic foot per second
FY	fiscal year

ACRONYMS AND ABBREVIATIONS (CONTINUED)

g/cm^3	gram per cubic centimeter
gal.	gallon
gal/ac	gallon per acre
gal/ft^3	gallon per cubic foot
GIS	Geographic Information System
GMFMC	Gulf of Mexico Fisheries Management Council
GMT	Greenwich Mean Time
gpd	gallon per day
gpd/ft^3	gallon per day per cubic foot
GPS	Global Positioning System
ha	hectare
HV	high voltage
ID	identification
in.	inch
in/in	inch per inch
$ind/100m^3$	individual per 100 cubic meters
ind/m^2	individual per square meter
ind/m^3	individual per cubic meter
J	analyte present but reported value may not be accurate or precise
JTU	Jackson turbidity unit
kg	kilogram
kg/cm^2	kilogram per square centimeter

ACRONYMS AND ABBREVIATIONS (CONTINUED)

km	kilometer
km/h	kilometer per hour
km^2	square kilometer
kPa	kilopascal
kPa/sec	kilopascal per second
kV	kilovolt
L	liter
L/cm^3	liter per cubic centimeter
L/day	liter per day
lb.	pound
lb/yr	pound per year
LCD	Local Climatological Data
LCFS	LNP to proposed Central Florida South Substation
LCR	LNP to CREC 500-kV switchyard
LE	Listed Endangered
LNP	proposed Levy Nuclear Plant Units 1 and 2
LNP 1	proposed Levy Nuclear Plant Unit 1
LNP 2	proposed Levy Nuclear Plant Unit 2
LOS	level of service
LPC	LNP to proposed Citrus Substation
LPG	liquefied petroleum gas
LNG	liquefied natural gas
LPZ	low population zone

ACRONYMS AND ABBREVIATIONS (CONTINUED)

LS	Listed State Species of Special Concern
LT	Listed Threatened
m	meter
m/s	meter per second
m^2	square meter
m^{-2}	$1/m^2$
m^3/s	cubic meter per second
mb	millibar
mb/s	millibar per second
MCL	maximum contaminant level
MCU	Middle Confining Unit
mg/kg	milligram per kilogram
μg/L	microgram per liter
mg/L	milligram per liter
mg/m^3	milligram per cubic meter
mgd	million gallons per day
MHP	mobile home park
mi.	mile
$mi.^2$	square mile
MIS	marine oxygen isotope stage
mL	milliliter
mld	million liters per day
μm	micrometer

ACRONYMS AND ABBREVIATIONS (CONTINUED)

μm/sec	micrometer per second
mm	millimeter
MML	Mote Marine Laboratory
mph	mile per hour
μS/cm	microSiemens per centimeter
MS-1	Medical Service One
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
msl	mean sea level
mV	millivolt
MW	monitoring well
N	north
N/A	not applicable; not available
NAAQS	National Ambient Air Quality Standards
NAD83	North American Datum of 1983
NCDC	National Climatic Data Center
ND	not detected
NGVD29	Northern Geodetic Vertical Datum of 1929
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NR	not recorded
NRC	U.S. Nuclear Regulatory Commission

ACRONYMS AND ABBREVIATIONS (CONTINUED)

NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NTU	nephelometric turbidity unit
NWA	National Wilderness Area
NWFWMD	Northwest Florida Water Management District
NWR	National Wildlife Refuge
NWS	National Weather Service
OFW	Outstanding Florida Water
ORC	Objection, Recommendations, and Comments
ORP	oxidation reduction potential
PCU	platinum-cobalt unit
PEF	Florida Power Corporation doing business as Progress Energy Florida, Inc.
pH	hydrogen ion concentration
PHP	Polk to Hillsborough to Pinellas
PL	Public Law
PLS	Public Land Survey
PM_{10}	particulate matter of 10 micrometers and smaller
$PM_{2.5}$	particulate matter of 2.5 micrometers and smaller
POR	period of record
PPSA	Power Plant Siting Act
ppt	part per thousand
PSD	Prevention of Significant Deterioration

ACRONYMS AND ABBREVIATIONS (CONTINUED)

psi	pound per square inch
psi/sec	pound per square inch per second
PVC	polyvinyl chloride
PW	production well
PWS	potable water supply
RB	Rose Bengal (solution)
ROD	Record of Decision
ROW	right-of-way
RPC	Regional Planning Council
RV	recreational vehicle
S	south
SAMSON	Solar and Meteorological Surface Observation Network
SAV	submerged aquatic vegetation
SCA	Site Certification Application
SD	subdivision
SCUBA	self-contained underwater breathing apparatus
sec	second
sec/m^3	second per cubic meter
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Officer
SIO	Selected Important Organism
SJRWMD	St. Johns River Water Management District
SM	silty sand

ACRONYMS AND ABBREVIATIONS (CONTINUED)

SO_2	sulphur dioxide
SOP	standard operating procedure
SP	poorly graded sand
SP-SM	poorly graded sand with silt
SPT	standard penetration testing
SRWMD	Suwanee River Water Management District
SS	sampling station
SU	standard unit
SWAPP	Source Water Assessment and Protection Program
SWFWMD	Southwest Florida Water Management District
T	trace amount; transmissivity
TDS	total dissolved solids
TIGER	Topologically Integrated Geographic Encoding Referencing
TIITF	Board of Trustees of the Internal Improvement Trust Fund
TKN	total Kjeldahl nitrogen
TMDL	total maximum daily load
TOC	total organic carbon
TSS	total suspended solids
U	analyte analyzed for but not detected above method detection limit
USC	United States Code
UJ	analyte analyzed for but qualified as not detected; result is estimated
USACE	U.S. Army Corps of Engineers

ACRONYMS AND ABBREVIATIONS (CONTINUED)

USAF	United States Air Force
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USN	United States Navy
UTM	Universal Transverse Mercator
W	west
Westinghouse	Westinghouse Electric Company, LLC
WIC	Women, Infants, and Children
WMD	Water Management District
WRF	water reclamation facility
WRPC	Withlacoochee Regional Planning Council
WRWSA	Withlacoochee Regional Water Supply Authority
WTF	water treatment facility
WTP	water treatment plant
WWTF	wastewater treatment facility
WWTP	wastewater treatment plant
X/Q	local atmospheric dilution factor
yd.	yard
yr	year

2.0 ENVIRONMENTAL DESCRIPTION

This chapter of the Environmental Report (ER) describes the existing environmental conditions at and around the proposed Levy Nuclear Plant Units 1 and 2 (LNP) site. The environmental conditions described in this chapter provide sufficient details to identify those environmental resources that have the potential to be affected by the construction and operation of the proposed units. This information forms the basis for assessing the potential effects from the proposed activities as discussed in ER Chapters 4, 5, 6, and 10.

The pertinent terms and definitions used for discussion and consistency within these chapters are provided in ER Chapter 1.

This chapter is divided into the following eight sections:

- ER Section 2.1 — Station Location
- ER Section 2.2 — Land
- ER Section 2.3 — Water
- ER Section 2.4 — Ecological Description
- ER Section 2.5 — Socioeconomics
- ER Section 2.6 — Geology
- ER Section 2.7 — Meteorology and Air Quality
- ER Section 2.8 — Related Federal Project Activities

2.1 STATION LOCATION

This section describes the geographical location of the station, which is proposed to be located near the southern border of Levy County, Florida (Figures 1.1-1 and 2.1-1). Table 2.1-1 shows the coordinates of the proposed Levy Nuclear Plant Units 1 and 2 (LNP 1 and LNP 2), which are located within the following Sections, Township, and Range: Sections 7, 17, 18, 19, 20, 29, and 30; Township 16 S, Range 17 E. LNP 1 and LNP 2 are designed to be situated near the center of the LNP site, which is 1257 hectares (ha) (3105 acres [ac.]) in area. LNP 1 will be located immediately south of LNP 2 (Figure 2.1-2) (Reference 2.1-001).

Figure 1.1-1 of ER Chapter 1 identifies readily recognized landmarks such as the Crystal River Energy Complex (CREC), which is located approximately 15.5 kilometers (km) (9.6 miles [mi.]) south of the plant. The Withlacoochee River, Inglis Bypass Channel, and the Cross Florida Barge Canal (CFBC) are located approximately 5.4 km (3.4 mi.), 5.2 km (3.2 mi.), and 5.2 km (3.2 mi.) south of the site, respectively. The City of Gainesville, which is located approximately 71.1 km (44.2 mi.) northeast of the LNP, and the City of Ocala, which is located approximately 48.4 km (30.1 mi.) east of the LNP, are the nearest major cities. The towns closest to the site are Inglis and Yankeetown, which are located 6.6 km (4.1 mi.) and 12.9 km (8.0 mi.) southwest of the site, respectively.

The LNP site is approximately 4.8 km (3.0 mi.) north of Lake Rousseau and 12.8 km (7.9 mi.) east of the Gulf of Mexico. The Withlacoochee River is the only major river in the site vicinity; other local waterways include Spring Run and Ten Mile Creek to the northwest of the LNP site (Figure 2.1-1). U.S. Highway 19 (US-19) runs generally in the north to south direction along the northwestern portion of the LNP site and intersects with County Road 40 (CR-40) to the west in the Town of Inglis (Figure 2.1-1).

The LNP station is irregularly shaped and will be comprised of the following major site-related features (Figure 2.1-2):

- LNP 1 and LNP 2 and associated cooling towers.
- Three stormwater retention ponds (A, B, and C).
- On-site portion of the blowdown pipeline corridor.
- 500-kilovolt (kV) switchyard.
- Switchyard connection corridor.
- On-site portion of the transmission line corridor.
- On-site portion of two access roads.
- On-site portion of the heavy haul road.
- Meteorological tower.

Figure 3.1-3 in ER Chapter 3 provides a conceptual, perspective view of the major components listed above looking south on the LNP site.

2.1.1 REFERENCES

2.1-001 Progress Energy and Engelhardt, Hammer & Associates, “Application for Large-scale Future Land Use Map and Text Amendments,” March 1, 2007.

Table 2.1-1
Universal Transverse Mercator (UTM) Coordinates of Proposed Reactors

Reactor Unit	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	State Plane West Florida NAD83 Northing	State Plane West Florida NAD83 Easting	UTM Zone 17N NAD83 Northing	UTM Zone 17N NAD83 Easting
1	29.072292	-82.620262	1723097.070000	458028.560000	3217078.800230	342285.357501
2	29.074903	-82.621300	1724048.087660	457701.878858	3217369.482310	342188.255334

Notes:

NAD83 = North American Datum of 1983
UTM = Universal Transverse Mercator

2.2 LAND

This section describes the present and planned land use in the area that surrounds the LNP site and is divided into the following three subsections:

- ER Subsection 2.2.1 — Site and Vicinity
- ER Subsection 2.2.2 — Transmission Corridors and Off-Site Areas
- ER Subsection 2.2.3 — Region

Land use information from the Southwest Florida Water Management District (SWFWMD), St. Johns River Water Management District (SJRWMD), and Suwanee River Water Management District (SRWMD) for the time period from 1994 to 2004 was used to create a contiguous coverage for the entire LNP region (References 2.2-001 and 2.2-002). The Florida Land Use and Cover Classification System (FLUCCS) categories were rectified with U.S. Geological Survey (USGS) Anderson Level II classifications, as presented in Table 2.2-1 (References 2.2-003 and 2.2-004).

2.2.1 SITE AND VICINITY

This subsection discusses the nature and extent of present and planned land use within the LNP site and vicinity that might be affected or modified as a result of station construction and operation. The LNP site is located entirely within unincorporated Levy County, Florida, on the east side of US-19/US-98 (SR-55) and south of Goethe Road (County Road 320 [CR-320]) (Figures 2.1-1 and 2.2-1). Fee simple ownership of seven parcels was obtained from Rayonier, Inc. in 2007 by Florida Power Corporation doing business as Progress Energy Florida, Inc. (PEF) (Reference 2.2-005).

The vicinity encompasses a 9.7-km (6-mi.) radius surrounding the LNP site. For the purpose of small sites, NUREG-1555 expands this definition to describe the vicinity as an area in which the site comprises no more than 10 percent of the total area. The vicinity is located within Citrus, Levy, and Marion counties. The 2006 population estimates for Citrus, Levy, and Marion counties were 136,749; 38,981; and 315,074; respectively (Reference 2.2-006). The closest towns are Inglis and Yankeetown, which are located approximately 6.6 km (4.1 mi.) and 12.9 km (8.0 mi.) southwest of the LNP site, respectively (Figure 2.2-1). Information relating to electrical transmission, communications, and utility lines are discussed in ER Subsection 2.2.2.

2.2.1.1 Land Use

Mixed forest land and forested wetlands comprise 91 percent of the total land use within the site boundaries (Figures 2.2-2 and 2.2-3) (References 2.2-001 and 2.2-002). A tabulation of areas within the site, organized by land use category, is presented in Table 2.2-2. Agricultural lands encompass 3.4 percent of the site area and limited transportation, communications, and utilities land uses are present within the site boundary. There are no residential, commercial or industrial services, strip mines, quarries, or gravel pits within the site (Reference 2.2-007). There are no special land use categories within the site boundary as defined by NUREG-1555; however, a Coastal Zone Consistency Determination is being requested from Florida State Clearinghouse because the LNP will be federally certified under 10 Code of Federal Regulations (CFR) 52, Subpart B. The FSC coordinates the state's review of proposed federal activities, requests for federal funds, and applications for federal permits other than permits issued under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. See Appendix 10.2.7 of the LNP Florida Site Certification Application (SCA) for additional information. The general station features listed above would replace lands currently classified as rural open lands, tree plantations, and cypress.

As shown in Figure 2.2-4 and Table 2.2-2, 68 percent of the vicinity is comprised of deciduous forest lands, mixed forest lands, evergreen forest land, and forested wetlands; 8.6 percent of the vicinity is comprised by residential land use. There are no confined feeding operations within the vicinity. Croplands and pasture and other agricultural lands encompass 4.1 and 3.9 percent of the vicinity, respectively. There are no prime farm lands on the site or in the vicinity.

Commercial and services, industrial, and transportation land uses are limited in the vicinity. The closest vicinity commercial land uses that support residents and visitors, such as grocery stores and convenience stores/gas stations, are the Food Ranch Supermarket, which is located less than 8 km (5 mi.) from the site to the southwest, as well as another small grocery store and two convenience stores/gas stations; all are located in the Town of Inglis (Reference 2.2-008).

2.2.1.2 Mineral Resources

Strip mines, quarries, and gravel pits are limited in the vicinity of the LNP site. No active quarrying or mining facilities are located within the 9.7-km (6-mi.) radius of the LNP site. Gulf Rock, Inc. is an inactive mine located 6.3 km (3.9 mi.) from the LNP site. Tarmac America, LLC, is planning a mining operation, Tarmac King Road Limestone Mine, within 8 km (5 mi.) of the LNP site, approximately 1.6 km (1 mi.) west of US-19 (Reference 2.2-009). The proposed facility plans to mine approximately 12.1 ha (30 ac.) of the 1942.5-ha (4800-ac.) tract annually for the next century. Tarmac America, LLC estimates that the King Road Limestone Mine will utilize less than 1 mgd of water and will generate approximately 500 truck trips entering US-19/US-98 at King Road each day (Reference 2.2-010). While the mine will not require a Large Scale Map Amendment from FDCA since the activity is proposed for land already zoned for mining, the potential impacts on other comprehensive plan elements would be considered during the next Levy County comprehensive plan update. The U.S Army Corps of Engineers (USACE) anticipates that the Environmental Impact Statement (EIS), triggered by their Section 404 review of the project's permit application, will result in a Record of Decision (ROD) in the summer of 2009 (Reference 2.2-009). No mineral rights have been leased and there are no outstanding mineral rights that could result in the production of either surface or subsurface minerals at the LNP site.

2.2.1.3 Waterways and Transportation Corridors

Figure 2.1-1 shows the waterways and transportation routes in the vicinity of the LNP site; however, there are no named streams at the LNP site (Reference 2.2-011). The property is traversed by a number of vehicular trails and three local roads: Road No. 4, Road No. 5, and Old Rock Road. Old Rock Road and Road No. 4 provide access to CR-320 to the north, while Road No. 5 provides access to CR-40 to the south. A vehicular trail provides direct access to US-19/US-98 at the northwestern corner of the property (Reference 2.2-005).

The major waterways within the LNP vicinity are the CFBC, which includes 13.4 km (8.4 mi.) of canal within the vicinity area, and the Withlacoochee River (Figure 2.1-1). The Withlacoochee River offers a variety of opportunities for recreation and has been designated by the State of Florida as an Outstanding Florida Water (OFW). An OFW is designated worthy of special protection because of its natural attributes. The OFW designation is intended to protect water quality. (Reference 2.2-012) A list of the major navigable waterways within the LNP vicinity and region is provided in Table 2.2-3; a more detailed description of freshwater streams in the vicinity is provided in ER Subsection 2.3.1.1. There are no National Wild and Scenic Rivers in the LNP region. Some of the other water bodies within the vicinity area include the Ten Mile Creek, which connects to Cow Creek and the Gulf of Mexico; Spring Run Creek, which extends to the Gulf of Mexico; and Lake Rousseau. (Reference 2.2-007)

Transportation routes near the site are limited to state and county roads, (Figure 2.1-1) and include major highways in Levy County (near the LNP site) leading to Gainesville and Ocala (i.e., US-19/US-98) (Figure 2.1-1). US-19 is a four-lane divided highway with a roadway level of service (LOS) designation of "C." The highway is a principal arterial that connects Chiefland to Crystal River west of the LNP site. CR-40 is a two-lane rural major collector road, which also has an LOS designation of "C." CR-40 connects Citrus Springs to Inglis at US-19 south of the LNP site. No egress limitations are anticipated from the area surrounding the site based on the current level of service designations (Reference 2.2-013).

Interstate (I)-75 is the closest interstate to the LNP site, which is located approximately 45 km (28 mi.) to the east. Abandoned railroad tracks with only the rail bed remaining are located along the northeastern portion of the site and north of SR-336. Active railroads are located southeast of the LNP site close to the Crystal River. No airports are located within the site vicinity (Reference 2.2-005).

ER Subsection 2.2.2 discusses the one existing high voltage (HV) transmission line traversing a small portion of the northwest corner of the LNP site, as well as the balance of the existing transmission corridors in the LNP vicinity and region illustrated in Figure 2.2-1. Figures 2.1-1 and 2.2-1 illustrate the two liquefied natural gas (LNG) pipelines in the vicinity owned and operated by Florida Gas Transmission Company (FGT). These underground natural gas pipelines are located on the north side of US-19 alongside the abandoned railroad track. The pipelines cross CR-121, turn south, and cross over CR-336. The lines run parallel to power lines that run south with US-19, crossing over US-19 near the intersection of US-19 and CR-40, and continuing towards the LNP site. The FGT plans to construct a 24.5-km (15.2-mi.) loop, which would extend approximately 24 km (15 mi.) along the eastern side of the existing pipeline. The 20.3-centimeter (cm) (8-inch [in.]) and 76.2-cm (30-in.) LNG pipelines are owned by FGT. The 20.3-cm (8-in.) pipeline is buried to a minimum of 0.9 m (3 ft.) below ground surface, and is 2123 m (6966 ft.) west of the LNP site. The pipeline has a maximum pressure of 61.1 kilogram per square centimeter (kg/cm^2) (912 pounds per square inch [psi]). The 76.2-cm (30-in.) pipeline is buried a minimum of 0.9 m (3 ft.) below ground surface. The pipeline has a maximum pressure of 84.4 kg/cm^2 (1200 psi) and is located 1769 m (5803 ft.) west of the LNP site. There are no plans to carry any other product in the pipeline except for natural gas.

2.2.1.4 Recreational and Visually Sensitive Areas

There are no recreational areas within the LNP site; however, it has been used historically on a limited basis for hunting. In addition, the Goethe State Forest is adjacent to the northeast; this state forest is also discussed in ER Subsection 2.5.2.7. Goethe State Forest is 21,609 ha (53,398 ac.) in size and the Florida Department of Agriculture and Consumer Services (FDAC), Division of Forestry, manages it for multiple uses, including timber management, wildlife management, outdoor recreation, and ecological restoration (Figure 2.2-5). (Reference 2.2-014) The South Goethe parcel, a 2023.4-ha (5000-ac.) site located east of the main tract, is scheduled for acquisition under the Florida Forever Program. Some of the recreational activities associated with the Goethe State Forest include picnicking, hiking, bicycling, fishing, wildlife viewing, horseback riding, and hunting (Reference 2.2-015).

Recreational areas in the vicinity are primarily located in the Inglis–Yankeetown area and along the Lake Rousseau and Withlacoochee River corridor to the south of the LNP site (Figures 2.1-1 and 2.2-5). The 486-ha (1200-ac.) Marjorie Harris Carr Cross Florida Greenway-Inglis Island Trail (CFG-IIT) is located directly south of the Inglis Lock and provides unpaved trails for use by hikers, bikers, and equestrian riders (Figures 2.1-1 and 2.1-2) (Reference 2.2-016). Boat launches at Inglis Dam Recreation Area and the Florida Marine Patrol Station provide access to Lake Rousseau, the Withlacoochee River, and the CFBC. Access for bank fishing for both freshwater and saltwater fishing is available at the CFG-IIT and at the Inglis Spillway Day Use Area (Figure 2.1-2).

The CFG continues to the southwest of the LNP site and includes the Felburn Park Trailhead and Withlacoochee Bay Trail, and is 36,421.8 ha (90,000 ac.) in size (Item 1391 on Figure 2.2-5). Felburn Park is an approximately 56.7-ha (140-ac.) former limerock mine with parking facilities, restrooms, and picnic tables. Phil's Lake, which is 16.2 ha (40 ac.) in size, is also located here. The Withlacoochee Bay Trail traverses 8.05 km (5 mi.) west from the Felburn Park Trailhead to the Gulf of Mexico along the southern side of the CFBC. In addition to 9 km (5.6 mi.) of equestrian trails, there is a multi-use, handicap-accessible paved trail that runs adjacent to the CFBC for the first 4.02 km (2.5 mi.) and then switches its path to the south side of the “berm” that was created by the canal’s excavation. The westernmost 4.02 km (2.5 mi.) of the trail runs through maritime hammocks and salt marsh. The primary activities occurring along the trail are bicycling, walking and skating, as well as opportunities to observe wildlife, picnic, or bank-fish along the route (Reference 2.2-017). The proposed water intake structure and pumphouse will be constructed on the CFBC, and the pipeline corridor will connect the CFBC and the LNP. Water from the CFBC will be used to provide cooling tower makeup water for the LNP (Figure 2.1-2).

Other boat ramps in the vicinity are located at Inglis, Yankeetown, Vassey Creek, the CFBC, Pumpkin Island, and Williams Landing. No marinas are located within the site boundary, but there are two marinas located within the vicinity (Figure 2.2-5). Freshwater fishing opportunities for bass, bluegill, redear and spotted sunfish occur along the Withlacoochee River from Inglis to Yankeetown, while bream are common in Lake Rousseau. There are no golf courses within the LNP site or vicinity. Natural resource areas such as conservation easements and aquatic preserves within 16 km (10 mi.) of the site are discussed in ER Section 2.4 and illustrated in Figure 2.4-7; detailed information on recreational activities within the region is provided in ER Subsection 2.5.2.7.

2.2.1.5 Land Use Plans

The State of Florida is comprised of state, regional, and local planning authorities. At the local level, a comprehensive land use plan discusses the current and future land use classifications. Each of the counties located within the LNP site and vicinity have prepared comprehensive land use plans, which are discussed below:

- **Levy County**. Chapter 8, Future Land Use Element, of Levy County’s 1999 Comprehensive Plan discusses the current and future land use plans for the county which currently designate the 1257-ha (3105-ac.) site as Forestry/Rural Residential (1 dwelling unit [du] per 20 ac). A Large Scale Future Land Use Map (FLUM) and Text Amendment were submitted to the Florida Department of Community Affairs (FDCA) in February 2007 to change the LNP site’s designation to Public Use in order to allow a nuclear power generating facility and to change the definition of Public Use in the Comprehensive Plan. The FDCA returned an Objection, Recommendations, and Comments (ORC) report to the Levy County Board of County Commissioners (BOC) on September 28, 2007. After responding to the ORC comments, the BOC adopted ordinances related to the Amendment on March 18, 2008, and the FDCA issued its Notice of Intent on May 8, 2008, that the ordinances are in compliance. The effective dates of the ordinances are pending a 21- day administrative review period, after which the LNP site will be designated as Public Use. Public use provides for public buildings and grounds including public utilities which are defined as gas, water, and electric, water power, well houses, electric substations, power generating facilities, sewerage, telephone facilities, utility poles and street lighting, and other similar equipment necessary for the furnishing of adequate services (References 2.2-005, 2.2-018, 2.2-019, 2.2-020, and 2.2-021).

- **Citrus County**. Citrus County borders Levy County directly south of the LNP site (Figure 2.2-1). The Citrus County FLUM indicates the following future land uses within the vicinity of the LNP site: low intensity coastal and lakes, industrial, conservation land, agriculture, residential mixed use, rural activity center, mobile home park (MHP); and transportation, communications, and utilities. According to the Citrus County Comprehensive Plan, Future Land Use Element, much of the county is classified as Rural. The county is transforming from a rural to suburban setting as vacant and agricultural land decreases and residential land uses increase. The predominant land use is residential with commercial developments sporadically located throughout the county. (References 2.2-022 and 2.2-023)

- **Marion County**. Marion County is adjacent to the eastern border of Levy County and the southwestern portion of the county is located within the LNP site and vicinity (Figure 2.2-1). The future land use in Marion County, adjacent to the Withlacoochee River and southeast of the LNP site, is rural in nature with a majority of the land classified as agricultural or vacant open space. The City of Dunnellon is an incorporated area located along US-41, contiguous to the Withlacoochee River and southwest of the LNP site. This suburban area extends into Citrus County and is referred to as South Dunnellon. (References 2.2-022 and 2.2-023)

Some clearing and other development will be required for the construction and operation of the LNP units. This is discussed in further detail in ER Chapters 4 and 5. Currently, there are no structures on the LNP site other than the LNP meteorological tower. Personal communication with the Withlacoochee Regional Planning Council confirmed that currently no new industrial developments are anticipated within the 9.7-km (6-mi.) radius of the LNP site.

2.2.2 TRANSMISSION CORRIDORS AND OFF-SITE AREAS

The LNP will require new transmission lines in order to incorporate the additional power into the Florida electrical grid system. Four new 500-kV transmission lines will connect LNP to the Florida electrical grid system. Two of the four 500-kV transmission lines will connect to the proposed Citrus Substation, one will connect to the proposed Central Florida South Substation, and the last one will connect to the CREC 500-kV switchyard.

The proposed corridors for these four new 500-kV transmission lines, where practicable, encompass available PEF existing right-of-ways (ROWs). The corridor lengths range from approximately 7 to 59 mi., and range in width from approximately 1000 ft. to 0.5 mi. to allow for maximum flexibility when determining the ROW and for entering or exiting substations (Figure 2.2-6). Approximately 91 mi. of transmission lines will need to be constructed to the first substations in order to incorporate the power generated by LNP into the Florida electrical grid system. A detailed description of the transmission line corridors is provided in the following subsection.

- 500-kV transmission lines from the LNP to proposed Citrus Substation (LPC):

  The LPC corridor for two 500-kV transmission lines will originate at the LNP south site boundary in Levy County and traverse south for approximately 14.5 km (9 mi.) to the proposed Citrus Substation in Citrus County. The LPC corridor is also known as Citrus 1 and 2.

- 500-kV transmission line from the LNP to CREC 500-kV switchyard (LCR):

  The LCR corridor for one 500-kV transmission line will originate at the LNP south site boundary in Levy County, traverse south, turn west at the existing PEF 500-kV/230-kV transmission line, and will terminate at the CREC 500-kV switchyard in Citrus County. The LCR corridor is approximately 22.5 km (14 mi.) in length and is also known as Crystal River.

- 500-kV transmission line from the LNP to proposed Central Florida South Substation (LCFS):

  The LCFS corridor for one 500-kV transmission line will originate at the LNP south site boundary in Levy County, traverse south, turn east, and will terminate at the proposed Central Florida South Substation near the boundary between Sumter and Lake counties. The LCFS corridor is approximately 100 km (59 mi.) in length and is also known as Sumter.

Additional (and supplemental) transmission lines will be required beyond the first substations to connect the LNP to the Florida electrical grid system. They include the following:

- 230-kV transmission lines from the proposed Citrus Substation to the Crystal River East Substation (CCRE):

  The CCRE corridor for two 230-kV transmission lines will originate at the proposed Citrus Substation located in Citrus County and will terminate at the existing Crystal River East Substation, also located in Citrus County. The CCRE corridor is also known as Crystal River East.

- 230-kV transmission line from the CREC 500-kV switchyard to Brookridge Substation (CB):

  The CB corridor for one 230-kV tranmission line will originate at the CREC 500-kV switchyard in Citrus County and will terminate at the existing Brookridge Substation in Hernando County. The CB corridor is also known as Brookridge.

- 230-kV transmission line from the Brookridge Substation to Brooksville West Substation (BBW):

  The BBW corridor for one 500-kV transmission line will originate at the Brookridge Substation in Hernando County and will terminate at the existing Brooksville West Substation, also located in Hernando County. The BBW corridor is also known as Brookridge.

- 230-kV transmission line from the Polk to Hillsborough to Pinellas (PHP):

  The PHP corridor for one 230-kV transmission line will originate at the existing Kathleen Substation in Polk County, traverse south to the existing Griffin Substation in Hillsborough County, traverse west, and will terminate at the existing Lake Tarpon Substation in Pinellas County. The corridor will collocate with the existing PEF Kathleen-Griffin 230-kV transmission line and the existing Higgins-Griffin 115-kV transmission line. The PHP corridor is also known as Kathleen.

Two 69-kV transmission lines will be required to support construction and administration of the LNP, as described below:

- 69-kV transmission line from the LNP via the north LNP construction/administration corridor:

  The north LNP construction/administration corridor for one 69-kV transmission line will originate at the west site boundary line of the LNP and connect to an existing 69-kV transmission line near US-19. This corridor is also known as Levy North.

- 69-kV transmission line from the LNP via the south LNP construction/administration corridor:

  The south LNP construction/administration corridor for one 69-kV transmission line will originate at the south site boundary line of the LNP and connect to the existing 69-kV transmission line north of the Inglis Lock Bypass Channel. This corridor is also known as Levy South.

2.2.2.1 Corridor Descriptions

2.2.2.1.1 LPC Corridor

Two 500-kV transmission lines will originate at the LNP site boundary in Levy County and traverse south in the LPC corridor for approximately 7 mi. The LPC corridor is expected to be 1 mi. wide. The LPC corridor map key is presented as

Figure 2.2-7, and the corridor sectional maps are presented in Figure 2.2-8. The LPC corridor can be described as follows:

- LNP to SR-488 (West Dunnellon Road):

  The LPC corridor will be approximately 1 mi. wide and will extend south for approximately 7 mi. from the LNP site boundary to SR-488 (West Dunnellon Road). The LPC corridor will traverse the CFG for approximately 1.3 mi., as well as the Withlacoochee River. The predominant land uses within this section of the LPC corridor are rural residential and public environmental and recreation lands.

- SR-488 (West Dunnellon Road) to the general area of the proposed Citrus Substation:

  From SR-488 (West Dunnellon Road) the LPC corridor proceeds south to the existing PEF 500-kV/230-kV transmission line ROW, where it will proceed due west following the transmission line ROW approximately 1 mi. The 1-mi. width of the proposed corridor will allow flexibility in identifying a site for the proposed Citrus Substation. The predominant land uses within this section of the LPC corridor are rural residential, the existing utility corridor, and PEF's Crystal River East Substation.

2.2.2.1.2 LCR Corridor

The proposed LCR corridor will originate at the LNP south boundary site. The LCR corridor is expected to be approximately 14 mi. in length and 1 mi. in width. The LCR corridor map key is presented as Figure 2.2-9, and the LCR corridor sectional maps are presented as Figure 2.2-10. The LCR corridor can be described as follows:

- Proposed LNP to SR-488 (West Dunnellon Road):

  The LCR corridor will be approximately 1 mi. wide and will extend south for approximately 7 mi. from the LNP property line to SR-488 (West Dunnellon Road). The LCR corridor will traverse the CFG for approximately 1.3 mi. This segment of the LCR corridor is co-extensive with the LPC corridor in this area. The predominant land uses within this section of the LCR corridor are rural residential and public environmental and recreation lands.

- SR-488 (West Dunnellon Road) to CREC 500-kV switchyard:

  From SR-488 (West Dunnellon Road), the LCR corridor will proceed south to the existing PEF 500-kV/230-kV transmission line ROW where it will turn west centered on the existing PEF 500-kV/230-kV transmission line ROW alignment to the CREC 500-kV switchyard. The width of the LCR corridor in this section is expected to be approximately 1 mi. The predominant land uses within this section of the LCR corridor are rural residential and existing PEF transmission line ROWs.

2.2.2.1.3 LCFS Corridor

The LNP to LCFS corridor originates at the LNP south boundary site. The overall length of the LCFS corridor is expected to be approximately 59 mi. The first part of the LCFS corridor south of the LNP site will be co-located with the LPC and LCR corridors. Approximately 82 percent of the LCFS corridor will include the existing PEF 500-kV/230-kV transmission line ROW that extends eastward from the CREC 500-kV switchyard. In the area of the proposed Central Florida South Substation, the LCFS corridor will be 1 mi. wide to allow flexibility in identifying a site for the proposed Central Florida South Substation. The LCFS corridor map key is presented as Figure 2.2-11, and the corridor sectional maps are presented as Figure 2.2-12. The LCFS corridor can be described as follows:

- LNP to SR-488 (West Dunnellon Road):

  The LCFS corridor will be approximately 1 mi. wide and will traverse for approximately 9 mi. extending south from the LNP site to SR-488 (West Dunnellon Road). The LCFS corridor will traverse the CFG for approximately 1.3 mi., as well as the Withlacoochee River. The predominant land uses within this section of the corridor are rural residential and public environmental and recreation lands. This segment of the LCR corridor is co-extensive with the LPC corridor in this area.

- SR-488 (West Dunnellon Road) to the existing PEF 500-kV/230-kV transmission line ROW:

  From SR-488 (West Dunnellon Road), the LCFS corridor will proceed south for approximately 1 mi. to encompass the existing PEF 500-kV/230-kV transmission line ROW that extends eastward from the CREC. The width of the LCFS corridor in this area will be 1 mi. The predominant land use within this section of the corridor is rural residential.

- Existing PEF 500-kV/230-kV transmission line ROW to Holder Substation vicinity:

  From this point, the LCFS corridor will proceed east for approximately 12 mi. along the existing PEF 500-kV/230-kV transmission line ROW. For the westernmost 1.5 mi., the LCFS corridor will remain 1 mi. wide and will then narrow to approximately 1000 ft. in width, centered on the existing PEF 500-kV/230-kV transmission line ROW. The LCFS corridor will widen to approximately 0.6 mi. around the Holder Substation in Citrus County to allow flexibility for routing the transmission line in or around the substation. This segment of the LCFS corridor will traverse the Withlacoochee State Trail. The predominant land uses within this section of the corridor are rural residential, lands managed for environmental consideration, and existing PEF 500-kV/230-kV transmission lines.

- Holder Substation vicinity to Ross Prairie Substation vicinity:

  From the Holder Substation in Citrus County, the LCFS corridor will continue east and then northeast following the existing PEF 500-kV/230-kV transmission line ROW. The LCFS corridor will be approximately 1000 ft. wide and centered on the existing ROW. The LCFS corridor will traverse the Withlacoochee State Forest for approximately 2 mi., the Halpata Tastanaki Preserve for approximately 1.3 mi., and the Ross Prairie State Forest for approximately 2.7 mi. Around the Ross Prairie Substation in Marion County, the corridor will widen to approximately 0.6 mi. to allow flexibility for routing the transmission line in or around the substation. The predominant land uses within this section of the corridor are rural residential, public environmental and recreation lands, and existing PEF 500-kV/230-kV transmission lines.

- Ross Prairie Substation vicinity to Anderson Substation:

  From the Ross Prairie Substation, the 1000-ft. wide LCFS corridor will proceed east for approximately 1.7 mi. and then southeast for approximately 10 mi. It will be centered on the existing PEF 500-kV/230-kV transmission line ROW until it reaches the vicinity of the Anderson Substation in Sumter County. Around the Anderson Substation, the corridor will widen to approximately 0.6 mi. to allow flexibility for routing the transmission line in or around the substation. The predominant land uses within this section of the corridor are residential and the existing PEF 500-kV/230-kV transmission lines.

- Anderson Substation vicinity to SR-462:

  From the Anderson Substation, the 1000-ft. wide LCFS corridor will continue southeast approximately 0.3 mi. centered on the existing PEF 500-kV/230-kV transmission line ROW until it intersects SR-44 and I-75 in Sumter County. At this point, the corridor will widen to 1 mi. to allow flexibility in traversing I-75 and the Florida Turnpike. The predominant land uses within this section of the corridor are rural residential, other agricultural lands, and the existing PEF 500-kV/230-kV transmission line ROW.

- SR-44 vicinity to the proposed Central Florida South Substation:

  The 1-mi.-wide LCFS corridor will continue for approximately 13.5 mi., its width including portions of the existing PEF 500-kV/230-kV transmission line ROW, the Florida Turnpike, and SR-44. South of the intersection of the existing PEF 500-kV/230-kV transmission line ROW and the Florida Turnpike, the LCFS corridor will follow the Florida Turnpike until it reaches the existing PEF 500-kV Central Florida-Kathleen transmission line ROW that runs north-south approximately 0.25 mi. west of the intersection of Sumter and Lake counties.

There the LCFS corridor will turn south toward CR-470 and then east, following the CR-470 alignment into Lake County, ending east of the Florida Turnpike and the existing PEF 500-kV/230-kV transmission line. The corridor width will allow flexibility in identifying a suitable site for the proposed Central Florida South Substation. The predominant land uses within this section of the corridor are rural residential, open/agricultural lands, major roads, and the existing PEF 500-kV/230-kV transmission line ROW.

2.2.2.2 Vegetation/Land Use

2.2.2.2.1 LPC Corridor

Between the LNP site and the Withlacoochee River, the LPC corridor will traverse mixed forest land intermixed with forested wetlands, other urban or built-up land and deciduous forest lands, and then intersect the forested wetlands of the Withlacoochee River to the west and mixed forest land and forested wetlands surrounding Lake Rousseau to the east. The corridor will cross the Withlacoochee River, traversing mostly deciduous forest land, forested wetlands, and residential areas intermixed with deciduous forest land, before intersecting CR-488 (West Dunnellon Road) and an existing 69-kV transmission line. It will then continue south through mixed forest land to the northerly boundary of the existing PEF 500-kV/230-kV transmission line ROW. There it will turn west and cross US-19. The general area of the proposed Citrus Substation is an area of cropland, pasture, and mixed forest land.

The forest lands adjacent to the Withlacoochee River and Lake Rousseau that will be intersected by part of the LPC corridor are a portion of the CFG. The CFG has mixed rangelands, deciduous forest land habitat, evergreen forest land habitat, blackwater streams, springs, and rare/endangered plants and animals. Figure 2.2-13 depicts land use along the entire length of the LPC corridor using SWFWMD and SJRWMD data as updated by Golder Associates and coded using the USGS Anderson system (References 2.2-001, 2.2-002, and 2.2-004). Habitats observed along the corridor include transportation, communications, and utilities (USGS 14), other urban or built-up land (USGS 17), cropland and pasture/other agricultural lands (USGS 21/24), shrub and brush rangeland (USGS 32), mixed rangeland (USGS 33), deciduous forest land (USGS 41), evergreen forest land (USGS 42), mixed forest land (USGS 43), streams and canals (USGS 51), lakes/reservoirs (USGS 52/53), forested wetlands (USGS 61), and nonforested wetlands (USGS 62). Descriptions of each of these habitats are included in ER Appendix 2.2-1. Table 2.2-4 quantifies the acreages of each of the vegetative communities within the LPC corridor. The dominant plant species observed within the most prevalent habitats are presented in ER Appendix 2.2-2.

2.2.2.2.2 LCR Corridor

Between the LNP site and the Withlacoochee River, the LCR corridor will traverse mixed forest land intermixed with forested wetlands, other urban or built-up land and deciduous forest lands, and then intersect the forested wetlands of the Withlacoochee River to the west and mixed forest land and forested wetlands surrounding Lake Rousseau to the east. The LCR corridor will cross the Withlacoochee River, traversing mostly deciduous forest land, forested wetlands, and residential areas intermixed with deciduous forest land before intersecting CR-488 (West Dunnellon Road) and an existing 115-kV transmission line. It will then continue south through mixed forest land to the northerly boundary of the existing PEF 500-kV/230-kV transmission line ROW. There it will turn west and follow the existing PEF 500-kV/230-kV transmission line ROW for approximately 3 mi., traversing mostly mixed forest land and forested wetlands along the edge of the Crystal River Preserve State Park, as well as some nonforested wetlands and mixed forest land, ending at the CREC.

The forest lands adjacent to the Withlacoochee River and Lake Rousseau that will be intersected by part of the LCR corridor are a portion of the CFG. The CFG has mixed rangeland, deciduous forest land, evergreen forest land habitat, blackwater streams, springs, and rare/endangered plants and animals. The LCR corridor will traverse along the northern edge of the Crystal River Preserve State Park co-locating with existing PEF 500-kV/230-kV transmission line ROW. The Crystal River Preserve State Park habitat includes hydric hammock, mixed upland forests, scrub, and sand hills (Reference 2.2-024).

Figure 2.2-14 depicts land uses along the entire length of the LCR corridor using SWFWMD and SJRWMD data as updated by Golder Associates and coded using the USGS Anderson system. Habitats observed along the LCR corridor include transportation, communications, and utilities (USGS 14), other urban or built-up land (USGS 17), cropland and pasture/other agricultural lands (USGS 21/24), shrub and brush rangeland (USGS 32), mixed rangeland (USGS 33), deciduous forest land (USGS 41), evergreen forest land (USGS 42), mixed forest land (USGS 43), streams and canals (USGS 51), lakes/reservoirs (USGS 52/53), bays and estuaries (USGS 54), forested wetlands (USGS 61), nonforested wetlands (USGS 62), and strip mines, quarries, and gravel pits (USGS 75). Descriptions of each of these habitats are included in ER Appendix 2.2-1. Table 2.2-5 quantifies the acreages of each of the vegetative communities within the LCR corridor. The dominant plant species observed within each habitat are presented in ER Appendix 2.2-2.

2.2.2.2.3 LCFS Corridor

Between the LNP site and the Withlacoochee River, the LCFS corridor will traverse mixed forest land intermixed with forested wetlands, other urban or built-up land and deciduous forest land, and then intersect the forested wetlands of the Withlacoochee River to the west and mixed forest land and forested wetlands surrounding Lake Rousseau to the east. The corridor will cross the Withlacoochee River, traversing mostly deciduous forest land, forested wetlands, and residential areas intermixed with deciduous forest lands before intersecting SR-488 (West Dunnellon Road).

The forest lands adjacent to the Withlacoochee River and Lake Rousseau that will be intersected by the LCFS corridor are a portion of the CFG. The CFG has mixed rangelands, deciduous forest lands, evergreen forest lands, blackwater streams, springs, rare/endangered plants and animals, and culturally significant sites. The area is used for outdoor recreation and natural resource management (References 2.2-024, 2.2-025, and 2.2-026).

After turning east and following the existing PEF 500-kV/230-kV transmission line ROW, the LCFS corridor will intersect mostly pasture and residential areas. East of SR-495, the LCFS corridor will encompass the existing transmission line ROW and traverse areas of deciduous forest lands, mixed forest lands, and residential areas. North of the intersection of North Lecanto Highway and North Deltona Boulevard, near a power substation, the LCFS corridor will cross the Withlacoochee State Trail and US-41. The LCFS corridor will intersect the Two-Mile Prairie Tract of the Withlacoochee State Forest, northeast of the intersection of CR-491 and SR-200. Northeast of CR-39, as the LCFS corridor continues along the existing transmission ROW, crosses the Withlacoochee River and its associated forested wetlands, and intersects the southern borders of the Halpata Tastanaki Preserve and the Ross Prairie Wildlife Management Area. Continuing southeast, the LCFS corridor will traverse large tracts of mixed forest lands and large areas of cropland and pasture.

Where the LCFS corridor will parallel I-75 and SR-44, it will traverse areas of cropland and pasture, forested wetlands, deciduous forest lands, and evergreen forest lands north of SR-468. South of SR-468, the LCFS corridor will predominantly traverse large areas of cropland and pasture and depressional nonforested wetlands. At the east end of the LCFS corridor, in the vicinity of the proposed Central Florida South Substation, mixed forest lands and cropland and pastures are dominant.

The LCFS corridor will cross through the Withlacoochee State Forest along an existing PEF transmission line ROW. Located in Citrus, Hernando, Pasco, and Sumter counties, the Withlacoochee State Forest is comprised of seven large mostly non-contiguous tracts: Two-Mile Prairie, Homosassa, Citrus, Headquarters, Jumper Creek, Croom, and Richloam. The forest, totaling approximately 160,000 ac., extends from the coastal nonforested wetlands on the Gulf of Mexico through the Brooksville Ridge south to the evergreen forest lands and forested wetlands of the Green Swamp. It contains the headwaters of the Little Withlacoochee River and many miles of the Withlacoochee River (Reference 2.2-024). According to the FDAC Division of Forestry, manager of Withlacoochee State Forest, high quality evergreen forest lands within the state forest support significant populations of the red-cockaded woodpecker (*Picoides borealis*). Southeast areas of the state forest contain large expanses of evergreen forest lands and forested wetlands. The land is used for timber management, wildlife management, ecological restoration, and outdoor recreation.

The Halpata Tastanaki Preserve that will be intersected by the LCFS corridor is an 8110-ac. property managed by SWFWMD and is located in southwest Marion County, east of the City of Dunnellon. A variety of habitat types occur on the property, including forested wetlands and deciduous forest lands along the Withlacoochee River. Recovering stands of deciduous forest land within the evergreen forest lands support Florida scrub jay (*Aphelocoma coerulescens*) populations. The preserve is currently used for outdoor recreation and habitat restoration (Reference 2.2-027).

The Ross Prairie Wildlife Management Area that will be intersected by the LCFS corridor is a 3500-ac. forest managed by the FDAC Division of Forestry. The forest is located on the southern end of Ross Prairie, a nonforested depressional wetland characterized by open areas of wetland grasses surrounded by deciduous forest lands. The majority of the Ross Prairie Wildlife Management Area is comprised of evergreen forest lands. (Reference 2.2-028) The CFG lies north of this state forest.

Figure 2.2-15 depicts land use along the LCFS corridor using SWFWMD and SJRWMD data as updated by Golder Associates and coded using the USGS Anderson system (References 2.2-001, 2.2-002, and 2.2-004). Habitats observed along the LCFS corridor include transportation, communications, and utilities (USGS 14), other urban or built-up land (USGS 17), cropland and pasture/other agricultural land (USGS 21/24), shrub and brush rangeland/mixed rangeland (USGS 32/33), deciduous forest land (USGS 41), evergreen forest land (USGS 42), mixed forest land (USGS 43), streams and canals (USGS 51), lakes/reservoirs (USGS 52/53), forested wetlands (USGS 61), nonforested wetlands (USGS 62), and transitional areas (USGS 76). Descriptions of each of these habitats are included in ER Appendix 2.2-1. Acreages of each of the vegetative communities identified in the LCFS corridor are provided in Table 2.2-6. The dominant plant species observed in each habitat are listed in ER Appendix 2.2-2.

2.2.2.3 Community Characteristics

2.2.2.3.1 LPC and LCR Corridors

The LPC and LCR corridors will be located within Levy and Citrus counties (Figures 2.2-16 and 2.2-17). The Town of Inglis in Levy County is the closest municipality to both corridors.

2.2.2.3.1.1 Demography

Levy County was estimated to have 38,981 residents in 2006, a 13.15-percent increase from 2000. Citrus County was estimated to have 136,749 residents in 2006, a 15.81-percent increase from 2000. The medium population projection for all of Levy County depicts continued growth, with an estimated population of 53,800 in 2025. The medium population projection for all of Citrus County depicts continued growth, with an estimated population of 188,100 in 2025

(Reference 2.2-029). The Town of Inglis was estimated to have 1731 residents in 2006, a 16.10-percent increase from 2000 (Reference 2.2-029).

2.2.2.3.1.2 Labor Force

The total labor force in Levy County for 2006 was 16,791, with employment of 16,222. Unemployment in 2005 was 569, or 3.4 percent, in Levy County. The total labor force in Citrus County for 2006 was 54,339 with employment of 52,300. Unemployment in 2006 was 2039, or 3.8 percent, in Citrus County. For the State of Florida, the total labor force was 8,989,000 and employment was 8,693,000 with an unemployment rate of 3.3 percent. The total labor force in the United States was 151,428,000 and employment was 144,427,000 with an unemployment rate of 4.6 percent (Reference 2.2-029).

Average monthly private-sector employment by major industry group in Levy and Citrus counties for June 2007 is provided in Table 2.2-7 (Reference 2.2-029). The construction industry provided about 972 jobs in Levy County and 4329 jobs in Citrus County (Reference 2.2-029). Employment projections for construction trades in Florida have been estimated for the year 2014 statewide, construction employment is estimated to increase from 617,201 in 2006 to 733,495 in 2014 (Reference 2.2-030).

2.2.2.3.1.3 General Income

In 2005, Levy County had a per capita personal income of $22,036 and Citrus County had a per capita personal income of $26,072. The State of Florida and United States per capita personal income in 2005 was $34,001 and $34,471, respectively (Reference 2.2-029). The Levy County income level ranked 52nd and Citrus County income level ranked 34th out of Florida's 67 counties.

The median household income in Levy County was $29,314 and in Citrus County it was $33,576 in 2004. When compared to the 2000 median household income, the Levy County income level experienced a 5.7-percent increase and the Citrus County income level a 7.1-percent increase. Florida had a median household income of $40,900 in 2004, which was an increase of 5.5 percent from 2000 (Reference 2.2-029). The 2005 average wage and salary earning per job in Levy County was $25,021 and in Citrus County was $30,174. This average wage and salary earnings was approximately 32 percent lower in Levy County and approximately 18 percent lower in Citrus County than the statewide average of $36,583 (Reference 2.2-029).

2.2.2.3.1.4 Housing

ER Subsection 2.5.2.5 provides a detailed discussion of housing in Levy and Citrus counties. The average house purchase prices in Levy and Citrus counties in 2005 were $190,491 and $196,322, respectively (Reference 2.2-031).

The Department of Business and Professional Regulation collects reports on licensed, public lodging which includes apartment buildings, rooming houses, resort condominiums, resort dwellings, transient apartment buildings, as well as hotels and motels. A total of 54 licensed lodging units existed In Levy County in 2007 (Reference 2.2-029), representing 936 lodging units. Excluding hotels and motels, public lodgings that target rentals of six months or less include 420 apartment building units, three rooming house units, 117 rental condominiums, and 36 transient apartment building units (Reference 2.2-029).

A total of 76 licensed lodging units existed in Citrus County in 2007 (Reference 2.2-029), representing 2269 lodging units. Excluding hotels and motels, public lodgings that target rentals of six months or less include 1124 apartment building units, nine rooming house units, 15 rental condominiums, and 116 transient apartment building units (Reference 2.2-029).

2.2.2.3.2 LCFS Corridor

The LCFS corridor will be located within Levy, Citrus, Marion, Sumter, and Lake counties (Figure 2.2-18). The Town of Inglis in Levy County, the City of Wildwood in Sumter County, and the City of Leesburg in Lake County are the closest municipalities to the LCFS corridor. All three of the municipalities are located within the LCFS corridor.

2.2.2.3.2.1 Demography

Levy County was estimated to have 38,981 residents in 2006, a 13.15-percent increase from 2000. Citrus County was estimated to have 136,749 residents in 2006, a 15.81-percent increase from 2000. Marion County was estimated to have 315,074 residents in 2006, a 21.69-percent increase from 2000. Sumter County was estimated to have 82,599 residents in 2006, a 54.84-percent increase from 2000. Lake County was estimated to have 276,783 residents in 2005, a 31.47-percent increase from 2000 (Reference 2.2-029).

The medium population projections for all five of the counties depict continued growth. The estimated medium population projections for 2025 for the five counties are provided below (Reference 2.2-029):

- Levy County – 53,800
- Citrus County – 188,100
- Marion County – 476,000
- Sumter County – 155,700
- Lake County – 456,200

Census counts and population estimates for the three LCFS municipalities are provided in Table 2.2-8 (Reference 2.2-029).

2.2.2.3.2.2 Labor Force

The total labor force in 2006 in the five counties is provided in Table 2.2-9 (Reference 2.2-029). For the State of Florida, the total labor force was 8,989,000 and employment was 8,693,000 with an unemployment rate of 3.3 percent. The total labor force in the United States was 151,428,000 and employment was 144,427,000 with an unemployment rate of 4.6 percent (Reference 2.2-029).

Average monthly private-sector employment by major industry group in the five counties for June 2007 is provided in Table 2.2-10 (Reference 2.2-029). Employment projections for construction and extraction trades in Florida have been estimated for the year 2014. Statewide, construction employment is estimated to increase from 617,201 in 2006 to 733,495 in 2014 (Reference 2.2-030).

2.2.2.3.2.3 General Income

A summary of general income in the five counties is provided in Table 2.2-11 (Reference 2.2-029). Florida's median household income in 2004 was $40,900 with a 5.5-percent change from 2000 (Reference 2.2-029). The 2004 average wage and salary earnings per job in the five counties are provided in Table 2.2-12 (Reference 2.2-029).

2.2.2.3.2.4 Housing

The total number of housing units in the five counties by occupancy type according to the U.S. Census Bureau 2006 American Community Survey is provided in Table 2.2-13 (Reference 2.2-031). The average house purchase price in 2005 in the five counties is provided in Table 2.2-14 (Reference 2.2-031). A summary of the total licensed lodging in 2007 in the five counties is provided in Table 2.2-15 (Reference 2.2-029). A breakdown of the total licensed lodging types in 2007 in the five counties is provided in Table 2.2-16 (Reference 2.2-029).

2.2.2.4 Regional Scenic, Cultural, and Natural Landmarks

2.2.2.4.1 LPC Corridor

The LPC corridor (two transmission lines) will traverse the CFG and the Withlacoochee River (Figure 2.2-19). The LPC corridor will traverse the CFG for approximately 1.3 mi. The CFG traverses Citrus, Levy, Marion, and Putnam counties, which occupy much of the land that was formerly the CFBC. The CFG stretches from the Gulf of Mexico to the St. Johns River, encompassing a variety of habitats and ecosystems and offers an array of trails and recreation areas for visitors (Reference 2.2-032).

The LPC corridor will also cross the Withlacoochee River. As discussed in ER Subsection 2.2.1.3, the Withlacoochee River offers a variety of recreation opportunities and has been designated by the State of Florida as an OFW (Reference 2.2-012).

2.2.2.4.2 LCR Corridor

Because the LCR corridor will be co-extensive with the LPC corridor for the northernmost 9 mi., it will also traverse the CFG for approximately 1.3 mi. and the Withlacoochee River (Figure 2.2-20).

The LCR corridor will also traverse along the northern edge of the Crystal River State Preserve following the existing PEF 500-kV/230-kV transmission line ROWs. The Crystal River State Preserve is managed by the FDEP, and encompasses most of the land between Homosassa and Crystal River west of US-19 and several sections of land north of Crystal River. The park is approximately 30,000 ac. (Reference 2.2-033).

2.2.2.4.3 LCFS Corridor

Because the LCFS corridor will be co-extensive with the LPC and LCR corridors for the northernmost 7 mi., it will also cross the CFG for approximately 1.3 mi., as well as the Withlacoochee River (Figure 2.2-21). The Withlacoochee State Trail is approximately 46 mi. in length and is currently the longest paved trail in Florida. The trail runs through small towns, ranches, and natural areas as it makes its way south from Citrus Springs to Trilby. The Withlacoochee Trail will eventually join many other trails in the region, becoming part of the Central Florida Loop (References 2.2-025 and 2.2-026).

Following an existing PEF 500-kV/230-kV transmission line ROW, the LCFS corridor will traverse for approximately 2 mi. through the Two Mile Prairie, which is managed as part of the Withlacoochee State Forest. The Two Mile Prairie is located along the southern bank of the Withlacoochee River at the northern end of the Tsala Apopka Lake system. The property consists of 2900 ac. that have a variety of natural upland and wetland plant communities. The Two Mile Prairie offers a variety of recreation activities including camping, fishing, horseback riding, and picnicking (Reference 2.2-034). The Withlacoochee State Forest is currently the third largest state forest in Florida and is divided into several distinct tracts of land. The FDAC Division of Forestry provides for multiple usages of the forest resources which includes timber management, wildlife management, ecological restoration, and outdoor recreation (Reference 2.2-035).

The LCFS corridor will also cross the Halpata Tastanaki Preserve along an existing PEF 500-kV/230-kV transmission line ROW. The Halpata Tastanaki Preserve is located in Marion County east of Dunnellon. The 8110-ac. property is managed by the SWFWMD and includes wetland areas along the Withlacoochee River, with oak scrub and floodplain swamp and upland areas of longleaf pine and turkey oak sandhills. The preserve offers recreation activities such as bicycling, boating, equestrian use, and fishing (Reference 2.2-027).

The LCFS Corridor crosses the Ross Prairie State Forest along an existing PEF 500-kV/230-kV transmission line ROW. The Ross Prairie State Forest consists of approximately 3500 ac. in Marion County that are managed by the FDAC Division of Forestry (Reference 2.2-028).

2.2.2.5 Easements, Title, and Agency Works

Easements will be necessary to cross lands under the jurisdiction of the State of Florida Board of Trustees of the Internal Improvement Trust Fund (TIITF) and private land owners. Crossing federal highways such as I-75 would typically require approval from the Florida Department of Transportation (FDOT). Other entities that would normally be contacted for permits or approvals to cross existing facilities include state, county, and municipal governments for maintained roads; water management districts; railroads for their facilities; and gas pipeline companies. All crossing of state roads will conform to the specifications in the FDOT's Utility Accommodation Manual, if applicable (Reference 2.2-036).

The three corridors traverse one state park (the CFG), two state forests (Ross Prairie State Forest and Withlacoochee State Forest), one state trail (Withlacoochee State Trail), one preserve (Halpata Tastanaki Preserve), one OFW (Withlacoochee River) and three local recreation areas (South Levy Recreational Park, Buddy Richer Sports Complex, and Central Ridge District Park). These properties may require easements to be obtained.

2.2.2.6 Land Use Plans

As discussed in ER Subsection 2.2.1.5, the State of Florida is comprised of state, regional, and local planning authorities. Each of the counties and municipalities located within the corridors have adopted comprehensive plans to meet the requirements of the Local Government Comprehensive Planning and Land Development Regulations Act of 1985 (also referred to as Florida's Growth Management Act), as presented in Chapter 163, Part II, Florida Statutes (F.S.) and Chapter 9J-5, Florida Administrative Code (F.A.C.).

The transmission line corridors have been evaluated relative to the regulations of the Levy, Citrus, Marion, Sumter, and Lake counties; the City of Wildwood (Sumter County); and the City of Leesburg (Lake County). The following summarizes the policies that may be relevant to electric utility facilities that are included in the Comprehensive Plan for each of the local governmental jurisdictions potentially crossed by the proposed transmission lines and/or substations.

The State of Florida has preempted the certification of transmission lines and transmission line corridors to which it applies and the certification issued pursuant to that process is the sole non-federal license necessary to construct and maintain the transmission line. As a result (and as per F.S. Sections 163.3164[6], 380.04[1] and 380.04[3][b] and [h]), the licensing of the transmission line is conducted pursuant to the State of Florida Electrical Power Plant Siting Act

(PPSA) and applicable rules, rather than the procedural requirements of the individual agencies or local governments.

2.2.2.6.1 Levy County

The Levy County Comprehensive Plan (as amended through June 1999) discusses electric utility facilities in the Infrastructure Element and the Coastal Management Element, and the Conservation Element of the plan. In the Infrastructure Element, there is a Utilities sub-element that references electric utility projects. In that sub-element, the county identifies the need for electric utilities to support growth in the county and mentions the need to adequately and efficiently provide these utilities through coordination with private and state entities. The county encourages utility facilities to be located in areas that would serve growth areas while minimizing impacts to the appearance and character of the area (Policy 1.1); encourages utility facilities to be co-located with each other (Policy 1.2); and encourages utility facilities to use underground lines, where feasible (Policy 1.3). Policy 1.4 states that essential public utilities are permitted in all land use classifications and should be consistent with standards and guidelines in the Capital Improvement, Conservation, and Coastal Management Elements (Reference 2.2-018).

In the Coastal Management Element, Policy 1.6 states that underground utilities should be encouraged to maintain and enhance the aesthetic quality of the coastal area. Policy 14.2 states that electric utilities are considered “essential” infrastructure. Policy 5.11 recognizes the need for electrical utilities, and states that relevant siting studies should consider the importance of minimizing adverse social and environmental impacts. Policy 5.13 recognizes areas of ecological sensitivity and encourages utilities to direct potential growth resulting from a project towards favorable areas. Policy 5.14 encourages avoidance of disruption to environmentally sensitive areas existing in the coastal zone and minimization of line installation that may impact existing aquatic systems.

In the Conservation Element, Policy 1.1 states that enhancing air quality could be implemented by preserving trees, natural vegetation and open space through provisions in the land development regulations. Policy 5.2 states that habitat of any threatened or endangered species will be managed to ensure survival of that species. In addition, mitigation activities should be identified to sustain or increase the carrying capacity of habitat in accordance with State-approved management plan(s).

2.2.2.6.2 Citrus County

The Citrus County Comprehensive Plan identifies public utilities in the Future Land Use Element, Utility Element, and the Conservation Element of the plan. In the Future Land Use Element (last amended July 2006), Policy 17.14.2 states that public utilities are permitted in all future land use districts including planned residential developments, with the understanding that performance standards are met. In the Utility Element (last amended July 2006) the county recognizes that existing systems may need to be upgraded and transmission lines may need to be extended and/or constructed to meet future demands. The element also states that when new facilities or extension to existing facilities are needed, existing corridors will be evaluated and used whenever possible to minimize environmental impacts (Reference 2.2-023).

In the Conservation Element (last amended in July 2006), Policy 3.1.3 states that construction in the vicinity of water bodies or wetland areas must retain a buffer of 15 ft. or greater for natural vegetation or 25 ft. or greater upland of springs, spring-fed water bodies, and open sinkholes; existing topography and vegetation must be retained; runoff should be reduced into adjacent and downstream water with pervious pavement materials; silt screens must be in place between construction or land clearing and the water body or wetland to prevent erosion and siltation; and vegetation must be retained or replaced with suitable native vegetation to minimize and stabilize erosion and to decrease pollution. Policy 3.1.4 states that the land development code should identify a mechanism for greater setbacks and buffers when environmental characteristics of any area require additional protective measures. Concerning wildlife and habitat, the county identifies the need to maintain a natural balance between ecological communities and increased development. The county will continue to enforce wetland protection regulations and permitting requirements (Policy 3.9.4); continue to enforce regulations and programs for the protection of species listed as endangered, threatened, and of special concern (Policy 3.9.5); request that projects in excess of five acres be required to have a biological survey conducted when native vegetative or ecological communities are present (Policy 3.9.8); preserve and protect the native tree canopy and offset the loss of trees due to construction activities; and continue to develop and implement wetland protection standards, permitting requirements, and compensatory mitigation programs (Policies 3.16.1 – 3.16.9).

2.2.2.6.3 Marion County

The Marion County Comprehensive Plan identifies public utilities in the Future Land Use Element and the Conservation Element of the plan. The Future Land Use Element (last amended in May 2007) states that the county will ensure availability of suitable land for public utilities. Policy 1.9 states that public facilities and utilities should be located to maximize the efficiency of the service provided, minimize costs, minimize impacts on the natural environment, and minimize the impact on adjacent land uses. Policy 8.1 states that public utilities needed to provide essential service to existing and future land uses, as authorized in other plan elements or by the county, will be allowed in all of the land use classifications when uses conform to county codes and ordinances. In the Conservation Element (last amended in March 2005), the county identifies the need to minimize impacts to the CFG and states in Policy 2.23 that the county will coordinate with the state to minimize the effects of utility lines crossing the CFG. The policy identifies design considerations such as burying lines, co-locating with existing lines, and narrow corridors that would be consistent with the CFG management plan (Reference 2.2-037).

2.2.2.6.4 Sumter County

The Sumter County Comprehensive Plan, which was last amended in December 2007, discusses public utilities in the Future Land Element of the plan. Policy 7.1.9.1 states that public utilities providing essential services to existing and future land uses, as authorized by other elements of the comprehensive plan or by the county, will be allowed in all land use classifications when uses conform to county codes and ordinances. Policy 7.1.9.3 also states that the county will maintain a close relationship with public utility providers to assure continuity and availability of service (Reference 2.2-038).

2.2.2.6.5 Lake County

The Lake County Comprehensive Plan discusses public utilities in the Future Land Use Element. In the Future Land Use Element (last amended in December 2002), Policy 1-9.1 states that the county will coordinate the Comprehensive Plan with the development and service plans of utility companies to assure that sufficient ROW and other land is available for utility placements and distribution lines. Distribution lines, such as telephone lines and water mains, shall be permitted in public ROWs or as otherwise stated in the Land Development Regulations (Reference 2.2-039).

2.2.2.6.6 City of Wildwood (Sumter County)

The City of Wildwood Comprehensive Plan, which was last amended in June 2001, identifies the need to provide public facilities in a manner that protects investments in existing facilities and promotes orderly, compact urban growth in the Utilities Element. In the Future Land Use Element, the city identifies the need to promote adequate land for utility facilities. Policy 1.1.2 states that the city will continue to require adequate buffer and screening along the boundaries of different types of uses as specified in the development regulations to promote compatibility among all the various uses. In the Conservation Element, the city identifies the need to conserve, protect and manage the natural resources of the city to ensure that resources are used efficiently yet maintaining the highest environmental quality possible. In Policy 1.7.3, the city states that native vegetative communities identified in the Florida Natural Areas Inventory (FNAI) must be preserved through identified standards and guidelines. Policies 1.7.5 and 1.7.7 state that wetlands and recharge potential areas, respectively, are to be protected through the implementation of standards and guidelines (Reference 2.2-040).

2.2.2.6.7 City of Leesburg (in Lake County)

The City of Leesburg Comprehensive Plan, which was last amended in September 2003, discusses public utilities in the Future Land Use Element. Objective 1.12 identifies the city’s interest in maintaining regulations and procedures in the land development code that require the provision of land for utility facilities that are necessary to support development and will limit land development activities when such land is not available. Policy 1.12.1 states that existing and proposed utility systems, including transmission corridors for electric utilities, will be evaluated prior to construction.

The Conservation Element discusses the city's objective to conserve, protect, and appropriately manage the natural resources of the city and the surrounding area to ensure a high environmental quality for its citizens. In Policy 1.1.5, the city identifies the need to coordinate with Lake County to assure land use controls are in place to protect surface water quality. Policy 1.2.17 states that the city will continue to implement and enforce codes/provisions pertaining to buffer size requirements, setback requirements, native vegetation setback requirements and stormwater swale requirements to protect the natural environment. Policy 1.3.1 states that the city will continue to coordinate with the Florida Department of Environmental Protection (FDEP) concerning jurisdictional authority for wetland, water quality, and submerged lands pertaining to development and permitting. Policies 1.3.5 and 1.3.6, respectively, state that wetlands within the city will be protected, and that mitigation measures and provisions within the land development code must be followed when unavoidable impacts to wetlands occur. Policy 1.5.1 states that the city will assist in the application of, and compliance with, all state and federal regulations pertaining to endangered and threatened species and species of special concern. Policy 1.5.2 states that the city will enforce its tree protection ordinance to protect existing vegetation communities and wildlife habitat (Reference 2.2-041).

2.2.2.6.8 Future Land Use

The corridors traverse five counties and two municipalities within central Florida. The corridors traverse unincorporated portions of Levy, Citrus, Marion, Sumter, and Lake counties, the City of Wildwood (Sumter County), and the City of Leesburg (Lake County).

The relevant future land use categories are described below for information purposes only. The future land use legend keys for the following figures are provided in Figure 2.2-22. The future land use categories within the LPC, LCR, and LCFS corridors are depicted on Figures 2.2-23, 2.2-24, and 2.2-25, respectively.

2.2.2.6.8.1 Levy County

In Levy County, the corridors traverse the following future land use categories (Reference 2.2-018):

- Forestry/Rural Residential – The Forestry/Rural Residential future land use category is intended to provide for commercial forestry, and accessory and supportive uses to the forestry industry. In addition, the category provides for resource-based and/or non-spectator based recreational uses, conservation uses, and very low rural density development, which are spatially separated from forestry uses. The maximum residential density within this category is 1 du/20 ac. with a minimum parcel size of 20 ac.

- Low Density Residential – The Low Density Residential future land use category is intended to provide for single family residential uses and accessory and supportive uses to residential development. The maximum density is 2 du/ac.

- Rural Residential – The Rural Residential future land use category is intended to provide for rural low density single family residential uses, accessory and supportive uses to rural residential development and limited agricultural uses. The maximum residential density is 1 du/3 ac. with a minimum parcel size of 3 ac.

- Public (Use) – The Public (Use) future land use category is intended to provide for public buildings and grounds, including city halls; post offices; fire and police stations; libraries; public utilities; public potable water well; the county airport and maintenance yards; educational facilities; and other public facilities (such as churches, health center, hospitals, etc). The minimum lot size is 0.25 ac.

- Natural Reservation – The Natural Reservation future land use category is intended to provide for areas designated for conservation purposes, and owned/operated by contractual agreement with, or managed by a federal, state, regional, or local government, or non-profit agency. The uses allowed in the category include park facilities and services, agricultural/forestry uses, and passive recreational activities and facilities that are compatible with and complement conservation purposes of the area and are consistent with jurisdictional management plans. Typical uses may include walking trails and trailhead facilities, primitive camping sites, and hunting/fishing activities.

2.2.2.6.8.2 Citrus County

In Citrus County, the corridors traverse the following future land use categories (Reference 2.2-023):

- Low Intensity Coastal and Lakes – The Low Intensity Coastal and Lakes future land use category is intended to provide for areas with environmental characteristics that are sensitive to development and should be protected. Residential development is restricted to a maximum of 1 du/20 ac. In addition, the category allows single family developments, multifamily residences, recreational uses, agricultural and silvicultural uses, public/semi-public institutional facilities, home occupations, new railroad ROWs, communication towers, utilities, commercial fishing and marina-related uses, and commercial uses that are water-dependent when uses are compatible with surrounding uses and development standards are met.

- Rural Residential – The Rural Residential future land use category is intended to provide for areas that are in transition between higher density developments and agricultural or conservation uses. The category encourages the preservation of economically viable agricultural land and large tracts of residential land to maintain the rural atmosphere in appropriate areas of the county. Residential densities allowed in the category are up to 1 du/10 ac. In addition, the category allows recreation uses, agricultural and silvicultural uses, public/semi-public institutional facilities, home occupations, new railroad ROWs, storage facilities, or related structures, communication towers, and utilities when uses are compatible with surrounding uses and development standards are met.

- Agriculture – The Agriculture future land use category is intended to provide for areas that are suitable for crops, pasture, forestry, and rangeland. Single family residences are permitted with a maximum density of 1 du/10 ac. Higher density developments are permitted when development standards are met. In addition, the category allows recreational uses, public/semi-public institutional facilities, and utilities when uses are compatible with surrounding uses and development standards are met.

- Transportation, Communication, and Utilities – The Transportation, Communication, and Utilities future land use category is intended to provide for uses directly related to transportation, communication and utilities. In addition, the category allows service and storage-related facilities necessary to support the intended uses.

- Industrial – The Industrial future land use category is intended to provide for manufacturing, processing, storage and warehousing, wholesaling, and distribution uses. The category allows uses that include industrial uses or transportation, communication, and utility uses when uses are compatible with surrounding uses and development standards are met.

- General Commercial – The General Commercial future land use category is intended to provide for commercial and office developments. In this category single family and multi-family residential development is permitted when development standards are met. This category will not be located within environmentally sensitive areas of the county due to its intended high density/intensity development.

- Residential Mixed Use – The Residential Mixed Use future land use category is intended to provide for integrated planned developments and a mixture of land uses is encouraged. The intended maximum density is 6 du/ac.

- Medium Density Residential – The Medium Density Residential future land use category is intended to provide for single family residential development with a maximum density of up to 4 du/ac. The category represents an urbanizing area and also permits multifamily residences, home occupations, recreational uses, public/semi-public institutional facilities, utilities, professional services and offices (in association with housing developments), and limited commercial uses (in association with housing developments) in this category when compatible with surrounding uses and development standards are met.

- Recreational Vehicle Park – The Recreational Vehicle Park future land use category is intended to provide for existing recreational vehicle (RV) parks and campgrounds, as well as the location and development of new RV parks. The intended maximum density is 10 spaces per ac. In addition, the category also allows recreational uses, agricultural and silvicultural uses, public/semi-public institutional facilities, convenience retail and personal services (servicing park visitors and guest) when uses are compatible with surrounding uses and development standards are met.

- Professional Services/Offices – The Professional Services/Offices future land use category is intended to provide for professional office development. The category is intended for very limited uses and buffers areas between commercial and residential development or is intended as a transitional use between residential areas and major thoroughfares. In addition, the category allows recreational uses, public/semi-public institutional facilities, utilities, neighborhood commercial development, adult and child day care centers, and multi-family residential (10 du/ac.) when uses are compatible with surrounding uses and development standards are met.

- Low Density Residential – The Low Density Residential future land use category is intended to provide for single family residential developments with a maximum density of 2 du/ac. In addition, the category allows attached housing, silvicultural uses, recreational uses, public/semi-public institutional facilities, home occupations, and utilities when uses are compatible with surrounding uses and development standards are met.

- Public/Semi-Public Institutional – The Public/Semi-Public Institutional future land use category is intended to provide for buildings and grounds not designated as recreational. Uses allowed in the category include public and private educational (i.e., nature centers), religious, governmental uses, cultural (i.e., art galleries, museums, theaters, playhouses, and libraries), and limited recreational uses (i.e., camps, arboretums, playgrounds, and outdoor ball fields). Public uses refer to those owned or operated by a public entity. Semi-public uses refer to public uses that are owned or operated by a non-public body.

- Recreation – The Recreation future land use category is intended to provide for public and private areas where outdoor recreation is the land use. In addition, the category allows recreational and supporting ancillary uses such as marinas, golf courses, fishing and hunting camps, and RV parks.

- Conservation – The Conservation future land use category is intended to provide for publicly owned lands where management objectives are towards protection and conservation of sensitive land, water, and other natural resources. The category may also be intended for resource-based recreational development, public water supply well-fields and ancillary facilities. Where privately owned land is designated by this category, development may not exceed a density of 1 du per lot, parcel, or tract of record.

- Extractive – The Extractive future land use category is intended to provide for surface mining operations (encompassing areas rich in limestone and dolomite). Permitted uses include rock quarries, strip mines (clay, sand and gravel), and industrial complexes (where extracted material is refined, packaged or further processed). In addition, the category allows limited recreation use, agricultural uses, railroad ROWs (including switching, freight, or storage yards), communication towers, and single caretaker residences when uses are compatible with surrounding uses and development standards are met.

2.2.2.6.8.3 Marion County

In Marion County, the LCFS corridor will traverse the following future land use categories (Reference 2.2-037):

- Rural – The Rural future land use category is intended to provide for a range of agricultural and/or agricultural-related uses. Uses allowed in the category include low density residential development with a maximum density of 1 du/10 ac. The dwelling units may include detached single family homes, mobile homes, and manufactured homes. In addition, the category allows for uses that are permitted in the Commercial, Recreation, Conservation, Public Use, Natural Reservation, and Recreation and Open Space land use categories.

2.2.2.6.8.4 Sumter County

In Sumter County, the LCFS corridor will traverse the following future land use categories (Reference 2.2-038):

- Agricultural – The Agricultural future land use category is intended to provide for land primarily used for production of plants and animals useful to humans. Uses in the category include aquaculture, horticulture, floriculture, viticulture, dairy, livestock, poultry, bees, and all forms of farm products and farm production. Structures allowed within the category include non-residential uses to support the intended facilities. In addition, the category allows community-serving public facilities and infrastructure as special uses. The maximum allowed density in the category is 1 du/10 ac.

- Industrial – The Industrial future land use category is intended to provide for both light and heavy industrial activities. Heavy uses are allowed when requirements and limitations designated in the land development code are met. Intended uses in the category include communication facilities, light and heavy manufacturing, repair, fabrication, assembly, packaging, processing, wholesale business, warehousing, concrete or asphalt plant, commercial marinas, and accessory uses and structures for docking facilities.

- Rural Residential – The Rural Residential future land use category is intended to provide for residential uses and residential accessory uses. In addition, the category allows community-serving public facilities and infrastructure as a special use. The maximum allowed density in the category is 1 du/ac.

- (General) Commercial – The (General) Commercial future land use category is intended to provide for activities with access from an arterial or collector road. No residential development is allowed; with the exception of one residential unit for the owner/operator or night security.

- Conservation – The Conservation future land use category is intended to provide for public land areas that were acquired for the purpose of conserving, preserving, or managing environmentally sensitive lands.

- Recreational – The Recreational future land use category is intended to provide for lands devoted to public parks, playgrounds, and open spaces serving local, community, and regional needs.

2.2.2.6.8.5 Lake County

In Lake County, the LCFS corridor will traverse the following future land use categories (Reference 2.2-039):

- Employment Center – The Employment Center future land use category is intended to provide for light industrial, heavy industrial, wholesale, manufacturing and assembly uses, warehousing, and offices. In addition, the category allows for office space related to finance, insurance, and real estate businesses and to professional services (such as technology oriented businesses or limited commercial uses). Accessory services, provided they are oriented towards employees within the center areas, are allowed when designated standards and requirements are met. Unless otherwise identified all other uses are prohibited.

- Rural – The rural future land use category is intended to provide for the continuation of existing agricultural uses, maintain open space, and protect native habitats. Residential development within the category is allowed with a maximum density of 1 du/5 ac. In addition, the category allows commercial development when designated standards and requirements are met.

2.2.2.6.8.6 City of Wildwood (Sumter County)

In the City of Wildwood (Sumter County), the LCFS corridor will traverse the following future land use categories (Reference 2.2-040):

- Industrial – The Industrial future land use category is intended to provide for all types of industry (both light and heavy), packing plants, food processing, open storage, fuel storage and junk yards. In addition, the category allows mining operations.

- Government Use (Other Public Facilities) – The Government Use (Other Public Facilities) future land use category is intended to provide for government owned facilities (other than schools) and public facilities used to deliver public services. Uses allowed in the category include water supply sites, fire station, and city drainage retention areas.

- Commercial – The Commercial future land use category is intended to provide for retail and wholesale trade, offices, hotels, motels, restaurants, service outlets, automobile service stations and repair facilities. The category is identified by three levels of intensity: central business district, highway commercial, and scattered neighborhood type businesses.

- Mobile Home Park – The MHP future land use category is intended to provide for residents of MHPs. Uses allowed in the category include MHPs and subdivisions, conventional single family homes, office uses, neighborhood commercial, community facilities, and public facilities.

- Agriculture – The Agriculture future land use category is intended to provide for area currently involved in agricultural activities or land that is composed of soils suitable for agricultural productivity or rural uses. Uses allowed in the category include farms, ranches, silviculture, aquaculture, agriculturally compatible residential uses, and neighborhood commercial uses.

2.2.2.6.8.7 City of Leesburg (Lake County)

In the City of Leesburg (Lake County), the LCFS corridor will traverse the following future land use categories (Reference 2.2-041):

- Institutional – The Institutional future land use category is intended to provide for public structures or lands that are owned, leased, or operated by a governmental entity. Uses allowed in the category include civic and community centers, airports, hospitals, libraries, police and fire stations, and governmental administration buildings. In addition, the category will allow not-for-profit and semi-public uses such as churches, institutions, group homes, cemeteries, nursing homes, hospitals, and emergency shelters. Educational facilities allowed in the category include public or private primary or secondary schools, vocational and technical schools, and college and universities.

- Industrial – The Industrial future land use category is intended to provide for both light and heavy industrial land uses. Uses allowed in the category include distribution centers, manufacturing, processing, and fabrication plants and recycling centers.

- General Commercial – The General Commercial future land use category is intended to provide economic activity and local employment opportunities. Uses allowed in the category include a variety of retail, convenience, entertainment, personal, business and professional services. The category allows residential uses if the site is part of a planned unit development and if it is compatible with adjacent uses.

2.2.2.7 Aesthetic Considerations

The corridors are co-located to the maximum extent practicable with existing PEF transmission lines in order to minimize the effects on the environment and the community.

Once an ROW has been established, trees will be cleared from the land under the transmission lines, and up to 105 ft. in both directions from the transmission line center line to protect the lines from damage and to allow for future maintenance. Typically during the initial clearing process, PEF removes trees and debris from the area to the maximum extent possible given the land conditions. Stumps are not removed, but are cut as close to the ground as practicable. Tree limbs are removed from hand-cut and pruned trees in wetlands to avoid damaging the environment. The ROWs are mowed and maintained, including pruning, clearing and removal of dangerous trees on a routine basis, typically every 3 years.

Certain encroachments may be constructed by the underlying fee owner on PEF ROWs with prior written approval from PEF. Trees, shrubs, bushes, hedges, flowers, grasses, low-growing shrubs or other vegetation may be planted within the ROW if they do not exceed 12 ft. at maturity and do not interfere with PEF's access or maintenance requirements.

2.2.3 REGION

The LNP site is located in a primarily rural, minimally populated area within Levy County. The region comprises an 80-km (50-mi.) radius that includes Levy, Citrus, Marion, Alachua, Dixie, Gilchrist, Hernando, Lake, Pasco, Putnam, and Sumter counties (Figure 2.2-1). Sumter County is projected to experience the greatest growth in the next 8 years. The projected populations for 2010 and

2015, as well as the estimated percent growth from 2006 to 2010 and from 2010 to 2015 for counties within the region are summarized in Table 2.2-17 (Reference 2.2-006).

2.2.3.1 Land Use

A description of land uses for the site and vicinity is discussed in ER Subsection 2.2.1.1. A tabulation of areas within the region, organized by land use category, is presented in Table 2.2-2. Figure 2.2-26 shows the land use categories within the region. As shown in Table 2.2-2 and Figure 2.2-26, the site region is dominated by rural areas such as deciduous forest lands, forested wetlands, mixed forest lands, and nonforested wetlands. Industrial development is relatively limited (0.2 percent) in the region. The majority of the industrial development in the region is located in the urbanized areas of Gainesville and Ocala. Some of the other industrial areas within the region include those around the junction of US-301 and I-75, the area near the junction of CR-50 and I-75, the area in and around Brooksville, and the area along US-19 near the northwestern portion of the LNP region boundary (Figures 2.2-26 and 2.2-4). There are no Native American Tribal lands within the site region.

There are various mining or quarrying facilities located within the region (Table 2.2-2). Inglis Quarry, which is owned by Citrus Mining and Timber, Inc., is an active limestone mine located approximately 10.1 km (6.3 mi.) from the LNP site (Reference 2.2-042). Holcim, Inc. operates a quarry that is located 12.7 km (7.9 mi) southwest of the LNP site in Citrus County on the CFBC and extends to the Gulf of Mexico (Reference 2.2-043). This facility is one of the largest suppliers of Portland and blended cements-related mineral components in the United States (Reference 2.2-044). Seventy-five additional mining or quarrying facilities are located within the site region.

The closest shopping locations to support residents and visitors such as grocery stores and convenience stores/gas stations are located in Crystal River, which is 23 driving minutes south of the site and has three major grocery stores (including a Publix). Dunnellon, located approximately 15 mi. and 22 minutes driving time to the east of the site, has two major grocery stores and a Wal-Mart. There is a Winn Dixie located in Williston (23 mi. to the northeast of the site), as well as three small grocery stores and three gas station convenience stores. Bronson, located over 25.9 mi. north of the site, also had two small grocery stores and one convenience store. One small grocery store can be found in Cedar Key (40 mi. west) and in Fanning Springs (34.9 mi. northwest). Other than Dunnellon, the closest Wal-Marts are located in Chiefland (over 25.9 mi. to the northwest) and Homosassa (27.1 mi. to the south) (References 2.2-008 and 2.2-045).

The Florida National Guard, Company B, 3rd Battalion, 20th Special Forces Group, and the 690th Military Police Company National Guard are the only significant military facilities located with the region. Florida National Guard, Company B, 3rd Battalion, 20th Special Forces is located in Brooksville, Florida and is 67.6 km (42 mi.) from the site. The 690th Military Police Company National Guard is located in Crystal River, Florida, adjacent to the Crystal River Airport, and is 24.5 km (15.2 mi.) from the site. There are no Native American Tribal lands within the site region.

Communication with Withlacoochee Regional Planning staff confirmed that there are no federal, regional, or state adopted land use plans and that land use plans and maps are developed at the local level in Florida. The Withlacoochee Regional Planning staff stated there were no major regional planning projects projected at this time and that the Williston Airport Industrial Park, located northeast of the LNP site, was the largest and most active industrial park in the area. A new hospital is being considered in Chiefland, northwest of the LNP site, and has the potential to draw new activity; however, there were no official plans at the time of communication. The regional growth trend around the LNP site has been consistently low density development.

Strategic regional policy plans have been developed through Regional Planning Councils in Florida to promote a collaborative process for each region to coordinate planning between local governments, regional entities, and state and federal agencies. These plans are not regulatory documents and do not create regulatory authority. (Reference 2.2-046)

The following is a list of local land use plans developed for each county within the site region:

- Levy County Land Use Plan: As discussed in ER Subsection 2.2.1.5, Chapter 8, Future Land Use Element, of Levy County's 1999 Comprehensive Plan discusses the current and future land use plans for the county. Updates to the Levy County Comprehensive Plan and zoning and future land use map were adopted March 18, 2008 by the BOC, pending FDCA final approval, to refine the definition of Public Use and to change the LNP on-site zoning and future land use designation to Public Use.

- Citrus County Land Use Plan: The Citrus County Land Use Plan and land use map were most recently updated in 2006.

- Marion County Land Use Plan: The Marion County Land Use Plan and land use map were adopted in 1992 and large scale amendments to the plan for 2007 are currently under review by the Marion Board of County Commissioners.

- Alachua County Land Use Plan: The Unified Land Development Code was adopted in January 2006 and the Alachua County Comprehensive Plan and corresponding land use map were adopted in 2005.

- Dixie County Land Use Plan: The Dixie County Land Development Regulations and land use map were completed in 1994.

- Gilchrist County Land Use Plan: The Gilchrist County Land Use Plan and land use map were adopted in 1993.

- Hernando County Land Use Plan: The Hernando County Land Development Regulations were adopted in 2007 and the land use map was adopted in 2003 (References 2.2-047 and 2.2-048).

- Lake County Land Use Plan: The Lake County Land Development Code was adopted in 2007 and the land use map was completed in 2007.

- Pasco County Land Use Plan: The Pasco County Land Development Code was adopted in 2007 and the land use map was approved in 1991.

- Putnam County Land Use Plan: The Putnam County Land Development Code was adopted in 2002 and the land use map was originally adopted in 1991 and most recently revised in 2006.

- Sumter County Land Use Plan: The Sumter County Land Development Code was formally adopted in 1996 and the land use map was adopted in 1992.

2.2.3.2 Principal Agricultural Products

Other major land uses within the region include croplands and pastures, agricultural lands, and residential use. An estimated 159,705,794 liters (L) (42,189,805 gallons [gal.]) of milk are produced in all of the counties within 80 km (50 mi.) of the LNP site. Table 2.2-18 summarizes the milk production from milk cows and goats per county within 80 km (50 mi.) of the LNP site. Of these counties, Gilchrist County produces the most milk (102,040,474 L [26,956,240 gal.]), followed by Pasco County (24,386,391 L [6,442,203 gal.]), Hernando County (18,996,560 L [5,018,360 gal.]), and Alachua County (13,405,005 L [3,541,228 gal.]).

A combination of vegetables is also produced by all of the counties within 80 km (50 mi.) of the LNP site, and is estimated at 1,158,084,840 kg (2,553,139,867 pounds (lb.). Table 2.2-19 summarizes the vegetable production by county. As shown in this table, Levy County produces the most vegetables among these counties, with an estimated 262,945,465 kg (579,695,482 lb.) of vegetable production. Vegetables produced within the 80-km (50-mi.) radius from the site include snap beans, cabbage, sweet corn, cucumbers, bell peppers, squash, tomatoes, watermelons, strawberries, oranges, grapefruit, tangelos, tangerines, and temples. A summary of production by the type of vegetable is presented in Table 2.2-20.

There is also an estimated 161,094,633 kg (355,152,848 lb.) of meat produced within 80 km (50 mi.) of the LNP site. Meat animals include beef cows, hogs and pigs, sheep and lamb, chickens-layers, chickens-broilers, turkeys, ducks, and meat goats. Of these, beef cows produced the most meat, with an estimated

159,532,100 kg (351,708,000 lb.) produced by all of the counties within 80 km (50 mi.) of the LNP site. The number of meat animals and amount of meat produced in each county is summarized in Table 2.2-21.

2.2.3.3 Waterways and Transportation Corridors

There are approximately 215 streams and five canals located within the region, respectively (Figure 2.2-1). In addition, there are seven reservoirs, 532 lakes, and 19 springs in the region (Reference 2.2-049). Table 2.2-3 provides a summarized list of the major waterways and the associated waterway lengths within the region. A detailed discussion of water resources is provided in ER Section 2.3. ER Subsection 2.2.1.3 discusses the transportation routes in the site vicinity. Several U.S. Highways and I-75 intersect the region (Figure 2.2-1). I-75 is located approximately 45 km (28 mi.) to the east of the LNP site.

Multiple railroad corridors transect the region generally running north to south (Figure 2.2-1). The lines include an abandoned track with only the rail bed remaining, which is located northeast of the site and north of SR-336; the second is an active railroad line operated by CSX Transportation, Inc. (CSX), which is located southeast of the LNP site. The CSX line runs from the City of Crystal River northeast to the City of Dunnellon.

There are multiple utility networks such as electric-transmission corridors and gas pipelines within the region, as illustrated on Figure 2.2-1. A detailed discussion of the electric-transmission corridors is found in ER Subsection 2.2.2, while further discussion of the gas pipelines in the vicinity is found in ER Subsection 2.2.1.3.

There are 57 airports and airstrips located within the region; 48 of these airports and airstrips are privately owned. The nine public airports and their distances/directions from the plant are shown below:

- Crystal River Airport (Citrus County) – 23.3 km (14.5 mi.) south
- Marion County Dunnellon Airport (Marion County) – 23.8 km (14.8 mi.) east
- Williston Municipal Airport (Levy County) – 34.1 km (21.2 mi.) northwest
- Ocala International Airport (Marion County) – 40.1 km (24.9 mi.) east
- George T. Lewis Airport (Levy County) – 42.7 km (26.2 mi.) northwest
- Inverness Airport (Citrus County) – 42.7 km (26.2 mi.) south
- Hernando County Airport (Hernando County) – 68.6 km (42.6 mi.) south
- Gainesville Regional Airport (Alachua County) – 76.1 km (47.3 mi.) northeast
- Cross City Airport (Dixie County) – 78.7 km (48.9 mi.) northwest

2.2.3.4 Major Public and Trust Land Areas

Table 2.2-22 is a tabulation of public trust lands organized by managing agency category. For the purposes of this document, public trust land is defined as lands managed by local, state, or federal government agencies. Table 2.2-22 includes information on managed area name, managing agency, and county jurisdiction within the site vicinity and region. Managed area identification (ID) shown in Table 2.2-22 corresponds to the list of IDs shown in Figure 2.2-5, which depicts these public trust lands by managing agency categories. As shown in Table 2.2-22, there are 56, 101, and eight public trust lands within the site region that are managed by local, state, and federal agencies, respectively. Seventeen of these public trust lands are state parks and six are greater than 20,234.3 ha (50,000 ac.). The six include the Lower Suwannee National Wildlife Refuge, Goethe State Forest, Big Bend Wildlife Management Area, CFG State Recreation and Conservation Area, Withlacoochee State Forest, and the Ocala National Forest. There are 35 marinas and four beaches located in the region (Reference 2.2-050). A detailed discussion of recreational areas is included in ER Subsection 2.5.2.7.

The Waccasassa Bay Preserve State Park and Gulf Hammock Wildlife Management Area are located in the southwestern portion of Levy County along the Gulf of Mexico (Figure 2.2-5), and is 9752 ha (34,099 ac.) in size. This park is only accessible by boat and is home to many wildlife species. Although the park has no marked foot trails, it supports both saltwater and freshwater fishing, canoeing, boating, camping, and wildlife viewing (Reference 2.2-049).

2.2.4 REFERENCES

2.2-001 University of Florida GeoPlan Center, “Water Management District Land Use 2004 - St. John's River & Southwest Florida,” Website, www.fgdl.org/metadataexplorer/explorer.jsp, accessed February 11, 2008 and March 18, 2008.

2.2-002 University of Florida GeoPlan Center, “Suwannee River Water Management District Land Use 1995 - Updated,” Website, www.fgdl.org, accessed February 11, 2008 and March 18, 2008.

2.2-003 State of Florida Department of Transportation Geographic Mapping Section, “Florida Land Use, Cover and Forms Classification System,” 3rd ed., January 1999.

2.2-004 U.S. Department of the Interior, “A Land Use and Land Cover Classification System for Use with Remote Sensor Data,” Geological Survey Professional Paper 964, 1976.

2.2-005 Progress Energy and Engelhardt, Hammer & Associates, “Application for Large-scale Future Land Use Map and Text Amendments,” March 1, 2007.

2.2-006 Florida Legislature, Office of Economic and Demographic Research, "County Profiles," Website, edr.state.fl.us/county profiles.htm, accessed November 5, 2007.

2.2-007 DeLorme, *Florida Atlas & Gazetteer*, 8th ed., 2006.

2.2-008 Idearc Media Corporation, "Inglis Grocery Stores in Inglis FL," Website, www.superpages.com/yellowpages/C-Grocery+Stores/PI-101507/S-FL/T-Inglis/, accessed February 25, 2008.

2.2-009 U.S. Army Corp of Engineers, "Tarmac King Road Limestone Mine Environmental Impact Statement," Public Scoping Meeting Presentation, March 26, 2008, Website, www.kingroadeis.com/TarmacScopingPres.pdf, accessed May 13, 2008.

2.2-010 Al Townsend, "Retain Local Control Over Mining," The Ledger, April 19, 2008, Website, www.theledger.com/article/20080419/COLUMNISTS03/804190385/1110/RSS14&source=RSS, accessed May 13, 2008.

2.2-011 Environmental Data Resources, Inc., "The EDR Radius Atlas™ with GeoCheck®," Inquiry Number 01926970.1r, May 14, 2007.

2.2-012 Florida Department of Environmental Protection and University of Florida GeoPlan Center, "Outstanding Florida Waters," Website, www.fgdl.org, accessed May 16, 2008.

2.2-013 Progress Energy and Lincks & Associates, Inc., "Transportation Analysis: Levy County Nuclear Power Plant," Project Number: L07040, February 2007.

2.2-014 State of Florida, Division of Forestry, "Goethe State Forest," Website, www.fl-dof.com/state_forests/goethe.html, accessed October 31, 2007.

2.2–015 Florida Department of Environmental Protection, "RE: Levy County 07-1; Plan Amendment ORC Review," Letter to Florida Department of Community Affairs, August 29, 2007.

2.2-016 Florida Department of Environmental Protection, Office of Greenways and Trails, "Cross-Florida Greenway—Inglis Island Trails," Website, www.dep.state.fl.us/gwt/guide/regions/crossflorida/trails/inglis.htm, accessed May 16, 2008.

2.2-017 Florida Department of Environmental Protection, Office of Greenways and Trails, "Withlacoochee Bay Trail/Felburn Park Trailhead," Website, www.dep.state.fl.us/gwt/guide/regions/crossflorida/trails/with_bay.htm, accessed December 7, 2007.

2.2-018 Levy County Planning Department, "Levy County Comprehensive Plan," adopted June 1999, Website, www.levycounty.org/html/body_comprehensive_plan.html, accessed January 16, 2008.

2.2–019 State of Florida, Department of Community Affairs, "Proposed Comprehensive Plan Amendment Review Objections, Recommendations and Comments" Memorandum, September 28, 2007.

2.2-020 Levy County Florida, "Ordinance Number 2008-03 and Ordinance Number 2008-04," March 18, 2008.

2.2-021 State of Florida Department of Community Affairs, "Notice of Intent to find the Levy County Amendments Adopted by Ordinance No. 2008-05 Not in Compliance, and the Remaining Amendments Adopted Pursuant to Ordinance No(s) 2008-03, 2008-04 and 2008-07 in Compliance Docket No. 08-1-NOI-3801-(A)-(I)-(N)," May 8, 2008.

2.2-022 Citrus County Community Development Division, "Generalized Future Land Use Map, Citrus County, Florida," 2006, Website, www.bocc.citrus.fl.us/maps/ldca/GFLUM/webpages/gflumbase.htm, accessed May 2, 2008.

2.2-023 Citrus County Community Development, "Citrus County Comprehensive Plan," adopted August 1995, Website, www.bocc.citrus.fl.us/devservices/commdev/comp_plan/comp_plan.htm, accessed March 11, 2008.

2.2-024 Florida Natural Areas Inventory, Florida Managed Lands, 2007. Available online at: www.fnai.org/gis_data.cfm, accessed March 20, 2008.

2.2-025 Florida Department of Environmental Protection, Office of Greenways and Trails, "Cross Florida Region," Website, www.dep.state.fl.us/gwt/guide/regions/crossflorida/trails/with_state.htm, accessed March 11, 2008.

2.2-026 Florida Department of Environmental Protection, Office of Greenways and Trails, "Withlacoochee River (North) Canoe Trail," Website, www.dep.state.fl.us/gwt/guide/regions/north/trails/withlacoochee.

htm, accessed May 16, 2008.

2.2-027 South Florida Water Management District, “Halpata Tastanaki Preserve,” Website, www.swfwmd.state.fl.us/recreation/areas/halpata.html, accessed May 6, 2008.

2.2-028 Visit Florida, “Ross Prairie State Forest,” Website, www.visitflorida.com/modules/listings/profile_page.php/listing.2759/profile.1/, accessed March 11, 2008.

2.2-029 University of Florida, Warrington College of Business, Bureau of Economic and Business Research, “Florida Statistical Abstract,” 41st ed., 2007.

2.2-030 State of Florida Agency for Workforce Innovation, “QCEW - Quarterly Census of Employment & Wages (ES-02),” Website, www.labormarketinfo.com/library/qcew.htm, accessed May 6, 2008.

2.2-031 U.S. Census Bureau, 2006 American Community Survey, Website, factfinder.census.gov, accessed February 1, 2008.

2.2-032 Florida Department of Environmental Protection, Office of Greenways and Trails, “Marjorie Harris Carr Cross Florida Greenway,” Website, www.dep.state.fl.us/gwt/cfg/, accessed May 6, 2008.

2.2-033 Florida State Parks, “Crystal River Preserve State Park,” Website, www.floridastateparks.org/crystalriverpreserve/, accessed March 20, 2008.

2.2-034 Southwest Florida Water Management District, “Two Mile Prairie,” Website, www.swfwmd.state.fl.us/recreation/areas/twomile.html, accessed May 6, 2008.

2.2-035 Florida Department of Agriculture and Consumer Services, Division of Forestry, “Withlacoochee State Forest,” Website, www.fl-dof.com/state_forests/withlacoochee.html, accessed May 6, 2008.

2.2-036 Florida Department of Transportation, “Utility Accommodation Manual,” October 2007.

2.2-037 Marion County, “Marion County Comprehensive Plan Future Land Use Element,” adopted March 2005. Website, www.marioncountyfl.org/PL271/PL_Comp_Plan.htm, accessed January 21, 2008.

2.2-038 Sumter County, "Sumter County Comprehensive Plan Future Land Use Element," adopted April 25, 2006.

2.2-039 Lake County, "Lake County Comprehensive Plan," adopted December 2004.

2.2-040 Wildwood City Commission, "City of Wildwood Comprehensive Plan 2001-2010," Volume 1, adopted June 2001.

2.2-041 City of Leesburg Community Development Department, "City of Leesburg Growth Management Plan Future Lane Use Element," Ordinance No. 03-90, adopted September 22, 2003.

2.2-042 Witt, Terry, "Cemex Withdraws Permit Request," The Citrus County Chronicle Online, Website, www.chronicleonline.com/articles/2007/06/01/news/news10.txt, accessed August 15, 2007.

2.2-043 Filzen, Lydia, "Crystal River Civil War Reenactment," Americanroads.net, Website, www.americanroads.net/Crystal-River-Civil-War-Reenactment.htm, accessed August 13, 2008.

2.2-044 Holcim (US), Inc., Holcim (US), Inc. Home, Website, www.holcim.com/us, accessed March 18, 2008.

2.2-045 Wal-Mart, Inc., "Store Finder Search Results," Website, www.walmart.com/storeLocator/ca_storefinder_results.do?sfsearch_city=Dunnellon&sfsearch_state=FL&sfsearch_zip=&continue=27&x=26&y=9, accessed February 26, 2008.

2.2-046 Withlacoochee Regional Planning Council, "Strategic Regional Policy Plan," Website, www.wrpc.cc/strategicpolicyplan.asp, accessed December 19, 2007.

2.2-047 Hernando County, "Code of Ordinances County of Hernando, Florida," Website, library4.municode.com/mcc/DocView/10731/1/2, accessed December 20, 2007.

2.2-048 Hernando County Planning Department, "Existing Land Use – Hernando County, FL," June 2003, Website, www.hernandocounty.us/plan/library.elu2003.htm, accessed December 20, 2007.

2.2-049 Florida State Parks, "Waccasassa Bay Preserve State Park," Website, www.floridastateparks.org/waccasassabay/default.cfm, accessed February 8, 2008.

2.2-050 U.S. Geological Survey, Florida Geographic Data Library, "USGS Geographic Names Information," 2006, Website, www.fgdl.org/metadataexplorer/explorer.jsp, accessed March 18, 2008.

Table 2.2-1 (Sheet 1 of 2)
Summary of Land Use Category Rectifications

USGS, Level II - Anderson	WMD FLUCCS, LEVEL 2
11 Residential	110 Residential, Low Density <Less than two dwelling units per acre>
	120 Residential, Medium Density <Two five-dwelling units per acre>
	130 Residential, High Density
12 Commercial and Services	140 Commercial and Services
13 Industrial	150 Industrial
14 Transportation, Communications, and Utilities	810 Transportation
	820 Communications
	830 Utilities
15 Industrial and Commercial Complexes	N/A
16 Mixed Urban or Built-up Land	170 Institutional
17 Other Urban or Built-up Land	190 Open Land
21 Cropland and Pasture	210 Cropland and Pastureland
	220 Tree Crops
22 Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticultural Areas	240 Nurseries and Vineyards
	250 Specialty Farms
23 Confined Feeding Operations	230 Feeding Operations
24 Other Agricultural Land	260 Other Open Lands <Rural>
31 Herbaceous Rangeland	310 Herbaceous (Dry Prairie)
32 Shrub and Brush Rangeland	320 Shrub and Brushland
33 Mixed Rangeland	330 Mixed Rangeland
	180 Recreational
41 Deciduous Forest Land	420 Upland Hardwood Forests
	430 Upland Hardwood Forests, Continued
42 Evergreen Forest Land	410 Upland Coniferous Forests
43 Mixed Forest Land	440 Tree Plantations
51 Streams and Canals	510 Streams and Waterways

Table 2.2-1 (Sheet 2 of 2)
Summary of Land Use Category Rectifications

USGS, Level II - Anderson	WMD FLUCCS, LEVEL 2
52 Lakes	520 Lakes
	560 Slough Waters
	550 Major Springs
53 Reservoirs	530 Reservoirs
54 Bays and Estuaries	540 Bays and Estuaries
	570 Major Bodies of Water
61 Forested Wetland	620 Wetland Coniferous Forests
	630 Wetland Forested Mixed
	610 Wetland Hardwood Forests
62 Nonforested Wetland	640 Vegetated Non-Forested Wetlands
	910 Vegetation
	650 Non-Vegetated
71 Dry Salt Flats	
72 Beaches	710 Beaches Other Than Swimming Beaches
73 Sandy Areas other than Beaches	720 Sand Other Than Beaches
74 Bare Exposed Rock	730 Exposed Rock
75 Strip Mines, Quarries, and Gravel Pits	160 Extractive
76 Transitional Areas	740 Disturbed Land

Notes:

FLUCCS = Florida Land Use and Cover Classification System
N/A = not applicable
USGS = U.S. Geological Survey
WMD = Water Management District

Sources: References 2.2-003 and 2.2-004

Table 2.2-2 (Sheet 1 of 2)
Summary of Land Use Categories for the LNP Site, Vicinity, and Region

	Site		Vicinity		Region	
USGS Land Use	**Area (hectares)**	**Percent of Site**	**Area (hectares)**	**Percent of Vicinity**	**Area (hectares)**	**Percent of Region**
Bays and Estuaries	0	0.0%	0	0.0%	185,687	12.1%
Beaches	0	0.0%	0	0.0%	9	0.0%
Commercial and Services	0	0.0%	65	0.2%	10,348	0.7%
Confined Feeding Operations	0	0.0%	0	0.0%	558	0.0%
Cropland and Pasture	0	0.0%	1139	4.1%	266,701	17.4%
Deciduous Forest Land	6	0.4%	1576	5.6%	135,465	8.8%
Dry Salt Flats	0	0.0%	0	0.0%	232	0.0%
Evergreen Forest Land	4	0.4%	4713	16.8%	789	0.1%
Forested Wetland	423	33.7%	4762	17.0%	137,556	9.0%
Herbaceous Rangeland	0	0.0%	0	0.0%	3641	0.2%
Industrial	0	0.0%	4	0.0%	3556	0.2%
Lakes	0	0.0%	58	0.2%	25,358	1.7%
Mixed Forest Land	721	57.4%	8014	28.6%	118,562	7.7%
Mixed Rangeland	0	0.0%	64	0.2%	16,165	1.1%
Mixed Urban or Built-Up	0	0.0%	24	0.1%	5570	0.4%
Non-Forested Wetland	57	4.6%	979	3.5%	226,818	14.8%
Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticultural Areas	0	0.0%	140	0.5%	38,524	2.5%
Other Agricultural Land	43	3.4%	1107	3.9%	123,605	8.0%

Table 2.2-2 (Sheet 2 of 2)
Summary of Land Use Categories for the LNP Site, Vicinity, and Region

USGS Land Use	Site		Vicinity		Region	
	Area (hectares)	Percent of Site	Area (hectares)	Percent of Vicinity	Area (hectares)	Percent of Region
Other Urban or Built-Up Land	0	0.0%	1156	4.1%	127	0.0%
Reservoirs	0	0.0%	1002	3.6%	3543	0.2%
Residential	0	0.0%	2397	8.6%	189,352	12.3%
Sandy Areas other than Beaches	0	0.0%	0	0.0%	2	0.0%
Shrub and Brush Rangeland	0	0.0%	377	1.3%	10,733	0.7%
Streams and Canals	0	0.0%	125	0.4%	3355	0.2%
Strip Mines, Quarries, and Gravel Pits; Strip Mines, Quarries, and Gravel Pits	0	0.0%	53	0.2%	10,412	0.7%
Transitional Areas	0	0.0%	27	0.1%	5210	0.3%
Transportation, Communications, and Utilities	2	0.2%	251	0.9%	14,734	1.0%
Total	**1,257**	**100%**	**28,035**	**100%**	**1,536,613**	**100%**

Sources: References 2.2-001 and 2.2-002

Table 2.2-3
List of Major Waterways within the LNP Vicinity and Region

Waterway Name	Waterway Length (Meters) Vicinity	Waterway Length (Meters) Region	Waterway Length (Miles) Vicinity	Waterway Length (Miles) Region
Cedar Key	--	11,993.9	--	7.5
Cross Florida Barge Canal	27,254.4	92,744.1	16.9	57.6
Crystal River	--	14,025.9	--	8.7
Deadman Bay	--	N/A	--	N/A
Florida Barge Canal	--	1806.3	--	1.1
Florida Power Corporation Channels	--	14,251.4	--	8.9
Florida Shallow Water Access	--	87,940.4	--	54.6
Florida Shallow Water Spine	--	15,983.8	--	9.9
Gulf Deep Water Access	--	47,914.3	--	29.8
Gulf Deep Water Appurtenant	--	7185.3	--	4.5
Homosassa River	--	9398.7	--	5.8
Horseshoe Cove	--	7390.9	--	4.6
Hudson River	--	2060.3	--	1.3
Suwannee River	--	29,687.8	--	18.4
Suwannee Sound	--	6317.3	--	3.9
Total	**27,254.4**	**348,700.4**	**16.9**	**216.7**

Notes:

"--" = waterway not included in the area
N/A = not applicable or not available

Source: Reference 2.2-010

Table 2.2-4
Proposed Citrus Substation
Acreage of Dominant Vegetative Communities within the LPC Corridor

USGS Code	USGS Description	Acres
14	Transportation, Communications, and Utilities	63.62
17	Other Urban or Built-up Land	157.86
21	Cropland and Pasture	623.76
24	Other Agricultural Land	154.90
32	Shrub and Brush Rangeland	35.57
33	Mixed Rangeland	38.53
41	Deciduous Forest Land	1190.23
42	Evergreen Forest Land	181.38
43	Mixed Forest Land	1044.67
51	Streams and Canals	64.03
52	Lakes	12.13
53	Reservoirs	6.48
61	Forested Wetland	452.93
62	Nonforested Wetlands	188.91
	Total	**4,215.01**

Sources: References 2.2-001 and 2.2-002

Table 2.2-5
CREC 500-kV Switchyard
Acreage of Dominant Vegetative Communities
within the LCR Corridor

USGS Code	USGS Description	Acres
14	Transportation, Communications, and Utilities	1245.51
17	Other Urban or Built-up Land	266.31
21	Cropland and Pasture	852.04
24	Other Agricultural Land	410.29
32	Shrub and Brush Rangeland	81.23
33	Mixed Rangeland	6.67
41	Deciduous Forest land	6.75
42	Evergreen Forest Land	441.30
43	Mixed Forest Land	7411.81
51	Streams and Canals	119.00
52	Lakes	15.86
53	Reservoirs	263.56
54	Bays and Estuaries	37.00
61	Forested Wetlands	2010.08
62	Nonforested Wetlands	1152.46
75	Strip Mines, Quarries, and Gravel Pits	272.19
	Total	**14,592.06**

Sources: References 2.2-001 and 2.2-002

Table 2.2-6
Proposed Central Florida South Substation Acreage of Dominant Vegetative Communities within the LCFS Corridor

USGS Code	USGS Description	Acres
14	Transportation, Communications, and Utilities	1942.81
17	Other Urban or Built-up Land	169.45
21	Cropland and Pasture	5786.71
24	Other Agricultural Land	263.59
32	Shrub and Brush Rangeland	58.56
33	Mixed Rangeland	182.50
41	Deciduous Forest Land	3174.39
42	Evergreen Forest Land	761.90
43	Mixed Forest Land	1126.40
51	Streams and Canals	68.46
52	Lakes	68.21
53	Reservoirs	73.39
61	Forested Wetland	1287.01
62	Nonforested wetlands	907.19
76	Transitional Areas	57.91
	Total	**15,928.78**

Sources: References 2.2-001 and 2.2-002

Table 2.2-7
Summary of Employment in Levy and Citrus Counties

Major Industry Group	Employment	
	Levy County	Citrus County
Agriculture, forestry, fishing, and hunting	499	94
Mining	44	72
Utilities	N/A	N/A
Construction	1037	3784
Manufacturing	784	805
Transportation and warehousing	133	190
Wholesale trade	238	640
Retail Trade	1449	5622
Finance and insurance	271	803
information	80	530
Real Estate, rental, and leasing	123	486
Professional scientific and technical services	215	1,087
Management and remediation services	113	2313
Educational services	37	113
Healthcare and social assistance	797	6,791
Arts, entertainment, and recreation	102	732
Accommodation and food services	743	2861
Other Services	203	1131
Unclassified	4	11

Notes:

N/A = not applicable or not available

Source: Reference 2.2-029

Table 2.2-8
LCFS Census Counts and Population Estimates

Municipality	Census 2000	Estimate 2006	Percentage Change
Inglis	1491	1731	+16.10
Wildwood	3924	4564	+16.31
Leesburg	15,956	18,841	+18.08

Source: Reference 2.2-029

Table 2.2-9
Total 2006 Labor Force in the Five LCFS Counties

County	Total Labor Force	Employment	Unemployment	Unemployment Percentage
Levy	16,791	16,222	569	3.4
Citrus	54,339	52,300	2039	3.8
Marion	131,653	127,200	4453	3.4
Sumter	29,152	28,364	788	2.7
Lake	123,126	119,036	4090	3.3

Source: Reference 2.2-029

Table 2.2-10
Average 2007 Monthly Private-Sector Employment in the Five LCFS Counties

Major Industry Group	Employment				
	Levy County	Citrus County	Marion County	Sumter County	Lake County
Agriculture, forestry, fishing, and hunting	499	94	2,675	413	11,740
Mining	44	72	259	45	210
Utilities	N/A	N/A	N/A	N/A	N/A
Construction	1037	3784	10,553	5220	8897
Manufacturing	784	805	9629	1375	4168
Transportation and warehousing	133	190	2429	217	2524
Wholesale trade	238	640	4,154	375	2,026
Retail trade	1449	5622	16,227	2964	13,328
Finance and insurance	271	803	4054	432	1904
Information	80	530	1947	30	1356
Real estate, rental, and leasing	123	486	1686	198	1772
Professional scientific and technical services	215	1087	3323	382	2670
Management and remediation services	113	2313	331	279	4445
Educational services	37	113	780	N/A	909
Healthcare and social assistance	797	6791	11,922	1822	12,147
Arts, entertainment, and recreation	102	732	1819	116	958
Accommodation and food services	743	2861	8530	1440	8056
Other services	203	1131	2763	265	2565
Unclassified	4	11	92	9	75

Notes:

N/A = not applicable or not available

Source: Reference 2.2-029

Table 2.2-11
General Income in the Five LCFS Counties

	Levy County	Citrus County	Marion County	Sumter County	Lake County
Per capita person income in 2005	$22,036	$26,072	$26,893	$21,878	$28,942
Median household income in 2004	$29,314	$33,576	$34,948	$37,523	$40,745
Median household income percentage change from 2000	5.7	7.1	7.4	18.3	9.1
Income level ranking in the state	52	34	33	58	24

Source: Reference 2.2-029

Table 2.2-12
2004 Average Wage and Salary Earnings per Job in the Five LCFS Counties

County	Wage and Salary Earnings	Percent Difference from State-Wide Average
Levy County	$25,021	-30
Citrus County	$30,174	-19
Marion County	$29,952	-18
Sumter County	$30,173	-16
Lake County	$30,881	-18

Source: Reference 2.2-029

Table 2.2-13
2006 Housing Units by Occupancy Type in the Five LCFS Counties

County	Renter-Occupied	Owner-Occupied	Vacant	Total Occupied
Levy County	N/A	N/A	N/A	N/A
Citrus County	10,080	51,176	12,353	61,256
Marion County	28,749	101,381	22,728	130,130
Sumter County	4960	28,015	6307	32,975
Lake County	22,494	90,246	21,400	112,740

Notes:

N/A = not applicable or not available

Source: Reference 2.2-031

Table 2.2-14
2005 Average House Purchase Price in the Five LCFS Counties

County	Average House Purchase Price
Levy County	$190,491
Citrus County	$196,322
Marion County	$201,419
Sumter County	$207,800
Lake County	$212,454

Source: Reference 2.2-031

Table 2.2-15
2007 Total Licensed Lodging in the Five LCFS Counties

County	Total Licensed Lodging Number	Units
Levy County	54	936
Citrus County	76	2269
Marion County	240	12,851
Sumter County	46	1859
Lake County	1090	13,172

Source: Reference 2.2-029

Table 2.2-16
2007 Total Licensed Lodging by Type in the Five LCFS Counties

County	Apartment Building Units	Rooming House Units	Rental Condominiums	Transient Apartment Building Units
Levy County	420	3	117	36
Citrus County	1124	9	15	116
Marion County	8557	0	43	50
Sumter County	491	0	702	24
Lake County	8747	45	1494	72

Source: Reference 2.2-029

Table 2.2-17
Summary of Population Projections and Percent Growth for Counties within the Region

County	2010 Projected Population	Percent Population Growth from 2006 to 2010	2015 Projected Population	Percent Population Growth from 2010 to 2015
Alachua	259,800	6.6%	277,300	6.7%
Citrus [(a)]	149,300	9.2%	163,500	9.5%
Dixie	16,900	7.8%	18,400	8.9%
Gilchrist	18,600	11.4%	20,700	11.3%
Hernando	174,000	10.8%	193,800	11.4%
Lake	319,300	15.4%	368,500	15.4%
Levy [(a)]	42,500	9.0%	46,600	9.6%
Marion [(a)]	353,700	12.3%	398,000	12.5%
Pasco	474,600	11.8%	533,600	12.4%
Putnam	77,000	3.5%	79,900	3.8%
Sumter	99,700	20.7%	119,600	20.0%

Note:

a) Indicates county is located within vicinity of LNP site.

Source: Reference 2.2-006

Table 2.2-18
Summary of Milk Production by County within 80 Km (50 Mi.) of the LNP Site

Milk Production	Alachua	Citrus	Dixie	Gilchrist	Hernando	Lake	Levy	Marion	Pasco	Putnam	Sumter	Total
Milk Cows	1700	NR	NR	13,000	2400	NR	NR	NR	3100	NR	NR	20,200
Milk Goats	51	205	51	51	124	161	51	93	51	51	23	912
Gallons of Goat Milk Produced	18,615	74,825	18,615	18,615	45,260	58,765	18,615	33,945	18,615	18,615	8395	332,880
Pounds of Cow Milk Produced	28,180,900	0	0	215,501,000	39,784,800	0	0	0	51,388,700	0	0	334,855,400
Gallons of Cow Milk Produced	3,522,613	0	0	26,937,625	4,973,100	0	0	0	6,423,588	0	0	41,856,925
Gallons of Milk Produced	3,541,228	74,825	18,615	26,956,240	5,018,360	58,765	18,615	33,945	6,442,203	18,615	8395	42,189,805
Liters of Milk Produced	**13,405,005**	**283,243**	**70,465**	**102,040,474**	**18,996,560**	**222,450**	**70,465**	**128,496**	**24,386,391**	**70,465**	**31,779**	**159,705,794**

Notes:

NR = not recorded

Table 2.2-19
Summary of Vegetable Production by County within 80 Km (50 Mi.) of the LNP Site

Vegetable Production	Alachua	Citrus	Dixie	Gilchrist	Hernando	Lake	Levy	Marion	Pasco	Putnam	Sumter	Total
Acres of Vegetables Harvested	20,419	146	33	12,864	1011	18,075	23,798	12,079	9878	4490	2020	104,813
Pounds of Vegetables Harvested	497,386,421	3,556,414	803,847	313,354,176	24,626,949	440,288,925	579,695,482	294,232,361	240,618,202	109,371,910	49,205,180	2,553,139,867
Tons of Vegetables Harvested	248,693	1778	402	156,677	12,313	220,144	289,848	147,116	120,309	54,686	24,603	1,276,570
Kilograms of Vegetables Harvested	**225,610,700**	**1,613,162**	**364,619**	**142,135,073**	**11,170,597**	**199,711,710**	**262,945,465**	**133,461,563**	**109,142,588**	**49,610,267**	**22,319,096**	**1,158,084,840**

Table 2.2-20
Summary of Vegetable Yields within 80 Km (50 Mi.) of the LNP Site

Yield Per Acre	Kilograms	Pounds
Snap Beans	4309	9500
Cabbage	14,969	33,000
Sweet Corn	8391	18,500
Cucumbers	11,340	25,000
Bell Peppers	11,113	24,500
Squash	4536	10,000
Tomatoes	15,876	35,000
Watermelons	14,969	33,000
Strawberries	12,701	28,000
Oranges	12,288	27,090
Grapefruit	12,453	27,455
Tangelos	9063	19,980
Tangerines	14,091	31,065
Temples	11,431	25,200
Average Vegetable (yield per acre)	**11,049**	**24,359**

Table 2.2-21
Summary of Meat Production within 80 Km (50 Mi.) of the LNP Site

Meat Production	Alachua	Citrus	Dixie	Gilchrist	Hernando	Lake	Levy	Marion	Pasco	Putnam	Sumter	Total
Beef Cows	44,300	8000	4000	20,000	13,600	29,000	41,000	40,000	43,900	9000	44,000	296,800
Hogs and Pigs	1439	210	689	151	201	338	1078	2498	925	575	113	8217
Sheep and Lamb	756			180	254		105	802	888	21	504	3510
Chickens - Layers		1094	78,334	242	(D)	(D)		2100	221			81,991
Chickens - Broilers						147	430			136	183	896
Turkeys	18	52	75	(D)	19	223	68	71	5	95	6	632
Ducks	60	36	(D)	12	175	107	4	133	51	91	185	854
Miscellaneous Livestock (Meat Goats)	2064	716	297		671	688	963	1828	680		265	8172
Pounds of Beef Cows	52,495,500	9,480,000	4,740,000	23,700,000	16,116,000	34,365,000	48,585,000	47,400,000	52,021,500	10,665,000	52,140,000	351,708,000
Pounds of Hogs and Pigs	372,701	54,390	178,451	39,109	52,059	87,542	279,202	646,982	239,575	148,925	29,267	2,128,203
Pounds of Lamb and Mutton	64,260	0	0	15,300	21,590	0	8925	68,170	75,480	1785	42,840	298,350
Pounds of Chickens - Broilers and Layers	0	5995	429,270	1326	0	806	2356	11,508	1211	745	1003	454,221
Pounds of Turkeys	539	1558	2,248	0	569	6683	2038	2128	150	2847	180	18,941
Pounds of Ducks	406	244	0	81	1185	724	27	900	345	616	1252	5782
Pounds of Meat Goats	136,224	47,256	19,602	0	44,286	45,408	63,558	120,648	44,880	0	17,490	539,352
Pounds of Meat Animal	53,069,631	9,589,443	5,369,571	23,755,816	16,235,689	34,506,163	48,941,106	48,250,336	52,383,141	10,819,919	52,232,032	355,152,848
Kilograms of Meat Animal	**24,071,981**	**4,349,699**	**2,435,597**	**10,775,458**	**7,364,385**	**15,651,733**	**22,199,314**	**21,885,986**	**23,760,595**	**4,907,833**	**23,692,053**	**161,094,633**

Notes:

(D) = Data withheld to avoid disclosing data of individual farms.

Table 2.2-22 (Sheet 1 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
30	Twenty-Ninth Road Property	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
41	Scott Spring/Celebration 2000 Community Park	City of Ocala	Local	Marion	Region
103	Boulware Springs Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
183	Cypress Lakes Preserve	Hernando County	Local	Hernando	Region
192	Morningside Nature Center	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
211	Treasure Island Preserve	Lake County Water Authority	Local	Lake	Region
222	Palm Point	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
243	All-Bar Ranch	Pinellas County	Local	Pasco	Region
299	Bugg Spring Property	Lake County Water Authority	Local	Lake	Region
334	Eagle Ridge Preserve	Lake County Water Authority	Local	Lake	Region
410	Alfred A. Ring Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
419	Heritage Nature Conservancy	City of Ocala	Local	Marion	Region
426	Fickett Hammock Preserve	Hernando County	Local	Hernando	Region

Table 2.2-22 (Sheet 2 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
463	Earl P. Powers Park	Alachua County	Local	Alachua	Region
478	Loblolly Woods	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
489	Fort King Property	City of Ocala	Local	Marion	Region
505	Terwilliger Pond	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
535	Central Florida Electric Corporation Parcel	City of Chiefland	Local	Levy	Region
661	Owens-Illinois Park	Alachua County	Local	Alachua	Region
690	M. K. Rawlings Park	Alachua County	Local	Alachua	Region
781	Lake Kanapaha	Alachua County	Local	Alachua	Region
802	Flat Island Preserve	Lake County Water Authority	Local	Lake	Region
823	Sugarfoot Prairie	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
825	Big Prairie	Lake County Water Authority	Local	Lake	Region
864	Wilkin Property	Lake County Water Authority	Local	Lake	Region
914	Gainesville-Hawthorne Downtown Connector	City of Gainesville Dept. of Parks, Recreation, and Cultural Affairs	Local	Alachua	Region

Table 2.2-22 (Sheet 3 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
935	San Felasco Park	Alachua County	Local	Alachua	Region
940	Cross Bar Ranch Wellfield	Pinellas County	Local	Pasco	Region
948	Green Acres Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1019	Kanapaha Botanical Gardens	Alachua County	Local	Alachua	Region
1063	Clear Lake	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1117	Broken Arrow Bluff	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1120	Bourlay Historic Nature Park	Lake County Water Authority	Local	Lake	Region
1204	Split Rock	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1237	Colclough Pond	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1334	Gum Root Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1409	Watermelon Pond Park	Alachua County	Local	Alachua	Region
1466	Property adjacent to Forest Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region

Table 2.2-22 (Sheet 4 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1490	Bivens Arm Nature Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1635	Cofrin Nature Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1793	Crews Lake Wilderness Park	Pasco County	Local	Pasco	Region
1799	John Mahon Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1800	Flatwoods Conservation Area	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
1886	Sweetwater Preserve	Alachua County	Local	Alachua	Region
1901	Silver Springs Conservation Area	Marion County	Local	Marion	Region
1908	Horseshoe Lake	Marion County	Local	Marion	Region
1909	Carney Island Conservation and Recreation Area	Marion County	Local	Marion	Region
1976	Barr Hammock Preserve	Alachua County	Local	Alachua	Region
1981	Watermelon Pond - King	Alachua County	Local	Alachua	Region
1982	Phifer Flatwoods	Alachua County	Local	Alachua	Region
1983	Paynes Prairie Addition	Alachua County	Local	Alachua	Region

Table 2.2-22 (Sheet 5 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1984	Watermelon Pond - Gladman Tract	Alachua County	Local	Alachua	Region
1989	Yankeetown Conservation Area	Town of Yankeetown	Local	Levy	Region
1991	Springtree Park	City of Gainesville Dept. of Parks and Recreation	Local	Alachua	Region
2054	Carlton Village Park	Lake County	Local	Lake	Region
2068	Lake Forest Creek Pithlochocco Canoe Tract	Alachua County	Local	Alachua	Region
64	Devil's Millhopper Geological State Park	FDEP, Division of Recreation and Parks	State	Alachua	Region
94	TTC/Gainesville Wellfield Conservation Easement	Suwannee River Water Management District	State	Alachua	Region
130	Forest Systems Conservation Easement	Suwannee River Water Management District	State	Dixie	Region
133	Fort Cooper State Park	FDEP, Div. of Recreation and Parks	State	Citrus	Region
138	Silver River State Park	FDEP, Div. of Recreation and Parks	State	Marion	Region

Table 2.2-22 (Sheet 6 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
251	Rainbow Springs State Park	FDEP, Div. of Recreation and Parks	State	Marion	Region
272	Lower Coastal Creeks Conservation Area	Suwannee River Water Management District	State	Dixie	Region
297	Orange Creek Restoration Area	St. Johns River Water Management District	State	Alachua, Marion	Region
313	Annutteliga Hammock	Southwest Florida Water Management District	State	Hernando	Region
347	Upper Waccasassa Conservation Area	Suwannee River Water Management District	State	Alachua, Levy	Region
407	Crystal River Archaeological State Park	FDEP, Div. of Recreation and Parks	State	Citrus	Region
417	Manatee Springs State Park	FDEP, Div. of Recreation and Parks	State	Levy	Region
467	Emeralda Marsh Conservation Area	St. Johns River Water Management District	State	Lake, Marion	Region
504	Chassahowitzka River and Coastal Swamps	Southwest Florida Water Management District	State	Citrus, Hernando	Region
516	Kohn Conservation Easement	St. Johns River Water Management District	State	Marion	Region

Table 2.2-22 (Sheet 7 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
524	Log Landing Conservation Area	Suwannee River Water Management District	State	Dixie	Region
531	Sunnyhill Restoration Area	St. Johns River Water Management District	State	Marion	Region
532	Withlacoochee State Trail	FDEP, Office of Greenways and Trails	State	Citrus, Hernando, Pasco	Region
549	Flying Eagle Ranch	Southwest Florida Water Management District	State	Citrus, Sumter	Region
563	NATC Gulf Hammock Conservation Easement	Suwannee River Water Management District	State	Levy	Region
580	NATC Oak Hammock Conservation Easement	Suwannee River Water Management District	State	Levy	Region
585	Potts Preserve	Southwest Florida Water Management District	State	Citrus, Sumter	Region
598	Wannee Conservation Area	Suwannee River Water Management District	State	Dixie, Gilchrist	Region
600	Perry Oldenburg Mitigation Park Wildlife and Environmental Area	Florida Fish and Wildlife Conservation Commission	State	Hernando	Region
617	Halpata Tastanaki Preserve	Southwest Florida Water Management District	State	Citrus, Marion	Region

Table 2.2-22 (Sheet 8 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
621	Nature Coast State Trail	FDEP, Office of Greenways and Trails	State	Dixie, Gilchrist, Levy	Region
664	Half Moon Wildlife Management Area	Florida Fish and Wildlife Conservation Commission	State	Sumter	Region
668	Weekiwachee Preserve	Southwest Florida Water Management District	State	Hernando, Pasco	Region
671	Black Sink Prairie	St. Johns River Water Management District	State	Marion	Region
674	Dade Battlefield Historic State Park	FDEP, Div. of Recreation and Parks	State	Sumter	Region
687	Panasoffkee/Outlet Tract	Southwest Florida Water Management District	State	Sumter	Region
709	Paynes Prairie Preserve State Park	FDEP, Div. of Recreation and Parks	State	Alachua	Region
712	Lower Waccasassa Conservation Area	Suwannee River Water Management District	State	Levy	Region
714	Marjorie Harris Carr Cross Florida Greenway State Recreation and Conservation Area	FDEP, Office of Greenways and Trails	State	Citrus, Levy, Marion, Putnam	Vicinity/Region

Table 2.2-22 (Sheet 9 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
715	Monteocha Conservation Area	Suwannee River Water Management District	State	Alachua	Region
748	Gum Slough Swfwmd Conservation Easement	Southwest Florida Water Management District	State	Marion, Sumter	Region
789	Lochloosa Wildlife Conservation Area	St. Johns River Water Management District	State	Alachua	Region
813	Cedar Key Scrub State Reserve	FDEP, Div. of Recreation and Parks	State	Levy	Region
826	Goethe State Forest	Florida Dept. Agriculture and Consumer Services, Div. of Forestry	State	Alachua, Levy	Vicinity/Region
874	Chinsegut Wildlife and Environmental Area	Florida Fish and Wildlife Conservation Commission	State	Hernando	Region
882	Cedar Key Museum State Park	FDEP, Div. of Recreation and Parks	State	Levy	Region
884	University of Florida Foundation Parcel	University of Florida	State	Alachua	Region
892	Jack R. Welling Parcel	St. Johns River Water Management District	State	Lake	Region
961	Lake Panasoffkee	Southwest Florida Water Management District	State	Sumter	Region

Table 2.2-22 (Sheet 10 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
981	Big Bend Wildlife Management Area	Florida Fish and Wildlife Conservation Commission	State	Dixie	Region
991	Timber Company Conservation Easement	St. Johns River Water Management District	State	Alachua	Region
1005	Homosassa Springs Wildlife State Park	FDEP, Div. of Recreation and Parks	State	Citrus	Region
1010	Fowlers Bluff Conservation Area	Suwannee River Water Management District	State	Levy	Region
1021	Ocklawaha Prairie Restoration Area	St. Johns River Water Management District	State	Marion	Region
1022	Chassahowitzka Wildlife Management Area	Florida Fish and Wildlife Conservation Commission	State	Hernando	Region
1043	Dudley Farm Historic State Park	FDEP, Div. of Recreation and Parks	State	Alachua	Region
1050	Waccasassa Bay Preserve State Park	FDEP, Div. of Recreation and Parks	State	Levy	Vicinity/Region
1061	Andrews Wildlife Management Area	Florida Fish and Wildlife Conservation Commission	State	Levy	Region

Table 2.2-22 (Sheet 11 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1082	Marjorie Kinnan Rawlings Historic State Park	FDEP, Div. of Recreation and Parks	State	Alachua	Region
1105	Fanning Springs State Park	FDEP, Div. of Recreation and Parks	State	Levy	Region
1141	Chinsegut Hill Conference Center	University of South Florida	State	Hernando	Region
1150	Withlacoochee State Forest	Florida Dept. Agriculture and Consumer Services, Div. of Forestry	State	Citrus, Hernando, Pasco, Sumter	Region
1173	City of Newberry Conservation Easement	Suwannee River Water Management District	State	Alachua	Region
1174	Natc Suwannee Swamp Conservation Easement	Suwannee River Water Management District	State	Levy	Region
1193	Ross Prairie State Forest	Florida Dept. Agriculture and Consumer Services, Div. of Forestry	State	Marion	Region
1276	Price's Scrub	FDEP, Office of Greenways and Trails	State	Marion	Region
1355	Strickland Field Conservation Easement	Suwannee River Water Management District	State	Dixie	Region

Table 2.2-22 (Sheet 12 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1362	Crystal River Preserve State Park	FDEP, Div. of Recreation and Parks	State	Citrus	Region
1391	Felburn Park	FDEP, Office of Greenways and Trails	State	Citrus	Vicinity
1444	Newnans Lake Conservation Area	St. Johns River Water Management District	State	Alachua	Region
1445	Lake Griffin State Park	FDEP, Div. of Recreation and Parks	State	Lake	Region
1461	San Felasco Hammock Preserve State Park	FDEP, Div. of Recreation and Parks	State	Alachua	Region
1479	Yellow Jacket Conservation Area	Suwannee River Water Management District	State	Dixie	Region
1492	Yulee Sugar Mill Ruins Historic State Park	FDEP, Div. of Recreation and Parks	State	Citrus	Region
1573	Beville Ranch Conservation Easement	Southwest Florida Water Management District	State	Sumter	Region
1577	Coastal Creeks Conservation Area	Suwannee River Water Management District	State	Dixie	Region

Table 2.2-22 (Sheet 13 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1578	G. L. Drummond Conservation Easement	Suwannee River Water Management District	State	Levy	Region
1579	Jack and Loy Ann Mann Conservation Easement	Suwannee River Water Management District	State	Levy	Region
1580	David and Sarah Meeks Conservation Easement	Suwannee River Water Management District	State	Levy	Region
1638	Longleaf Flatwoods Reserve	St. Johns River Water Management District	State	Alachua	Region
1702	Usher Trust Conservation Easement	Suwannee River Water Management District	State	Levy	Region
1753	Fly'n R Ranch Conservation Easement	St. Johns River Water Management District	State	Lake, Marion	Region
1801	Graham Woods	University of Florida	State	Alachua	Region
1802	Lake Alice South Wetland	University of Florida	State	Alachua	Region
1803	Lake Alice	University of Florida	State	Alachua	Region
1804	Hogtown Creek Woods	University of Florida	State	Alachua	Region
1805	Harmonic Woods	University of Florida	State	Alachua	Region
1806	Bivens Rim Forest	University of Florida	State	Alachua	Region
1807	Bartram-Carr Woods	University of Florida	State	Alachua	Region
1808	University Park Arboretum	University of Florida	State	Alachua	Region

**Table 2.2-22 (Sheet 14 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region**

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1809	Natural Area Teaching Laboratory	University of Florida	State	Alachua	Region
1810	Solar Park Pond	University of Florida	State	Alachua	Region
1811	Swine Unit Woods	University of Florida	State	Alachua	Region
1812	Mccarty Woods	University of Florida	State	Alachua	Region
1813	Fraternity Wetland	University of Florida	State	Alachua	Region
1814	Digital Design Wetland/Sweet Sink	University of Florida	State	Alachua	Region
1815	Dash Course Woods	University of Florida	State	Alachua	Region
1816	Blue Wave Wetland	University of Florida	State	Alachua	Region
1817	Bat House Woods	University of Florida	State	Alachua	Region
1818	President's Park	University of Florida	State	Alachua	Region
1819	Reitz Ravine Woods	University of Florida	State	Alachua	Region
1820	Trillium Slope	University of Florida	State	Alachua	Region
1821	Green Pond and Newins-Ziegler Sink	University of Florida	State	Alachua	Region
1822	University of Florida Creeks and Ponds	University of Florida	State	Alachua	Region

Table 2.2-22 (Sheet 15 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1961	Avatar State Forest	Florida Dept. Agriculture and Consumer Services, Div. of Forestry	State	Marion	Region
1999	Watermelon Pond Mitigation Park Wildlife and Environmental Area	Florida Fish and Wildlife Conservation Commission	State	Alachua	Region
2075	Crones Cradle Conservation Easement	St. Johns River Water Management District	State	Marion	Region
247	Ocala National Forest	US Dept. of Agriculture, Forest Service	Federal	Lake, Marion, Putnam	Region
440	Lower Suwannee National Wildlife Refuge	US Dept. of the Interior, Fish and Wildlife Service	Federal	Dixie, Levy	Region
754	Chassahowitzka National Wildlife Refuge	US Dept. of the Interior, Fish and Wildlife Service	Federal	Citrus, Hernando	Region
767	Cedar Keys National Wildlife Refuge	US Dept. of the Interior, Fish and Wildlife Service	Federal	Levy	Region
865	Cummer Sanctuary	US Dept. of the Interior, Fish and Wildlife Service	Federal	Levy	Region
1087	Subtropical Agricultural Research Station	US Dept. of Agriculture (Unspecified)	Federal	Hernando	Region
1189	Plant Materials Center	US Dept. of Agriculture (Unspecified)	Federal	Hernando	Region

Table 2.2-22 (Sheet 16 of 16)
Summary of Public Trust Lands within the LNP Site Vicinity and Region

Managed Area ID	Managed Area Name	Managing Agency	Managing Agency Category	County	Site Area
1470	Crystal River National Wildlife Refuge	U.S. Dept. of the Interior, Fish and Wildlife Service	Federal	Citrus	Region

Source: Reference 2.2-049

2.3 WATER

This section includes site-specific and regional descriptions of the hydrology, existing water use, and water quality conditions that could affect or be affected by the construction and operation of the LNP site. The hydrologic data will serve as a baseline to assess potential impacts that may arise from plant construction and operation, and the adequacy of the proposed surface water and groundwater monitoring programs. The potential construction and operational impacts to water resources are discussed in ER Chapters 4 and 5, respectively; the monitoring programs are discussed in ER Chapter 6.

The site that is proposed for the LNP is located in southern Levy County, Florida. The site encompasses an area of approximately 1257 ha (3105 ac.) in a primarily rural area southwest of Gainesville, Florida and west of Ocala, Florida (Figure 2.3-1). The LNP site is located approximately 15.5 km (9.6 mi.) north of the existing CREC, which is owned by PEF. The LNP site is located approximately 11 km (7 mi.) east of the Gulf of Mexico, and approximately 4.8 km (3.0 mi.) north of Lake Rousseau (Figure 2.3-2). (Reference 2.3-001) The LNP site was purchased by PEF from Rayonier Company L.P., a timber company based in Jacksonville, Florida (Reference 2.3-002). PEF has selected Westinghouse's AP1000 as the certified plant design for the LNP site. The proposed AP1000 units are referred to as LNP 1 and LNP 2.

Current vegetative growth at the LNP site consists primarily of upland forest and wetlands. Because the area was formerly managed by a timber company, the majority of the trees within the site are southern yellow pines. The pines were managed to produce fiber using modern silvicultural practices, which included the construction of artificial drainage networks, and the use of chemicals (fertilizers and pesticides) to facilitate timber growth. It should be noted that the site was managed following best management practices (BMPs) to minimize adverse impacts to water quality caused by erosion and surface water runoff. (Reference 2.3-003)

Ground elevations at the LNP site range from 10.7 to 18.3 m (35 to 60 ft.) National Geodetic Vertical Datum of 1929 (NGVD29) (Figure 2.3-3). Based on recent survey data obtained during the precharacterization work, the ground elevation at LNP 1 is about 13.0 m (42.6 ft.) North American Vertical Datum of 1988 (NAVD88); at LNP 2 the ground elevation is about 13.2 m (43.4 ft.) NAVD88 (Figure 2.3-3). The topography of the area near the reactors is nearly flat.

The majority of the LNP site lies within the Waccasassa River Drainage Basin, with a small portion of the site lying within the Withlacoochee River Drainage Basin (Figure 2.3-4). The northern portion of the LNP site lies within the Spring Run Subbasin of the Waccasassa River Basin (Figure 2.3-5). The central portion of the LNP site, which includes LNP 1 and LNP 2, lies within the Direct Runoff to Gulf Subbasin of the Waccasassa River Basin. The southeastern corner of the LNP site lies within the Withlacoochee River Basin.

There are no named streams at the LNP site. Runoff from the site is primarily overland, with storage provided by wetlands. The general direction of the overland flow is to the southwest toward the Lower Withlacoochee River and the Gulf of Mexico. (Reference 2.3-004) Major freshwater bodies in the vicinity of the LNP site include the Withlacoochee River and Lake Rousseau (Figure 2.3-4). Lake Rousseau is located approximately 4.8 km (3.0 mi.) south of the LNP site. The Withlacoochee River and the Rainbow River are the primary sources of water to Lake Rousseau. The Gulf of Mexico is located approximately 12.8 km (7.9 mi.) west of the LNP site.

A portion of the LNP site consists of wetlands (Reference 2.3-005). Extensive salt marsh communities are found between SR-19, the highway to the west of the LNP site, and the open waters of the Gulf of Mexico. Wetlands are described in more detail in ER Subsection 2.4.1.

The principal source of water for the LNP site is the CFBC, which is approximately 5.2 km (3.2 mi.) south of the LNP site. A section of the unfinished barge canal connects Lake Rousseau to the Gulf of Mexico, bifurcating the Withlacoochee River downstream of Lake Rousseau (Figure 2.3-2). The three water control structures in this area are the Inglis Lock, Inglis Bypass Spillway, and the Inglis Dam. These structures are operated by the SWFWMD and were constructed as part of the decommissioned CFBC project. Spillways at the Inglis Lock Bypass Channel and Inglis Dam are used to maintain an optimum pool elevation of 28 ft. mean sea level (msl) at Lake Rousseau.

The Inglis Lock, which is currently inactive, separates Lake Rousseau from the western end of the CFBC. The lock's former function was to raise and lower water levels so that vessels could travel between Lake Rousseau and the Gulf of Mexico. (Reference 2.3-006) During operation the lock released approximately 43.2 million L (11.4 million gal.) of freshwater into the Gulf of Mexico each time it was operated. Operation of the lock was discontinued in 1999 due to mechanical malfunctions. There are currently no plans to repair the lock.

2.3.1 HYDROLOGY

This subsection describes the surface water and groundwater aquifer resources that are present in the vicinity of the LNP site. These resources were evaluated to determine the potential effects that plant construction and operation may have on surface water and groundwater flow and quality.

The following hydrologic systems were considered in this evaluation:

- Freshwater streams
- Lakes and impoundments
- CFBC

- CREC Discharge Canal
- Groundwater

2.3.1.1 Freshwater Streams

The general hydrologic network and its relation to the LNP site are presented on Figure 2.3-4 and discussed in the following subsections. Figure 2.3-5 shows the LNP site subbasin drainage areas. Figure 2.3-6 shows the USGS monitoring stations within the Waccasassa and Withlacoochee River Drainage Basins.

2.3.1.1.1 Waccasassa River

The Waccasassa River is located within the Waccasassa River Basin. The Waccasassa River Drainage Basin is located in the southern part of the SRWMD and encompasses an area of approximately 2334 square kilometers (km^2) (901 square miles [$mi.^2$]) (Figure 2.3-4) (Reference 2.3-003). The Waccasassa River Drainage Basin is largely undeveloped, and consists of more than 55 percent forested areas, 18 percent wetland areas, and more than 15 percent agricultural lands. (Reference 2.3-003) Named drainage features in the basin include the Waccasassa River, Jakes Creek, Kelly Creek, Otter Creek, Magee Branch, Wekiva Creek, Cow Creek, Ten Mile Creek, and Spring Run. Several ponds and lakes are present in the basin, primarily north of the LNP site. The basin generally slopes and drains to the southwest, toward the Gulf of Mexico. There are no known water control structures in this basin.

A USGS gauging station (USGS ID: 02313700, Waccasassa River Near Gulf Hammock, Florida [Figure 2.3-6]), is located on the Waccasassa River near Gulf Hammock, Florida. Discharge data from April 1, 1963 through September 30, 2007 and gauge height data from October 1, 1977 through September 30, 2007 are available for this station. The drainage area monitored by this station encompasses an area of 1243 km^2 (480 $mi.^2$). (Reference 2.3-007)

The average monthly discharge of the river is 7.2 cubic meters per second (m^3/s) (255 cubic feet per second [ft^3/sec]). The highest average monthly discharge of 13.4 m^3/s (474 ft^3/sec) occurs during August, and the lowest average monthly discharge of 3.1 m^3/s (110 ft^3/sec) occurs during May. (Reference 2.3-008) The maximum average daily streamflow of 322.8 m^3/s (11,400 ft^3/sec) was recorded on September 12, 1964. (Reference 2.3-009)

The daily water stage has been recorded at this station for a period of 30 years (1977 to 2007). The maximum stage observed at this station during that period is 7.87 m (25.81 ft.) NGVD29 (September 8, 2004). The minimum stage observed at this station is 2.87 m (9.43 ft.) NGVD29 (February 4, 1978). (Reference 2.3-010)

2.3.1.1.2 Withlacoochee River

The Withlacoochee River is part of the Withlacoochee River Drainage Basin. The Withlacoochee River Drainage Basin is located in the northern part of the SWFWMD and encompasses an area of approximately 5439 km^2 (2100 $mi.^2$) (Figure 2.3-4). The Withlacoochee River originates in Green Swamp, and flows north and west through eight counties before discharging into the Gulf of Mexico at the Withlacoochee Bay Estuary, which is located near Yankeetown, Florida. (Reference 2.3-011) The length of the Withlacoochee River is approximately 253 km (157 mi.). The average gradient of the river is 0.9 ft. per mi. Major tributaries of the Withlacoochee River include Little Withlacoochee River, Big Grant Canal, Jumper Creek, Shady Brook, Outlet River of Lake Panasoffkee, Leslie Heifner Canal, Orange State Canal, Tsala Apopka Outfall Canal, and Rainbow Springs. (Reference 2.3-012) The Withlacoochee River and the Rainbow River are the primary sources of water to Lake Rousseau (Reference 2.3-013).

The Withlacoochee River is divided into three segments: upper, middle, and lower. The Upper Withlacoochee River consists of the portion of the river from its confluence with the Little Withlacoochee River to its headwaters in Green Swamp. The Middle Withlacoochee River consists of the portion of the river between US-41, which intersects the Withlacoochee River east of Lake Rousseau, and its confluence with the Little Withlacoochee River. The Lower Withlacoochee River consists of the portion of the river between US-41 and its discharge point in the Gulf of Mexico. (Reference 2.3-013)

The Lower Withlacoochee River includes the CFBC, Lake Rousseau, Inglis Lock Bypass Channel, Inglis Dam, and Inglis Lock (Reference 2.3-014). The construction of the CFBC and the water control structures (lock, bypass spillway, and dam) has altered the hydrology of the Lower Withlacoochee River. For example, the CFBC is sometimes used as a flood relief channel during high flow conditions, thereby reducing long-term average flows within the Lower Withlacoochee River (Reference 2.3-011). The CFBC, Lake Rousseau, and the associated water control structures are discussed in further detail in the following subsections. Figure 2.3-7 shows the locations of the water control structures near the LNP site.

Five USGS gauging stations are located on the Lower Withlacoochee River near the LNP site (Figure 2.3-8). They include the following:

- Withlacoochee River at Dunnellon, Florida (USGS ID: 02313200, #20 on Figure 2.3-8): This station is located on the Withlacoochee River, 1.3 km (0.8 mi.) upstream of Lake Rousseau. Gauge height data from February 6, 1963 through present day are available for this station. Discharge data are not available for this station. The drainage area monitored by this station encompasses an area of 5076 km^2 (1960 $mi.^2$). (Reference 2.3-015)

- Withlacoochee River at Inglis Dam near Dunnellon, Florida (USGS ID: 02313230, #21 on Figure 2.3-8): This station is located on the

Withlacoochee River on the upstream side of the Inglis Dam. Gauge height data from October 1, 1985 through present day and discharge data from October 1, 1969 through present day are available for this station. The drainage area monitored by this station encompasses and area of 5232 km^2 (2020 $mi.^2$). (Reference 2.3-016)

- Withlacoochee River below Inglis Dam near Dunnellon, Florida (USGS ID: 02313231, #22 on Figure 2.3-8): This station is located on the Withlacoochee River downstream side of Inglis Dam. Gauge height data from October 1, 1969 through present day are available for this station; however, discharge data are not available for this station. The drainage area monitored by this station is undetermined. (Reference 2.3-017)

- Withlacoochee River Bypass Channel near Inglis, Florida (USGS ID: 02313250, #23 on Figure 2.3-8): This station is located about 2.1 km (1.3 mi.) upstream of the bypass spillway. Gauge height data from July 16, 1971 through present day and discharge data from October 1, 1970 through present day are available for this station. The drainage area monitored by this station is undetermined. (Reference 2.3-018)

- Withlacoochee River at Chambers near Yankeetown, Florida (USGS ID: 02313272, #24 on Figure 2.3-8): This station is located about 17.7 km (11 mi.) downstream of the Inglis Dam at the mouth of Gulf of Mexico. Tidal high and tidal low daily gauge height data are only available from January 28, 2005 to July 23, 2007 at this station. Discharge data are not available for this station. The drainage area monitored by this station is undetermined. (Reference 2.3-019)

Table 2.3-1 presents the average monthly discharge data for the Withlacoochee River at USGS station 02313250. The average monthly discharge of the Inglis Bypass Channel is 29.7 m^3/s (1049 ft^3/sec). The highest average monthly discharge of 31.4 m^3/s (1110 ft^3/sec) occurs during September and the lowest average monthly discharge of 26.9 m^3/s (949 ft^3/sec) occurs during June. (Reference 2.3-020) The yearly maximum average daily streamflow of 52.1 m^3/s (1840 ft^3/sec) occurred on October 1, 1987 (Table 2.3-2) (Reference 2.3-021).

2.3.1.1.2.1 Withlacoochee River – Water Control Structures

The location of water control structures on the Withlacoochee River are shown on Figure 2.3-9. These water control structures were part of the unfinished CFBC project constructed by the USACE in the 1960s (Reference 2.3-022). Each structure is described in more detail below.

Inglis Lock is located on the CFBC between Lake Rousseau and the Withlacoochee River (Figures 2.3-7 and 2.3-9) (Reference 2.3-006). The lock was formerly used to raise and lower water levels so vessels could travel between Lake Rousseau and Gulf of Mexico (Reference 2.3-022). The lock is 182.9 m (600 ft.) long by 25.6 m (84 ft.) wide and when in operation approximately 43.2 million L (11.4 million gal.) of freshwater were discharged from Lake Rousseau into the Gulf of Mexico each time it was used. This lock has not been used since 1999 because the upstream gate is in need of repair. There are currently no plans to repair this structure. (Reference 2.3-022)

The Inglis Lock Bypass Channel and Inglis Bypass Spillway are located located at the western end of the bypass channel (Figure 2.3-7). These structures discharge fresh water from Lake Rousseau to the Lower Withlacoochee River to sustain the prevailing environment, prevent saltwater intrusion, maintain the optimum pool level of the lake, and to accommodate navigation interests in the river. The maximum capacity of the spillway is 43.6 m^3/s (1540 ft^3/sec). (Reference 2.3-023) During high inflow conditions, when the operating capacity of the spillway is exceeded, the Inglis Dam is used to control the elevation of Lake Rousseau. Inglis Dam is located at the western end of Lake Rousseau, south of the Inglis Lock and Inglis Lock Bypass Channel, in Citrus County (Figure 2.3-9). (Reference 2.3-024)

The Inglis Dam and Inglis Bypass Spillway are the main flood control structures for the Lower Withlacoochee River, releasing excess water to the Gulf of Mexico through the CFBC (Reference 2.3-006).

2.3.1.1.3 Rainbow River

The Rainbow River and the Withlacoochee River are the major surface water contributors to Lake Rousseau (Reference 2.3-013). The Rainbow River is 9.2 km (5.7 mi.) long and merges with the Withlacoochee River at Dunnellon, Florida. The primary source of water for the Rainbow River is Rainbow Spring, which is a natural spring of first order magnitude (Figure 2.3-4) (Reference 2.3-025). Rainbow River discharges an average of 20.6 m^3/s (727 ft^3/sec) per day of water into the Withlacoochee River (Reference 2.3-011).

A USGS gauging station (USGS ID: 02313100, Rainbow Springs near Dunnellon, Florida [Figure 2.3-6]), is located at the head of the springs, 6.3 km (3.9 mi.) north of Dunnellon, Florida. Discharge data from January 1, 1965 through August 7, 2007 are available at this station. The drainage area monitoring by this station is undetermined. Gauge height data are unavailable at this station for historical flood and drought analysis. (Reference 2.3-026) Table 2.3-3 presents the average monthly discharge for this station. The average monthly discharge of the spring is 19.8 m^3/s (698 ft^3/sec). The highest average monthly discharge of 21.2 m^3/s (748 ft^3/sec) occurs during October, and the lowest average monthly discharge of 18.8 m^3/s (663 ft^3/sec) occurs during June (Reference 2.3-027). The maximum average daily streamflow of 30 m^3/s (1060 ft^3/sec) was recorded on September 19, 1988 (Table 2.3-4) (Reference 2.3-028).

2.3.1.1.4 Other Water Control Structures

The Withlacoochee River Basin has several other water control structures. These are the Lake Tsala Apopka Dam, Slush Pond Dam, and Gant Lake Dam

(Figure 2.3-9). As none of these structures directly affect the water elevation at Lake Rousseau or the LNP site, they are not discussed in detail in this report.

2.3.1.1.5 Wetlands

Wetlands located within 3000 ft. of the LNP are presented in Figure 2.3-10. Wetlands within the LNP site are described in detail in ER Subsection 2.4.1.

2.3.1.2 Lakes and Impoundments

The Inglis Dam is located at the western end of Lake Rousseau, where the lake discharges into a bifurcated section of the Withlacoochee River (Figure 2.3-7).

There appears to be some limited barge traffic on the CFBC between the Gulf of Mexico and a mine located about 5.6 km (3.5 mi.) upstream from the Gulf. There is also recreational use of the canal, primarily on the south side. The canal is straight, with a design depth of 3.7 m (12 ft.), a bottom width of 45.7 m (150 ft.), and a design bank slope of 1:3 (vertical: horizontal). The CFBC is now owned by the state and as part of Florida's Greenway System has been renamed the CFG State Recreation and Conservation Area.

2.3.1.2.1 Lake Rousseau

Lake Rousseau is a 1497-ha (3700-ac.) impoundment on the Withlacoochee River formed by the Inglis Dam (Reference 2.3-013). Lake Rousseau is located approximately 17.7 km (11 mi.) upstream of the mouth of the Withlacoochee River near the Town of Inglis (Figure 2.3-8). Lake Rousseau was constructed in 1909 by Florida Power Corporation for electric power generation (Reference 2.3-011). Lake Rousseau is approximately 9.7 km (5.7 mi.) long. (Reference 2.3-013).

The Withlacoochee and Rainbow Rivers are the major surface water contributors to Lake Rousseau (Reference 2.3-006) (Figure 2.3-8). During dry periods, flows into Lake Rousseau are dominated by the Rainbow River and other spring-fed tributaries to the Withlacoochee River. West of Lake Rousseau, the Withlacoochee River flows to the Gulf of Mexico where it discharges into the Withlacoochee Bay Estuary (Reference 2.3-003).

The pool elevation at Lake Rousseau is controlled by three structures: the Inglis Lock Bypass Channel and Spillway, the Inglis Dam, and the Inglis Lock. (Figure 2.3-7).The majority of the normal discharge (up to 43.6 m^3/s [1540 ft^3/sec]) passes through the bypass channel and spillway to the Lower Withlacoochee River. The Inglis Dam passes flows in excess of the bypass channel and spillway to the CFBC though a short section of the natural Withlacoochee River (approximately 2743.2 m [9000 ft.]). (Reference 2.3-011)

The operating pool elevation at Lake Rousseau is maintained between 7.3 and 8.5 m (24.0 and 28.0 ft.) NGVD29 (Reference 2.3-006). Prior to heavy rainfall the pool elevation may be lowered up to 0.15 m (0.5 ft.), depending upon the reservoir conditions and river flow (Reference 2.3-024). The pool elevation is maintained at the optimum level of 8.4 m (27.5 ft.) NGVD29; however, due to a lack of storage capacity at the reservoir, heavy rainfall can substantially affect the stage within short period of time.

USGS gauging station 02313230 is located on the upstream side of the Inglis Dam (Figure 2.3-8). Discharge data available at this location include approximately 2 m^3/s (70 ft^3/sec) of flow from a spring downstream of the water control structure. This spring flow is considered to be leakage from Lake Rousseau (Reference 2.3-016). Table 2.3-5 presents the average monthly discharge (October 1969 through April 2005) at this station. The average monthly discharge of Lake Rousseau into the CFBC through the Lower Withlacoochee River is 12.5 m^3/s (443 ft^3/sec). The highest average monthly discharge of 23 m^3/s (816 ft^3/sec) occurs in October, and the lowest average monthly discharge of 5 m^3/s (178 ft^3/sec) occurs in June (Reference 2.3-029). The yearly maximum average daily streamflow of 170 m^3/s (6030 ft^3/sec) occurred on October 19, 2004 (Table 2.3-6) (Reference 2.3-030).

USGS gauging station 02313200 is located 1.3 km (0.8 mi.) upstream of Lake Rousseau at the junction of the Withlacoochee and Rainbow Rivers (Figure 2.3-8). Stage at this station is regulated by Lake Rousseau (Reference 2.3-031). Average gauge height at this station for 2002 and 2004 through 2006 is 8.6 m (28.07 ft.) NGVD29. The discharge for this station is unavailable (Reference 2.3-032).

2.3.1.2.1.1 Inglis Lock

Inglis Lock is located on the northwestern corner of Lake Rousseau between Citrus and Levy counties, at the western end of the CFBC (Figure 2.3-7). As previously described, the lock is no longer in operation; however, during operation approximately 43.2 million L (11.4 million gal.) of freshwater were released from Lake Rousseau into the Gulf of Mexico every time the lock was used. There are no current plans to restore operation of the lock.

2.3.1.2.1.2 Inglis Lock Bypass Channel

The Inglis Lock Bypass channel connects the downstream portion of the Withlacoochee River to Lake Rousseau (Figure 2.3-7). The function of the bypass channel is to discharge freshwater to the Lower Withlacoochee River, thereby sustaining the prevailing environment, preventing saltwater intrusion, maintaining the level of Lake Rousseau, and accommodating navigation interests in the river. The Inglis Bypass Spillway, located at the western end of the bypass channel, consists of a reinforced concrete, U-shaped, two-gate spillway with an ogee weir and a baffled stilling basin. Two hydraulically operated vertical lift gates (2 ft. x 14 ft. x 7 ft.) are fitted to the structure to regulate outflows. The bypass spillway is used to maintain the optimum pool elevation of Lake Rousseau. The structure includes an operating platform to accommodate the gate operating equipment and a service bridge that crosses the structure at an elevation of 30 ft. msl. The crest elevation of the bypass spillway is 28 ft. msl.

The maximum operating capacity of the bypass spillway is 43.6 m^3/s (1540 ft^3/sec). The specific details of the Inglis Bypass Spillway are as follows (Reference 2.3-022):

Invert Elev.	21 ft. msl
Crest Elev.	28 ft. msl
County	Levy
Drainage Area	5232 km^2 (2020 $mi.^2$)
USGS Quadrangle Map	Yankeetown SE Quadrangle
Operational Method	Hydraulic

The Inglis Bypass Spillway is used to maintain the optimum pool level, as the gates of the Inglis Dam are closed most of the time (Reference 2.3-023). The Inglis Dam and the Inglis Bypass Spillway are the main flood control structures for the Withlacoochee River basin, releasing the excess of water to the Gulf of Mexico through the CFBC (Reference 2.3-006).

2.3.1.2.1.3 Inglis Dam

The Inglis Dam is also located at the western end of Lake Rousseau, but south of the lock and bypass channel (Figure 2.3-7). The dam is used to control the surface water elevation of the lake and maintain water levels within the lake during flood events. During floods the water is channeled through the spillway. The Inglis Dam Spillway is a reinforced concrete U-shaped gated spillway with an ogee-type weir I (crest elevation of 3.4 m (11.3 ft.) with reinforced concrete wing-walls. Each bay has a 12.2 m (40 ft.) wide by 5.1 m (16.7 ft.) high vertical lift gate, installed on the crest of the weir. The gate-operating equipment is mounted on a reinforced concrete operating platform at an elevation of 52 ft. msl. The structure is configured with a reinforced concrete service bridge at an elevation of 33 ft. msl. Riprap has been provided upstream and downstream of the spillway to protect against eroding velocities. (Reference 2.3-024)

Structural details of the dam include the following (Reference 2.3-024):

Invert Elev	11.3 ft. msl
Crest Elev	28.0 ft. msl
County	Citrus
Drainage Area	5232 km^2 (2020 $mi.^2$)
USGS Quadrangle Map	Yankeetown SE Quadrangle
Operational Method	Hydraulic

2.3.1.2.1.4 Flood History

The 100-year flood zones for the LNP site were determined based on Federal Emergency Management Agency Flood Insurance Rate Maps. Flood zone data for Citrus, Marion, and Levy counties were obtained from the Florida Geographic Data to determine the 100-year flood zones within a 6-mi. radius of the LNP as presented in Figure 2.3-11. The footprints of LNP 1 and 2 intersect the existing 100-year flood zone. The land surface below the proposed footprint will be raised to create a nominal site grade above the surrounding land as described in the LNP Final Safety Analysis Report.

The total estimated limit of disturbance for the LNP site is approximately 1190 acres with approximately 64 percent, or 760 acres, affecting the 100-year flood zone. Changes to the 100-year flood plain due to site grading are discussed in more detail in ER Subsection 4.1.1.1.2.1.

The Inglis Dam and Inglis Bypass Spillway are the two main structures near the LNP site that control the flow of water in Lake Rousseau and the Withlacoochee River (Reference 2.3-006). The gates of the Inglis Dam are typically closed and the Inglis Bypass Spillway is used to control the pool elevation at Lake Rousseau. During periods of flow that exceed the operating capacity of the bypass spillway, the dam gates are opened to control the pool elevation of Lake Rousseau. The maximum allowable headwater elevation at both the Inglis Bypass Spillway and Inglis Dam is 8.5 m (28.0 ft.) NGVD29. (Reference 2.3-024) The operating capacity of the bypass spillway is 43.6 m^3/s (1540 ft^3/sec) (Reference 2.3-023).

The following five USGS stations record flow in the Withlacoochee River and Lake Rousseau near the LNP site (Figure 2.3-8):

- Withlacoochee River at Dunnellon, Florida (USGS ID: 02313200, #20 on Figure 2.3-6): This station is located on the Withlacoochee River, 1.3 km (0.8 mi.) upstream of Lake Rousseau. The daily water stage has been recorded at this station for a period of 44 years (1963 to 2007). The maximum stage observed at this station during that period is 9.26 m (30.37 ft.) NGVD29 (September 27, 2004) (Reference 2.3-031). Add the conversion factor of -0.267 m (-0.876 ft.) to elevations with a NGVD29 datum to obtain elevations with a NAVD88 datum at this station (Reference 2.3-033).

- Withlacoochee River at Inglis Dam near Dunnellon, Florida (USGS ID: 02313230, #21 on Figure 2.3-6): This station is located on the Withlacoochee River on the upstream side of the Inglis Dam (Reference 2.3-016). The daily water stage has been recorded at this station for a period of 12 years (1985 to 2007). The maximum stage observed at this station during that period is 8.54 m (28.03 ft.) NGVD29 (March 27, 2005) (Reference 2.3-034). Add the conversion factor of -0.309 m (-1.01 ft.) to elevations with a NGVD29 datum to obtain elevations with a NAVD88 datum at this station (Reference 2.3-033).

- Withlacoochee River below Inglis Dam near Dunnellon, Florida (USGS ID: 02313231, #22 on Figure 2.3-6): This station is located on the Withlacoochee River on the downstream side of the Inglis Dam. The daily water stage has been recorded at this station for a period of 38 years (1969 to 2007). (Reference 2.3-017) The maximum stage observed at this station during this period is 2.82 m (9.25 ft.) NGVD29 (March 20, 1998) (Reference 2.3-035). Add the conversion factor of -0.309 m (-1.01 ft.) to elevations with a NGVD29 datum to obtain elevations with a NAVD88 datum at this station (Reference 2.3-033).

- Withlacoochee River Bypass Channel near Inglis, Florida (USGS ID: 02313250, #23 on Figure 2.3-6): This station is located 2.1 km (1.3 mi.) upstream of the bypass spillway. The daily water stage has been recorded at this station for a period of 35 years (1971 to 2007). (Reference 2.3-018) The maximum stage observed at this station during this period is 8.57 m (28.11 ft.) NGVD29 (January 2, 1994) (Reference 2.3-036). Add the conversion factor of -0.310 m (-1.02 ft.) to elevations with a NGVD29 datum to obtain elevations with a NAVD88 datum at this station (Reference 2.3-033).

- Withlacoochee River at Chambers near Yankeetown, Florida (USGS ID: 02313272, #24 on Figure 2.3-6): This station is located 17.7 km (11 mi.) downstream of the Inglis Dam at the mouth of Gulf of Mexico. The tidal high and tidal low daily gage height data are only available from January 28, 2005 to July 23, 2007 at this station. (Reference 2.3-019) The maximum stage observed at this station during high tides is 1.36 m (4.47 ft.) NAVD88 (June 13, 2006). The maximum stage observed at this station during low tides is 0.14 m (0.46 ft.) NAVD88 (March 21, 2006). (Reference 2.3-037)

The National Weather Service (NWS) has identified the following flood stages at USGS Station 02313200 (#20 on Figure 2.3-6): the flood stage, moderate flood stage, and major flood stage at this station are 8.8 m (29 ft.), 9.1 m (30 ft.), and 9.4 m (31 ft.) NGVD29, respectively (Reference 2.3-038). Water levels at these stations have not exceeded the major flood stage during the period of record. The moderate flood stage at this station has only been exceeded once during the period of record, for 22 consecutive days in 2004 (September 27 to October 18). The flood stage at these stations has been exceeded during 15 of the 44 years of record. (Reference 2.3-031)

The elevation of the LNP site varies between 10.7 m (35 ft.) and 18.3 m (60 ft.) NAVD88 (Figure 2.3-3). Based on historical water level observations, flooding of the LNP site is considered unlikely. However, areas near the LNP site — specifically lower elevation areas near Lake Rousseau, the Withlacoochee River, and the CFBC — may become flooded during high water periods. Historical flooding has not been observed in the area downstream of the Inglis Dam because of the upstream water control provided by the dam (Reference 2.3-014).

2.3.1.2.1.5 Drought History

Historical low flow stages at following USGS stations are discussed below:

- Withlacoochee River at Dunnellon, Florida (USGS ID: 02313200, #20 on Figure 2.3-6)**:** This station is located on the Withlacoochee River, 1.3 km (0.8 mi.) upstream of Lake Rousseau. Daily water stage has been recorded at this station for a period of 44 years (1963 – present day).

(Reference 2.3-015) Minimum stage observed at this station during that period is 7.04 m (23.10 ft.) NGVD29 (October 11, 1972). (Reference 2.3-031) Add the conversion factor of -0.267 m (-0.876 ft.) to elevations with a NGVD29 datum to obtain elevations with a NAVD88 datum at this station (Reference 2.3-033).

- Withlacoochee River at Inglis Dam near Dunnellon, Florida (USGS ID: 02313230, #21 on Figure 2.3-6): This station is located on the Withlacoochee River on the upstream side of the Inglis Dam (Reference 2.3-016). Daily water stage has been recorded at this station for a period of 12 years (1985 – present day). Minimum stage observed at this station during that period is 7.36 m (24.14 ft.) NGVD29 (January 13, 1990). (Reference 2.3-034) Add the conversion factor of -0.309 m (-1.01 ft.) to elevations with a NGVD29 datum to obtain elevations with a NAVD88 datum at this station (Reference 2.3-033).

- Withlacoochee River below Inglis Dam near Dunnellon, Florida (USGS ID: 02313231, #22 on Figure 2.3-6): This station is located on the Withlacoochee River on the downstream side of the Inglis Dam. Daily water stage has been recorded at this station for a period of 38 years (1969 – present day) (Reference 2.3-017). Minimum stage observed at this station during this period is -0.56 m (-1.85 ft.) NGVD29 (January 16, 1972) (Reference 2.3-035). Add the conversion factor of -0.309 m (-1.01 ft.) to elevations with a NGVD29 datum to obtain elevations with a NAVD88 datum at this station (Reference 2.3-033).

- Withlacoochee River Bypass Channel near Inglis, Florida (USGS ID: 02313250, #23 on Figure 2.3-6): This station is location 2.1 km (1.3 mi.) upstream of the bypass spillway. Daily water stage has been recorded at this station for a period of 35 years (1971 – present day). (Reference 2.3-018) Minimum stage observed at this station during this period is 6.62 m (21.73 ft.) NGVD29 (October 11, 1972) (Reference 2.3-036). Add the conversion factor of -0.310 m (-1.02 ft.) to elevations with a datum of NGVD29 to obtain elevations with a datum of NAVD88 at this station (Reference 2.3-033).

- Withlacoochee River at Chambers near Yankeetown, Florida (USGS ID: 02313272, #24 on Figure 2.3-6): This station is located 17.7 km (11 mi.) downstream from the Inglis Dam on the Lower Withlacoochee River at the mouth of Gulf of Mexico. Tidal high and tidal low daily gage height data are only available from January 2005 through July 2007 at this station. (Reference 2.3-019) The minimum stage observed at this station during high tides was -0.99 m (-0.62 ft.) NAVD88 (April 16, 2005). The minimum stage observed at this station during low tides was -5.29 m (-3.29 ft.) NAVD88 (January 28, 2005 and February 6, 2005). (Reference 2.3-037)

2.3.1.3 Cross Florida Barge Canal

The CFBC was constructed in the 1960s as part of a federal project to create a northern inland water route between the Gulf of Mexico and Northeast Florida (Reference 2.3-039). The canal was designed to have a depth of 12 ft. (3.7 m), a minimum bottom width of 150 ft. (45.7 m), and five locks. The total length of the project was approximately 172.2 km (107 mi.). (Reference 2.3-040) Construction of the CFBC was stopped in 1971 due to the adverse environmental and economic effects on Florida. It is now a protected green belt corridor known as the CFG (Reference 2.3-041).

While the project was abandoned, the initial construction included a lock structure and a straight canal between Lake Rousseau and the Gulf of Mexico. This canal bisected the Withlacoochee River, severing the hydraulic connection between Inglis Dam and the downstream river. To maintain flow to the Lower Withlacoochee River, a bypass channel with a control structure was built adjacent to, and just downstream of, the locks. The existing flow path is from Lake Rousseau, through the Inglis Lock Bypass Channel and associated gated spillway to the Lower Withlacoochee River (Reference 2.3-024). There is a large embankment that separates the CFBC from the Lower Withlacoochee River. Flow is only released from the dam into the CFBC during extreme flooding (Reference 2.3-024).

The proposed water intake structure for LNP is to be located on the CFBC. Depth measurements were taken on October 3, 2007 at 26 stations along the canal. The depths to bottom at the cross-section near the intake structure (Stations 1A, 1B, 1C, and 1D) ranged from 14.23 ft. to 15.76 ft. The bathymetry of the CFBC near the water intake structure is presented on Figure 2.3-12.

2.3.1.4 Crystal River Energy Complex Discharge Canal

The CREC discharge canal extends from the CREC to the Gulf of Mexico (Figure 2.3-13). The blowdown water from the LNP will be piped to the CREC and discharged into the CREC discharge canal. The bathymetry of the portion of the CREC discharge canal that extends into the Gulf of Mexico is presented in Figure 2.3-14.

2.3.1.5 Groundwater

This subsection describes the groundwater conditions, sources, and usage of the aquifer in the region and at the proposed location of the LNP site. An overview of the regional and site-specific geology is also discussed, as it presents the geologic framework through which groundwater migrates.

2.3.1.5.1 Regional and Site Geology

The LNP site is located within the mid-peninsular physiographic zone of the Coastal Plain province of the Atlantic Plain division of North America. The mid-peninsular zone is characterized by discontinuous subparallel ridges lying parallel to the length of the peninsula. These ridges are separated by broad valleys of gently sloping to nearly level terrain. (Reference 2.3-042) As shown on Figure 2.3-15, the LNP site lies in the localized subdivision of the mid-peninsular zone known as the Gulf Coastal Lowlands. Karst topography is a typical component of the Gulf Coastal Lowlands where carbonate rocks are near the land surface and are subject to dissolution by downward-infiltrating rainfall (References 2.3-043 and 2.3-044).

The geologic regime underlying the LNP site is known as the Floridan platform, consisting of recently emergent Mesozoic and Cenozoic age shallow marine carbonate and evaporite sediments in a sequence approximately 5 km (3.1 mi.) thick. These sediments overlie Paleozoic igneous, sedimentary, and volcanic basement rocks (Reference 2.3-043). Figure 2.3-16 presents a generalized north-south geologic cross-section of central Florida, including Levy County, within which the LNP site is located. The general relationship between these stratigraphic units and the hydrogeologic units (aquifers) in this area are shown on Figure 2.3-17. Figure 2.3-18 presents the surficial rocks and sediment types within 10 ft. of land surface in the region near the LNP site.

The general geomorphology, stratigraphy, and physiography of the site vicinity are presented in more detail in ER Section 2.6.

2.3.1.5.2 Regional Groundwater Systems

In west-central Florida, the groundwater flow system is a combination of a surficial aquifer comprised of unconsolidated sediments of Quaternary age, and an underlying carbonate rock aquifer of Miocene to Paleocene age rocks known as the Floridan aquifer system (FAS). Deposits comprising the FAS extend into Georgia, Alabama, and South Carolina, receiving recharge from a broad area. In Florida, the FAS consists of an Upper and Lower Floridan aquifer, and ranges in thickness from about 152.4 m (500 ft.) to over 548.6 m (1800 ft.). The Upper Floridan aquifer is the main source of potable water and spring flow in west-central Florida. (Reference 2.3-045)

The aquifer systems are differentiated based upon their permeability differences, with the overlying surficial aquifer having a lower permeability than the underlying Floridan aquifer. Where present, the surficial aquifer is typically comprised of Quaternary sands and provides substantial recharge to the Floridan aquifer. The principal use of the surficial aquifer is for irrigation, domestic use on a small scale, and dewatering projects associated with mining and/or construction. (Reference 2.3-046)

In parts of north and central peninsular Florida, the surficial and Floridan aquifer systems are separated and hydraulically confined by the Hawthorn Formation, a series of clastic Miocene age marine sediments. The Hawthorn Formation is comprised of interbedded sands and clays that are locally phosphatic and contain carbonate interbeds. (Reference 2.3-047)

The general hydrostratigraphy of the Upper Floridan aquifer in west-central Florida near the LNP site consists of three principal carbonate units: the Suwannee Limestone of Oligocene age, the Ocala Limestone of upper Eocene age, and the upper part of the Avon Park Limestone of middle Eocene age. The Upper and Lower Floridan aquifers are separated by a low permeability carbonate rock sequence known as the middle confining unit. The unit is comprised of varying types of carbonate rocks, from gypsum to chalky limestone. The occurrence of the middle confining unit has been mapped as a group of seven sub-regional to local units, which appear to be associated with the lower sequence of the Avon Park Limestone. (Reference 2.3-047)

The underlying Lower Floridan aquifer is less well known and understood geologically, and in many areas of Florida contains saline water, and is not used as source of potable water. The Lower Floridan aquifer is comprised of middle Eocene to upper Cretaceous carbonate beds of varying permeability. In northeast and southern Florida there are sub-regional permeable zones, presumed to be associated with Eocene paleowater table karst topography development, but the Lower Floridan aquifer is not typically exploited for potable water. In some areas, the Lower Floridan aquifer is used for disposal (injection) wells. (Reference 2.3-044)

The Upper Floridan aquifer is very productive and serves as the main source of spring flows and potable water for private and municipal supply in the western part of Florida. The estimated transmissivity (T) of the Upper Floridan aquifer has values ranging from 537.6 square centimeters per second (cm^2/sec) (50,000 square feet per day [ft^2/d]) to approximately 1075.3 cm^2/sec (100,000 ft^2/d) in Levy County in the vicinity of the LNP site, and up to 139,784.7 cm^2/sec (13,000,000 ft^2/d) at Silver Springs in Marion County to the east. (Reference 2.3-045) These units can be multiplied by 0.001 liters per cubic centimeter (L/cm^3) (7.48 gallons per cubic foot [gal/ft^3]) to obtain units of liters per second per centimeter (gallons per day per foot [gpd/ft]).

2.3.1.5.3 Site Groundwater Systems

Investigations conducted within the LNP site boundary reveal that geologic and hydrologic conditions are essentially the same as the regional conditions described in ER Subsection 2.3.1.5.2, with the following site-specific conditions.

The LNP site is a Greenfield site, formerly used as a pine plantation (silviculture), but is otherwise undeveloped except for one grade road and a perimeter unpaved road loop. No wells are known to exist on the property prior to the Combined License Application (COLA) field work. The site is relatively level, with very little variation in surface topography, with no rivers, no streams, and no other major drainage features on-site.

A series of wetlands exist on-site, mainly associated with existing cypress tree growth areas. These wetlands and cypress “domes” provide preferential recharge to both the surficial and Floridan aquifers, and may be associated with increased karst development in the Avon Park limestones underlying the Quaternary deposits.

As summarized in Table 2.3-7, the surface soils present at the LNP site are undifferentiated Quaternary sands of the Smyrna-Immokalee-Basinger (S1547) Series, described as a loamy fine silica sand and fine silty sand, and are poorly to very poorly drained (Reference 2.3-048). Distribution of surface soils within a 16.1-km (10-mi.) radius of the LNP site is shown on Figure 2.3-19. As discussed in detail in ER Section 2.6, the surficial aquifer resides within these soils, which grade into the carbonate-derived silty sediments of the Avon Park Formation unconformity zone at varying depths on-site.

Published geologic literature indicates that the local hydrostratigraphic sequence at the LNP site consists of Quaternary surficial aquifer deposits lying directly over the Floridan aquifer limestones of the Avon Park Formation. The Hawthorn Group is not present at the LNP site, nor are the Tampa, Suwannee, or Ocala Limestones. (Reference 2.3-044) The Upper Floridan aquifer at the LNP site contains fresh potable water, and is separated physically and hydraulically from the underlying Lower Floridan aquifer by sequences of lower permeability evaporate rock units, which act as an aquitard. (Reference 2.3-046)

A site investigation that included geotechnical borings was conducted at the LNP site during late 2006 and 2007 to characterize the thickness of unconsolidated Quaternary sediment deposits, to determine the depth to the Avon Park limestone bedrock, and to evaluate the engineering properties of this rock beneath the proposed improved areas. A total of 118 boreholes were advanced during the COLA field investigations to characterize the subsurface conditions at the LNP 1 and LNP 2 locations (Figures 2.3-45, 2.3-46, and 2.3-47). Subsurface cross-sections for LNP 1 and LNP 2 are shown on Figures 2.3-48, 2.3-49, 2.3-50, and 2.3-51.

Rotary drilling with standard penetration testing (SPT) was the typical method employed to advance through soil and subsurface sediments into the upper zone of Avon Park formation rock. Rock coring was then initiated, using double-tube wireline coring methods to the borehole termination depth. Borehole depths ranged from approximately 18 to 152 m (60 to 500 ft.) below ground surface (bgs). Sonic drilling methods were also utilized in the initial phase for five borings at each reactor site to be used for downhole geophysical testing.

The geotechnical boring program results confirmed that the first carbonate rock units encountered below the surficial aquifer deposits are the deposits of the middle Eocene age Avon Park Limestone. To the maximum investigated depth of 152 m (500 ft.), neither the Middle Confining Unit (MCU) nor the Lower Floridan aquifer units were encountered.

A surficial water table aquifer exists on-site within the Quaternary deposits, with typical water table depths less than 1.5 m (5 ft.) bgs, varying with seasonal rainfall. The surficial aquifer at the LNP site varies in thickness from less than 3 m (10 ft.) to about 60 m (200 ft.) in isolated locations, with an average thickness of approximately 15 m (50 ft.). Water table data collected in 2007 indicate that the water table ranges in depth at LNP 1 and LNP 2 from less than 0.3 m (1 ft.) bgs during rainy periods to approximately 1.5 m (5 ft.) bgs during drier periods.

The surficial aquifer transitions into the underlying marine carbonates of the Avon Park Formation gradually rather than with an abrupt bedding contact. The surficial aquifer typically is not used for potable supply in this area, and is not hydraulically confined from the underlying Floridan aquifer within the Avon Park Formation. The Avon Park Limestone comprises the Upper Floridan aquifer and is the main source of potable water in the area. More information on aquifer characteristics is presented in the following subsections.

The Upper Floridan aquifer at the LNP site consists of fresh potable water within the Avon Park Formation, and serves as the primary potable aquifer in the area. Both productivity and water quality of the Avon Park are good for private and municipal potable supply. Based on limited downhole geophysical testing and monitoring of drilling fluid losses at the LNP site, the most productive interval of the Upper Floridan aquifer appears to be at depths of approximately 30 to 60 m (100 to 300 ft.) bgs.

The Upper Floridan aquifer is separated from the underlying Lower Floridan aquifer by sequences of lower permeability evaporite deposits and finely crystalline dense dolostones that act as an aquitard and confining unit. This layer, the MCU, can be up to 122 m (400 ft.) thick in the site vicinity and is considered to be part of the Avon Park Formation, stratigraphically.

The deepest geotechnical borings drilled to depths of approximately 152 m (500 ft.) bgs did not encounter the MCU or the underlying Oldsmar and Cedar Keys formations that comprise the Lower Floridan aquifer. However, traces of the evaporate deposits and quartz-infilled porosity typical of the MCU were observed sporadically in the borings at depths below 122 m (400 ft.), indicating that these borings may be approaching the less permeable lower portion (MCU) of the Avon Park Formation.

No local aquifers associated with the LNP site are designated or proposed to be designated as “sole source aquifers.” (Reference 2.3-066).

2.3.1.5.4 Groundwater Levels and Movement

Configuration of the potentiometric surface in the immediate vicinity of the LNP site was determined by measuring water levels in monitoring wells installed during the site investigation conducted from March through December 2007. Table 2.3-8 summarizes the water levels within the plant area. Twenty-three monitoring wells and one pumping well were installed during the LNP site investigation to accurately characterize the potentiometric surface, gradient, and flow pathways within the vicinity of LNP 1 and LNP 2. Six nested well pairs (12 out of 24 wells) were installed during the investigation to determine the connectivity between the surficial and bedrock aquifers. In addition, three monitoring wells were installed as a nested set and one piezometer was installed with wells MW-13S/MW-14D. Shallow monitoring wells were screened within the silt and sand of the surficial aquifer directly above the bedrock interface. Deep monitoring wells were screened completely within the limestone bedrock of the Upper Floridan aquifer. Groundwater gauging events were conducted quarterly (March, June, September, and December 2007) to account for seasonal and long-term variations. Well construction details are summarized on Table 2.3-9.

Groundwater gauging events were conducted quarterly (March, June, September, and December 2007) to evaluate seasonal variations in water levels within both the surficial/overburden and bedrock aquifers beneath the proposed LNP site. Water level measurement data collected during gauging events are summarized on Table 2.3-8. Figures 2.3-20, 2.3-21, 2.3-22, 2.3-23, 2.3-24, 2.3-25, 2.3-26, and 2.3-27 show potentiometric contour maps for each of the quarterly events.

During the quarterly events in 2007, groundwater occurred between ground surface and 2.4 m (8 ft.) bgs (Table 2.3-8). The depth to groundwater was shallowest during the spring gauging event (wet season). Potentiometric contour maps in the surficial/overburden aquifer in March, June, September, and December 2007 are illustrated on Figures 2.3-20, 2.3-21, 2.3-22, and 2.3-23, respectively. As shown on these figures, the primary groundwater flow direction is west-southwest from the topographic high of approximately 18.3 m (60 ft.) NAVD88 in the eastern portion of the site toward the topographic low of approximately 10.7 m (35 ft.) NAVD88 in the southwest portion of the site (Figure 2.3-3). In the center portion of the site, where the topography is relatively flat, the groundwater surface also becomes relatively flat. No significant differences were observed in the groundwater flow direction or gradient during the quarterly events within the surficial aquifer.

March, June, September, and December 2007 potentiometric contour maps of the bedrock aquifer are illustrated on Figures 2.3-24, 2.3-25, 2.3-26, and 2.3-27, respectively. As shown on these figures, the primary groundwater flow direction is west-southwest. Comparison of the water levels within the surficial/overburden and bedrock aquifers shows that the direction of groundwater flow is the same.

In addition to the groundwater elevation measurements collected during the quarterly events, pressure transducers were installed in MW-13S and MW-15S, which are screened within the surficial aquifer. MW-15S is located in the center of the footprint of LNP 1 and MW-13S is located in the center of the footprint of LNP 2. Groundwater elevation measurements (as pressure) were collected every 12 hours for more than a year at each location. Maximum groundwater elevations were observed during March 2007 and March 2008 at both locations, as shown in Figures 2.3-28 and 2.3-29. Figures 2.3-28 and 2.3-29 show that groundwater elevations were more than 2.1 m (7 ft.) below nominal plant grade elevation and more than 2.4 m (8 ft.) below nominal plant floor elevation between March 2007 and March 2008.

Six nested well sets were installed during the site investigation to determine the vertical gradient between the surficial and bedrock aquifers. Shallow monitoring wells/were screened within the silt and sand surficial aquifer directly above the soil/bedrock interface. Intermediate and deep monitoring wells were screened completely within the limestone bedrock of the Upper Floridan aquifer. In all cases the hydraulic head was higher within the surficial aquifer than the bedrock aquifer; indicating there is a downward vertical gradient (Table 2.3-10). In the center portion of the site, where the topography is relatively flat, the groundwater surface also becomes relatively flat. No significant differences were observed in the groundwater flow direction or gradient during the quarterly events or between the surficial and bedrock aquifer. Nested well pairs MW-15S/MW-16D and MW-13S/MW14D, located within the footprint of the safety-related structures for LNP 1 and LNP2, respectively, had downward vertical gradients with elevation head differences as measured in the field on September 13, 2007 of 0.17 and 0.08 m (0.55 and 0.27 ft.), respectively (Table 2.3-10). Vertical gradients between the surficial and bedrock aquifers remained consistent for all nested well pairs during each quarterly gauging event.

"Typical" seasonal variations (higher groundwater levels in the spring, lower groundwater levels in the fall) were observed at the LNP site in both the surficial and bedrock aquifers.

2.3.1.5.5 Site Hydrogeologic Conditions

The slug test method was used to determine the in situ permeability or hydraulic conductivity of the surficial and Upper Floridan aquifers at the LNP site. Slug tests were performed at all 23 monitoring wells. Table 2.3-11 summarizes the slug test results. Average horizontal permeability (hydraulic conductivity) values range from 3.4×10^{-4} centimeters per second (cm/sec) (0.9 foot per day [ft/day]) to 1.0×10^{-2} cm/sec (28.6 ft/day) in the surficial aquifer. Values ranged from 8.3×10^{-4} cm/sec (2.4 ft/day) to 1.9×10^{-2} cm/sec (54.4 ft/day) in the Upper Floridan aquifer. These values are indicative of moderate to high permeability conditions.

In addition, a surficial aquifer pumping test was performed at production well PW-1. Results from the aquifer pumping test were used to determine the transmissivity (related to hydraulic conductivity) and specific yield of the surficial aquifer using the Neuman (1974) approach (Reference 2.3-67). The Neuman analysis assumes that vertical leakage occurs within the water table during the aquifer test. However, this method does not discriminate between upward leakage and downward leakage; only drainage by gravity. Table 2.3-54 summarizes the results of the surficial pumping test at monitoring and observation wells located near PW-1. Figure 2.3-30 shows the locations of the aquifer test pumping well and observation wells. Transmissivity values ranged from 14 cm^2/sec (1.3×10^3 ft^2/day) to 237 cm^2/sec (2.2×10^3 ft^2/day) and specific yield ranged from 1.2×10^{-2} to 1.7×10^{-1} (dimensionless). These values are indicative of moderate to high permeability conditions and reflect the results of the slug tests discussed above.

In order to more accurately estimate leakage from layers above and below the pumping layer, the surficial aquifer pumping test data and subsequently collected Upper Floridan aquifer pumping test data were analyzed using the computer model MLU (Multi-Layer Unsteady state), a commercial software for analyzing multi-layer aquifer systems. The MLU model was used to evaluate three aquifer test programs conducted at the LNP site: one within the surficial aquifer and two within the Upper Floridan aquifer. The MLU model was selected for this evaluation because it can be used for aquifer test analysis of transient well flow in layered aquifer systems and stratified aquifers. The aquifer test programs at the LNP site involved pumping and monitoring wells screened at three different depth intervals in the surficial aquifer and up to four different depth intervals in the Upper Floridan aquifer.

Table 2.3-55 summarizes the results of the surficial aquifer and Upper Floridan aquifer analysis using MLU. Transmissivity values ranged from 4.8 cm^2/sec (4.5 x 10^2 ft^2/day) to 6.2 cm^2/sec (5.8 x 10^2 ft^2/day) and 43 cm^2/sec (4.0 x 10^3 ft^2/day) to 570 cm^2/sec (5.3 x 10^4 ft^2/day) for the surficial and Upper Floridan aquifers, respectively. These values are indicative of moderate to high permeability conditions and are consistent with the results of the slug tests and surficial aquifer analysis using the Neuman (1974) approach discussed above.

Linear groundwater velocity and Darcy flux estimates for the surficial and Upper Floridan aquifers were calculated using site parameters for LNP. Table 2.3-13 presents the results for the seepage velocity and Darcy flux for the March, June, September, and December 2007 gauging events. Nested monitoring wells were selected both upgradient and downgradient, where possible, for each LNP unit, to more accurately compare the surficial and bedrock aquifers.

For LNP 2, the seepage velocity and Darcy flux for the surficial aquifer between MW-7S and MW11S ranged from about 1.1 x 10^{-7} cm/sec (0.0003 ft/day) to 7.1 x 10^{-6} cm/sec (0.02 ft/day) and 3.3 x 10^{-4} cubic centimeters per second (cm^3/sec) (0.001 cubic feet per day [ft^3/day]) to 1.3 x 10^{-3} cm^3/sec (0.004 ft^3/day), respectively. Higher values of seepage velocity and Darcy flux were observed in March and lower values were observed during the June groundwater gauging event. For the bedrock aquifer, the seepage velocity and Darcy flux between MW-8D and MW-12D are about 1.8 x 10^{-5} cm/sec (0.05 ft/day) and 3.3 x 10^{-3} cm^3/sec (0.01 ft^3/day), respectively, no significant seasonal variation in these values was observed in the bedrock aquifer.

Similar estimates were calculated for LNP 1. The seepage velocity and Darcy flux for the surficial aquifer between monitoring wells MW-11S and MW-15S ranged from about 3.5 x 10^{-7} cm/sec (0.001 ft/day) to 7.1 x 10^{-6} cm/sec (0.02 ft/day) and 6.6 x 10^{-5} cm^3/sec (0.0002 ft^3/day) to 1.6 x 10^{-3} cm^3/sec (0.005 ft^3/day), respectively. As with LNP 2, higher values of seepage velocity and Darcy flux were observed in March and lower values were observed during the June groundwater gauging event. For the bedrock aquifer, the seepage velocity and Darcy flux between MW-12D and MW-16D are about 2.1 x 10^{-5} cm/sec (0.06 ft/day) to 2.5 x 10^{-5} cm/sec (0.07 ft/day) and 3.3 x 10^{-3} cm^3/sec

(0.01 ft^3/day), respectively, no significant seasonal variation in these values was observed in the bedrock aquifer.

2.3.2 WATER USE

LNP water use, surface water use, groundwater use, and future water use are described in the following subsections.

2.3.2.1 Plant Water Use

LNP 1 and LNP 2 will collect cooling tower makeup water at the LNP makeup water pumphouse within the CFBC. The intake structure will be located approximately 11.1 km (6.9 mi.) east from the Gulf of Mexico on the berm that forms the north side of the canal and within 0.8 km (0.5 mi.) of the Inglis Lock (Figure 2.3-31). After being used, cooling tower blowdown water will be pumped through a pipeline that runs south to and along the northern berm of the CFBC. It will then run south to the CREC and will ultimately be discharged into the CREC discharge canal. There will be no discharge of water from the cooling towers to Waccasassa River basin.

The proposed pipelines (both blowdown and makeup) will be located in the lower part of the LNP site within the Withlacoochee River basin (Figure 2.3-31). However, the Withlacoochee River will not be influenced by the LNP as the makeup pipe will be directly connected to the Gulf of Mexico through the CFBC and the blowdown pipe will be connected to the Gulf through the CREC discharge canal.

Water for general plant operation will be taken from groundwater wells located off-site. Cooling tower makeup water at LNP 1 and LNP 2 will be withdrawn from the CFBC. Plant water use is described in further detail in ER Chapter 3.

2.3.2.2 Surface Water Use

There are no known communities that withdraw water from the Withlacoochee River or Lake Rousseau for public or private water supply. Groundwater is the primary source of water for public supply near the LNP site. However, surface water withdrawal does occur for non-drinking water purposes within Citrus, Levy, and Marion counties, which are located within a 16.1-km (10-mi.) radius of the proposed LNP site. Non-potable surface water uses include the following (Table 2.3-14) (Reference 2.3-049):

- Irrigation – 13.89 million liters per day (mld) (3.67 [million gallons per day [mgd]) of freshwater.
- Livestock – 0.45 mld (0.12 mgd) of freshwater.
- Mining – 8.52 mld (2.25 mgd) of freshwater.

- Thermoelectric Power – 1491.1 mld (393.9 mgd) of saline water.

A small portion of Sumter County lies within a 40.2-km (25-mi.) radius of the LNP site. Sumter County is the only additional county (besides Citrus, Levy, and Marion counties) that lies within a 40.2-km (25-mi.) radius of the LNP site. Surface water is not used as a source of potable water in Sumter County; however, surface water withdrawals for non-drinking water purposes include the following (Table 2.3-15) (Reference 2.3-049):

- Irrigation – 2.42 mld (0.64 mgd) of freshwater.
- Livestock – 0.26 mld (0.07 mgd) of freshwater.
- Mining – 64.28 mld (16.98 mgd) of freshwater.

Fishing and boat ramps within the vicinity are discussed in ER Subsection 2.2.1.4. Navigable waterways in the region are discussed in ER Subsection 2.2.3.3.

2.3.2.3 Groundwater Use

Current groundwater use near the LNP site was identified in three ways: using the SWFWMD and SRWMD well permitting databases, using the FDEP's Source Water Assessment and Protection Program (SWAPP) database, and performing a land use survey. The results of each of these data gathering activities are discussed below.

Permits are required for all wells, regardless of use, within both the SWFWMD and the SRWMD. Data were requested from SWFWMD and SRWMD for all well permits issued within 40.2 km (25 mi.) of the LNP site. Data available varied by WMD, but generally included Public Land Survey (PLS) section, township, and range of the well location, general well use, well permit number, and general well construction information. Figure 2.3-32 presents the PLS section, township, and ranges located within 40.2 km (25 mi.) of the LNP site. Table 2.3-16 summarizes SWFWMD well permits and Table 2.3-17 summarizes SRWMD well permits; Figure 2.3-33 presents the distribution of well permits within 40.2 km (25 mi.) of the LNP site by PLS section, township, and range. More exact locations, such as addresses or coordinates, were not available for many of the wells permitted by SWFWMD and SRWMD.

Data provided by SWFWMD generally included all well permits issued between 1970 and November 19, 2007, and include permits for the monitoring and production wells installed at the LNP site. Data provided by the SRWMD generally included all well permits issued between 1976 and November 29, 2007. It is important to note that not all of the wells included in the permitting records provided by SWFWMD and SRWMD may still exist.

As presented in Table 2.3-16, SWFWMD has issued approximately 53,670 well permits within 40.2 km (25 mi.) of the LNP site, as follows (Reference 2.3-050):

- Approximately 77 percent (41,484 wells) of these wells are used for domestic water supply. Figure 2.3-34 presents the distribution of permitted domestic wells within 40.2 km (25 mi.) of the LNP site.

- Approximately 2 percent (995 wells) of these wells are used for public water supply. Figure 2.3-35 presents the distribution of permitted public supply wells within 40.2 km (25 mi.) of the LNP site.

- Approximately 9 percent (4637 wells) of these wells are used for irrigation. Figure 2.3-36 presents the distribution of permitted irrigation wells within 40.2 km (25 mi.) of the LNP site.

- Approximately 12 percent (6554 wells) of these wells are used for other uses including industrial, mining, power, livestock, fire protection, air conditioning supply, aquaculture, geothermal, grounding rod, injection, observation or monitoring, recovery of contaminants, return air/heat, sealing water, and testing/piezometer. Figure 2.3-37 presents the distribution of wells permitted for other uses within 40.2 km (25 mi.) of the LNP site. The wells installed at the LNP site as part of 2007 data-gathering activities are included in this category.

As presented in Table 2.3-17, SRWMD has issued 918 well permits within 40.2 km (25 mi.) of the LNP site, as follows (Reference 2.3-051):

- Approximately 88 percent of these wells (804 wells) are self-supplied residential wells. Figure 2.3-34 presents the distribution of permitted self-supplied residential wells within 40.2 km (25 mi.) of the LNP site.

- Approximately 3 percent of these wells (24 wells) are public water supply wells. Figure 2.3-35 presents the distribution of permitted public water supply wells within 40.2 km (25 mi.) of the LNP site.

- Approximately 1 percent of these wells (12 wells) are used for irrigation and landscaping (commercial and residential). Figure 2.3-36 presents the distribution of permitted irrigation wells within 40.2 km (25 mi.) of the LNP site.

- Approximately 8 percent of these wells (78 wells) are used for groundwater monitoring, fire protection, and other uses. Figure 2.3-37 presents the distribution of wells permitted for other uses within 40.2 km (25 mi.) of the LNP site.

Additional information on public water supply wells was obtained from FDEP's SWAPP database. Similar to SWFWMD, FDEP defines a public water supply system as one that provides water to 25 or more people for at least 60 days each year or serves 15 or more service connections. These systems may be publicly or privately owned and operated. Public water supply systems are divided into three categories (Reference 2.3-052):

- Community: Serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. This group includes a range of sizes from small mobile home courts to large city utilities.

- Transient Noncommunity: Serves at least 25 people or 15 connections, to flow-through populations, such as stores, RV parks, hotels, or churches that are open at least 60 days per year.

- Nontransient Noncommunity: Serves water to the same individuals for six months or more each year. Includes schools, factories, or large businesses with their own drinking water supplies.

Figure 2.3-38 and Table 2.3-14 summarize the 46 public water supply systems within 16.1 km (10 mi.) of the LNP site, which include 13 community, 26 transient noncommunity, and seven nontransient noncommunity public water systems. A total of 64 public supply wells serving approximately 10,300 customers with a total design capacity of approximately 25 mld (6.6 mgd) were identified within 16.1 km (10 mi.) of the LNP site by the SWAPP. The Floridan aquifer is the source water for all of these wells. Three municipal/city public water supply systems are located within 16.1 km (10 mi.) of the LNP site for Dunellon, Inglis, and Yankeetown. These municipal/city systems account for approximately 7.2 million L per day (1.9 mgd) or 30 percent of the public water supply design capacity within 16.1 km (10 mi.) of the LNP site (Reference 2.3-053).

Figure 2.3-39 and Table 2.3-15 summarize the 222 public water supply systems between 16.1 km (10 mi.) and 40.2 km (25 mi.) of the LNP site, which include 65 community, 140 transient noncommunity, and 17 nontransient noncommunity public water systems. A total of 305 public supply wells serving approximately 143,543 customers with a total design capacity of approximately 283.8 mld (75 mgd) were identified between 16.1 km (10 mi.) and 40.2 km (25 mi.) of the LNP site by the SWAPP. The Floridan aquifer is the source water for all of these wells. The five municipal/city public water supply systems located within between 16.1 km (10 mi.) and 40.2 km (25 mi.) of the LNP site include Cedar City Water Treatment Plant (WTP), Otter Creek WTP, the City of Crystal River, Inverness Water Department, and Williston WTP. These municipal/city systems account for approximately 29.9 million L/ day (7.9 mgd) or 11 percent of the public water supply design capacity between 16.1 km (10 mi.) and 40.2 km (25 mi.) of the LNP site (Reference 2.3-053).

Table 2.3-18 summarizes the sources of public water supply for counties surrounding the LNP site.

In December 2007, PEF performed a land use survey within 8 km (5 mi.) of the LNP site to identify the nearest residents to the LNP site. The land area around the LNP site was divided into sixteen 22.5-degree sectors with an 8-km (5-mi.) radius. Within each sector, residents were asked to provide, or a visual inspection was performed to determine the numbers of food animals kept on the property; whether a food garden greater than 50 square meters (m^2) (538 square feet [$ft.^2$]) was kept on the property and the number, and use, of wells on the property (e.g., potable water, irrigation, etc.). Table 2.3-19 presents the distances to the nearest residents to the LNP site within each sector.

All of the residents surveyed use groundwater to supply their potable water needs because no public water is available in this relatively remote portion of Levy County. Figure 2.3-40 shows the locations of the nearest resident in each survey sector. The closest surveyed resident is about 2.6 km (1.6 mi.) northwest of the LNP site. Private water wells ranged from 6 to 137 m (20 to 450 ft.) bgs in depth. No other water well details or usage rates were available from private residents.

2.3.2.4 Future Water Use

The SWFWMD has developed a water management plan and estimated future water demands. The LNP site spans Levy, Citrus, and Marion counties. These plans are discussed below.

2.3.2.4.1 Levy County

Table 2.3-20 summarizes the Levy County area future water use in 5-year increments through the year 2025. Projected water use is divided into four major categories — agricultural water demand, industrial water demand, public water demand, and aesthetic and recreational water demand. Results are given in average water use for the county and the one-in-ten drought event. The one-in-ten drought event is the 10 percent probability that an event would result in an increase in water demand in any given year. The results indicate the increased water demand if such an event were to occur.

Agricultural water demand for Levy County consists of irrigated crops and non-irrigated crops (aquaculture, diary, cattle, poultry, and others). Non-irrigated demand is projected to remain stable until 2025 at 0.4 mld (0.1 mgd), while total agricultural demand is projected to fall from an average of 24.8 mld (6.55 mgd) in 2005 to 6.17 in 2025. The one-in-ten drought event demand is expected to fall from 28.5 mld (7.52 mgd) in 2005 to 27.0 mld (7.12 mgd) in 2025. Industrial/commercial water demand is expected to increase from 0.132 mld (0.035 mgd) in 2005 to 0.148 mld (0.039 mgd) in 2025. There is no present or projected water use for mining/dewatering or power generation. As shown in the table, public supply water demand estimates and projections for Levy County increase from 13.9 mld (3.681 mgd) in 2005 to 19.7 mld (5.203 mgd) in 2025. The one-in- ten drought event demand is estimated to be 14.8 mld (3.902 mgd) in 2005 and 20.9 mld (5.516 mgd) in 2025. Average aesthetic/recreational water use is projected to increase from 0.08 mld (0.021 mgd) in 2005 to 0.11 mld (0.030 mgd) in 2025 and the one-in-ten drought event is projected to increase from 1.53 mld (0.405 mgd) in 2005 to 2.14 mld (0.565 mgd) in 2025. (Reference 2.3-054)

2.3.2.4.2 Citrus County

Table 2.3-20 summarizes the Citrus County area future water use in 5-year increments through the year 2025. Agricultural water demand for Citrus County consists of irrigated crops and non-irrigated crops (aquaculture, diary, cattle, poultry, and others). Non-irrigated demand is projected to remain stable until 2025 at 0.38 mld (0.1 mgd), while total agricultural demand is projected to fall from an average of 2.04 mld (0.54 mgd) in 2005 to 1.51 mld (0.40 mgd) in 2025. The one-in-ten drought event demand is expected to fall from 2.16 mld (0.57 mgd) in 2005 to 1.55 mld (0.41 mgd) in 2025. Industrial/commercial water demand is expected to increase from 1.50 mld (0.397 mgd) in 2005 to 1.69 mld (0.447 mgd) in 2025, Mining/dewatering water demand is projected to increase from 1.50 mld (0.396 mgd) in 2005 to 1.69 mld (0.446 mgd) in 2025, and power generation water demand is projected to remain stable at 4.96 mld (1.309 mgd) through 2025. Table 2.3-20 shows that public supply water demand estimates and projections for Citrus County increase from 76.56 mld (20.226 mgd) in 2005 to 106.65 mld (28.173 mgd) in 2025. The one-in-ten drought event demand is estimated to be 81.16 mld (21.439 mgd) in 2005 and 113.04 mld (29.863 mgd) in 2025. Average aesthetic/recreational water use is projected to increase from 0.50 mld (0.132 mgd) in 2005 to 0.67 mld (0.177 mgd) in 2025 and the one-in-ten drought event is projected to increase from 1.82 mld (0.481 mgd) in 2005 to 2.44 mld (0.644 mgd) in 2025. (Reference 2.3-054)

2.3.2.4.3 Marion County

Table 2.3-20 summarizes the Marion County area future water use in 5-year increments through the year 2025. Agricultural water demand for Marion County consists of irrigated crops and non-irrigated crops (aquaculture, diary, cattle, poultry, and others). Non-irrigated demand is projected to remain stable until 2025 at 1.51 mld (0.4 mgd), while total agricultural demand is projected to increase from an average of 22.37 mld (5.91 mgd) in 2005 to 28.05 mld (7.41 mgd) in 2025. The one-in-ten drought event demand is expected to increase from 23.32 mld (6.16 mgd) in 2005 to 33.35 mld (8.81 mgd) in 2025. Industrial/commercial water demand is expected to increase from 0.48 mld (0.128 mgd) in 2005 to 0.55 mld (0.145 mgd) in 2025. There is no present or projected water use for mining/dewatering or power generation. Table 2.3-20 shows that public supply water demand estimates and projections for Marion County increase from 72.90 mld (19.259 mgd) in 2005 to 111.96 mld (29.578 mgd) in 2025. The one-in-ten drought event demand is estimated to be 77.28 mld (20.415 mgd) in 2005 and 118.68 mld (31.353 mgd) in 2025. Average aesthetic/recreational water use is projected to increase from 0.31 mld (0.083 mgd) in 2005 to 0.44 mld (0.117 mgd) in 2025 and the one-in-ten drought event is projected to increase from 2.72 mld (0.720 mgd) in 2005 to 3.83 mld (1.012 mgd) in 2025. (Reference 2.3-054)

2.3.3 WATER QUALITY

This subsection describes the water quality conditions in the surface water and groundwater that may potentially affect or be affected by the construction and operation of the LNP. The potential construction effects on water quality are discussed in ER Chapter 4. Operational effects on water quality are discussed in ER Chapter 5.

The State of Florida's water quality standard program is based on the federal CWA of 1977. The following subsections describe the water quality of surface water and groundwater.

2.3.3.1 Surface Water

The water bodies near the LNP include the Withlacoochee River, Waccasassa River, Rainbow Springs, and the CFBC. These water bodies are classified by the FDEP as CLASS III (recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife) waters. Florida's surface water quality standards system is published in 62-302 (and 62-302.530) of the F.A.C.

Water samples were collected and analyzed for PEF quarterly during 2007 at sampling stations SS-1 and SS-2. PEF also collected samples at sampling stations along the CFBC and into the Gulf of Mexico from October through December 2007. The locations of these sample stations are shown on Figure 2.3-8. Historical USGS data were also reviewed. The analytical data from the PEF sampling events and from the historical USGS sampling are summarized in the following subsections.

2.3.3.1.1 Withlacoochee River

Data from six USGS Stations (02313200, 02313230, 02313231, 02313250, 02313272, and 02313274) along the Withlacoochee River and one preapplication monitoring station (SS-2) which is located east of the Inglis Dam near the Inglis Lock Bypass Channel were collected and summarized in Tables 2.3-21, 2.3-22, 2.3-23, 2.3-24, 2.3-25, 2.3-26, 2.3-27, 2.3-28, 2.3-29, 2.3-30, 2.3-31, 2.3-32, 2.3-33, 2.3-34, 2.3-35, 2.3-36, and 2.3-37. The locations of these stations are shown on Figure 2.3-8.

2.3.3.1.1.1 USGS Station 02313200

USGS Station 02313200 is located on the Withlacoochee River at Dunnellon, Florida (Figure 2.3-6). Data were collected from this station between May 1996 and July 2006. The field parameters are summarized in Table 2.3-21.

Temperature measurements ranged from 11 to 32 degrees Celsius (°C) (51.8 to 89.6 degrees Fahrenheit [°F]) and varied seasonally. As shown in Table 2.3-21, the mean temperature is 23°C (73.4°F).

Specific conductance measurements ranged from 165 to 804 microSiemens per centimeter (µS/cm) with a mean of 264 µS/cm. The State of Florida's water quality standard dictates that it may not exceed 50 percent of background readings. During the last several years the specific conductance readings were within the range of values acceptable under the water quality standard.

Dissolved oxygen (DO) concentrations ranged from 0.9 to 13.2 milligrams per liter (mg/L), varied seasonally, and were higher in the winter months and lower in the summer months. According to Table 2.3-21, the mean DO concentration is 6.4 mg/L. Since 2006, the DO measurements have been approximately 5 mg/L, which is at the minimum water quality standard for DO (greater than [>] 5 mg/L).

The hydrogen ion concentration (pH) values ranged from 6 to 8 standard units (SU) with no significant temporal trends. The median pH value was 7.3.

Tables 2.3-21 and 2.3-22 present the water quality analytical data from USGS Station 02313200. Data from the most recent monitoring event conducted by the USGS (March 20, 1997) in which analytical samples were collected show that all water quality parameters were within the State of Florida's water quality standards. Other than sulphate levels increasing from 15 mg/L to 22 mg/L from June 31, 1966 to April 14, 1981, no significant temporal trends were identified. Table 2.3-23 presents a summary of the metals data collected at USGS Station 02313200.

2.3.3.1.1.2 USGS Stations 02313230 and 02313231

USGS stations 02313230 and 02313231 are located on the Withlacoochee River at Inglis Dam. USGS Station 02313230 is located above the dam and USGS Station 0231231 is below the dam (Figure 2.3-6). Tables 2.3-24, 2.3-25, 2.3-26, 2.3-27, 2.3-28, and 2.3-29 summarize the data collected from these stations.

A summary of the field parameter data at these stations are presented on Tables 2.3-24 and 2.3-27 and were generally within the State of Florida's water quality standards. Field parameters measured at station 02313230 have 178 occurrences ranging from 1963 to 1999. However, the majority of these measurements (175) were obtained between 1963 and 1978 with only one measurement recorded in 1981, 1984, and 1999. USGS Station 02313231 has 148 occurrences ranging from 1963 to 1984 with only one measurement recorded in 1984. Temperature measurements varied seasonally and ranged from 10.5 to 35°C (50.9 to 95°F) for USGS Station 02313230 and from 10.5 to 32°C (50.9 to 89.6°F) for USGS Station 02313231.

The pH values ranged from 6.6 to 9 SU at USGS Station 02313230 and 6.4 to 8.3 SU at USGS Station 02313231. DO concentrations ranged from 0.4 to 14 mg/L at USGS Station 02313230 and from approximately 6.5 to 10.4 to mg/L at USGS Station 02313231. DO levels were typically about the 5 mg/L minimum, including the latest measurements; however, there were a few measurements less than 5 mg/L including results of 1.6 and 1.9 mg/L in the last quarter of 1975.

DO concentrations varied seasonally — they were higher in the winter months and lower in the summer months.

Water quality parameters were recorded from 1963 to1977 and are presented in Tables 2.3-25, 2.3-27, 2.3-28, and 2.3-29. Water quality parameter concentrations at both USGS Stations 02313230 and 02313231 were within the State of Florida's water quality standards. However, concentrations of fecal coliform were as high as 3200 colonies per 100 milliliters (mL) and had an average of 537 colonies per 100 mL at USGS Station 02313230. The presence of fecal coliform in surface water suggests that the surface water quality near USGS Station 02313230 may be impaired due to stormwater runoff from urban and agricultural areas. No fecal coliform measurements were taken below the dam at USGS Station 02313231.

2.3.3.1.1.3 USGS Station 02313250

USGS Station 02313250, which is located at the Inglis Lock Bypass Channel along the Withlacoochee River recorded data from 1971 to 1984 with only one reading in 1984 (#23 on Figure 2.3-6). Tables 2.3-30, 2.3-31, and 2.3-32 present data from this station.

The field parameters are presented in Table 2.3-30. Forty-three temperature measurements were collected, with only 33 and 26 measurements collected for DO and pH, respectively. The majority of the temperature measurements were collected during later years. The temperature measurements varied seasonally and ranged from 14 to 30°C (57.2 to 86°F). DO concentrations ranged from 2.8 to 11.4 mg/L and pH values ranged from 6 to 8 SU.

Water quality data are present in Table 2.3-31. There were only small variances in the water quality parameters at USGS Station 02313250. Ammonia levels were above the State of Florida's water quality standard of 0.02 mg/L and ranged from 0.02 to 0.08 mg/L.

Metals data are presented in Table 2.3-32. Metals were measured eight times between 1971 and 1982 and are within the State of Florida's water quality standards. The August 1980 measurements have maximum levels for magnesium, sodium, potassium, and silica, possibly indicating higher turbidity in the channel.

2.3.3.1.1.4 USGS Station 02313272

At USGS Station 02313272 located at Chambers near Yankeetown on the Withlacoochee River, temperature and specific conductance data were averaged for each month during 2007 (#24 on Figure 2.3-6 and Table 2.3-33). Temperature measurements varied seasonally and ranged from 13.9 to 32.6°C (57.02 to 90.68°F). Specific conductance ranged from 11,689.3 to 40,452.6 µS/cm.

2.3.3.1.1.5 USGS Station 02313274

At USGS Station 02313274, which is located at Bungalow pass at Port Inglis on the Withlacoochee River, temperature and specific conductance data were collected and averaged for each month during 2007 (#25 on Figure 2.3-6 and Table 2.3-34). Temperature measurements varied seasonally and ranged from 13.9 to 29.3°C (57.02 to 84.74°F). Specific conductance ranged from 6123.8 to 37,683.3 µS/cm.

2.3.3.1.1.6 SS-2 (Sampling Station)

SS-2 is located east of the Inglis Lock near the bypass channel of the Withlacoochee River within Lake Rousseau (Figure 2.3-8). Field parameters and analytical data were recorded quarterly from March 2007 to December 2007. Tables 2.3-35, 2.3-36, and 2.3-37 present the data for SS-2.

Field parameters are presented in Table 2.3-35. Field parameter measurements were collected four times during 2007; however, temperature was only measured three times. The temperature ranged from 18.41 to 29.89°C with an average of 23.43°C (65.14 to 85.80°F). The DO concentration ranged from 0.67 to 9.3 mg/L, with an average of 6.00 mg/L. The specific conductance ranged from 0.166 to 0.4 µS/cm and averaged 0.27 µS/cm. The pH was between 7.94 and 8.62 SU and averaged 8.25 SU. The oxidation reduction potential (ORP) varied from 98.9 to 220.7 millivolts (mV) with an average of 153.7 mV. The turbidity averaged 38.79 nephelometric turbidity units (NTU), but this was aided by a high turbidity reading of 151.5 NTU during the first sample collection event in March 2007.

Water quality data for SS-2 are presented in Table 2.3-36. There is no Florida water quality standards for fresh water for any of the parameters listed in the table. There were slight temporal variances in the water quality parameters at SS-2.

Metals data for SS-2 are presented in Table 2.3-37. The metals concentrations exhibited slight variations throughout the year. Concentrations of all metals analyzed were below the State of Florida's surface water quality standards.

2.3.3.1.2 Rainbow Springs

Data from USGS Station 02313100 were collected at Rainbow Springs near Dunnellon (#19 on Figure 2.3-6). Data collected from 1956 to 1999 are presented in Tables 2.3-38, 2.3-39, and 2.3-40.

Field parameters are presented in Table 2.3-38. Temperature measurements varied seasonally and ranged from 20 to 25.5°C (68 to 77.9°F). The pH values ranged from 5.8 to 9 SU and the DO values ranged from 4.2 to 12.3 mg/L.

Water quality analytical data are presented in Table 2.3-39. There were only slight temporal variances in the water quality parameters at USGS Station

2313100. Water quality parameters were within the State of Florida's water quality standards.

Table 2.3-40 summarizes the metals data collected from 1956 to 1999 at USGS Station 02313100. The test results indicate calcium, magnesium, sodium, potassium, silica, arsenic, copper, iron, lead, manganese, nickel, zinc, and mercury were within normal water quality levels.

2.3.3.1.3 Waccasassa River

Data from USGS Station 02313700, located on the Wassacassa River near Gulf Hammock (#13 on Figure 2.3-6) were collected from 1963 to 1977. A summary of the data are presented in Tables 2.3-41, 2.3-42, and 2.3-43.

Table 2.3-38 presents a summary of the field data. Temperature measurements varied seasonally and ranged from 11.1 to 32°C (51.98 to 89.6°F). The pH values ranged from 6.6 to 7.9 SU and the DO values ranged from 3.7 to 9.3 mg/L.

Table 2.3-42 presents the water quality analytical data. There were only small temporal variances in the water quality parameters except for sulphate. In May 1968, sulphate was detected at a concentration of 1180 mg/L, which is significantly greater than other recorded sulphate concentrations. During May 1968, the hardness of water was measured at a maximum concentration of 2900 mg/L. Otherwise, all water quality parameters showed no unusual measurements and were within normal water quality standards.

Table 2.3-43 summarizes the metals data collected from 1963 to 1973 from USGS Station 02313700. The test results indicate concentrations of the metals calcium, magnesium, sodium, potassium, chloride, silica, arsenic, copper, iron, lead, manganese, nickel, zinc, and mercury were below normal water quality standards.

2.3.3.1.4 Cross Florida Barge Canal

There are four sampling stations (Stations 1-3 and SS-1) along the CFBC (Figure 2.3-8). Although SS-2 is also located on the CFBC, it will be considered part of Lake Rousseau since it is located east of the Inglis Lock. Also, historical analytical data was collected from 1970 through 1977 from analytical samples from USGS Station 02313237 and the results are summarized on Tables 2.3-44, 2.3-45, and 2.3-46. The proposed LNP intake structure will be located about 0.8 km (0.5 mi.) west of the Inglis Lock on the canal. The preapplication thermal monitoring program included quarterly sampling at station SS-1 in March 2007, June 2007, September 2007, and December 2007. This monitoring was performed to evaluate seasonal variations in water temperature and salinity within the canal at the proposed location of the LNP intake structure. Field measurements including temperature, salinity, dissolved oxygen, pH, conductivity, salinity, oxygen reduction potential, and turbidity measurements were collected at the surface of the canal using a YSI® Multiprobe or Multiparameter Instrument (or equivalent meter).

Water quality monitoring was performed at three locations (Station 1, Station 2, and Station 3) within the CFBC in conjunction with the ecological/water quality characterization effort. Measurements were collected at Station 1 and Station 2 on October 16, 2007 and November 11, 2007 and at Station 3 on October 16, 2007, October 18, 2007, and November 19, 2007. Monitoring was also performed quarterly at SS-1 (March 2007, June 2007, September 2007, and December 2007) as part of the preapplication monitoring efforts near the proposed makeup water intake location.

This subsection provides an overview of the field data, water quality analytical data, and metals data for temporal and spatial trends along the CFBC. Tables 2.3-35, 2.3-36, and 2.3-37 present the data from the four stations along the CFBC that were monitored in 2007. The data are summarized in the subsections that follow.

2.3.3.1.4.1 Temperature

Temperature was measured at each station at depths ranging from 0.15 to 5 m at Stations 1-3 and at 0.15 m at SS-1 as shown on Table 2.3-35. The stratification was not apparent across the depth interval measured; however, temperature decreased throughout the water column during the winter months. Average temperatures for the length of the water column ranged from 21.30 to 23.38°C (70.3 to 74.1°F). Surface water temperatures ranged from 20.09 to 29.13°C (68.2 to 84.4°F). No significant spatial temperature changes were seen in the 2007 data.

2.3.3.1.4.2 Dissolved Oxygen

DO was measured at each station at depths ranging from 0.15 to 5 m at Stations 1-3 and at 0.15 m at SS-1 as shown on Table 2.3-35. DO concentrations ranged from 3.69 to 4.61 mg/L. As the depth of water increased at Station 1-3, the DO concentrations decreased slightly. DO concentrations measured at the surface at SS-1 ranged from 0.52 to 8.19 mg/L.

2.3.3.1.4.3 Specific Conductance

Specific conductance was measured at each station at depths ranging from 0.15 to 5 m at Stations 1-3 and at 0.15 m at SS-1 as shown on Table 2.3-35. Specific conductance increased with depth (from the surface up to approximately 10 ft). The conductance over the length of the water column at Stations 1-3 ranged from 34.87 to 40.23 μS/cm, and the conductance at 0.15 m at Stations 1-3 and SS-1 ranged from 1.949 to 15.65 μS/cm. There were slight spatial variances among the stations. Station 2 exhibited lower conductances at the surface than either Station 1 or 3, and SS-1 exhibited lower concentrations than any of the stations. Very little temporal variation was observed at these stations.

2.3.3.1.4.4 pH and Total Alkalinity

The pH was measured at each station at depths ranging from 0.15 to 5 m at Stations 1-3 and at 0.15 m at SS-1 as shown on Table 2.3-35. There were no significant spatial trends for pH. The median pH levels for all stations ranged from approximately 7.6 to 7.92 SU, and varied only slightly with depth. Total alkalinity was measured at the surface at SS-1 only and ranged from 89 to 102 mg/L.

2.3.3.1.4.5 Nitrogen

Nitrogen data are presented in Table 2.3-36. Nitrogen as total nitrogen, ammonia nitrogen (NH_3-N), and nitrate plus nitrite were measured within the CFBC. Total nitrogen concentrations ranged from 0.20 to 2.3 mg/L. The mean concentrations of the samples collected at the surface ranged from 0.235 to 1.34 mg/L.

2.3.3.1.4.6 Phosphorus

Phosphorus data are presented in Table 2.3-36. Average phosphorus concentrations along the CFBC ranged from 0.05 to 0.102 mg/L. The concentrations decreased from east to west along the canal.

2.3.3.1.4.7 Ions and Hardness

Ions (chloride, sulphate, calcium, and magnesium) and hardness data are presented in Tables 2.3-36 and 2.3-37. Only samples from SS-1 were analyzed for these parameters. There were temporal variations of chloride, sulphate, calcium, and magnesium observed for SS-1. March 2007 data for chloride, sulphate and magnesium were much lower in concentration than the subsequent samples collected in 2007. Chloride concentrations ranged from 741 to 1790 mg/L. Sulphate ranged from 139 to 288 mg/L. Calcium range from 59.9 to 75.8mg/L. Magnesium ranged from 50.9 to121 mg/L. Hardness at SS-1 exhibited slight temporal variation. For most of the year the hardness ranged from 602 to 710 mg/L as calcium carbonate ($CaCO_3$); however, in March 2007, the hardness was 366 mg/L as $CaCO_3$.

2.3.3.1.4.8 Metals

Table 2.3-37 summarizes metals concentrations within the CFBC. The concentrations of copper, nickel, and zinc decreased with distance from east to west along the canal, and the concentration of iron increased from east to west. Small temporal variations were observed.

2.3.3.1.4.9 Water Clarity

Turbidity and Secchi depth measurements data are presented in Table 2.3-35. Turbidity was measured at SS-1 quarterly in 2007 and ranged from 0.7 to 21.4 NTU. Secchi depth measurements were measured at Stations 1-3. Average Secchi depth measurements ranged from 1.10 to 1.70 m.

2.3.3.1.5 Gulf of Mexico

Monitoring was performed in the Gulf of Mexico beyond the CFBC at four locations (Station 4, Station 5, Station 6, and Station 7) as part of an ecological/water quality characterization effort (Figure 2.3-8). Samples were collected at the four stations on October 16, 2007, October 18, 2007, and November 19, 2007. This subsection provides an overview of the field data, water quality analytical data, and metals data for temporal and spatial trends. Tables 2.3-47, 2.3-48, and 2.3-49 present the data.

2.3.3.1.5.1 Field Parameters

The field parameters for each of the four stations are presented in Table 2.3-47. The average temperature at the four stations exhibited temporal variation between October and December 2007; however, no stratification or spatial variation was exhibited. The average temperature for the length of the water column ranged from 20.26 to 22.05°C (68.5 to 71.7°F).

The DO concentrations exhibited a slight spatial variation with average concentrations increasing from east to west. The DO concentrations were averaged for the length of the water column and ranged from 4.15 mg/L to 5.84 mg/L. Temporal variation was observed at Stations 6 and 7.

The pH exhibited no spatial or temporal variation and no stratification was observed. The pH ranged from 7.92 to 8.12 SU.

The specific conductance at the four stations exhibited some spatial variation with conductance increasing from east to west. The average conductance ranged from 44.55 to 52.66 µS/cm. Stratification was observed at Station 4 with the conductance increasing with depth; however, this was not observed at any other location. No temporal variation was exhibited between the sampling events.

The salinity of the water increased from east to west, as the stations are located further into the Gulf of Mexico. The average salinity ranged from 29.92 to 34.71 parts per thousand (ppt). Stratification was only observed at Station 4 where the salinity increased with depth. No temporal variations were exhibited.

2.3.3.1.5.2 Nitrogen

Total nitrogen and nitrate+nitrite nitrogen were analyzed from the sampling stations within the Gulf of Mexico. Total nitrogen and nitrate+nitrite concentrations exhibited no spatial or temporal variations. The mean of the total nitrogen samples ranged from 0.2 to 0.265 mg/L and the mean of the nitrate+nitrite samples ranged from 0.033 to 0.15 mg/L.

2.3.3.1.5.3 Phosphorus

Average phosphorous concentration exhibited very little spatial variation with the mean of the samples ranging from 0.021 to 0.039 mg/L. The highest concentration was measured at Station 4, which is located furthest inland. No temporal variation was exhibited.

2.3.3.1.5.4 Metals

Metal concentrations in the Gulf of Mexico samples are presented in Table 2.3-49. Of the metals analyzed (copper, iron, nickel, and zinc) only iron exhibited some spatial variation with the mean of the samples decreasing from east to west. The mean of the iron samples ranged from 3.4 to 135 micrograms per liter (μg/L). No temporal variation was observed in the metal concentrations.

2.3.3.1.6 Crystal River Energy Complex Discharge Canal

Currently, a surface water sampling program is being conducted to collect surface water samples for the CREC discharge canal. Details for the sampling program are outlined in ER Chapter 6. Analytical data for the CREC discharge canal will be available for review as the data become available.

The CREC's existing discharge canal is not waters of the State; instead, it is an essential component of the "point source" or "wastewater facility" for regulatory purposes. PEF relies on the heat loss in the canal to come into temperature compliance by the end of it, hence the helper cooling towers along its banks.

Pursuant to Section 403.0885(2), F.S., the Department "is empowered to establish a state NPDES program in accordance with Section 402 of the federal Clean Water Act." Requirements under the Clean Water Act are applicable to discharges from point sources that are released into jurisdictional waters. (See Rule 62-660.400(1), F.A.C.) The term "point source" is defined as "any discernible, confined, and discrete conveyance," such as a "ditch" or "channel," Rule 62-620.200(37), F.A.C. Similarly, the term "wastewater facility" means a facility discharging into jurisdictional waters; the term "wastewater facility" includes the wastewater "transmission system," Rule 62-620.200(55), F.A.C.

Simply put, the CREC discharge canal is a classic example of an existing "discrete conveyance" that constitutes part of an existing point source, not jurisdictional waters. As explained in Rule 62-302.520(3)(g), F.A.C., the point of discharge for a thermal discharge is "that point at which the effluent physically leaves its carrying conduit (open or closed), and discharges into the waters of the state…." This confirms that the discharge canal itself is not jurisdictional waters. Note that the existing discharge canal was constructed specifically to transport the Crystal River cooling water from the plant to jurisdictional waters. Because "waste transport" is specifically excluded as a permissible designated use for jurisdictional waters (40 CFR 131.10), it would not be logical to assert that water quality standards (which include designated uses) apply within the discharge canal.

2.3.3.2 Groundwater

The following descriptions of the groundwater quality conditions are based on groundwater samples collected from wells MW-13S, MW-14D, MW-15S, and MW-16D during the quarterly sampling performed in March, June, and September 2007 (Figure 2.3-41). Tables 2.3-50, 2.3-51, and 2.3-52 summarize the data collected.

The field parameters are summarized on Table 2.3-50. From the four wells sampled, pH ranged from 6.45 to 7.01 SU, the average conductivity ranged from 0.341 to 0.532 μS/cm, the average DO concentration ranged from 0.17 to 0.27 mg/L, and the average temperature ranged 21.96 to 23.10°C.

Groundwater analytical data are summarized on Table 2.3-51 and include carbon dioxide (CO_2), total dissolved solids (TDS), total suspended solids (TSS), hardness, chlorine, sulphate, sulphide, alkalinity, bicarbonate, ammonia, Kjeldahl nitrogen, phosphorus, orthophosphate, biological oxygen demand (BOD), chemical oxygen demand (COD), and total organic carbon (TOC). For all analytical parameters that have drinking water standards in the State of Florida, each was within the limits. No temporal trends were observed.

Groundwater metals data are summarized on Table 2.3-52 and include arsenic, boron, calcium, chromium, copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, zinc, mercury, and silica. For all analytical parameters that have drinking water standards in the State of Florida, each was within the limits. No temporal trends were observed.

2.3.3.3 Impaired Waters and Pollutant Sources

Section 303(d) of the CWA requires states to develop a list of waters that either do not meet water quality standards or have impaired uses. Listed waters must be prioritized, and a management strategy or total maximum daily load (TMDL) must subsequently be developed for all listed waters. The 303(d) list is intended for updating and publishing on a 5-year cycle. Due to the complexity of the implemented watershed study approach and the TMDL evaluations, many states, including Florida, have developed revolving scheduled review cycles. The most recent review cycle of impaired waters in Florida dates from 2002. The Withlacoochee River Basin, including Lake Rousseau, is scheduled for a water quality review, including a TMDL, with a submittal date of 2010. It is not clear from the available information if the CFBC is to be included in the scheduled 2010 TMDL review. Coastal waters in the vicinity of the LNP site are listed as Class II waters, waters suitable for shellfish propagation or harvesting. The CFBC is not specifically mentioned as a coastal water and it is not clear from the available listing of Class II waters if it is included in that designation. While the coastal waters listed as Class II are not individually designated as 303(d) waters, all coastal waters in Florida are judged as impaired and listed as 303(d) waters due to measured mercury levels in edible fish. Figures 2.3-42 and 2.3-43 and Table 2.3-53 present the water bodies that are on the Florida impaired waters list and are within the vicinity of the LNP. Although these were not identified as pollutant sources, the locations of WWTP facilities within 10 km (6 mi.) are plotted on Figure 2.3-44.

2.3.4 REFERENCES

2.3-001 Progress Energy, “Progress Energy Florida Names Potential Nuclear Plant Site in Levy County,” Website, progress-energy.com/aboutus/news/article.asp?id=15462, accessed August 8, 2007.

2.3-002 St. Petersburg Times, TampaBay.com, “Progress picks Levy for new nuclear plant,” December 13, 2006, Website, www.sptimes.com/2006/12/13/Tampabay/Progress_picks_Levy_f.shtml, accessed August 27, 2007.

2.3-003 Florida Department of Environmental Protection, “Basin Status Report, Suwannee,” November 2001.

2.3-004 U.S. Geological Survey, “Gainesville, Florida 1:240,000 Topographic Map,” revised 1978.

2.3-005 Environmental Data Resources, The EDR Radius Atlas™ with GeoCheck®- Progress Energy. Inquiry Number: 01926970.1r”, May 14, 2007.

2.3-006 Florida Department of Environmental Protection, Office of Greenways and Trails, “Water Control Plan for Inglis Project Works, Cross Florida Greenway Recreation and Conservation Area and Lake Rousseau,”June 2001.

2.3-007 U.S. Geological Survey, “USGS 02313700, Waccasassa River near Gulf Hammock, FL,” Website, waterdata.usgs.gov/nwis/uv?02313700, accessed April 25, 2008.

2.3-008 U.S. Geological Survey, “USGS Surface-Water Monthly Statistics for the Nation, USGS 02313700 Waccasassa River near Gulf Hammock, FL,” Website, waterdata.usgs.gov/nwis/monthly/?referred_module=sw&site_no=02313700&por_02313700_3=2396281,00060,3,1963-04,2007-09&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list, accessed May 15, 2008.

2.3-009 U.S. Geological Survey, "USGS 02313700 Waccasassa River near Gulf Hammock, FL, Discharge," Website, waterdata.usgs.gov/nwis/dv?cb_00060=on&cb_00065=on&cb_72020=on&cb_00055=on&cb_00010=on&format=html&begin_date=1962-10-01&end_date=2007-09-30&site_no=02313700&referred_module=sw, accessed May 15, 2008.

2.3-010 U.S. Geological Survey, "USGS 02313700 Waccasassa River near Gulf Hammock, FL, Gage Height," Website, waterdata.usgs.gov/nwis/dv?cb_00065=on&format=html&begin_date=1977-10-01&end_date=2008-05-14&site_no=02313700&referred_module=sw, accessed May 15, 2008.

2.3-011 Southwest Florida Water Management District, *Withlacoochee River Watershed Plan*, 2001.

2.3-012 Southwest Florida Water Management District, "Green Swamp Interactive," Website www.swfwmd.state.fl.us/education/interactive/greenswamp/textonly.html, accessed August 7, 2007.

2.3-013 Florida Department of Environmental Protection, Division of Water Resources Management, "Water Quality Status Report: Withlacoochee," 2005.

2.3-014 U.S. Fish and Wildlife Service, "Coordination Act Report: Draft Withlacoochee River, Wetland/Habitat Restoration and Water Quality Enhancement Project," September 2005.

2.3-015 U.S. Geological Survey, "USGS 02313200, Withlacoochee River at Dunnellon, FL," Website, waterdata.usgs.gov/nwis/dv/?site_no=02313200&amp, accessed September 6, 2007.

2.3-016 U.S. Geological Survey, "USGS 02313230, Withlacoochee River at Inglis Dam near Dunnellon, FL," Website, waterdata.usgs.gov/nwis/dv/?site_no=02313230&amp, accessed August 9, 2007.

2.3-017 U.S. Geological Survey, "USGS 02313231, Withlacoochee River below Inglis Dam near Dunnellon, FL," Website, waterdata.usgs.gov/nwis/dv?cb_00065=on.007-07-31&site_no=02313231&referred_module=sw, accessed January 22, 2008.

2.3-018 U.S. Geological Survey, “USGS 02313250, Withlacoochee River Bypass Channel near Inglis, FL,” Website, waterdata.usgs.gov/nwis/dv/?site_no=02313250&amp, accessed August 9, 2007.

2.3-019 U.S. Geological Survey, “USGS 02313272, Withlacoochee River at Chambers IS near Yankeetown, FL,” Website, waterdata.usgs.gov/nwis/dv?cb_00065=on&...=2007-9-30&site_no=02313272&referred_module=sw, accessed December 3, 2007.

2.3-020 U.S. Geological Survey, “USGS Surface-Water Monthly Statistics for the Nation, USGS 02313250, Withlacoochee River Bypass Channel near Inglis, FL,” Website, waterdata.usgs.gov/nwis/monthly?referred_module=sw&site_no=02313250&por_02313250_2=2396182,00060,2,1970-01,2006-09&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list, accessed August 9, 2007.

2.3-021 U.S. Geological Survey, “Peak Streamflow for the Nation USGS 02313250, Withlacoochee River Bypass Channel near Inglis, FL,” Website, nwis.waterdata.usgs.gov/nwis/peak?site_no=02313250&agency_cd=USGS&format=html, accessed August 9, 2007.

2.3-022 Florida Department of Environmental Protection, Office of Greenways and Trails, “Inglis Lock Review,” Report No. IA-03-21-2005-128,” August 2005.

2.3-023 Southwest Florida Water Management District, “Structure Profile: Inglis Bypass Spillway,” October 25, 2001.

2.3-024 Southwest Florida Water Management District, “Structure Profile: Inglis Main Dam,” November 16, 2001.

2.3-025 The Rainbow River, Website, www.therainbowriver.com/index.html, accessed August 8, 2007.

2.3-026 U.S. Geological Survey, “USGS 02313100, Rainbow Springs near Dunnellon, FL,” Website, waterdata.usgs.gov/nwis/dv?cb_00060=on...007-07-31&site_no=02313100&referred_module=sw, accessed January 22, 2008.

2.3-027 U.S. Geological Survey, "USGS Surface-Water Monthly Statistics for Florida, USGS 02313100, Rainbow Springs near Dunnellon, FL," Website, nwis.waterdata.usgs.gov/nwis/monthly/?referred_module=sw&site_no=02313100&por_02313100_2=2396175,00060,2,1965-01,2007-09&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list, accessed January 22, 2008.

2.3-028 U.S. Geological Survey, "Peak Streamflow for Florida, USGS 02313100, Rainbow Springs near Dunnellon, FL" Website, nwis.waterdata.usgs.gov/fl/nwis/peak?site_no=02313100&agency_cd=USGS&format=html, accessed January 22, 2008.

2.3-029 U.S. Geological Survey, "USGS Surface-Water Monthly Statistics for the Nation, USGS 02313230, Withlacoochee River at Inglis Dam near Dunnellon, FL," nwis.waterdata.usgs.gov/nwis/monthly/?referred_module=sw&site_no=02313230&por_02313230_2=2396178,00060,2,1969-10,2007-09&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list, accessed August 9, 2007.

2.3-030 U.S. Geological Survey, "Peak Streamflow for Flordia, USGS 02313230, Withlacoochee River at Inglis Dam near Dunnellon, FL," Website, nwis.waterdata.usgs.gov/nwis/peak/?site_no=02313230&agency_cd=USGS, accessed February 2, 2008.

2.3-031 U.S. Geological Survey, "USGS 02313200, Withlacoochee River at Dunnellon, FL, Gage Height," Website, nwis.waterdata.usgs.gov/nwis/dv?cb_00065=on&format=html&begin_date=1963-02-06&end_date=2007-09-30&site_no=02313200&referred_module=sw, accessed October 10, 2007.

2.3-032 U.S. Geological Survey, "USGS Surface-Water Annual Statistics for the Nation, USGS 02313200 Withlacoochee River at Dunnellon, FL," Website, waterdata.usgs.gov/nwis/annual?referred_module=sw&site_no=02313200&por_02313200_2=2396177,00065,2,2001,2007&year_type=W&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_list, accessed December 3, 2007.

2.3-033 National Oceanic and Atmospheric Administration, "Orthometric Height Conversion," VERTCON, Website, www.ngs.noaa.gov/cgi-bin/VERTCON/vert_con.prl, accessed January 15, 2008.

2.3-034 U.S. Geological Survey, "USGS 02313230, Withlacoochee River at Dunnellon, FL, Gage Height," nwis.waterdata.usgs.gov/fl/nwis/dv?cb_00065=on&format=html&begin_date=1985-10-01&end_date=2007-09-30&site_no=02313230&referred_module=sw, accessed October 10, 2007.

2.3-035 U.S. Geological Survey, "USGS 02313231, Withlacoochee River Bl Inglis Dam Near Dunnellon, FL, Gage Height," Website nwis.waterdata.usgs.gov/fl/nwis/dv?cb_00065=on&format=html&begin_date=1969-10-01&end_date=2007-09-30&site_no=02313231&referred_module=sw, accessed October 8, 2007.

2.3-036 U.S. Geological Survey, "USGS 02313250, Withlacoochee River Bypass Channel near Inglis, FL, Gage Height," Website, waterdata.usgs.gov/fl/nwis/dv?cb_00060=on&cb_00065=on&format=html&begin_date=1971-07-16&end_date=2007-09-30&site_no=02313250&referred_module=sw, accessed October 10, 2007.

2.3-037 U.S. Geological Survey, "USGS 02313272, Withlacoochee River at Chambers Island near Yankeetown, FL, Gage Height," Website, nwis.waterdata.usgs.gov/nwis/dv?cb_00065=on&format=html&begin_date=2005-01-28&end_date=2007-09-30&site_no=02313272&referred_module=sw, accessed December 3, 2007.

2.3-038 National Weather Service, Advanced Hydrologic Prediction Service, Tampa Bay Area: Withlacoochee River at Dunnellon," Website, ahps.srh.noaa.gov/ahps2/hydrograph.php?wfo=tbw&gage=dnfl1, accessed October 8, 2007.

2.3-039 Claude Pepper Center, "The Cross-Florida Barge Canal Project: A Guide to Selected Materials in the Claude Pepper Selection," Website, pepper.cpb.fsu.edu/guides/FlyerCanal.htm, accessed August 14, 2007.

2.3-040 U.S. Army Corps of Engineers, "Project Portfolio: Cross-Florida Barge Canal," Website, www.saj.usace.army.mil/digitalproject/dpn/sajn_006.htm, accessed August 23, 2007.

2.3-041 Florida Defenders of the Environment, "Restoring the Ocklawaha River Ecosystem: The Cross Florida Barge Canal . . . The Cross Florida Greenway," Website, www.fladefenders.org/publications/restoring3.html, accessed September 6, 2007.

2.3-042 Florida Geological Survey, "Florida's Groundwater Quality Monitoring Program," Special Publication No. 32, October 1992.

2.3-043 Randazzo, Anthony F. and Douglas S. Jones, eds., The Geology of Florida, 1997.

2.3-044 Miller, James A., "Hydrogeologic Framework of the Floridan Aquifer System in Florida, and in Parts of Georgia, Alabama and South Carolina," USGS Professional Paper 1403-B, 1986.

2.3-045 Ryder, Paul D., "Hydrology of the Floridan Aquifer System in West-Central Florida," USGS Professional Paper 1403-F, 1985.

2.3-046 Southwest Florida Water Management District, "Aquifer Characteristics within the Southwest Florida Water Management District," Report 99-1, 2006.

2.3-047 Johnson, Richard H. and Peter W. Bush, "Summary of the Hydrology of the Floridan Aquifer System In Florida and in Parts of Georgia, South Carolina, and Alabama," Professional Paper 1403-A, Website sofia.usgs.gov/publications/papers/pp1403a/flaqsys.html, accessed January 15, 2008.

2.3-048 National Resource Conservation Service, "Soil Data Mart," Website, soildatamart.nrcs.usda.gov/Survey.aspx?County=FL075&UseState=FL, accessed March 20, 2008.

2.3-049 Florida Department of Environmental Protection, Source Water Assessment and Protection Program, "Public Water Supply: Search for Assessment Results by County," Website, www.dep.state.fl.us/swapp/search.asp, accessed March 20, 2008.

2.3-050 Southwest Florida Water Management District, "Well Requests," received from Courtney Toomer, Regulation Processing Specialist, Well Construction Regulation Section, Regulation Performance Management Department, Southwest Florida Water Management District, via e-mail November 16 and 19, 2007.

2.3-051 Suwannee River Water Management District, "Water Well Depth Owner Search," Website, fl-suwanneeriver.civicplus.com/waterwelldepthownersearch/waterwelldepthownersearch.asp, accessed January 31, 2008.

2.3-052 Florida Department of Environmental Protection, "Public Water Systems," Website, www.dep.state.fl.us/swapp/PWSType.asp, accessed January 25, 2008.

2.3-053 Florida Department of Environmental Protection, "SWAPP Data Request," e-mail received by CH2M HILL from FDEP, January 28, 2008.

2.3-054 Southwest Florida Water Management District, "Regional Water Supply Plan," December 2006.

2.3-055 U.S. Geological Survey, "Estimated Use of Water in the United States County-Level Data for 2000," Website, water.usgs.gov/watuse/data/2000/index.html, accessed August 9, 2007.

2.3-056 U.S. Geological Survey, "Water Quality Samples for the Nation, USGS 02313200, Withlacoochee River at Dunnellon, FL" Website, nwis.waterdata.usgs.gov/nwis/qwdata?search_site_no=02313200+&search_site_no_match_type=exact&format=station_list&sort_key=site_no&group_key=NONE&sitefile_output_format=html_table&column_name=agency_cd&column_name=site_no&column_name=station_nm&begin_date=&end_date=&TZoutput=0&qw_attributes=0&inventory_output=0&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression=file&list_of_search_criteria=search_site_no, accessed December 16, 2007.

2.3-057 U.S. Geological Survey, "Water Quality Samples for the Nation, USGS 02313230, Withlacoochee River at Inglis Dam near Dunnellonn, FL " Website, nwis.waterdata.usgs.gov/nwis/qwdata?search_site_no=02313230&search_site_no_match_type=exact&format=station_list&sort_key=site_no&group_key=NONE&sitefile_output_format=html_table&column_name=agency_cd&column_name=site_no&column_name=station_nm&begin_date=&end_date=&TZoutput=0&qw_attributes=0&inventory_output=0&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression=file&list_of_search_criteria=search_site_no, accessed December 14, 2007.

2.3-058 U.S. Geological Survey, " Water Quality Samples for the Nation, USGS 02313231, Withlacoochee River below Inglis Dam near Dunnellon, FL," Website, nwis.waterdata.usgs.gov/nwis/qwdata?search_site_no=02313231&search_site_no_match_type=exact&format=station_list&sort_key=site_no&group_key=NONE&sitefile_output_format=html_table&column_name=agency_cd&column_name=site_no&column_name=station_nm&begin_date=1963-03-21&end_date=1984-10-17&TZoutput=0&qw_attributes=0&inventory_output=0&rdb_inventory_output=file&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression=file&list_of_search_criteria=search_site_no, accessed February 8, 2008.

2.3-059 U.S. Geological Survey, “Water Quality Samples for the Nation, USGS 02313250, Withlacoochee River Bypass Channel near Inglis, FL” Website, nwis.waterdata.usgs.gov/nwis/qwdata?site_no=02313250&agency_cd=USGS&begin_date=&end_date=&TZoutput=0&qw_attributes=0&inventory_output=0&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=brief_list, accessed December 14, 2007.

2.3-060 U.S. Geological Survey, “Water Quality Samples for the Nation, USGS 02313272, Withlacoochee River at Chambers Island near Yankeetown, FL”, nwis.waterdata.usgs.gov/nwis/dv?site_no=02313272, accessed January 3, 2008.

2.3-061 U.S. Geological Survey, “Water Quality Samples for the Nation, USGS 02313274, Withlacoochee River at Bungalow Pass at Port Inglis, FL,” Website, nwis.waterdata.usgs.gov/nwis/qwdata?site_no=02313274&agency_...te_format=YYYY-MM-DD&rdb_compression=file&submitted_form=brief_list, accessed August 15, 2008.

2.3-062 U.S. Geological Survey, “Water Quality Samples for the Nation, USGS 02313100, Rainbow Springs near Dunnellon, FL, " Website, nwis.waterdata.usgs.gov/nwis/qwdata?search_site_no=02313100+&search_site_no_match_type=exact&format=station_list&sort_key=site_no&group_key=NONE&sitefile_output_format=html_table&column_name=agency_cd&column_name=site_no&column_name=station_nm&begin_date=&end_date=&TZoutput=0&qw_attributes=0&inventory_output=0&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression=file&list_of_search_criteria=search_site_no, accessed December 2007.

2.3-063 U.S. Geological Survey, “Water Quality Samples for the Nation,Monitoring Station 02313700, Waccasassa River Near Gulf Hammock, FL,” Website, nwis.waterdata.usgs.gov/nwis/qwdata?search_site_no=02313700+&search_site_no_match_type=exact&format=station_list&sort_key=site_no&group_key=NONE&sitefile_output_format=html_table&column_name=agency_cd&column_name=site_no&column_name=station_nm&begin_date=&end_date=&TZoutput=0&qw_attributes=0&inventory_output=0&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression=file&list_of_search_criteria=search_site_no, accessed December 16, 2007.

2.3-064 U.S. Geological Survey "Water Quality Samples for the Nation, USGS 02313237, Barge Canal at Inglis Lock near Inglis, FL, " Website, nwis.waterdata.usgs.gov/nwis/qwdata?search_site_no=02313237&search_site_no_match_type=exact&format=station_list&sort_key=site_no&group_key=NONE&sitefile_output_format=html_table&column_name=agency_cd&column_name=site_no&column_name=station_nm&begin_date=&end_date=&TZoutput=0&qw_attributes=0&inventory_output=0&qw_sample_wide=wide&rdb_qw_attributes=0&date_format=YYYY-MM-DD&rdb_compression+file&list_of_search_criteria=search_site_no, accessed December 16, 2007.

2.3-065 U.S. Environmental Protection Agency, "Impaired Waters 03110101 Waccasassa," and "Impaired Waters 03100208 Withlacoochee," Websites, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-3729&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-3703_A&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-8037&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-3699&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1378&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1399&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1329H&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1476&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1329B&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1357&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1381&p_cycle=2002, oaspub.epa.gov/tmdl/enviro.control?p_list_id=FL-1320A&p_cycle=2002,accessed December 18, 2007.

2.3-066 U.S. Environmental Protection Agency, "Sole Source Aquifers in the Southeast," Website, http://www.epa.gov/Region4/water/groundwater/r4ssa.html, accessed June 16, 2009.

2.3-067 Neuman, S.P., "Effect of partial penetration on flow in unconfined aquifers considering delayed gravity response," Water Resources Research, vol. 10, no. 2, pp. 303-312, 1974.

Table 2.3-1 (Sheet 1 of 2)
Monthly Mean Streamflow Measurements for Inglis Bypass Channel near Inglis, Florida

Levy County
USGS Station Identification #: 02313250
Hydrologic Unit Code: 03100208
Latitude: 29°01'15"
Longitude: -82°38'17"

	Monthly Mean Streamflow, in ft^3/sec											
Year	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
1970	1131	961.8	1217	1293	1427	1372	1319	1336	1353	1366	1245	1180
1971	1184	1320	1228	1175	917.4	782	922.3	1411	1405	1393	1402	1243
1972	1123	1283	1187	1436	1098	1062	1056	1107	654.3	264.9	240.5	484
1973	966.5	1463	1396	1468	1233	1072	1221	1384	1577	1594	1243	1196
1974	1210	1030	992.2	875.5	783.6	916.3	1311	1063	1264	1513	1269	1164
1975	1100	1019	860.3	792.5	723.7	683.7	730.4	807.5	1149	1408	1278	1034
1976	971	855.6	740.1	712.2	893.4	1256	1539	1395	1282	1322	1098	1115
1977	1365	1407	1292	937.3	759.6	750	749	788.7	921	851.2	775.7	888.4
1978	1070	1394	1326	1442	1192	1158	1248	1550	1472	1040	896.3	914.2
1979	1069	1127	1255	1123	1457	1232	1035	1182	1428	918.3	1566	1551
1980	1429	1366	1258	1262	1170	1115	1388	1201	1169	962.3	1097	1080
1981	932.9	991.9	886.7	773	658	663.1	621.5	674.1	710.6	727.5	736.1	729.9
1982	844.8	1017	1414	1562	1323	1397	1122	1228	1096	997.2	1027	920
1983	684.3	1049	1459	1387	1430	1508	1482	1462	1459	1478	1462	1444
1984	1418	1467	1408	1574	1518	1551	1548	1557	1433	1168	1193	1029
1985	956.1	892	748.8	664.7	574	724.5	836.4	1289	1098	1359	1312	1171
1986	1445	1475	1480	1323	979.2	971.5	1070	896.5	1146	1043	903.5	951.1
1987	1028	1181	1339	1201	1427	1295	1287	1027	1004	861.7	492.5	1093
1988	1130	1367	835.4	1549	1291	1207	1114	1217	1124	1256	1475	1565
1989	1549	1502	1384	1046	896.3	915.6	978.5	928.2	925	827.3	831.3	779.3

Table 2.3-1 (Sheet 2 of 2)
Monthly Mean Streamflow Measurements for Inglis Bypass Channel near Inglis, Florida

Year	Monthly Mean Streamflow, in ft^3/sec											
	January	February	March	April	May	June	July	August	September	October	November	December
1990	560.7	576.3	649.3	699.8	585.5	636	688.1	811.8	890.1	753.1	619.8	572
1991	571.9	548	688.2	807.2	853.3	1011	1075	1400	1276	920.6	754.5	692.6
1992	561.2	640.9	572.1	569	530	566.8	609.6	663.8	642.3	650	908.8	946.4
1993	839.3	894.1	1107	1210	818.1	645.2	859	770.6	818.4	734.2	715.5	619
1994	848.4	903.9	827.6	777.5	660.2	691	718.2	857.9	925.9	1,135	1310	1288
1995	1225	917.5	747.1	755.6	688.5	622.1	778.2	977.5	1254	1251	1310	1217
1996	1286	1310	1289	1310	1310	1098	1255	1293	1235	1078	964.5	947.1
1997	904.3	830.9	772.7	683.7	628.6	573.3	583.3	685.2	727	983.4	1281	1574
1998	1107	1058	962.1	1108	1419	1335	1354	1362	1395	1535	1380	1329
1999	1311	1353	1076	877.9	853.3	909.5	863.8	929.9	686.2	695.1	835.2	681.9
2000	605.4	597	469.5	463.8	379.4	364.2	492.8	521.7	508.4	485.5	479.5	436
2001	434.9	442.2	504.5	463.2	382.7	407	441.5	363.7	609.2	1523	1022	737.1
2002	732.6	641.1	667.1	485.9	362.5	517.3	1068	1490	1500	1439	1175	1237
2003	1432	1426	1444	1443	1118	1279	1441	1398	1398	1451	1452	1265
2004	1161	1270	1437	1120	798.5	882.3	962	980.9	1276	1148	1373	1413
2005	1439	1396	1311	1325	1301	1378	1388	1271	1432	1445	1452	1451
2006	1381	1439	1204	955.8	734	579.6	811.5	747.4	778.2	ND	ND	ND
Mean of Monthly Streamflow (ft^3/sec)	1050	1090	1070	1040	951	949	1030	1080	1110	1100	1070	1050

Notes:

ND = no data available for the given time period
ft^3/sec = cubic feet per second

Source: Reference 2.3-020

Table 2.3-2 (Sheet 1 of 2)
Yearly Maximum Average Daily Streamflow Measurements for Inglis Bypass Channel near Inglis, Florida

Levy County
USGS Station Identification #: 02313250
Hydrologic Unit Code: 03100208
Latitude: 29°01'15"
Longitude: -82°38'17"

Year	Date	Streamflow (ft^3/sec)
1971	Sep. 09, 1971	1550
1972	Apr. 09, 1972	1690
1973	Sep. 02, 1973	1740
1974	Oct. 06, 1973	1660
1975	Oct. 01, 1974	1550
1976	Jun. 30, 1976	1620
1977	Jan. 04, 1977	1630
1978	Aug. 02, 1978	1600
1979	May. 14, 1979	1660
1980	Jan. 27, 1980	1630
1981	Nov. 25, 1980	1610
1982	Jun. 19, 1982	1800
1983	Feb. 19, 1983	1610
1984	Feb. 22, 1984	1760
1985	Aug. 16, 1985	1540
1986	Jan. 22, 1986	1670
1987	Mar. 09, 1987	1580
1988	Oct. 01, 1987	1840
1989	Feb. 01, 1989	1640

Table 2.3-2 (Sheet 2 of 2) Yearly Maximum Average Daily Streamflow Measurements for Inglis Bypass Channel near Inglis, Florida

Year	Date	Streamflow (ft^3/sec)
1990	Jul. 15, 1990	1540
1991	Sep. 10, 1991	1630
1992	Oct. 06, 1991	1160
1994	Jan. 31, 1994	1310
1995	Oct. 27, 1994	1400
1996	Oct. 07, 1995	1310
1997	Sep. 30, 1997	1310
1998	Dec. 25, 1997	1820
1999	Oct. 03, 1998	1580
2000	Oct. 22, 1999	1260
2001	Sep. 29, 2001	1500
2002	Oct. 08, 2001	1540
2003	Oct. 10, 2002	1470
2004	Oct. 13, 2003	1480
2005	Jul. 19, 2005	1590

Notes:

ft^3/sec = cubic feet per second

Source: Reference 2.3-021

Table 2.3-3 (Sheet 1 of 2)
Monthly Mean Streamflow Measurements for Rainbow River near Dunnellon, Florida

Marion County
USGS Station Identification #: 02313100
Hydrologic Unit Code: 03100208
Latitude: 29°06'08"
Longitude: -82°26'16"

	Monthly Mean Streamflow, in ft^3/sec											
Year	January	February	March	April	May	June	July	August	September	October	November	December
1965	895.6	857.1	865.4	834.2	831.9	847	878.9	992.9	1039	1023	953.4	907
1966	895.1	824.7	846.8	845.3	840	842.7	865.2	881.5	910.4	938.1	915.1	868.7
1967	823.9	807.5	801.6	766.1	719.7	695.5	695.8	731.5	786.4	780.1	752.5	722.9
1968	692.8	667.6	649.9	628.5	611.9	618.8	692.3	777	844.6	850.5	856.6	823.8
1969	784.9	758.5	759.4	776.5	756.4	748.9	732.7	738.3	808.3	864.4	817.6	822.7
1970	842.5	914.7	945.2	940.6	924.6	914	879	911.9	986.4	933	849.2	793.9
1971	748.5	725.5	701.5	680.8	683.8	681.7	680.1	723.9	788.3	781.1	766.1	731.2
1972	705.5	689.7	672.2	677.3	665.5	652	661.4	666.4	724.9	733.1	702.8	676.4
1973	649.8	661.4	672.6	701.6	706.8	677.6	671.2	715.9	739.6	738.9	728.2	693.3
1974	650.4	624	601.7	590.1	580.5	595.4	648.8	688.2	730	733.6	697.4	666.7
1975	636.2	613.7	603.5	608.5	589	551.6	562.5	579.3	588.9	624.8	640	636.6
1976	625.8	609.2	595.4	575.2	552.4	635.9	676.3	689.1	681	675.9	661.8	645.2
1977	667.5	679.6	662.1	638.3	611.1	589.4	571.1	561.2	567.8	561.2	562	563.3
1978	579.2	642.2	801.8	814.7	753.6	715	698.7	730	746.6	719.5	689.1	662.5
1979	642.9	637.9	632.2	625.4	634.1	651	644.2	641.2	685.2	845	813.9	756.2
1980	712.2	694.8	670.1	668.3	659.6	654.8	724.8	731.5	730.1	712.4	695.2	677.6
1981	655.3	636.2	617.9	600.5	583.1	567.6	559.5	561.6	575.3	590	592	581.4
1982	573.7	571.1	589	638	685.1	714	852.2	871.8	918.8	987.1	923.5	853.6
1983	795.9	766.4	780.2	822.5	837.4	793.3	781.2	799.4	830.4	883.2	863.7	839.7
1984	837.1	835.9	829.5	840.2	842.4	825.5	838.5	863.8	854.9	821.7	775.4	732.6
1985	705.9	681.3	656.1	633	606.3	590.6	615.1	676.5	875	878.3	838.6	793.3
1986	779	780	769.4	770.3	743.5	721.2	702.9	698.5	733	755.6	737.4	720.1

Table 2.3-3 (Sheet 2 of 2)
Monthly Mean Streamflow Measurements for Rainbow River near Dunnellon, Florida

	Monthly Mean Streamflow, in ft^3/sec											
Year	January	February	March	April	May	June	July	August	September	October	November	December
1987	712.1	707.2	737.3	850.7	854.6	803.9	779.8	758.1	742.1	735.3	723.6	707.5
1988	693.2	694	725.3	771.4	747.3	720.4	704.8	715.4	948.1	944.3	849.7	802
1989	756.1	718.6	694.2	666.2	641.9	628.3	643.5	639.3	633.5	640.5	639.8	626.4
1990	611.3	600.6	585.2	576.1	552.9	546.1	570.2	610.1	624.5	603.2	586.2	565.5
1991	541.9	525.1	532.5	583.5	629.6	659.5	658.1	675.8	676.8	658.3	643	618.1
1992	593.2	574	561.8	570.4	557.6	534.4	554.3	573.5	616.2	727.6	739.3	701
1993	663.5	630.7	629	643.6	644	627.2	613.4	615.7	623.5	611.7	616.5	620.2
1994	618.1	662.9	697.9	679.5	650.3	630.6	621.5	633.7	639.9	687.6	703.9	691.6
1995	677.7	672.6	650.7	636.9	613.7	607.5	610.6	642.5	678	680.5	685.2	671.2
1996	690.9	682.8	670	703.3	698	686.2	711.5	755.8	773.5	754.7	724.1	707.5
1997	686.5	665.8	641.5	633	627.5	627.6	637.5	663.1	685.1	705.6	788.3	900.5
1998	934	924	1016	956.7	884.9	844.9	790.4	777	801.5	885.2	884.5	843.9
1999	789.5	728.2	674.5	649.4	621.5	611.2	611.4	619.7	620.4	602.6	592.5	583
2000	569.2	556.8	540.9	526.6	503.6	499	524.3	536.7	549.5	525.4	536.7	532.2
2001	519.8	514.2	514.2	513.7	491	479.7	486.8	547.1	593.9	640.9	623.6	598.9
2002	578.6	560.3	541.5	519.2	493.5	485.7	529	569	581.8	589.8	568.3	564.2
2003	592.1	594.7	631.6	659.8	633.8	645.5	776.8	794.4	780.4	ND	ND	ND
2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	734.2	705.3	686.2
2006	660.2	678.6	662.4	629.7	600.4	589.2	587.6	580.6	583.4	ND	ND	ND
Mean of Monthly Streamflow (ft^3/sec)	695	684	686	686	672	663	676	698	732	748	729	707

Notes:

ND = no data available for the given time period
ft^3/sec = cubic feet per second

Source: Reference 2.3-027

Table 2.3-4 (Sheet 1 of 2)
Yearly Maximum Average Daily Streamflow Measurements for Rainbow River near Dunnellon, Florida

Marion County
USGS Station Identification #: 02313100
Hydrologic Unit Code: 03100208
Latitude: 29°06'08"
Longitude: -82°26'16

Year	Date	Streamflow (ft^3/sec)
1966	Oct. 01, 1965	1040
1967	Oct. 17, 1966	945
1968	Sep. 19, 1968	856
1969	Oct. 29, 1968	867
1970	Sep. 11, 1970	993
1971	Oct. 01, 1970	978
1972	Oct. 19, 1971	785
1973	Oct. 08, 1972	744
1974	Sep. 25, 1974	755
1975	Oct. 01, 1974	750
1976	Aug. 18, 1976	692
1977	Feb. 05, 1977	684
1978	Mar. 26, 1978	852
1980	Oct. 16, 1979	859
1981	Oct. 01, 1980	724
1982	Sep. 30, 1982	987
1983	Oct. 07, 1982	1000
1984	Oct. 17, 1983	891
1985	Sep. 20, 1985	915
1986	Oct. 01, 1985	904
1987	Apr. 25, 1987	879
1988	Sep. 19, 1988	1060
1989	Oct. 01, 1988	1010

Table 2.3-4 (Sheet 2 of 2)
Yearly Maximum Average Daily Streamflow Measurements for Withlacoochee River at Inglis Dam near Dunnellon, Florida

Marion County
USGS Station Identification #: 02313100
Hydrologic Unit Code: 03100208
Latitude: 29°06'08"
Longitude: -82°26'16

Year	Date	Streamflow (ft^3/sec)
1990	Oct. 21, 1989	643
1991	Aug. 30, 1991	693
1992	Oct. 02, 1991	667
1993	Oct. 25, 1992	756
1994	Mar. 04, 1994	707
1995	Nov. 21, 1994	707
1996	Aug. 30, 1996	783
1997	Oct. 07, 1996	774
1998	Mar. 21, 1998	1030
1999	Nov. 05, 1998	892
2000	Oct. 22, 1999	608
2001	Sep. 27, 2001	626
2002	Oct. 23, 2001	650
2003	Aug. 23, 2003	803
2004	Sep. 30, 2004	921
2005	Oct. 20, 2004	835

Notes:

ft^3/sec = cubic feet per second

Source: Reference 2.3-028

Table 2.3-5 (Sheet 1 of 2)
Monthly Mean Streamflow Measurements for Withlacoochee River at Inglis Dam near Dunnellon, Florida

Levy County
USGS Station Identification #: 02313230
Hydrologic Unit Code: 03100208
Latitude: 29°00'35"
Longitude: -82°37'01"
Drainage Area: 2020 mi.^{2}

	Monthly Mean Streamflow, in ft^3/sec											
Year	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
1969	ND	ND	ND	ND	ND	ND	ND	ND	ND	2655	2573	2035
1970	2445	3207	2497	1670	377.4	191.7	150	719.4	463.3	233.2	180	180
1971	173.9	238.2	182.6	125.7	80	124.3	145.5	396.5	1011	593.2	180	136.2
1972	75	75	75	99.6	75	190.2	75	91.6	882.9	951.8	897.4	695.8
1973	272.9	241.1	219.7	140.1	70	70	70	118.8	363.1	274.2	70	70
1974	70	70	70	70	70	105.6	796.3	1995	1180.00	354.9	81.4	70
1975	70	70	70	70	70	70	70.8	73	72.3	74.2	104.8	73.1
1976	73.9	73.3	71.9	70	119.2	103.7	204.7	369.6	330.3	168.1	70	71.2
1977	72.2	72.1	73.9	72.8	75.8	74	72.3	72.6	74.4	71.2	72.6	72.7
1978	108.2	203.1	1199	206.2	89.8	71.9	72.4	413.3	228.7	75.9	72	72.4
1979	77.4	82.3	70	72	140.2	79.3	70.2	71.3	645.1	3175	571	108.2
1980	94.5	73.1	71.6	106.9	77.2	175.1	96.3	85.4	90.1	84.4	86.2	86.5
1981	83.4	80.6	84.9	81.4	74.2	71	70.8	70.8	71	71.4	71.3	71.6
1982	71.2	71.4	190.3	191	76.3	696.5	2058	1783	2675	2908	1440	897.7
1983	922.8	1116	1647	1933	908.5	245.3	604.3	1062	980.3	912.5	491.6	561.4
1984	1147	1006	829.9	664.9	652.4	328.4	576.1	676.3	468.1	286.4	77.4	77.2
1985	84.1	82.9	84.2	106.8	84.1	91.7	105.9	239.7	2426	1225	344.8	84.6
1986	494.3	772.1	461.8	104.9	119.9	122.4	202	112.8	108.2	107.6	96	82.5
1987	107.8	70	275.9	2173	1125	214.3	95.1	119.4	129	294.4	741.6	129.8
1988	187.5	252.8	1095	287.8	119.6	104.1	112.9	133	2179	1578	311.4	524.2
1989	276.3	172.4	171	82.1	96.3	122.5	126.8	128.7	114.7	121	112.9	438.4

Table 2.3-5 (Sheet 2 of 2)
Monthly Mean Streamflow Measurements for Withlacoochee River at Inglis Dam near Dunnellon, Florida

Year	Monthly Mean Streamflow, in ft^3/sec											
	January	February	March	April	May	June	July	August	September	October	November	December
1990	601.9	466.2	70	96.2	96.3	104.5	142.5	117.5	111.5	101.7	92.1	84.1
1991	84.6	85.9	70	70	70	92.3	676.6	1037	237.4	115.5	90.9	118.1
1992	194.5	100.5	101	84.7	70	83.9	93.9	146.1	266.7	759.2	167.6	70
1993	117.3	175.1	93.2	88.5	109.6	133.8	91.2	85.8	91.6	290	290	290
1994	319.5	477.3	283.9	97.6	80.5	152.2	90.7	452.1	951.2	1556	911.6	550.6
1995	606.4	669.9	652.5	556.5	458.1	522.8	456.4	596.8	1363	2359	1645	427.5
1996	907	694.4	590.3	1154	741.5	303.1	237.2	502.6	153	166.1	127	168.2
1997	90	77.3	93.8	100.7	110	94.8	131.4	196.3	118.8	107.2	197.5	848.3
1998	4417	4390	5067	3353	648.3	102.1	122.7	200.3	467.9	457.4	452.1	230.4
1999	251.4	285.3	145.3	185.2	77.1	148	163.7	162.9	252.8	208.4	100.4	142.7
2000	161.8	110.2	84.2	106.6	95.1	221.8	162.1	93.6	130.5	70	79.2	74
2001	77.1	70	70	70	70	70	196.6	352.5	458.5	359.4	75.4	70
2002	90.8	70	70	70	70	70	100.6	369.5	747.6	594.1	85.3	293.4
2003	1534	904.8	1203	1009	347.2	796.8	2030	3066	2722	1082	437.1	70
2004	70	111.9	312	70	70	70	73.4	72.3	2136	4925	2422	857.2
2005	491.5	175.9	162.7	313.1	ND	ND	ND	ND	ND	ND	ND	ND
Mean of Monthly Streamflow (ft^3/sec)	470	469	514	438	218	178	301	462	706	816	439	301

Notes:

ND = no data available for the given time period
ft^3/sec = cubic feet per second

Source: Reference 2.3-029

Table 2.3-6 (Sheet 1 of 2)
Yearly Maximum Average Daily Streamflow Measurements for Withlacoochee River at Inglis Dam near Dunnellon, Florida

Levy County
USGS Station Identification #: 02313230
Hydrologic Unit Code: 03100208
Latitude: 29°00'35"
Longitude: -82°37'01"
Drainage Area: 2020 mi.^{2}

Year	Date	Streamflow (ft^3/sec)
1970	Jan. 21, 1970	3600
1971	Sep. 17, 1971	1450
1972	Sep. 08, 1972	2540
1973	Oct. 08, 1972	2440
1974	Aug. 07, 1974	2560
1975	Oct. 01, 1974	685
1976	May 24,1976	890
1977	Oct. 01, 1976	370
1978	Mar. 09, 1978	2220
1979	Sep. 30, 1979	1940
1980	Oct. 12, 1979	4500
1981	Nov. 25, 1980	170
1982	Sep. 23, 1982	4280
1983	Oct. 08, 1982	3820
1984	Mar. 29, 1984	2180
1985	Sep. 01, 1985	3560
1986	Nov. 01, 1985	2540
1987	Apr. 21, 1987	3680
1988	Sep. 06, 1988	4370
1989	Oct. 01, 1988	2790
1990	Jan. 10, 1990	900
1991	Jul. 28, 1991	1620
1992	Sep. 05, 1992	1010
1993	Oct. 03, 1992	3020
1994	Sep. 21, 1994	1480
1995	Oct. 12, 1994	1910
1996	Oct. 05, 1995	2790
1997	Oct. 08, 1996	1240
1998	Mar. 20, 1998	6000
1999	Oct. 01, 1998	2319

Table 2.3-6 (Sheet 2 of 2)
Yearly Maximum Average Daily Streamflow Measurements for Withlacoochee River at Inglis Dam near Dunnellon, Florida

Levy County
USGS Station Identification #: 02313230
Hydrologic Unit Code: 03100208
Latitude: 29°00'35"
Longitude: -82°37'01"
Drainage Area: 2020 $mi.^2$

Year	Date	Streamflow (ft^3/sec)
2000	Sep. 18, 2000	948
2001	Sep. 16, 2001	1300
2002	Sep. 26, 2002	1690
2003	Aug. 25, 2003	3610
2004	Sep. 27, 2004	4600
2005	Oct. 19, 2004	6030

Notes:

ft^3/sec = cubic feet per second

Source: Reference 2.3-030

Table 2.3-7 (Sheet 1 of 2)
U.S. Department of Agriculture (USDA) Soil Summary

Soil Name	Depth (in.)	USDA Texture	Unified Classification	Fragment >10 Inches (%)	Fragment 3-10 Inches (%)	Sieve No. 200 (%)	Organic Matter (%)	Available Water Capacity[a] (in/in)	Moist Bulk Density[b] (g/cm^3)	Porosity[c] (cm^3/cm^3)	Saturated Hydraulic Conductivity[d] (micro m/sec)	pH[e]
Smyrna	0-5	Fine sand	SP, SP-SM	0	0	2-12	1.0-5.0	0.03-0.07	1.35-1.50	0.43-0.49	42-141	3.5-7.3
	5-19	Fine sand, sand	SP, SP-SM	0	0	2-12	0.0-0.5	0.03-0.07	1.35-1.50	0.43-0.49	42-141	3.5-7.3
	19-23	Fine sand, loamy fine sand, sand	SM, SP-SM	0	0	5-20	1.5-6.0	0.10-0.20	1.30-1.45	0.45-0.51	4-42	3.5-7.3
	23-80	Fine sand, sand	SP, SP-SM	0	0	2-10	0.0-0.5	0.03-0.07	1.45-1.70	0.36-0.45	42-141	4.5-5.5
Immokalee	0-9	Fine sand	SP, SP-SM	0	0	2-10	1.0-2.0	0.05-0.10	1.20-1.50	0.43-0.55	42-141	3.5-6.0
	9-38	Fine sand, sand	SP, SP-SM	0	0	2-10	0.0-0.5	0.02-0.05	1.45-1.70	0.36-0.45	42-141	3.5-6.0
	38-43	Fine sand, sand	SM, SP-SM	0	0	5-21	2.0-5.0	0.10-0.25	1.30-1.70	0.36-0.51	4-14	3.5-6.0
	43-80	Fine sand, sand	SP, SP-SM	0	0	2-10	0.0-0.3	0.02-0.05	1.40-1.70	0.36-0.47	42-141	3.5-6.0
Basinger	0-6	Sand	SP-SM	0	0	5-12	0.5-4.0	0.03-0.07	1.40-1.55	0.42-0.47	141-353	4.5-6.0
	6-35	Sand	SP-SM	0	0	5-12	0.0-0.5	0.05-0.10	1.40-1.55	0.42-0.47	141-353	5.6-7.8
	35-64	Sand	SP-SM	0	0	5-12	0.5-2.0	0.10-0.15	1.40-1.65	0.38-0.47	141-353	5.6-7.8
	64-80	Sand	SP-SM	0	0	5-12	0.0-0.5	0.05-0.10	1.50-1.70	0.36-0.43	141-353	5.6-7.8

Table 2.3-7 (Sheet 2 of 2)
U.S. Department of Agriculture (USDA) Soil Summary

Notes:

a) Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in given in inches of water per inch of soil for each soil layer.

b) Moist bulk density is the weight of soil (oven dry) per unit volume. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration.

c) Porosity was calculated using the following equation: Porosity = 1 - (Bulk Density/ Particle Density), where particle density is assumed to equal 2.65 grams per cubic centimeter (g/cm^3)

d) Saturated hydraulic conductivity refers to the ease with which pores in a saturated soil transmit water.

e) pH refers to the soil pH range in water.

in. = inch
in/in = inch per inch
g/cm^3 = gram per cubic centimeter
cm^3/cm^3 = cubic centimeter per cubic centimeter
micro m/sec = micrometer per second
SP = poorly graded sand
SP-SM = poorly graded sand and silty sand
SM = silty sand

Source: Reference 2.3-048

Table 2.3-8 (Sheet 1 of 2)
Summary of Groundwater Levels within the Plant Area

Well Identification	Ground Elevation (ft. NAVD88)	Top of Casing (TOC) Elevation (ft. NAVD88)	Groundwater Surface Elevation March 6, 2007	June 14, 2007	September 13, 2007	December 4, 2007
MW-1S	41.95	45.09	40.50	37.40	36.21	36.31
MW-2S	43.34	45.84	41.93	37.98	36.87	36.21
MW-3S	48.41	51.55	45.82	41.93	41.12	40.66
MW-4S	46.38	48.83	45.09	41.78	40.77	40.93
MW-5S	42.80	45.52	41.74	39.14	37.68	37.59
MW-6D	42.66	45.59	41.40	38.59	37.18	37.27
MW-7S	44.22	46.91	42.54	39.30	38.03	37.99
MW-8D	44.00	46.83	42.21	39.28	37.95	37.97
MW-9S	43.45	46.08	41.75	39.22	37.94	38.05
MW-10D	43.51	46.00	41.72	38.95	37.47	37.71
MW-11S	42.06	44.70	41.30	39.28	37.64	37.66
MW-12D	41.89	44.54	40.73	37.83	36.49	36.58
MW-13S	42.58	45.78	41.94	39.17	37.66	37.70
MW-14D	42.56	45.72	41.83	38.91	37.39	37.56
MW-15S	43.35	46.24	42.05	39.25	38.01	37.88
MW-16D	43.34	46.01	41.73	38.93	37.46	37.68
OW-1	43.21	45.89	41.96	39.17	37.64	37.71
OW-2	42.56	45.62	42.09	39.25	37.73	37.80

Table 2.3-8 (Sheet 2 of 2)
Summary of Groundwater Levels within the Plant Area

Well Identification	Ground Elevation (ft. NAVD88)	Top of Casing (TOC) Elevation (ft. NAVD88)	Groundwater Surface Elevation March 6, 2007	June 14, 2007	September 13, 2007	December 4, 2007
OW-3	42.39	45.48	42.12	39.20	37.68	37.75
OW-4	42.41	45.48	41.97	39.13	37.61	37.69
OW-5	43.15	45.53	41.75	38.87	37.38	37.54
OW-6	42.46	45.57	41.89	39.08	37.55	37.66
OW-7	42.59	45.61	41.98	39.14	37.63	37.73
PW-1	41.99	45.82	42.00	39.17	37.65	37.72

Notes:

a) Elevation units are in feet (ft.) North American Vertical Daturm of 1988 (NAVD88).

b) Ground surface elevation is measured from the concrete well pad at the base of the well with the exception of PW-1, which was taken from ground surface because a well pad was not installed.

Table 2.3-9 (Sheet 1 of 2)
Summary of Piezometer and Monitoring Well Construction Details for the LNP Site

Well ID	Surficial or Bedrock Aquifer	Northing (NAD83)[a]	Easting (NAD83)[a]	Ground Elevation[b] (ft. NAVD88)[c]	Top of Casing (TOC) Elevation (ft. NAVD88)[c]	Flush / Stick-up	Height from TOC to Ground Surface (ft.)	Depth, Top of Screen (ft. BTOC)[d]	Depth, Bottom of Screen[e] (ft. BTOC)	Measured Total Depth[f] (ft. BTOC)	Riser Material	Riser Diameter (in.)	Screen Length (ft.)	Borehole Log / Completion Form available?	Date Installed
MW-1S	Surficial	1719510.77	455053.80	41.95	45.09	Stick-up	3.14	23.40	33.40	33.65	Sch 40 PVC	2	10	Y/Y	1/30/2007
MW-2S	Surficial	1729669.64	455298.09	43.34	45.84	Stick-up	2.50	23.83	33.83	34.08	Sch 40 PVC	2	10	Y/Y	1/29/2007
MW-3S	Surficial	1730335.14	460606.33	48.41	51.55	Stick-up	3.14	23.49	33.49	33.74	Sch 40 PVC	2	10	Y/Y	1/31/2007
MW-4S	Surficial	1721283.93	461369.67	46.38	48.83	Stick-up	2.45	22.80	32.80	33.05	Sch 40 PVC	2	10	Y/Y	1/30/2007
MW-5S	Surficial	1724805.79	456749.35	42.80	45.52	Stick-up	2.72	23.50	33.50	33.75	Sch 40 PVC	2	10	Y/Y	2/6/2007
MW-6D	Bedrock	1724807.03	456756.14	42.66	45.59	Stick-up	2.93	114.11	124.11	124.36	Sch 40 PVC	2	10	Y/Y	2/5/2007
MW-7S	Surficial	1724925.96	458463.69	44.22	46.91	Stick-up	2.69	23.02	33.02	33.27	Sch 40 PVC	2	10	Y/Y	2/1/2007
MW-8D	Bedrock	1724922.19	458475.09	44.00	46.83	Stick-up	2.83	143.25	153.25	153.50	Sch 40 PVC	2	10	Y/Y	1/31/2007
MW-9S	Surficial	1722583.32	458432.35	43.45	46.08	Stick-up	2.63	23.05	33.05	33.30	Sch 40 PVC	2	10	Y/Y	2/6/2007
MW-10D	Bedrock	1722591.07	458428.60	43.51	46.00	Stick-up	2.49	113.67	123.67	123.92	Sch 40 PVC	2	10	Y/Y	1/31/2007
MW-11S	Surficial	1722919.13	456631.88	42.06	44.70	Stick-up	2.64	22.19	32.19	32.44	Sch 40 PVC	2	10	Y/Y	2/13/2007
MW-12D	Bedrock	1722919.35	456622.58	41.89	44.54	Stick-up	2.65	113.39	123.39	123.64	Sch 40 PVC	2	10	Y/Y	2/13/2007
MW-13S	Surficial	1724099.32	457688.61	42.58	45.78	Stick-up	3.20	23.33	33.33	33.58	Sch 40 PVC	2	10	Y/Y	2/7/2007
MW-14D	Bedrock	1724099.32	457695.56	42.56	45.72	Stick-up	3.16	113.84	123.84	124.09	Sch 40 PVC	2	10	Y/Y	2/6/2007
MW-15S	Surficial	1723091.18	458117.36	43.35	46.24	Stick-up	2.89	23.18	33.18	33.43	Sch 40 PVC	2	10	Y/Y	2/11/2007
MW-16D	Bedrock	1723086.94	458110.46	43.34	46.01	Stick-up	2.67	112.50	122.50	122.75	Sch 40 PVC	2	10	Y/Y	2/12/2007
OW-1	Surficial	1724114.06	457688.26	43.21	45.89	Stick-up	2.68	23.31	33.31	33.56	Sch 40 PVC	2	10	Y/Y	2/7/2007

Table 2.3-9 (Sheet 2 of 2)
Summary of Piezometer and Monitoring Well Construction Details for the LNP Site

Well ID	Surficial or Bedrock Aquifer	Northing	Easting	Ground Elevation[b]	Top of Casing (TOC) Elevation	Flush / Stick-up	Height from TOC to Ground Surface	Depth, Top of Screen	Depth, Bottom of Screen[e]	Measured Total Depth[f]	Riser Material	Riser Diameter	Screen Length	Borehole Log / Completion Form available?	Date Installed
		(NAD83)[a]		(ft. NAVD88)[c]			(ft.)	(ft. BTOC)[d]	(ft. BTOC)	(ft. BTOC)		(in.)	(ft.)		
OW-2	Surficial	1724084.22	457702.12	42.56	45.62	Stick-up	3.06	22.96	32.96	33.21	Sch 40 PVC	2	10	Y/Y	2/10/2007
OW-3	Surficial	1724083.78	457718.85	42.39	45.48	Stick-up	3.09	22.97	32.97	33.22	Sch 40 PVC	2	10	Y/Y	2/6/2007
OW-4	Surficial	1724074.76	457678.12	42.41	45.48	Stick-up	3.07	23.05	33.05	33.30	Sch 40 PVC	2	10	Y/Y	2/6/2007
OW-5	Bedrock	1724076.16	457702.65	43.15	45.53	Stick-up	2.38	112.84	122.84	123.09	Sch 40 PVC	2	10	Y/Y	2/8/2007
OW-6	Intermediate	1724100.18	457680.60	42.46	45.57	Stick-up	3.11	68.86	78.86	79.11	Sch 40 PVC	2	10	Y/Y	1/31/2007
OW-7	Intermediate	1724092.30	457702.57	45.59	45.61	Stick-up	0.02	68.77	78.77	79.02	Sch 40 PVC	2	10	Y/Y	2/9/2007
PW-1	Surficial	1724085.88	457687.90	41.99	45.82	Stick-up	3.83	13.68	33.43	33.68	Sch 40 PVC	6	20	Y/Y	2/13/2007

Notes:

a) NAD83: North American Datum of 1983 (1999) SPC FL W US Survey Feet.

b) Ground surface elevation is measured from the concrete well pad at the base of the well with the exception of PW-1, which was taken from ground surface because a well pad was not installed.

c) NAVD88: North American Vertical Datum of 1988.

d) BTOC: below top-of-casing.

e) Well is finished with a 3-inch flat bottom polyvinyl chloride (PVC) sump attached to the bottom of the screen.

f) Measured in the field on March 6, 2007, by CH2M HILL.

Table 2.3-10 (Sheet 1 of 5)
Summary of Groundwater Vertical Gradients within the LNP Site

Well Identification	Interval	Top of Casing (TOC) Elevation (ft. NAVD88)	Depth to Well Screen (ft. BTOC)	Screen Length (ft.)	March 6, 2007 Depth to Water (ft. BTOC)	Bottom of Screen to Top of Screen (L:H)		Top of Screen to Top of Screen (H:H)		Mid-point of Screen to Mid-point of Screen (M:M)		Bottom of Screen to Bottom of Screen (L:L)		Top of Screen to Bottom of Screen (H:L)	
						(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)
MW-5S	Shallow	45.52	23.50	10.0	3.78	0.003	Down	0.004	Down	0.004	Down	0.004	Down	0.004	Down
MW-6D	Deep	45.59	114.11	10.0	4.19										
MW-7S	Shallow	46.91	23.02	10.0	4.37	0.003	Down	0.003	Down	0.003	Down	0.003	Down	0.003	Down
MW-8D	Deep	46.83	143.25	10.0	4.62										
MW-9S	Shallow	46.08	23.05	10.0	4.33	0.0003	Down	0.0003	Down	0.0003	Down	0.0003	Down	0.0004	Down
MW-10D	Deep	46.00	113.67	10.0	4.28										
MW-11S	Shallow	44.70	22.19	10.0	3.40	0.006	Down	0.006	Down	0.006	Down	0.006	Down	0.007	Down
MW-12D	Deep	44.54	113.39	10.0	3.81										
MW-13S	Shallow	45.78	23.33	10.0	3.84	0.001	Down	0.001	Down	0.001	Down	0.001	Down	0.001	Down
MW-14D	Deep	45.72	113.84	10.0	3.89										
MW-15S	Shallow	46.24	23.18	10.0	4.19	0.003	Down	0.004	Down	0.004	Down	0.004	Down	0.004	Down
MW-16D	Deep	46.01	112.50	10.0	4.28										
OW-2	Shallow	45.62	22.96	10.0	3.53	0.002	Down	0.002	Down	0.002	Down	0.002	Down	0.003	Down
OW-7	Intermediate	45.61	68.77	10.0	3.63										
OW-7	Intermediate	45.61	68.77	10.0	3.63	0.004	Down	0.005	Down	0.005	Down	0.005	Down	0.007	Down
OW-5	Deep	45.53	112.84	10.0	3.78										
OW-2	Shallow	45.62	22.96	10.0	3.53	0.003	Down	0.004	Down	0.004	Down	0.004	Down	0.004	Down

Table 2.3-10 (Sheet 2 of 5)
Summary of Groundwater Vertical Gradients within the LNP Site

					March 6, 2007										
						Bottom of Screen to Top of Screen (L:H)		Top of Screen to Top of Screen (H:H)		Mid-point of Screen to Mid-point of Screen (M:M)		Bottom of Screen to Bottom of Screen (L:L)		Top of Screen to Bottom of Screen (H:L)	
Well Identification	Interval	Top of Casing (TOC) Elevation (ft. NAVD88)	Depth to Well Screen (ft. BTOC)	Screen Length (ft.)	Depth to Water (ft. BTOC)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)
OW-5	Deep	45.53	112.84	10.0	3.78										
OW-6	Intermediate	45.57	68.86	10.0	3.68										
MW-14D	Deep	45.72	113.84	10.0	3.89										
MW-5S	Shallow	45.52	23.50	10.0	6.38	0.005	Down	0.006	Down	0.006	Down	0.006	Down	0.007	Down
MW-6D	Deep	45.59	114.11	10.0	7.00										
MW-7S	Shallow	46.91	23.02	10.0	7.61	0.0002	Down	0.0002	Down	0.0002	Down	0.0002	Down	0.0002	Down
MW-8D	Deep	46.83	143.25	10.0	7.55										
MW-9S	Shallow	46.08	23.05	10.0	6.86	0.003	Down	0.003	Down	0.003	Down	0.003	Down	0.003	Down
MW-10D	Deep	46.00	113.67	10.0	7.05										
MW-11S	Shallow	44.70	22.19	10.0	5.42	0.014	Down	0.016	Down	0.016	Down	0.016	Down	0.018	Down
MW-12D	Deep	44.54	113.39	10.0	6.71										
MW-13S	Shallow	45.78	23.33	10.0	6.61	0.003	Down	0.003	Down	0.003	Down	0.003	Down	0.003	Down
MW-14D	Deep	45.72	113.84	10.0	6.81										
MW-15S	Shallow	46.24	23.18	10.0	6.99	0.003	Down	0.004	Down	0.004	Down	0.004	Down	0.004	Down
MW-16D	Deep	46.01	112.50	10.0	7.08										
OW-2	Shallow	45.62	22.96	10.0	6.37	0.002	Down	0.002	Down	0.002	Down	0.002	Down	0.003	Down
OW-7	Intermediate	45.61	68.77	10.0	6.47										

Table 2.3-10 (Sheet 3 of 5)
Summary of Groundwater Vertical Gradients within the LNP Site

					June 14, 2007										
						Bottom of Screen to Top of Screen (L:H)		Top of Screen to Top of Screen (H:H)		Mid-point of Screen to Mid-point of Screen (M:M)		Bottom of Screen to Bottom of Screen (L:L)		Top of Screen to Bottom of Screen (H:L)	
Well Identification	Interval	Top of Casing (TOC) Elevation (ft. NAVD88)	Depth to Well Screen (ft. BTOC)	Screen Length (ft.)	Depth to Water (ft. BTOC)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)
OW-7	Intermediate	45.61	68.77	10.0	6.47	0.005	Down	0.006	Down	0.006	Down	0.006	Down	0.008	Down
OW-5	Deep	45.53	112.84	10.0	6.66										
OW-2	Shallow	45.62	22.96	10.0	6.37	0.004	Down	0.004	Down	0.004	Down	0.004	Down	0.005	Down
OW-5	Deep	45.53	112.84	10.0	6.66										
OW-6	Intermediate	45.57	68.86	10.0	6.49										
MW-14D	Deep	45.72	113.84	10.0	6.81										
MW-5S	Shallow	45.52	23.50	10.0	7.84	0.005	Down	0.006	Down	0.006	Down	0.006	Down	0.006	Down
MW-6D	Deep	45.59	114.11	10.0	8.41										
MW-7S	Shallow	46.91	23.02	10.0	8.88	0.001	Down	0.001	Down	0.001	Down	0.001	Down	0.001	Down
MW-8D	Deep	46.83	143.25	10.0	8.88										
MW-9S	Shallow	46.08	23.05	10.0	8.14	0.005	Down	0.005	Down	0.005	Down	0.005	Down	0.006	Down
MW-10D	Deep	46.00	113.67	10.0	8.53										
MW-11S	Shallow	44.70	22.19	10.0	7.06	0.011	Down	0.013	Down	0.013	Down	0.013	Down	0.014	Down
MW-12D	Deep	44.54	113.39	10.0	8.05										
MW-13S	Shallow	45.78	23.33	10.0	8.12	0.003	Down	0.003	Down	0.003	Down	0.003	Down	0.003	Down
MW-14D	Deep	45.72	113.84	10.0	8.33										
MW-15S	Shallow	46.24	23.18	10.0	8.23	0.006	Down	0.006	Down	0.006	Down	0.006	Down	0.007	Down
MW-16D	Deep	46.01	112.50	10.0	8.55										

Table 2.3-10 (Sheet 4 of 5)
Summary of Groundwater Vertical Gradients within the LNP Site

Well Identification	Interval	Top of Casing (TOC) Elevation (ft. NAVD88)	Depth to Well Screen (ft. BTOC)	Screen Length (ft.)	September 13, 2007: Depth to Water (ft. BTOC)	Bottom of Screen to Top of Screen (L:H) (feet/feet)	Bottom of Screen to Top of Screen (L:H) (up/down)	Top of Screen to Top of Screen (H:H) (feet/feet)	Top of Screen to Top of Screen (H:H) (up/down)	Mid-point of Screen to Mid-point of Screen (M:M) (feet/feet)	Mid-point of Screen to Mid-point of Screen (M:M) (up/down)	Bottom of Screen to Bottom of Screen (L:L) (feet/feet)	Bottom of Screen to Bottom of Screen (L:L) (up/down)	Top of Screen to Bottom of Screen (H:L) (feet/feet)	Top of Screen to Bottom of Screen (H:L) (up/down)
OW-2	Shallow	45.62	22.96	10.0	7.89	0.002	Down	0.002	Down	0.002	Down	0.002	Down	0.003	Down
OW-7	Intermediate	45.61	68.77	10.0	7.98										
OW-7	Intermediate	45.61	68.77	10.0	7.98	0.005	Down	0.006	Down	0.006	Down	0.006	Down	0.007	Down
OW-5	Deep	45.53	112.84	10.0	8.15										
OW-2	Shallow	45.62	22.96	10.0	7.89	0.004	Down	0.004	Down	0.004	Down	0.004	Down	0.004	Down
OW-5	Deep	45.53	112.84	10.0	8.15										
OW-6	Intermediate	45.57	68.86	10.0	8.02	0.003	Down	0.004	Down	0.004	Down	0.004	Down	0.005	Down
MW-14D	Deep	45.72	113.84	10.0	8.33										
MW-5S	Shallow	45.52	23.50	10.0	7.93	0.003	Down	0.004	Down	0.004	Down	0.004	Down	0.004	Down
MW-6D	Deep	45.59	114.11	10.0	8.32										
MW-7S	Shallow	46.91	23.02	10.0	8.92	0.0002	Down	0.0002	Down	0.0002	Down	0.0002	Down	0.0002	Down
MW-8D	Deep	46.83	143.25	10.0	8.86										
MW-9S	Shallow	46.08	23.05	10.0	8.03	0.003	Down	0.004	Down	0.004	Down	0.004	Down	0.004	Down
MW-10D	Deep	46.00	113.67	10.0	8.29										
MW-11S	Shallow	44.70	22.19	10.0	7.04	0.011	Down	0.012	Down	0.012	Down	0.012	Down	0.013	Down
MW-12D	Deep	44.54	113.39	10.0	7.96										

Table 2.3-10 (Sheet 5 of 5)
Summary of Groundwater Vertical Gradients within the LNP Site

					September 13, 2007										
						Bottom of Screen to Top of Screen (L:H)		Top of Screen to Top of Screen (H:H)		Mid-point of Screen to Mid-point of Screen (M:M)		Bottom of Screen to Bottom of Screen (L:L)		Top of Screen to Bottom of Screen (H:L)	
Well Identification	Interval	Top of Casing (TOC) Elevation (ft. NAVD88)	Depth to Well Screen (ft. BTOC)	Screen Length (ft.)	Depth to Water (ft. BTOC)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)	(feet/ feet)	(up/ down)
MW-13S	Shallow	45.78	23.33	10.0	8.08	0.001	Down	0.002	Down	0.002	Down	0.002	Down	0.002	Down
MW-14D	Deep	45.72	113.84	10.0	8.16										
MW-15S	Shallow	46.24	23.18	10.0	8.36	0.002	Down	0.002	Down	0.002	Down	0.002	Down	0.003	Down
MW-16D	Deep	46.01	112.50	10.0	8.33										
OW-2	Shallow	45.62	22.96	10.0	7.82	0.001	Down	0.002	Down	0.002	Down	0.002	Down	0.002	Down
OW-7	Intermediate	45.61	68.77	10.0	7.88										
OW-7	Intermediate	45.61	68.77	10.0	7.88	0.004	Down	0.004	Down	0.004	Down	0.004	Down	0.006	Down
OW-5	Deep	45.53	112.84	10.0	7.99										
OW-2	Shallow	45.62	22.96	10.0	7.82	0.003	Down	0.003	Down	0.003	Down	0.003	Down	0.003	Down
OW-5	Deep	45.53	112.84	10.0	7.99										
OW-6	Intermediate	45.57	68.86	10.0	7.93	0.001	Down	0.002	Down	0.002	Down	0.002	Down	0.002	Down
MW-14D	Deep	45.72	113.84	10.0	8.16										

Notes:

ft. = feet
BTOC = below top-of-casing

Table 2.3-11 (Sheet 1 of 3)
Slug Test Results Data Reduction

	Hydraulic Conductivity (ft/day)		
	Minimum	**Maximum**	**Average**
Shallow Monitoring/Observation Wells:	**0.9**	**28.6**	**9.2**
Intermediate Monitoring/Observation Wells:	**4.0**	**9.9**	**8.1**
Bedrock Monitoring/Observation Wells:	**2.4**	**54.4**	**13.9**

Well ID	Test Type	Fully or Partially Penetrating Well [(a)]	Well Screen Diameter (ft.)	Borehole Diameter (ft.)	Depth to Top of Screen (ft. BTOC)	Depth to Bottom of Screen (ft. BTOC)	Measured Total Depth[(b)] (ft. BTOC)	Depth to Static Water Level[(c)] (ft. BTOC)	Aquifer Thickness (ft.)	Is Water Level in the Well Screen?	Hydraulic Conductivity [(d)] (cm/sec)	Hydraulic Conductivity (ft/day)
MW-1S	In	*Partially*	0.17	0.50	23.40	33.40	33.65	4.59	*45.0*	No	8.4E-03	23.7
MW-1S	Out	*Partially*	0.17	0.50	23.40	33.40	33.65	4.59	*45.0*	No	4.4E-03	12.5
MW-2S	In	*Partially*	0.17	0.50	23.83	33.83	34.08	3.91	*45.0*	No	3.8E-03	10.9
MW-2S	Out	*Partially*	0.17	0.50	23.83	33.83	34.08	3.91	*45.0*	No	3.9E-03	10.9
MW-3S	In	*Partially*	0.17	0.50	23.49	33.49	33.74	5.73	*45.0*	No	8.7E-04	2.5
MW-3S	Out	*Partially*	0.17	0.50	23.49	33.49	33.74	5.73	*45.0*	No	6.9E-04	2.0
MW-4S	In	*Partially*	0.17	0.50	22.80	32.80	33.05	3.74	*45.0*	No	3.8E-03	10.7
MW-4S	Out	*Partially*	0.17	0.50	22.80	32.80	33.05	3.74	*45.0*	No	4.4E-03	12.4
MW-5S	In	*Partially*	0.17	0.50	23.50	33.50	33.75	3.78	*45.0*	No	3.7E-03	10.5
MW-5S	Out	*Partially*	0.17	0.50	23.50	33.50	33.75	3.78	*45.0*	No	3.8E-03	10.7
MW-6D	In	*Partially*	0.17	0.50	114.11	124.11	124.36	4.19	*250.0*	No	1.5E-03	4.1
MW-6D	Out	*Partially*	0.17	0.50	114.11	124.11	124.36	4.19	*250.0*	No	1.3E-03	3.7
MW-7S	In	*Partially*	0.17	0.50	23.02	33.02	33.27	4.37	*45.0*	No	8.8E-03	24.9
MW-7S	Out	*Partially*	0.17	0.50	23.02	33.02	33.27	4.37	*45.0*	No	1.0E-02	28.6
MW-8D	In	*Partially*	0.17	0.50	143.25	153.25	153.50	4.62	*250.0*	No	1.3E-03	3.8
MW-8D	Out	*Partially*	0.17	0.50	143.25	153.25	153.50	4.62	*250.0*	No	1.3E-03	3.7

Table 2.3-11 (Sheet 2 of 3)
Slug Test Results Data Reduction

	Hydraulic Conductivity (ft/day)		
	Minimum	Maximum	Average
Shallow Monitoring/Observation Wells:	**0.9**	**28.6**	**9.2**
Intermediate Monitoring/Observation Wells:	**4.0**	**9.9**	**8.1**
Bedrock Monitoring/Observation Wells:	**2.4**	**54.4**	**13.9**

Well ID	Test Type	Fully or Partially Penetrating Well [a]	Well Screen Diameter (ft.)	Borehole Diameter (ft.)	Depth to Top of Screen (ft. BTOC)	Depth to Bottom of Screen (ft. BTOC)	Measured Total Depth[b] (ft. BTOC)	Depth to Static Water Level[c] (ft. BTOC)	Aquifer Thickness (ft.)	Is Water Level in the Well Screen?	Hydraulic Conductivity [d] (cm/sec)	Hydraulic Conductivity (ft/day)
MW-9S	In	*Partially*	0.17	0.50	23.05	33.05	33.30	4.33	*45.0*	No	3.7E-04	1.0
MW-9S	Out	*Partially*	0.17	0.50	23.05	33.05	33.30	4.33	*45.0*	No	3.4E-04	0.9
MW-10D	In	*Partially*	0.17	0.50	113.67	123.67	123.92	4.28	*250.0*	No	4.1E-03	11.7
MW-10D	Out	*Partially*	0.17	0.50	113.67	123.67	123.92	4.28	*250.0*	No	3.0E-03	8.4
MW-11S	In	*Partially*	0.17	0.50	22.19	32.19	32.44	3.40	*45.0*	No	9.4E-04	2.7
MW-11S	Out	*Partially*	0.17	0.50	22.19	32.19	32.44	3.40	*45.0*	No	9.9E-04	2.8
MW-12D	In	*Partially*	0.17	0.50	113.39	123.39	123.64	3.81	*250.0*	No	3.2E-03	9.0
MW-12D	Out	*Partially*	0.17	0.50	113.39	123.39	123.64	3.81	*250.0*	No	2.7E-03	7.6
MW-13S	In	*Partially*	0.17	0.50	23.33	33.33	33.58	3.84	*45.0*	No	6.0E-04	1.7
MW-13S	Out	*Partially*	0.17	0.50	23.33	33.33	33.58	3.84	*45.0*	No	6.2E-04	1.8
MW-14D	In	*Partially*	0.17	0.50	113.84	123.84	124.09	3.89	*250.0*	No	8.7E-04	2.5
MW-14D	Out	*Partially*	0.17	0.50	113.84	123.84	124.09	3.89	*250.0*	No	8.3E-04	2.4
MW-15S	In	*Partially*	0.17	0.50	23.18	33.18	33.43	4.19	*45.0*	No	6.8E-04	1.9
MW-15S	Out	*Partially*	0.17	0.50	23.18	33.18	33.43	4.19	*45.0*	No	7.1E-04	2.0
MW-16D	In	*Partially*	0.17	0.50	112.50	122.50	122.75	4.28	*250.0*	No	1.9E-02	54.4
MW-16D	Out	*Partially*	0.17	0.50	112.50	122.50	122.75	4.28	*250.0*	No	1.7E-02	47.9
OW-1	In	*Partially*	0.17	0.50	23.31	33.31	33.56	3.93	*45.0*	No	2.1E-03	6.0
OW-1	Out	*Partially*	0.17	0.50	23.31	33.31	33.56	3.93	*45.0*	No	2.2E-03	6.3

Table 2.3-11 (Sheet 3 of 3)
Slug Test Results Data Reduction

	Hydraulic Conductivity (ft/day)		
	Minimum	Maximum	Average
Shallow Monitoring/Observation Wells:	0.9	28.6	9.2
Intermediate Monitoring/Observation Wells:	4.0	9.9	8.1
Bedrock Monitoring/Observation Wells:	2.4	54.4	13.9

Well ID	Test Type	Fully or Partially Penetrating Well [(a)]	Well Screen Diameter (ft.)	Borehole Diameter (ft.)	Depth to Top of Screen (ft. BTOC)	Depth to Bottom of Screen (ft. BTOC)	Measured Total Depth[(b)] (ft. BTOC)	Depth to Static Water Level[(c)] (ft. BTOC)	Aquifer Thickness (ft.)	Is Water Level in the Well Screen?	Hydraulic Conductivity [(d)] (cm/sec)	Hydraulic Conductivity (ft/day)
OW-2	In	*Partially*	0.17	0.50	22.96	32.96	33.21	3.53	*45.0*	No	7.4E-03	20.8
OW-2	Out	*Partially*	0.17	0.50	22.96	32.96	33.21	3.53	*45.0*	No	7.5E-03	21.2
OW-3	In	*Partially*	0.17	0.50	22.97	32.97	33.22	3.36	*45.0*	No	1.7E-03	4.8
OW-3	Out	*Partially*	0.17	0.50	22.97	32.97	33.22	3.36	*45.0*	No	1.3E-03	3.7
OW-4	In	*Partially*	0.17	0.50	23.05	33.05	33.30	3.51	*45.0*	No	4.3E-03	12.1
OW-4	Out	*Partially*	0.17	0.50	23.05	33.05	33.30	3.51	*45.0*	No	3.0E-03	8.4
OW-5	In	*Partially*	0.17	0.50	112.84	122.84	123.09	3.78	*250.0*	No	6.7E-03	19.1
OW-5	Out	*Partially*	0.17	0.50	112.84	122.84	123.09	3.78	*250.0*	No	5.8E-03	16.4
OW-6	In	*Partially*	0.17	0.50	68.86	78.86	79.11	3.68	*250.0*	No	3.1E-03	8.8
OW-6	Out	*Partially*	0.17	0.50	68.86	78.86	79.11	3.68	*250.0*	No	3.5E-03	9.9
OW-7	In	*Partially*	0.17	0.50	68.77	78.77	79.02	3.63	*250.0*	No	3.5E-03	9.8
OW-7	Out	*Partially*	0.17	0.50	68.77	78.77	79.02	3.63	*250.0*	No	1.4E-03	4.0

Notes:

a) Fully penetrating means the entire saturated aquifer was screened.

b) Total well depth = length of casing + length of screen + 3-inch sump.

c) Pressure heads were measured using a Level Troll 700, manufactured by In-Situ Inc.

d) AquiferWin32 software (developed by Environmental Simulations, Inc., Version 3, 1999) and the Bouwer & Rice, 1976 method were used.

cm/sec = centimeters per second
ft. = feet

Table 2.3-12
Aquifer Test Results Data Reduction

Well ID	Fully or Partially Penetrating Well [a]	Well Screen Diameter (ft.)	Borehole Diameter (ft.)	Depth to Top of Screen (ft. BTOC)	Depth to Bottom of Screen (ft. BTOC)	Measured Total Depth[b] (ft. BTOC)	Depth to Static Water Level[c] (ft. BTOC)	Calculated Aquifer Thickness[d] (ft.)	Is water level in the well screen?	Transmis sivity[e,f] (ft^2/day)	Storage Coefficient[e,f]	Beta (B)[e,f]	Specific Yield[e,f]
MW-13S	*Partially*	0.17	0.50	23.33	33.33	33.58	3.84	*29.5*	No	1.3E+03	1.6E-03	2.7E-03	1.7E-01
OW-1	*Partially*	0.17	0.50	23.31	33.31	33.56	3.93	*29.4*	No	2.1E+03	3.4E-04	1.7E-03	1.2E-02
OW-2	*Partially*	0.17	0.50	22.96	32.96	33.21	3.53	*29.4*	No	2.0E+03	7.1E-04	4.3E-03	2.7E-02
OW-3	*Partially*	0.17	0.50	22.97	32.97	33.22	3.36	*29.6*	No	2.2E+03	5.4E-04	2.1E-03	1.7E-02
OW-4	*Partially*	0.17	0.50	23.05	33.05	33.30	3.51	*29.5*	No	2.2E+03	5.3E-04	1.0E-03	1.6E-02

Notes:

a) Fully penetrating means the entire saturated aquifer was screened.

b) Total well depth = length of casing + length of screen + 3-inch sump.

c) Depth-to-groundwater measurements were collected on March 6, 2007.

d) Software uses the value of Aquifer Thickness = depth to bottom of screen - depth to static water level.

e) Pressure heads were measured using a Level Troll 700, manufactured by In-Situ Inc.

f) AquiferWin32 software (developed by Environmental Simulations, Inc., Version 3, 1999) and the Neuman, 1974 method were used.

ft. = feet
ft^2/day = square feet/day

Table 2.3-13 (Sheet 1 of 3)
Groundwater Linear Flow Velocity

Monitoring Wells			Hydraulic Conductivity[c] [*K*] (ft/day)			Water Level Gauging Date	Water Level - Up Gradient Well (ft. NAVD88)	Water Level - Down Gradient Well (ft. NAVD88)	Water Level Change [*dH*] (ft.)	Distance Between Wells[d] [*dL*] (ft.)	Hydraulic Gradient [*dH/dL*] (ft/ft)	Effective Porosity[e] [n_e]	Seepage Velocity [v_x] (ft/day)			Cross-sectional Area (ft.^{2})	Darcy Flux or Velocity (ft^3/day)		
			Minimum	Average	Maximum								Minimum	Average	Maximum		Minimum	Average	Maximum
March 6, 2007																			
Surficial Aquifer																			
MW-1S	to	MW-4S	0.9	9.2	28.6	6-Mar-07	45.09	40.50	4.59	6560	0.0007	0.2	0.003	0.03	0.1	1	0.001	0.006	0.02
MW-1S	to	MW-9S	0.9	9.2	28.6	6-Mar-07	41.75	40.50	1.25	4567	0.0003	0.2	0.001	0.01	0.04	1	0.0002	0.003	0.008
MW-2S	to	MW-3S	0.9	9.2	28.6	6-Mar-07	45.82	41.93	3.89	5350	0.0007	0.2	0.003	0.03	0.1	1	0.001	0.007	0.02
MW-5S	to	MW-7S	0.9	9.2	28.6	6-Mar-07	42.54	41.74	0.80	1719	0.0005	0.2	0.002	0.02	0.07	1	0.0004	0.004	0.01
MW-11S	to	MW-15S	0.9	9.2	28.6	6-Mar-07	42.05	41.30	0.75	1495	0.0005	0.2	0.002	0.02	0.07	1	0.0005	0.005	0.01
Bedrock Aquifer																			
MW-6D	to	MW-8D	2.4	13.9	54.4	6-Mar-07	42.21	41.40	0.81	1723	0.0005	0.15	0.01	0.04	0.2	1	0.001	0.01	0.03
MW-12D	to	MW-8D	2.4	13.9	54.4	6-Mar-07	42.21	40.73	1.48	2728	0.0005	0.15	0.01	0.05	0.2	1	0.001	0.01	0.03
MW-12D	to	MW-16D	2.4	13.9	54.4	6-Mar-07	41.73	40.73	1.00	1497	0.0007	0.15	0.01	0.06	0.2	1	0.002	0.01	0.04
June 14, 2007																			
Surficial Aquifer[f]																			
MW-1S	to	MW-4S	0.9	9.2	28.6	14-Jun-07	41.78	37.40	4.38	6560	0.0007	0.2	0.003	0.03	0.1	1	0.001	0.006	0.02
MW-1S	to	MW-9S	0.9	9.2	28.6	14-Jun-07	39.22	37.40	1.82	4567	0.0004	0.2	0.002	0.02	0.06	1	0.0004	0.004	0.01
MW-2S	to	MW-3S	0.9	9.2	28.6	14-Jun-07	41.93	37.98	3.95	5350	0.0007	0.2	0.003	0.03	0.1	1	0.001	0.007	0.02
MW-5S	to	MW-7S	0.9	9.2	28.6	14-Jun-07	39.30	39.14	0.16	1719	0.0001	0.2	0.0004	0.004	0.01	1	0.0001	0.001	0.003
Bedrock Aquifer																			
MW-6D	to	MW-8D	2.4	13.9	54.4	14-Jun-07	39.28	38.59	0.69	1723	0.0004	0.15	0.01	0.04	0.1	1	0.001	0.01	0.02
MW-12D	to	MW-8D	2.4	13.9	54.4	14-Jun-07	39.28	37.83	1.45	2728	0.0005	0.15	0.01	0.05	0.2	1	0.001	0.01	0.03
MW-12D	to	MW-16D	2.4	13.9	54.4	14-Jun-07	38.93	37.83	1.10	1497	0.0007	0.15	0.01	0.07	0.3	1	0.002	0.01	0.04

Table 2.3-13 (Sheet 2 of 3)
Groundwater Linear Flow Velocity

Monitoring Wells			Hydraulic Conductivity[c] [*K*] (feet/day)			Water Level Gauging Date	Water Level - Up Gradient Well (ft. NAVD88)	Water Level - Down Gradient Well (ft. NAVD88)	Water Level Change [*dH*] (ft.)	Distance Between Wells[d] [*dL*] (ft.)	Hydraulic Gradient [*dH/dL*] (ft/ft)	Effective Porosity[e] [n_e]	Seepage Velocity [v_x] (ft/day)			Cross-sectional Area (ft.^{2})	Darcy Flux or Velocity (ft^3/day)		
			Minimum	Average	Maximum								Minimum	Average	Maximum		Minimum	Average	Maximum
September 13, 2007																			
Surficial Aquifer																			
MW-1S	to	MW-4S	0.9	9.2	28.6	13-Sep-07	40.77	36.21	4.56	6560	0.0007	0.2	0.003	0.03	0.1	1	0.001	0.006	0.02
MW-1S	to	MW-9S	0.9	9.2	28.6	13-Sep-07	37.94	36.21	1.73	4567	0.0004	0.2	0.002	0.02	0.05	1	0.0003	0.003	0.01
MW-2S	to	MW-3S	0.9	9.2	28.6	13-Sep-07	41.12	36.87	4.25	5350	0.0008	0.2	0.004	0.04	0.1	1	0.001	0.007	0.02
MW-5S	to	MW-7S	0.9	9.2	28.6	13-Sep-07	38.03	37.68	0.35	1719	0.0002	0.2	0.001	0.01	0.03	1	0.0002	0.002	0.01
MW-11S	to	MW-15S	0.9	9.2	28.6	13-Sep-07	38.01	37.64	0.37	1495	0.0002	0.2	0.001	0.01	0.04	1	0.0002	0.002	0.01
Bedrock Aquifer																			
MW-6D	to	MW-8D	2.4	13.9	54.4	13-Sep-07	37.95	37.18	0.77	1723	0.0004	0.15	0.01	0.04	0.2	1	0.001	0.01	0.02
MW-12D	to	MW-8D	2.4	13.9	54.4	13-Sep-07	37.95	36.49	1.46	2728	0.0005	0.15	0.01	0.05	0.2	1	0.001	0.01	0.03
MW-12D	to	MW-16D	2.4	13.9	54.4	13-Sep-07	37.46	36.49	0.97	1497	0.0006	0.15	0.01	0.06	0.2	1	0.002	0.01	0.04
December 4, 2007																			
Surficial Aquifer																			
MW-1S	to	MW-4S	0.9	9.2	28.6	4-Dec-07	40.93	36.31	4.62	6560	0.0007	0.2	0.003	0.03	0.1	1	0.001	0.006	0.02
MW-1S	to	MW-9S	0.9	9.2	28.6	4-Dec-07	38.05	36.31	1.74	4567	0.0004	0.2	0.002	0.02	0.05	1	0.0003	0.004	0.01
MW-2S	to	MW-3S	0.9	9.2	28.6	4-Dec-07	40.66	36.21	4.45	5350	0.0008	0.2	0.004	0.04	0.1	1	0.001	0.008	0.02
MW-5S	to	MW-7S	0.9	9.2	28.6	4-Dec-07	37.99	37.59	0.40	1719	0.0002	0.2	0.001	0.01	0.03	1	0.0002	0.002	0.01
MW-11S	to	MW-15S	0.9	9.2	28.6	4-Dec-07	37.88	37.66	0.22	1495	0.0001	0.2	0.001	0.01	0.02	1	0.0001	0.001	0.004

Table 2.3-13 (Sheet 3 of 3)
Groundwater Linear Flow Velocity

Monitoring Wells			Hydraulic Conductivity[c] [*K*] (feet/day)			Water Level Gauging Date	Water Level - Up Gradient Well (ft. NAVD88)	Water Level - Down Gradient Well (ft. NAVD88)	Water Level Change [*dH*] (ft.)	Distance Between Wells[d] [*dL*] (ft.)	Hydraulic Gradient [*dH/dL*] (ft/ft)	Effective Porosity[e] [n_e]	Seepage Velocity [v_x] (ft/day)			Cross-sectional Area (ft.^{2})	Darcy Flux or Velocity (ft^3/day)		
			Minimum	Average	Maximum								Minimum	Average	Maximum		Minimum	Average	Maximum
Bedrock Aquifer																			
MW-6D	to	MW-8D	2.4	13.9	54.4	4-Dec-07	37.97	37.27	0.70	1723	0.0004	0.15	0.01	0.04	0.1	1	0.001	0.01	0.02
MW-12D	to	MW-8D	2.4	13.9	54.4	4-Dec-07	37.97	36.58	1.39	2728	0.0005	0.15	0.01	0.05	0.2	1	0.001	0.01	0.03
MW-12D	to	MW-16D	2.4	13.9	54.4	4-Dec-07	37.68	36.58	1.10	1497	0.0007	0.15	0.01	0.07	0.3	1	0.002	0.01	0.04

Notes:

a) Equation from *Seepage Velocity [v_x] = ((Hydraulic Conductivity [K] * Hydraulic Gradient [dH/dL])/Effective Porosity [n_e])*: C.W. Fetter. *Applied Hydrogeology, Third Edition.* 1994. Page 145.

b) Equation from *Darcy Flux [Q] = Hydraulic Conductivity [K] * Hydraulic Gradient [dH/dL] * Cross-sectional Area [A]*: R. Allen Freeze and John A. Cherry. Groundwater. 1979. Pages 16 and 17.

c) Hydraulic conductivity estimates are values derived from Table 2.4.12-207, Slug Test Results Data Reduction.

d) Well distances were derived from well survey conducted from March 21, 2007 through March 25, 2007.

e) Effective porosity is the ratio of void space through which flow can occur to the total volume of the material. Effective porosity estimates from:
David R. Maidment. Handbook of Hydrology. 1993. Pages 16.16 and 6.4.
Groundwater Protection and Siting Ordinance Hernando County, Florida, Ordinance NO. 94-8. Page 10.
John E. Till and H. Robert Meyer. *Radiological Assessment*. 1993, Pages 421-451.
William C. Walton, *Principals of Groundwater Engineering.*1991. Pages 37-38.

f) Due to the difference in water levels between MW-11S and MW-15S, MW-11S was not considered to be down gradient of MW-15S. Therefore these wells were not used in the calculation for June 14, 2007.

ft. = feet
ft.^{2} = square feet
ft.^{3} = cubic feet
MW = monitoring well

Table 2.3-14 (Sheet 1 of 3)
Public Water Supply Users within 16 Km (10 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Well	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment Area	Comments
Transient Noncommunity	Ground	6424732	Restaurant	1	Floridan	25	American Legion Post # 58	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6462730	Convenience Store	1	Floridan	25	B Kwik	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6424662	Airport	2	Floridan	25	Dunnellon Airport	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Nontransient Noncommunity	Ground	6424622	High School	4	Floridan	1000	Dunnellon High/Elem. School	Dunnellon	Marion	32678	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6424073	Municipal/ City	2	Floridan	1800	Dunnellon, City of	Dunnellon	Marion	34432	FL	5-year groundwater travel time around each well	GROUNDWATER: Petroleum Storage Tank - high to moderate susceptibility level.
Transient Noncommunity	Ground	6424764	Church	1	Floridan	30	Episcopal Church of Advent	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424760	Church	1	Floridan	25	First Christian Church of Dun	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424777	Church	1	Floridan	30	God's Way Day Care & Family Center	Dunnellon	Marion	34431	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6424706	Other	1	Floridan	50	Hampton Manor	Dunnellon	Marion	34432	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424770	Restaurant	1	Floridan	25	Horseshoe Café	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6424661	Bathing/Swi mming	1	Floridan	25	K.P. Hole Park	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination
Transient Noncommunity	Ground	6424667	Church	1	Floridan	25	Peace Lutheran Church	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6421462	Recreation Area	1	Floridan	35	Rainbow End Country Club	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6464784	Recreation Area	1	Floridan	35	Rainbow Lake Community Center & Park	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.

Table 2.3-14 (Sheet 2 of 3)
Public Water Supply Users within 16 Km (10 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Well	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment Area	Comments
Community	Ground	6424083	SD	3	Floridan	1648	Rainbow Lakes Estates	Dunnellon	Marion	34470	FL	5-year ground water travel time around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6421561	MHP	1	Floridan	25	Rainbow Oaks MHP	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6421470	Campground	2	Floridan	99	Rainbow River Campground	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6422679	Subdivision	2	Floridan	2000	Rainbow Springs CC Estates	Dunnellon	Marion	34430	FL	5-year groundwater travel time around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6421472	Office for Business	2	Floridan	25	Rainbow Spring Park	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424716	Church	1	Floridan	250	Rainbow Springs Village Church	Dunnellon	Marion	34431	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424736	Office for Business	1	Floridan	25	Reynaldo F. Gonzalez, DMD	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424633	Church	1	Floridan	25	Riverland Baptist Church	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6424729	Elementary School	2	Floridan	977	Romeo Elementary School	Dunnellon	Marion	34431	FL	500-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater: low susceptibility.
Transient Noncommunity	Ground	6424751	Bar or Lounge	1	Floridan	25	Silver Moon Tavern	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424686	Church	1	Floridan	600	St. John The Baptist Catholic Church	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424638	Restaurant	1	Floridan	25	Stumpknocker s	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6424741	Nursing Home	1	Floridan	40	Sunshine Gardens ACLF	Dunnellon	Marion	34432	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6384636	Recreation Area	1	Floridan	60	Forestry Youth Training Center	Inglis	Levy	34449	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-14 (Sheet 3 of 3)
Public Water Supply Users within 16 Km (10 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Well	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment Area	Comments
Community	Ground	6382056	Municipal / City	2	Floridan	1825	Inglis Water Dept.	Inglis	Levy	34449	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination
Nontransient Noncommunity	Ground	6384621	Campground	1	Floridan	35	Sheriff Youth Ranch / Caruth	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination
Transient Noncommunity	Ground	6384611	Campground	4	Floridan	65	Buddy Lake side Park, LLC	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384634	MHP	2	Floridan	25	Cannon Oaks MHP	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384612	MHP	2	Floridan	25	Dan's Adult MHP	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6382106	MHP	1	Floridan	41	Driftwood Trailer Park	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6382121	RV Park	1	Floridan	50	Fin n Feather	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6382112	RV Park	1	Floridan	35	Shady Oaks Campground	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381438	Recreation Area	1	Floridan	25	South Levy Recreational Park	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384610	MHP	1	Floridan	64	Village Pine Campground	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384619	Travel Trailer Park	1	Floridan	36	Wagonwheel MHP	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6382116	Municipal / City	4	Floridan	615	Yankeetown Water Dept.	Yankeeto wn	Levy	32698	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Notes:

ft. = feet
km = kilometers
MHP = mobile home park
RV = recreational vehicle
SD = subdivision

Source: Reference 2.3-049

Table 2.3-15 (Sheet 1 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6424732	Restaurant	1	Floridan	25	American Legion Post # 58	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6462730	Convenience Store	1	Floridan	25	B Kwik	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6424662	Airport	2	Floridan	25	Dunnellon Airport	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Nontransient Noncommunity	Ground	6424622	High School	4	Floridan	1000	Dunnellon High/Elem. School	Dunnellon	Marion	32678	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6424073	Municipal/City	2	Floridan	1800	Dunnellon, City of	Dunnellon	Marion	34432	FL	5-year ground water travel time around each well	GROUNDWATER: Petroleum Storage Tank - high to moderate susceptibility level.
Transient Noncommunity	Ground	6424764	Church	1	Floridan	30	Episcopal Church of Advent	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424760	Church	1	Floridan	25	First Christian Church of Dun	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424777	Church	1	Floridan	30	God's Way Daycare & Family Center	Dunnellon	Marion	34431	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6424706	Other	1	Floridan	50	Hampton Manor	Dunnellon	Marion	34432	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424770	Restaurant	1	Floridan	25	Horseshoe Café	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6424661	Bathing/ Swimming	1	Floridan	25	K.P. Hole Park	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424667	Church	1	Floridan	25	Peace Lutheran Church	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6421462	Recreation Area	1	Floridan	35	Rainbow End Country Club	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 2 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6464784	Recreation Area	1	Floridan	35	Rainbow Lake Community Center & Park	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Community	Ground	6424083	SD	3	Floridan	1648	Rainbow Lakes Estates	Dunnellon	Marion	34470	FL	5-year ground water travel time around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6421561	MHP	1	Floridan	25	Rainbow Oaks MHP	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6421470	Campground	2	Floridan	99	Rainbow River Campground	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6422679	Subdivision	2	Floridan	2000	Rainbow Springs CC Estates	Dunnellon	Marion	34430	FL	5-year ground water travel time around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6421472	Office for Business	2	Floridan	25	Rainbow Spring Park	Dunnellon	Marion	34430	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424716	Church	1	Floridan	250	Rainbow Springs Village Church	Dunnellon	Marion	34431	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424736	Office for Business	1	Floridan	25	Reynaldo F. Gonzalez, DMD	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424633	Church	1	Floridan	25	Riverland Baptist Church	Dunnellon	Marion	32630	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6424729	Elementary School	2	Floridan	977	Romeo Elementary School	Dunnellon	Marion	34431	FL	500-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater: low susceptibility.
Transient Noncommunity	Ground	6424751	Bar or Lounge	1	Floridan	25	Silver Moon Tavern	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424686	Church	1	Floridan	600	St. John The Baptist Catholic Church	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6424638	Restaurant	1	Floridan	25	Stumpknockers	Dunnellon	Marion	34432	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 3 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Community	Ground	6424741	Nursing Home	1	Floridan	40	Sunshine Gardens ACLF	Dunnellon	Marion	34432	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090150	SD	9	Floridan	12350	Beverly Hills Subdivision	Beverly Hills	Citrus	34464	FL	5-year ground water travel time around each well	GROUNDWATER: Petroleum Storage Tank - high to moderate susceptibility level.
Transient Noncommunity	Ground	6094876	Retail/General Merchant	1	Floridan	25	Beverly Hills Village Mall	Beverly Hills	Citrus	34465	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095047	Recreation Area	1	Floridan	25	Citrus County District Park (Central Ridge)	Beverly Hills	Citrus	34465	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6092334	MHP	2	Floridan	90	Sandy Oaks RV & MHP	Beverly Hills	Citrus	34465	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater- low susceptibility level.
Transient Noncommunity	Ground	6094990	Bathing/ Swimming	3	Floridan	25	Bicentennial Park	Crystal River	Citrus	34423	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094482	Restaurant	1	Floridan	25	Castaways Inn	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6092326	SD	1	Floridan	75	Cedar Lake Estates	Crystal River	Citrus	32629	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090411	MHP	1	Floridan	75	Crystal Acres MHP	Crystal River	Citrus	34429	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater - low susceptibility level.
Transient Noncommunity	Ground	6095055	Church	1	Floridan	500	Crystal River United Methodist Church	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090317	Municipal/City	3	Floridan	4528	City of Crystal River	Crystal River	Citrus	32628	FL	5-year groundwater travel time around each well	GROUNDWATER: Petroleum Storage Tank - high to moderate susceptibility level.
Community	Ground	6092336	MHP	1	Floridan	39	Crystal Wood Court	Crystal River	Citrus	34429	FL	1000-ft. radius circle around each well	GROUNDWATER: Industrial Wastewater- low susceptibility level.
Nontransient Noncommunity	Ground	6094883	Office for Business	1	Floridan	25	Executive Center Condo Assoc.	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 4 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Nontransient Noncommunity	Ground	6094956	Nuclear Reactor	4	Floridan	342	Florida Power Crystal River N	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Nontransient Noncommunity	Ground	6090601	Nuclear Reactor	3	Floridan	250	Florida Power Crystal River S	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Community	Ground	6092327	SD	2	Floridan	93	Forest Hill Subdivision	Crystal River	Citrus	34429	FL	1000-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6094869	Retail/General Merchant	1	Floridan	25	Happy Tymes -9895 N Citrus Avenue	Crystal River	Citrus	30000	FL	500-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Transient Noncommunity	Ground	6092888	Others	1	Floridan	25	Kelly's Health Club	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Nontransient Noncommunity	Ground	6095058	Daycare	1	Floridan	35	Little Disciplines Daycare	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Community	Ground	6092338	SD	1	Floridan	93	Meadow Wood SD	Crystal River	Citrus	34429	FL	1000-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Transient Noncommunity	Ground	6095051	Church	1	Floridan	45	Mt. Olive Missionary Baptist	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Transient Noncommunity	Ground	6095050	RV Park	1	Floridan	99	Nature Coast Campground	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Community	Purchased**	6091322	SD	N/A	N/A	3627	Ozello Water Association	Crystal River	Citrus	34423	FL	N/A	N/A
Community	Ground	6094874	SD	1	Floridan	100	Pinewood Mobile Home SD	Crystal River	Citrus	34429	FL	1000-ft. radius circle around each well	GROUNDWATER: No potentia source of contamination.
Nontransient Noncommunity	Ground	6091798	Lodge	2	Floridan	50	Plantation Inn & Golf Resort	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.

Table 2.3-15 (Sheet 5 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6094917	RV Park	1	Floridan	25	Quail Roost RV Campground	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6093077	Retail/General Merchant	1	Floridan	25	Right Way	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Community	Ground	6094810	Nursing Home	1	Floridan	100	River Oak Assisted Living	Crystal River	Citrus	34428	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6091516	RV Park	2	Floridan	207	River Oak Trailer Park	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater- low susceptibility level.
Nontransient Noncommunity	Ground	6092186	Hospital	1	Floridan	200	Seven Rivers Community Hospital	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6091608	Recreation Area	1	Floridan	75	Seven Rivers Golf & Country Club	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: Delineated Area - high susceptibility level.
Transient Noncommunity	Ground	6094972	Convenience Store	N/A	N/A	25	Seven River Shell	Crystal River	Citrus	34428	FL	N/A	N/A
Nontransient Noncommunity	Ground	6094907	Daycare	1	Floridan	25	Small World Daycare	Crystal River	Citrus	34428	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092967	Church	1	Floridan	26	St. Benedicts Church	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6095038	Restaurant	1	Floridan	33	Sun Cruz/Citrus Mining-Timber	Crystal River	Citrus	34423	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6091876	MHP	1	Floridan	80	Suncoast MHP	Crystal River	Citrus	34429	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6091816	MHP	1	Floridan	81	Thunderbird MHP	Crystal River	Citrus	34428	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater- low susceptibility level.
Transient Noncommunity	Ground	6095054	Church	1	Floridan	100	West Citrus Church of Christ	Crystal River	Citrus	34423	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 6 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6092696	Restaurant	1	Floridan	250	Wet Willies	Crystal River	Citrus	34429	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095062	Church	1	Floridan	100	Faith Baptist Church of Lake Rousseau	Dunnellon	Citrus	34433	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092767	Bar or Lounge	1	Floridan	25	4 Acres Traven	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094895	Bar or Lounge	1	Floridan	25	Armante's	Hernando	Citrus	32642	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094871	SD	2	Floridan	25	Greenbriar I	Hernando	Citrus	32642	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094987	Convenience Store	1	Floridan	25	Handy Way # 2119	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6095029	Church	1	Floridan	25	Hernandi Church of Nazarene	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094894	Restaurant	1	Floridan	25	Kim's Pastaria	Hernando	Citrus	34422	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094898	Restaurant	1	Floridan	25	King Edwards	Hernando	Citrus	32642	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6094971	Convenience Store	1	Floridan	25	Kwik King # 56	Hernando	Citrus	32642	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094879	Convenience Store	1	Floridan	25	Kwik Stop Chevron	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6091193	MHP	1	Floridan	50	Mid Florida Motel & Trailer Park	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.

Table 2.3-15 (Sheet 7 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6092049	MHP	1	Floridan	75	Overpass MHP	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095042	Restaurant	1	Floridan	25	Pollywags	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094878	Retail/ General Merchant	1	Floridan	25	Quik Corner #1	Hernando	Citrus	32642	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6092922	Others	1	Floridan	50	V F W 2442	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094994	Apartment	1	Floridan	100	Ventura Village	Hernando	Citrus	32642	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater: low susceptibility.
Transient Noncommunity	Ground	6092329	Campground	1	Floridan	60	Watson's Point Lot #13	Hernando	Citrus	34442	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095014	Restaurant	1	Floridan	25	Bill & Gerries Restaurant	Holder	Citrus	34445	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094944	Restaurant	1	Floridan	25	Mama Maries	Holder	Citrus	34445	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6094954	Restaurant	1	Floridan	25	Parkview Lanes	Holder	Citrus	34445	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095001	Convenience Store	1	Floridan	25	Texaco Food Mart	Holder	Citrus	32645	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6095045	Bar or Lounge	1	Floridan	25	Augie's Bar and Grill	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6090281	MHP	1	Floridan	100	Chassa River Lodge	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater low susceptibility level.

Table 2.3-15 (Sheet 8 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6094931	Convenience Store	1	Floridan	25	Circle K #7497	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6090236	MHP	1	Floridan	80	Covered Wagon Campground	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094916	Convenience Store	1	Floridan	25	Cumberland Farm Store #9641	Homosassa	Citrus	32646	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6094941	Restaurant	1	Floridan	25	Dan's Clam Stand	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6095021	Day Care	1	Floridan	50	Enchanted Moments Daycare	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090541	MHP	1	Floridan	140	Evanridge MHP	Homosassa	Citrus	34446	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater - low susceptibility level.
Transient Noncommunity	Ground	6095025	Church	1	Floridan	100	Faith Baptist Church/ Sanctuary	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090828	Recreation Area	4	Floridan	5972	Homosassa Special Water District	Homosassa	Citrus	34487	FL	5-year groundwater travel time around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092000	Recreation Area	3	Floridan	25	Howard's Flea Market	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095002	Bar or Lounge	1	Floridan	25	Horward's North/Sand Ray	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6092175	MHP	1	Floridan	35	Imperial Gardens	Homosassa	Citrus	34448	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater- low susceptibility level.

Table 2.3-15 (Sheet 9 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6090307	Retail/General Merchant	1	Floridan	50	Kwick Save Food Mart	Homosassa	Citrus	34448	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6094975	Convenience Store	1	Floridan	25	Kwik Stop (CITGO)	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6095032	Convenience Store	1	Floridan	25	Little General Food Center	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094939	Retail/General Merchant	1	Floridan	25	Oak Ridge Center	Homosassa	Citrus	34448	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level, Domestic Wastewater: low susceptibility.
Transient Noncommunity	Ground	6094913	Convenience Store	1	Floridan	25	Quick Save II	Homosassa	Citrus	34448	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6095052	Recreation Area	1	Floridan	25	Samos Enterprises	Homosassa	Citrus	32646	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094942	Retail/General Merchant	1	Floridan	25	Servos Square	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6095061	Convenience Store	1	Floridan	25	Shell Station Gas and Deli	Homosassa	Citrus	32647	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high to moderate susceptibility level.
Transient Noncommunity	Ground	6092967	Church	1	Floridan	25	St. Thomas Catholic Church	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6091625	MHP	2	Floridan	500	Stonebrook MHP	Homosassa	Citrus	34448	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater- low susceptibility level.
Transient Noncommunity	Ground	6094993	Office for Business	1	Floridan	50	Sugarmill Medical Center	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6091735	Subdivision	9	Floridan	7271	Sugarmill Woods S/D	Homosassa	Citrus	34447	FL	5-year groundwater travel time around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.

Table 2.3-15 (Sheet 10 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Nontransient Noncommunity	Ground	6090624	Retail/General Merchant	1	Floridan	50	Sunny Day Plaza	Homosassa	Citrus	34448	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level, Domestic Wastewater: low susceptibility.
Transient Noncommunity	Ground	609487	Convenience Store	1	Floridan	25	Tara Food Mart	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6092963	Restaurant	1	Floridan	26	Two Guys From Italy	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094892	MHP	2	Floridan	90	Walden Woods MHC	Homosassa	Citrus	34446	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6095003	Restaurant	1	Floridan	150	Yanni's Restaurant	Homosassa	Citrus	34446	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092959	Bar or Lounge	1	Floridan	50	Saloon Bar & Grill	Homosassa Springs	Citrus	34447	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094886	SD	2	Floridan	185	Eldorado Estates	Homosassa Springs	Citrus	34447	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6090204	Restaurant	1	Floridan	50	Emily's Family Restaurant	Homosassa Springs	Citrus	34447	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6092438	Restaurant	1	Floridan	100	Homosassa Springs Pizza Hut	Homosassa Springs	Citrus	34447	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095031	Others	1	Floridan	25	Three River Motel	Homosassa Springs	Citrus	34447	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094899	SD	2	Floridan	80	Wellaqua	Homosassa Springs	Citrus	34447	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6091956	MHP	1	Floridan	30	Whispering Pines MHP	Homosassa Springs	Citrus	34446	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater: low susceptibility.

Table 2.3-15 (Sheet 11 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6094920	Campground	1	Floridan	50	Big Oaks River Resort & Campground	Inglis	Citrus	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6091513	Campground	2	Floridan	202	Riverlodge RV Resort	Inglis	Citrus	32649	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095033	Convenience Store	1	Floridan	25	41 Chevron	Inverness	Citrus	34453	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6095023	Restaurant	1	Floridan	25	Al Evans	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092693	Restaurant	1	Floridan	80	American/ Italiar Social Club	Inverness	Citrus	34451	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094891	Retail/General Merchant	1	Floridan	25	Brads Deli	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6094936	Campground	1	Floridan	25	Camp David	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6091910	Restaurant	1	Floridan	150	Casey's Club	Inverness	Citrus	34452	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095028	Church	1	Floridan	25	Church of Christ	Inverness	Citrus	34452	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095053	Church	1	Floridan	25	Church Without Walls	Inverness	Citrus	34453	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094933	SD	2	Floridan	140	Citrus County Utility/Water Oaks SD	Inverness	Citrus	32650	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6090308	Others	1	Floridan	25	Citrus County Fair Association	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094945	RV Park	1	Floridan	50	Cove Campground & Restaurant	Inverness	Citrus	32650	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 12 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Community	Ground	6090898	MHP	1	Floridan	48	Croft MHP	Inverness	Citrus	34453	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095022	Medical Center	1	Floridan	25	Deerwood Professional Park	Inverness	Citrus	34452	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6095006	Others	1	Floridan	100	DHRS Client Center	Inverness	Citrus	34453	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095015	Others	1	Floridan	25	East Citrus Community Center	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6095013	Church	1	Floridan	40	First United Methodist Church	Inverness	Citrus	32252	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094935	Bar or Lounge	1	Floridan	25	Fisherman's Cove	Inverness	Citrus	32650	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6090610	Recreation Area	1	Floridan	60	Fort Cooper State Park	Inverness	Citrus	32650	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094915	Retail/General Merchant	1	Floridan	74	Fountain Square	Inverness	Citrus	34453	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095000	Bar or Lounge	1	Floridan	25	Fraternal Order of Eagles	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090609	SD	2	Floridan	79	Ft. Cooper Mobile Home Comm.	Inverness	Citrus	34450	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Purchased*	6090674	SD	N/A	N/A	385	Golden Terrace	Inverness	Citrus	34453	FL	N/A	N/A
Community	Ground	6090729	MHP	1	Floridan	63	Harbor Lights Mobile Resort	Inverness	Citrus	34450	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater - low susceptibility level.
Transient Noncommunity	Ground	6093076	Retail/General Merchant	1	Floridan	25	Hess Mart # 09401	Inverness	Citrus	32650	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.

Table 2.3-15 (Sheet 13 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6095024	Recreation Area	1	Floridan	25	Highland Civic Center	Inverness	Citrus	34451	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094980	Convenience Store	1	Floridan	30	Highlands Pure	Inverness	Citrus	34452	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - moderate susceptibility level.
Transient Noncommunity	Ground	6090859	Recreation Area	1	Floridan	40	Inverness Golf & Country Club	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092921	Lodge	1	Floridan	50	Inverness Moose Lodge 2112	Inverness	Citrus	34451	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090875	MHP	2	Floridan	100	Inverness Park	Inverness	Citrus	34450	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater - low susceptibility level.
Community	Ground	6090860	Apartment	2	Floridan	200	Inverness Village Gardens	Inverness	Citrus	34450	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090861	Municipal/City	1	Floridan	7500	Inverness Water Department	Inverness	Citrus	34450	FL	5-year ground water travel time around each well	GROUNDWATER: Petroleum Storage Tank – moderate susceptibility level.
Transient Noncommunity	Ground	6094872	Others	1	Floridan	25	Italian Social Club	Inverness	Citrus	34451	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094976	Elementary School	1	Floridan	25	King's Kid's	Inverness	Citrus	34452	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Purchased **	6094949	N/A	N/A	N/A	45	Laguna Palms/Twin Lakes	Inverness	Citrus	32650	FL	N/A	PWS not evaluated.
Community	Ground	6092197	Subdivision	2	Floridan	287	Lakeside Country Club Estates	Inverness	Citrus	34453	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6091046	Restaurant	1	Floridan	80	Largo Village	Inverness	Citrus	34453	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level, Industrial Wastewater: low susceptibility.

Table 2.3-15 (Sheet 14 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6091172	Campground	1	Floridan	100	McGregor Smith Scout Reserve	Inverness	Citrus	32650	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094970	MHP	2	Floridan	100	Oak Pond Adult M.H. Estates	Inverness	Citrus	34450	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater- low susceptibility level.
Nontransient Noncommunity	Ground	6094966	Apartment	2	Floridan	25	Pearl Apartments	Inverness	Citrus	32652	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6094900	Nursing Home	1	Floridan	26	Pleasant Grove Manor	Inverness	Citrus	34452	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6091422	SD	2	Floridan	1225	Point O' Wood	Inverness	Citrus	32650	FL	5-year groundwater travel time around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095065	Restaurant	N/A	N/A	25	Poppy's Deli	Inverness	Citrus	34453	FL	N/A	N/A
Nontransient Noncommunity	Ground	6094904	Apartment	1	Floridan	35	Regis Apts	Inverness	Citrus	34452	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092325	MHP	2	Floridan	75	Riverside Lodge	Inverness	Citrus	34451	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094905	SD	2	Floridan	542	Rosemont-Rollo ng Green	Inverness	Citrus	34430	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6091554	Others	2	Floridan	196	Royal Oaks Manor Inc.	Inverness	Citrus	34451	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092698	Restaurant	1	Floridan	25	Sportsmen's Bowl	Inverness	Citrus	34453	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	609061	Restaurant	1	Floridan	25	T.J's Steakhouse	Inverness	Citrus	34450	FL	500-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater: low susceptibility.
Community	Ground	6090532	MHP	1	Floridan	70	The Oasis MHP	Inverness	Citrus	32650	FL	1000-ft. radius circle around each well	GROUNDWATER: Domestic Wastewater: low susceptibility.

Table 2.3-15 (Sheet 15 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6092965	Bar or Lounge	1	Floridan	25	Turner Camp	Inverness	Citrus	34453	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6095005	Daycare	1	Floridan	25	All About Kids	Lecanto	Citrus	34461	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6094918	Retail/General Merchant	1	Floridan	25	American Food Grocery & Deli	Lecanto	Citrus	34460	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090156	MHP	1	Floridan	70	Big Pine Acres	Lecanto	Citrus	34461	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6095046	SD	N/A	N/A	25	Cinnamon Ridge Utilities, Inc.	Lecanto	Citrus	34461	FL	N/A	PWS not evaluated.
Community	Ground	6094556	SD	2	Floridan	150	Citrus County Utility/Foxwood/Indian AC	Lecanto	Citrus	34460	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094948	County Wide	7	Floridan	18000	Citrus County Utility/Charles A. Black	Lecanto	Citrus	34460	FL	5-year ground water travel time around each well	GROUNDWATER: Petroleum Storage Tank - high to moderate susceptibility level.
Community	Ground	6094969	SD	1	Floridan	140	Citrus County Utility/Quail Run	Lecanto	Citrus	34460	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6092772	RV Park	1	Floridan	1000	Citrus County Utl.-Cheswitzka CPG	Lecanto	Citrus	34460	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6094773	Subdivision	2	Floridan	225	Constate Utl/Hills on Avalon	Lecanto	Citrus	34460	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6092328	MHP	2	Floridan	72	Palm Terrace MHP SD	Lecanto	Citrus	32661	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 16 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6094989	Restaurant	1	Floridan	25	Rusty Duck Restaurant	Lecanto	Citrus	34461	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6095004	Office for Business	1	Floridan	25	Treetops Plaza	Lecanto	Citrus	32661	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6090312	SD	3	Floridan	4785	Citrus Spring	Longwood	Citrus	32779	FL	5-year ground water travel time around each well	GROUNDWATER: Domestic Wastewater - low susceptibility level.
Community	Ground	2381178	Municipal / City	3	Floridan	1033	Bronson WTP	Bronson	Levy	32621	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	2381414	Labor Camp	2	Floridan	250	Forestry Work Camp	Bronson	Levy	32621	FL	1000-ft. radius circle around each well	Ground Water: Petroleum Storage Tank: Moderate Susceptibility Level Domestic Wastewater: Low Susceptibility Level.
Community	Ground	2381208	SD	2	Floridan	315	University Oaks MHP	Bronson	Levy	32618	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	2381421	Daycare	1	Floridan	89	Imagination Station Center I	Bronson	Levy	32621	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381440	Daycare	N/A	N/A	38	Imagination Station Center II	Bronson	Levy	32621	FL	N/A	N/A
Transient Noncommunity	Ground	2381415	RV Park	1	Floridan	120	Rainbow Country RV Park	Cedar Key	Levy	32625	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Community	Ground	2380178	Municipal / City	3	Floridan	1600	Cedar Key WTP	Cedar Key	Levy	32625	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	2380189	Municipal / City	3	Floridan	2000	Chiefland WTP	Chiefland	Levy	32626	FL	1000-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high to moderate susceptibility level.

Table 2.3-15 (Sheet 17 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Community	Ground	2380387	SD	2	Floridan	280	Flower Bluff WTP	Chiefland	Levy	32626	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6382108	MHP	2	Floridan	100	Inglewood Estates MH SD	Chiefland	Levy	32644	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	2381409	MHP	2	Floridan	93	Springside MHP SD	Chiefland	Levy	32644	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	2381377	Retail / General Merchant	1	Floridan	65	Fun 4 Kids #2	Chiefland	Levy	32644	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	2381439	Elementary School	1	Floridan	80	Whispering Winds Charter School	Chiefland	Levy	32644	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381410	Recreation Ground	1	Floridan	99	Breezy Acres Campground	Chiefland	Levy	32626	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381381	Motel	1	Floridan	25	Holiday Times Motel	Chiefland	Levy	32644	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381423	Convenience Store	1	Floridan	50	Manatee Jiffy #2280 / Hudson Food Store	Chiefland	Levy	32644	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	2381383	Recreation Area	2	Floridan	370	Manatee Springs State Park	Chiefland	Levy	32626	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381378	Restaurant	1	Floridan	300	Mary's Little Restaurant	Chiefland	Levy	32626	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384606	RV Park	1	Floridan	30	Withlacoochee Backwater MHP	Dunnellon	Levy	34431	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Community	Ground	2381411	Municipal / City	1	Floridan	693	Fanning Springs WS	Fanning Springs	Levy	32693	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 18 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Community	Ground	2380485	MHP	2	Floridan	216	Hideaway MHP SD	Gainesville	Levy	32606	FL	1000-ft. radius circle around each well	Ground Water: Domestic Wastewater: Low Susceptibility Level.
Transient Noncommunity	Ground	6384622	Convenience Store	1	Floridan	25	Circle K# 7306	Gulf Hammock	Levy	32639	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6384628	Marina	1	Floridan	25	Waccasassa Fishing Club Store, LC	Gulf Hammock	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6384636	Recreation Area	1	Floridan	60	Forestry Youth Training Center	Inglis	Levy	34449	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6382056	Municipal / City	2	Floridan	1825	Inglis Water Dept.	Inglis	Levy	34449	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Nontransient Noncommunity	Ground	6384621	Campground	1	Floridan	35	Sheriff Youth Ranch / Caruth	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384611	Campground	4	Floridan	65	Buddy Lakeside Park, LLC	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384634	MHP	2	Floridan	25	Cannon Oaks MHP	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384612	MHP	2	Floridan	25	Dan's Adult MHP	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6382106	MHP	1	Floridan	41	Driftwood Trailer Park	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6382121	RV Park	1	Floridan	50	Fin n Feather	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6382112	RV Park	1	Floridan	35	Shady Oaks Campground	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 19 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	2381438	Recreation Area	1	Floridan	25	South Levy Recreational Park	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384610	MHP	1	Floridan	64	Village Pine Campground	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384619	Travel Trailer Park	1	Floridan	36	Wagonwheel MHP	Inglis	Levy	34449	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384629	Convenience Store	1	Floridan	25	Morris Junction	Morrison	Levy	32668	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - Moderate susceptibility level.
Transient Noncommunity	Ground	6368623	Convenience Store	1	Floridan	25	Kwik King #35	Ocala	Levy	3447 1	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Community	Ground	2380854	Municipal / City	2	Floridan	128	Otter Creek WTP	Otter Creek	Levy	3268 3	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381442	Restaurant	1	Floridan	25	The Clam Shack	Rosewood	Levy	32625	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	2381379	Recreation Area	1	Floridan	40	Odyssey Campground	Rosewood	Levy	32625	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6382055	Municipal / City	2	Floridan	2350	Williston, City of (Plants 1 & 2)	Williston	Levy	32696	FL	1000-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Nontransient Noncommunity	Ground	2381441	Industrial	2	Floridan	256	Williston-Airport Road WTP	Williston	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384635	Recreation Area	1	Floridan	25	Devils Den	Williston	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384630	Restaurant	1	Floridan	25	Frog's Place, Inc.	Williston	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Table 2.3-15 (Sheet 20 of 20)
Public Water Supply Users within 40.2 Km (25 Mi.) of the LNP Site

Public Water Supply	Source Type	Public Water Supply ID	Primary Use	Number of Wells	Aquifer	Population Served	Name	City	County	Zip	State	Size of Assessment area	Comments
Transient Noncommunity	Ground	6384626	Convenience Store	1	Floridan	25	Little Food Ranch # 3626 (HWY 121)	Williston	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - high susceptibility level.
Transient Noncommunity	Ground	6384627	Convenience Store	2	Floridan	25	Little Food Ranch # 3231 (HWY 27A)	Williston	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: Petroleum Storage Tank - Moderate susceptibility level.
Transient Noncommunity	Ground	6384607	MHP	1	Floridan	25	Promise Acres MHP	Williston	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Transient Noncommunity	Ground	6384625	Restaurant	1	Floridan	25	Williston Highlands Golf & C.C.	Williston	Levy	32696	FL	500-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.
Community	Ground	6382116	Municipal / City	4	Floridan	615	Yankeetown Water Dept.	Yankeetown	Levy	32698	FL	1000-ft. radius circle around each well	GROUNDWATER: No potential source of contamination.

Notes:

ft. = feet
km = kilometers
MHP = mobile home park
N/A = not available
PWS = public water supply
RV = recreational vehicle
SD = subdivision

Source: Reference 2.3-049

Table 2.3-16 (Sheet 1 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus	16	18	31	1								
	16	18	33	15	2	1						
	16	18	34	19	2							10
	17	16	3	1								
	17	16	4	11		3						28
	17	16	5	6		3						1
	17	16	8	3								24
	17	16	9							1		38
	17	16	10	6	1		1	1				10
	17	16	11	7	7	1						4
	17	16	12	36								7
	17	16	13	43		1						1
	17	16	14	1		1						
	17	16	15	2								2
	17	16	16	1								
	17	16	17	1								6
	17	16	18	2								
	17	16	20	1								

Table 2.3-16 (Sheet 2 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	**Township**	**Range**	**Section**	**Domestic**	**Public Supply**	**Irrigation**	**Industrial**	**Mining**	**Power**	**Livestock**	**Essential Services (Fire Protection)**	**Other**
Citrus cont.	17	16	21	4								
	17	16	23			2						1
	17	16	24	30	1	1						
	17	16	25	2								
	17	16	27									9
	17	16	28	1	1							28
	17	16	30			1						
	17	16	31	1								
	17	16	32	1							6	17
	17	16	33	1		1	1					52
	17	16	34	5								
	17	16	35	5								
	17	16	36	1			1					6
	17	17	1	100		2						6
	17	17	2	15								1
	17	17	7	10								20
	17	17	9	74	3	2						1
	17	17	10	109		1						2

Table 2.3-16 (Sheet 3 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	17	17	11	75	4	2					1	16
	17	17	12	65		2						2
	17	17	13	26		1						1
	17	17	14	57	2	1						2
	17	17	15	115	2					1		2
	17	17	16	104		1						2
	17	17	17	22								3
	17	17	18	43								3
	17	17	19	103	1	1						7
	17	17	20	87								
	17	17	21	154		4				1		4
	17	17	22	85	1	2						1
	17	17	23	113	4	5						15
	17	17	24	91		2						1
	17	17	25	67		1						1
	17	17	26	96	2	2					1	21
	17	17	27	44	1							13
	17	17	28	59		1						

Table 2.3-16 (Sheet 4 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	17	17	29	41	1							1
	17	17	30	16	2							1
	17	17	31	26	6	3	4		7		1	56
	17	17	32	6	2	1		1	3			4
	17	17	33	59		2						2
	17	17	34	52	4	2						1
	17	17	35	55								
	17	17	36	50								2
	17	18	1	27	3	3						2
	17	18	2	19	2	3						26
	17	18	3	28		5						10
	17	18	4	69	4	6					1	5
	17	18	5	73	1	4						4
	17	18	6	99	2	2		1				9
	17	18	7	60		1						
	17	18	8	63		6				1		
	17	18	9	52		3						
	17	18	10	5		3						1

Table 2.3-16 (Sheet 5 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	17	18	11	7		2						15
	17	18	12	6		7						1
	17	18	13	4		5						
	17	18	14	5		1						8
	17	18	15	3								
	17	18	16	7		3						
	17	18	17	30	1	2						4
	17	18	18	48		1						
	17	18	19	109								3
	17	18	20	3		2						
	17	18	21	4		4						6
	17	18	22	11		4						8
	17	18	23	8	1	3						
	17	18	24	15		2						
	17	18	25	11		1		1				2
	17	18	26	9								9
	17	18	27	3	1	2						13
	17	18	28	8		6						

Table 2.3-16 (Sheet 6 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	17	18	29	3		3						
	17	18	30	61								2
	17	18	31	80		1						
	17	18	32	20		7						
	17	18	33	18		5						
	17	18	34	15	1	7						1
	17	18	35	9		3						12
	17	18	36	16	1	1						1
	17	19	6	2								
	17	19	7	26		1						
	17	19	8	12		3						
	17	19	14	6	1							
	17	19	15	35		1						
	17	19	17	5		1						
	17	19	18	7	1	2						
	17	19	19	6								
	17	19	20	2		1						
	17	19	22	10								

Table 2.3-16 (Sheet 7 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	17	19	23	69		4						2
	17	19	24	42								2
	17	19	25	49	3	5						13
	17	19	26	11								
	17	19	27	4		1						8
	17	19	29	106	7	10		1				6
	17	19	30	25	2	3	1					4
	17	19	31	34	11	2						4
	17	19	32	19	7	1				1		17
	17	19	34	14	1							5
	17	19	35	81	5	3	1					4
	17	19	36	33								1
	17	20	29	13		2						
	17	20	30	59	4	3						9
	17	20	31	40		2						
	17	20	32	41		1						6
	17	20	33	3						1		
	18	16	3	2								

Table 2.3-16 (Sheet 8 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	16	5	1								
	18	16	13									7
	18	16	23	2								
	18	16	24	1		1						6
	18	16	25	1								
	18	16	34				1					2
	18	16	35									4
	18	17	1	26		5						1
	18	17	2	64	1							2
	18	17	3	37		1						1
	18	17	4	56								1
	18	17	5	86		4						6
	18	17	6	26	6	3						1
	18	17	7	24	1							
	18	17	8	65	1	1						8
	18	17	9	142	5	1						3
	18	17	10	114		2				1		3
	18	17	11	81		1						

Table 2.3-16 (Sheet 9 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	17	12	16		25						1
	18	17	13	41		20	1					
	18	17	14	125		2						2
	18	17	15	35	1	6						4
	18	17	16	75	3	1						7
	18	17	17	35		4						34
	18	17	18	6								4
	18	17	19	6		3						1
	18	17	20	11		10						15
	18	17	21	26	1	28					1	294
	18	17	22	74	1	17						141
	18	17	23	91	12	3						5
	18	17	24	106	4	5						31
	18	17	25	100	6	25	2				1	38
	18	17	26	72		3						
	18	17	27	66	5	8	1	1				39
	18	17	28	108		9						16
	18	17	29	16		3						1

Table 2.3-16 (Sheet 10 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	17	30	4		4						5
	18	17	31	7		1						1
	18	17	32	24		2						2
	18	17	33	80	6	16					1	10
	18	17	34	69	11	7						47
	18	17	35	194		3						9
	18	17	36	324	1	5						13
	18	18	1	8		2	1					12
	18	18	2	11		29						1
	18	18	3	10		72						4
	18	18	4	6		39						7
	18	18	5	17		50						1
	18	18	6	15	1	35						
	18	18	7	2		33						1
	18	18	8	21		55						
	18	18	9	6	2	38						3
	18	18	10	12		38						
	18	18	11	7	4	14		2				35

Table 2.3-16 (Sheet 11 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	18	12	5		3						26
	18	18	13	8		1						8
	18	18	14	3	1	1						5
	18	18	15	5	4	8	1	1				19
	18	18	16	6	1	72						
	18	18	17	10		30						
	18	18	18	11		28						
	18	18	19	12	2	25						2
	18	18	20	11		20				1		1
	18	18	21	10	1	14						1
	18	18	22	52	2	9						10
	18	18	23	6	4	9						40
	18	18	24	54	2	11						10
	18	18	25	227	5	7						26
	18	18	26	41	1							10
	18	18	27	281		2						6
	18	18	28	40	1	4		1				1
	18	18	29	42		1						4

Table 2.3-16 (Sheet 12 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	18	30	85	12	9					1	31
	18	18	31	136	4	15						8
	18	18	32	49	3	5						7
	18	18	33	24		9				1		16
	18	18	34	5		2						1
	18	18	35	218						1		1
	18	18	36	260	1	2						9
	18	19	1	183	2	4						10
	18	19	2	232	6	6	2					9
	18	19	3	27		1						
	18	19	4	7		3						
	18	19	5	139	5	3						6
	18	19	6	73	1	4						21
	18	19	7	9		13						
	18	19	8	91		20						1
	18	19	9	9								3
	18	19	10	70								6
	18	19	11	179	1	7						5

Table 2.3-16 (Sheet 13 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

County	Township	Range	Section	Number of Well Permits by Well Use Type								
				Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	19	12	18								1
	18	19	13	51	2	8						7
	18	19	14	193	4	10						9
	18	19	15	88		1						5
	18	19	16	8								
	18	19	17	20		13						
	18	19	18	146		3						1
	18	19	19	137	1	8						27
	18	19	20	19								
	18	19	21	47		7						11
	18	19	22	104	1	2						2
	18	19	23	33	10	3						38
	18	19	24	61	4	3						17
	18	19	25	164	7	3				1		13
	18	19	26	67	15	5						19
	18	19	27	131	2	1	1			1	1	7
	18	19	28	175	2	4						6
	18	19	29	2								

Table 2.3-16 (Sheet 14 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	19	30	291	6	11						17
	18	19	31	240		4						5
	18	19	32	9	1							7
	18	19	33	21		22						2
	18	19	34	75	3	5				1		7
	18	19	35	212		2						3
	18	19	36	231	6	79						18
	18	20	3	12		2						2
	18	20	4	7								
	18	20	5	8								1
	18	20	6	37		5						4
	18	20	7	9								
	18	20	8	7								
	18	20	9	6		2						
	18	20	10	5		1						1
	18	20	14	8	1							
	18	20	15	5								
	18	20	16	1		1						

Table 2.3-16 (Sheet 15 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	20	17	4		3						1
	18	20	18	5		2						
	18	20	19	16		3						2
	18	20	20	3		2						
	18	20	21	6		1						
	18	20	22	11		1						
	18	20	23	44	1							5
	18	20	25	18								
	18	20	26	46		1						3
	18	20	27	55		2						4
	18	20	28	48		1						
	18	20	29	13		2						
	18	20	30	11								2
	18	20	31	14		2						2
	18	20	32	18		2						1
	18	20	33	62		6		1				2
	18	20	34	44		3						1
	18	20	35	29		1						

Table 2.3-16 (Sheet 16 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type									
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	18	20	36	20		18						1
	19	16	5			1						
	19	16	7	1								
	19	16	10									1
	19	16	13	1								
	19	16	14									1
	19	16	19	2								
	19	16	20	1								
	19	16	26	1								
	19	16	30									1
	19	16	31									5
	19	16	32	1								
	19	16	36									5
	19	17	1	31		4						
	19	17	2	10	1	1						
	19	17	3	59	1							7
	19	17	4	51		1						7
	19	17	5	13								1

Table 2.3-16 (Sheet 17 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	19	17	6	10								1
	19	17	7	5								
	19	17	8	7								
	19	17	9	19								16
	19	17	10	165	11	2						30
	19	17	11	75								1
	19	17	12	172								2
	19	17	13	236	1	1					1	4
	19	17	14	91		1						4
	19	17	15	49	5	4	1					23
	19	17	16	12								
	19	17	17	1								
	19	17	18	4		1						
	19	17	19	1		2						
	19	17	20	1		1						4
	19	17	21	4								18
	19	17	22	97	7	5		1				113
	19	17	23	265	7	4	1					7

Table 2.3-16 (Sheet 18 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	19	17	24	254	6	5						5
	19	17	25	151	3	11						1
	19	17	26	199	5	4		1				21
	19	17	27	49	11	10		1			1	118
	19	17	28	10	2	4						33
	19	17	29	12		7						6
	19	17	30	10		12						18
	19	17	31	19		11						22
	19	17	32	16		4						25
	19	17	33	7		2						8
	19	17	34	24		2						1
	19	17	35	257	15							20
	19	17	36	219	2	9						2
	19	18	1	73	4	6						77
	19	18	2	108	13	5						6
	19	18	3	131	5	5						16
	19	18	4	41	6	8						41
	19	18	5	94	8	2						21

Table 2.3-16 (Sheet 19 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	19	18	6	25	4	2	1					14
	19	18	7	76	2	7	1					2
	19	18	8	17		1						1
	19	18	9	30	3	4				1		25
	19	18	10	15								1
	19	18	11	11								1
	19	18	12	53		1						3
	19	18	13	57	2	1						1
	19	18	14	24	2							
	19	18	15	4	1	2						
	19	18	16	11	7	5						7
	19	18	17	10		2						3
	19	18	18	64		3						9
	19	18	19	64	1		1					31
	19	18	20	20		4						14
	19	18	21	21	9	2					1	17
	19	18	22	5			1					2
	19	18	23	25		2						

Table 2.3-16 (Sheet 20 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	19	18	24	105		2						6
	19	18	25	104	1	8						1
	19	18	26	26	1							5
	19	18	27	6	2	1						9
	19	18	28	179								18
	19	18	29	159	3	5						3
	19	18	30	232	3	5						2
	19	18	31	356		2						5
	19	18	32	246		1				1		2
	19	18	33	123		5						3
	19	18	34	74						1		1
	19	18	35	100	1	2						2
	19	18	36	98		3						8
	19	19	1	160	4	3						5
	19	19	2	279	2	3						8
	19	19	3	26	1	3						16
	19	19	4	21	1	13						5
	19	19	6	45	6	3						23

Table 2.3-16 (Sheet 21 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	19	19	7	4		1						
	19	19	9	25		4						4
	19	19	10	61	3	6	1	1				93
	19	19	11	290	16	3	3	1				55
	19	19	12	56	5	2		1				20
	19	19	13	69	15	9						33
	19	19	14	116	3	3						5
	19	19	15	24								1
	19	19	16	10			1					
	19	19	18	2		2						6
	19	19	19	15								
	19	19	21	9	1	1						
	19	19	22	7								
	19	19	23	45		1						1
	19	19	24	13	1	2						
	19	19	25	75	2	2				1		3
	19	19	26	15								4
	19	19	27	8		4						

Table 2.3-16 (Sheet 22 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	19	19	28	10								
	19	19	30	29								4
	19	19	31	124		1						4
	19	19	33	9		1						
	19	19	34	11								4
	19	19	35	21								
	19	19	36	34	1	1			1			
	19	20	2	40	3	9						7
	19	20	3	156	1	10		1				12
	19	20	4	66	1	4						3
	19	20	5	69		9	1					1
	19	20	6	119	6	8						130
	19	20	7	27	5	10					1	13
	19	20	8	32	1	20						
	19	20	9	155	1	13						10
	19	20	10	55	1	5						4
	19	20	16	81	1	12						8
	19	20	17	13		11	1					304

Table 2.3-16 (Sheet 23 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	19	20	18	14		17						50
	19	20	19	48	3	4						20
	19	20	20	541	2	13	2					19
	19	20	30	158	1	2						2
	20	16	11	1								
	20	16	14	1								
	20	16	24			1						
	20	16	26	1								
	20	17	1	8	16	1						3
	20	17	2	1		2						
	20	17	4	1		1						
	20	17	5	9								3
	20	17	6	28	1	1						
	20	17	7	31	1	1						
	20	17	8	14		3						5
	20	17	9	3								
	20	17	10									8
	20	17	11			1						

Table 2.3-16 (Sheet 24 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	20	17	12	6	7	3						38
	20	17	13	6	4	6						35
	20	17	16	1		2						
	20	17	17			16						3
	20	17	18	13		27						
	20	17	19	4	1	18						4
	20	17	20	2		4						
	20	17	22	2								
	20	17	23	3		1						
	20	17	24	11	6	4						8
	20	17	25	67	2	1						10
	20	17	26	80	2	2						4
	20	17	27									6
	20	17	29	3		8						
	20	17	30	5		1						1
	20	18	1	54								2
	20	18	2	50	3	9						3
	20	18	3	70		2					1	1

Table 2.3-16 (Sheet 25 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Citrus cont.	20	18	4	66		2						
	20	18	5	87								10
	20	18	6	105								
	20	18	7	158	1	5						45
	20	18	8	157	2	15						
	20	18	9	101	1	4						
	20	18	10	69		3						3
	20	18	11	66		4				1		3
	20	18	12	78		4	1			1		2
	20	18	13	23	1	6						10
	20	18	14	1		1						1
	20	18	15	2		3						1
	20	18	16	12	2	77						4
	20	18	17	15		170						1
	20	18	18	43		125		1				22
	20	18	19	26		123						16
	20	18	20	22		175			1			12
	20	18	21	37	2	95						9

Table 2.3-16 (Sheet 26 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	**Township**	**Range**	**Section**	**Domestic**	**Public Supply**	**Irrigation**	**Industrial**	**Mining**	**Power**	**Livestock**	**Essential Services (Fire Protection)**	**Other**
Citrus cont.	20	18	22	1		1						3
	20	18	23	3		1						6
	20	18	24	6	2	1						10
	20	18	25	17		5						
	20	18	26	4		1						
	20	18	27	3		4				1		16
	20	18	28	13		9						21
	20	18	29	3		128						1
	20	18	30	15	6	33						8
	20	19	3	7								1
	20	19	4									2
	20	19	5	4								
	20	19	6	15		1						6
	20	19	8	4		1						
	20	19	9	4								
	20	19	18	4		1						2
Citrus Total				**22,509**	**607**	**2977**	**35**	**19**	**12**	**20**	**20**	**4158**

Table 2.3-16 (Sheet 27 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy	12	15	36									1
	12	17	16	58								24
	12	17	17	7	1	3						1
	12	17	18	2								
	12	17	19									1
	12	17	20	20						1		1
	12	17	21	98		1						3
	12	17	22	70	3	3						2
	12	17	23	152	2							5
	12	17	24	52	1							40
	12	17	25	44								1
	12	17	26	33		1						
	12	17	27	93								
	12	17	28	40		1				2		1
	12	17	29	4								
	12	17	30									1
	12	17	33	18		2				1		
	12	17	34	16		3				1		1

Table 2.3-16 (Sheet 28 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	12	17	35	5		3				1		
	12	17	36	38		1						
	12	18	19	54						1		
	12	18	20	17		1						
	12	18	21	26		1						
	12	18	25	24								14
	12	18	26	11	1	2				1		
	12	18	27	58	1	1				1		1
	12	18	28	54		1						
	12	18	29	62								
	12	18	30	104	2							3
	12	18	31	46								
	12	18	32	137		1				1		1
	12	18	33	83		1						
	12	18	34	26		1						
	12	18	35	33		5						
	12	18	36	19		3				2		1
	12	19	31	11		5				1		25

Table 2.3-16 (Sheet 29 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	12	19	32	17		2					1	
	13	14	22									1
	13	17	1	15		4						
	13	17	2	6		3				4		
	13	17	3	12		1				1		
	13	17	4	4								1
	13	17	5									1
	13	17	9	1						1		
	13	17	10	14								
	13	17	11	35		1						
	13	17	12	14		3						
	13	17	13	84		1						
	13	17	14	11								
	13	17	19									2
	13	17	22	8		1						1
	13	17	23	4		2						
	13	17	24	10		1						1
	13	17	25	3								3

Table 2.3-16 (Sheet 30 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	13	17	26	29						1		
	13	17	27	2								
	13	17	33									1
	13	17	34	1		1						
	13	17	35	27						1		
	13	17	36	30		2				1		
	13	18	1	30	1	3						4
	13	18	2	38		3						2
	13	18	3	24								1
	13	18	4	14						1		
	13	18	5	13		1						6
	13	18	6	8		3				1		10
	13	18	7	2		1				1		4
	13	18	8	10								
	13	18	9	3		1						
	13	18	10	43		1						16
	13	18	11	33						2		
	13	18	12	15	1	3						7

Table 2.3-16 (Sheet 31 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	13	18	13			2	1			1		2
	13	18	14							1		
	13	18	15	32		1						
	13	18	16	112		1						2
	13	18	17	26		2						1
	13	18	18	10		3						1
	13	18	19	132		1						5
	13	18	20	28		1						1
	13	18	21	142	1	1						1
	13	18	22	51		1						
	13	18	23	13		2				1		
	13	18	24	9		3						
	13	18	25	11		3						
	13	18	26	3								
	13	18	27	5		1				2		
	13	18	28	22		4				2		1
	13	18	29	88								1
	13	18	30	9		3						1

Table 2.3-16 (Sheet 32 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	13	18	31	11		6						
	13	18	32	41		1						
	13	18	33	4		5						
	13	18	34	9		1						
	13	18	35	4		1						
	13	18	36	45								
	13	19	2	1								
	13	19	4	45		3						7
	13	19	5	14			1					4
	13	19	6	27		4					1	302
	13	19	7	16	1					1		5
	13	19	8	25	1							
	13	19	9	15	2	2				2		1
	13	19	16	4								
	13	19	17	2								
	13	19	18	12		1						
	13	19	19	16		1						
	13	19	20	28						1		

Table 2.3-16 (Sheet 33 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	13	19	21	10		1				1		
	13	19	28	5		3						
	13	19	29	2								
	13	19	30	23								
	13	19	31	35		1				3		15
	13	19	32	6						1		
	13	19	33	6		4						
	14	17	1	13		8						
	14	17	2	42								
	14	17	3	4								
	14	17	4									1
	14	17	6									2
	14	17	7									1
	14	17	10									1
	14	17	11	43								6
	14	17	12	6		6						5
	14	17	13	1		3						3
	14	17	14	5								

Table 2.3-16 (Sheet 34 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	14	17	18									1
	14	17	23	60								
	14	17	24	36								
	14	17	25	28	1					1		
	14	17	26	11								
	14	17	35	39		1						
	14	17	36	58								1
	14	18	1	15		3				1		
	14	18	2	18		2						
	14	18	3	13		1						
	14	18	4	40		2				1		
	14	18	5	148	2							1
	14	18	6	121		2						
	14	18	7	2		2						5
	14	18	8	7		7				1		
	14	18	9	3		1				1		
	14	18	10	8		3						1
	14	18	11	9		2						

Table 2.3-16 (Sheet 35 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

County	Township	Range	Section	Number of Well Permits by Well Use Type: Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	14	18	12	24		1						
	14	18	13	20		2						
	14	18	14	2								
	14	18	16	6		3				1		
	14	18	17	3		2						
	14	18	18	22		1						
	14	18	19	27		2				1		1
	14	18	20	7								
	14	18	21	2		1						
	14	18	22	4		3						
	14	18	23	2		1						
	14	18	24	8		7						
	14	18	25	25		2						
	14	18	26	39		9						
	14	18	27	13		14						1
	14	18	28	12		1						
	14	18	29	63		1						1
	14	18	30	15		1						

Table 2.3-16 (Sheet 36 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	14	18	31	36		2						
	14	18	32	19		2						
	14	18	33	18								
	14	18	34	8								
	14	18	35	10		7						
	14	18	36	25		2						1
	14	19	4	9		3				1		
	14	19	5	7		1						
	14	19	6	29		3						
	14	19	7	40		2						15
	14	19	8	17	1	4						
	14	19	9	16		2				2		1
	14	19	16	22	1	4				3		
	14	19	17	1		1				1		1
	14	19	18	9		3						
	14	19	19	13		2						
	14	19	20	3		2				1		1
	14	19	21	8		2						1

Table 2.3-16 (Sheet 37 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	14	19	28	156		1						
	14	19	29	12		2						
	14	19	30	37		4				1		
	14	19	31	56	1							1
	14	19	32	5		2						
	14	19	33	37								
	15	15	12	1								
	15	15	28									1
	15	16	1									1
	15	16	2									1
	15	16	9									1
	15	16	11									1
	15	16	18									1
	15	16	19									1
	15	16	25									1
	15	16	26									1
	15	16	27									1
	15	16	33	1								

Table 2.3-16 (Sheet 38 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	15	16	36	9								
	15	17	1	24								
	15	17	2	2		4				1		
	15	17	3	17		1						12
	15	17	5									1
	15	17	6									1
	15	17	10	8	3	1						
	15	17	11	24		1						
	15	17	12	17								
	15	17	13	30								
	15	17	14	25								
	15	17	15	1								
	15	17	18									1
	15	17	19									1
	15	17	22	1								1
	15	17	23	24								1
	15	17	24	14		1						
	15	17	25	40								

Table 2.3-16 (Sheet 39 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	15	17	26	17								
	15	17	27			1						
	15	17	29									1
	15	17	34	1								3
	15	17	35		1							
	15	17	36	1								
	16	15	1	1								
	16	15	12	1								
	16	15	14	1								
	16	15	23	1								
	16	16	1	5	1	1						
	16	16	2	4								
	16	16	3	11		1						3
	16	16	4	4		1						
	16	16	5	2		1						
	16	16	6	2								
	16	16	8	5								4
	16	16	10	1	1	1						

Table 2.3-16 (Sheet 40 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	16	16	12	6		1						
	16	16	13	12								4
	16	16	17									1
	16	16	19									3
	16	16	20	2								
	16	16	21	6								
	16	16	23	1		1						
	16	16	24	1		1						
	16	16	25	10	2							
	16	16	26	3	1							
	16	16	27	2								
	16	16	28	5								1
	16	16	29			1						
	16	16	30	1								
	16	16	31	1								1
	16	16	32	12		1					1	9
	16	16	33	13	3	2						2
	16	16	34	71	1	2		1				3

Table 2.3-16 (Sheet 41 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	16	16	35	31	1	1				1		
	16	16	36	8								
	16	17	1	7								
	16	17	2	8	1							
	16	17	3	7	1	4						1
	16	17	4	5		1						
	16	17	5	7								2
	16	17	6	41	2	3						1
	16	17	7	11						1		
	16	17	8									3
	16	17	10	2								
	16	17	11	3								
	16	17	12	5								
	16	17	13	4								
	16	17	14	1								
	16	17	15	1								
	16	17	16	2								
	16	17	17	1								

Table 2.3-16 (Sheet 42 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	16	17	18	6								
	16	17	19	1								12
	16	17	21	4								7
	16	17	22	1								
	16	17	23	1								
	16	17	24	3								1
	16	17	25	3								
	16	17	26	6								
	16	17	27									3
	16	17	28	2								
	16	17	29	1								
	16	17	30	9								25
	16	17	31	5								
	16	17	32	4		1						
	16	17	33	45								
	16	17	34	101		3						2
	16	17	35	7								
	16	17	36	34	1	1						1

Table 2.3-16 (Sheet 43 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Levy cont.	17	16	1	44	4	4		1				12
	17	16	2	41		8				1		7
	17	16	3	55	7	5		1				39
	17	16	4	59	1	3						23
	17	16	5	36		4						39
	17	16	6	5		2				2		4
	17	16	7	1								4
	17	17	2	99		3						2
	17	17	3	54	1							1
	17	17	4	38	2							1
	17	17	5	23								2
	17	17	6	33	2	2						1
	17	17	7	18	1							
	17	17	8	5								4
	17	17	9	1								
Levy Total				**6121**	**61**	**354**	**2**	**3**		**65**	**3**	**850**

Table 2.3-16 (Sheet 44 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion	13	19	1	2								
	13	19	2	8						1		8
	13	19	3	18		4						1
	13	19	10	11		1						2
	13	19	11	8		1				1		
	13	19	12	5	1	2						2
	13	19	13	17								
	13	19	14	6		3				2		
	13	19	15	16		1				1		
	13	19	22	21		2				1		
	13	19	23	4								
	13	19	24	2								
	13	19	25	1								
	13	19	26	6		3						
	13	19	27	26		1				1		
	13	19	34	8								
	13	19	35	2		2						
	13	19	36	5	1	3						3

Table 2.3-16 (Sheet 45 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	13	20	19	2								
	13	20	29							1		
	13	20	30	4		1						
	13	20	31	4		3				1		1
	13	20	32	1						1		
	13	20	33	9	2					2		
	14	19	1	15								
	14	19	2	16								
	14	19	3	6		2				2		
	14	19	10	22		5				3		
	14	19	11	10		3						1
	14	19	12	29	2	1				2		1
	14	19	13	13								
	14	19	14	8		4						
	14	19	15	16		1						1
	14	19	22	10		1						
	14	19	23	10		2						1
	14	19	24	17		2				1		

Table 2.3-16 (Sheet 46 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	14	19	25	27		1				1		2
	14	19	26	26		1				1		
	14	19	27	13		1				1		
	14	19	34	1								
	14	19	36	4						1		1
	14	20	3	19								4
	14	20	4	16						3		
	14	20	5	10								
	14	20	6	8		1				1		4
	14	20	7	29	4	1				7		6
	14	20	8	35		1				3		1
	14	20	9	25	1	1				1		
	14	20	10	13		1						
	14	20	11	4								
	14	20	12	11		2						
	14	20	13	52		1				2		
	14	20	14	20						1		
	14	20	15	14		2						

Table 2.3-16 (Sheet 47 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	14	20	16	45		1				1		
	14	20	17	46		7				3		3
	14	20	18	47	2	3				5		13
	14	20	19	31		1				3		
	14	20	20	23	4	3				1		6
	14	20	21	25	1	2				2		1
	14	20	22	6						1		
	14	20	23	47						3		1
	14	20	24	39	1	3				2		2
	14	20	25	10	1	5				1		
	14	20	26	19		1				2		1
	14	20	27	22	7	5						15
	14	20	28	15						2		
	14	20	29	13						3		
	14	20	30	29		3		1		3		
	14	20	31	12						2		
	14	20	32	16	1	2				4		
	14	20	33	26		1				4		

Table 2.3-16 (Sheet 48 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	14	20	34	20		3				5		
	14	20	35	21		2						
	14	20	36	19	2	21				2		2
	14	21	31	21	8	30						4
	15	18	1	17		2						1
	15	18	2	29		2						1
	15	18	3	7		4						1
	15	18	4	11		4				1		
	15	18	5	8		2						
	15	18	6	21		1						1
	15	18	7	16								18
	15	18	8	16								
	15	18	9	5		3						
	15	18	10	17		2				2		2
	15	18	11	7		3				2		1
	15	18	12	12	1	1						5
	15	18	13	32		2				1		
	15	18	14	11		7						

Table 2.3-16 (Sheet 49 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	15	18	15	15		1				1		
	15	18	16	3								
	15	18	17	34								
	15	18	18	23								1
	15	18	19	30								1
	15	18	20	33		1						1
	15	18	21	38								
	15	18	22	22	1	1						
	15	18	23	16		1				1		1
	15	18	24	28		3				2		
	15	18	25	68	4	2				1		
	15	18	26	34		1						
	15	18	27	25	1							
	15	18	28	53								1
	15	18	29	51								4
	15	18	30	39		1						
	15	18	31	43								
	15	18	32	79								6

Table 2.3-16 (Sheet 50 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	15	18	33	64								1
	15	18	34	79		1						3
	15	18	35	120	2							
	15	18	36	87	2	2						1
	15	19	1	14								6
	15	19	2	17						1		1
	15	19	3	6								
	15	19	4	24		3						
	15	19	5	4		3				1		
	15	19	6	10	1	1						
	15	19	7	10		2						
	15	19	8	14		1						
	15	19	9	17		1				1		
	15	19	10	1								
	15	19	11	16		1						
	15	19	12	87		1				2		4
	15	19	13	41		8				3		1
	15	19	14	67		2						2

Table 2.3-16 (Sheet 51 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	15	19	15	9								
	15	19	16	5								
	15	19	17	2								
	15	19	18	24		3						
	15	19	19	93		1						
	15	19	20	84		1				1		1
	15	19	21	118								1
	15	19	22	2								
	15	19	23	36								
	15	19	24	156		2				1		2
	15	19	25	140	1	1						11
	15	19	26	72								
	15	19	28	210		2						1
	15	19	29	83	1	1						1
	15	19	30	156						1		1
	15	19	31	170		1						1
	15	19	32	116	2	1						4
	15	19	33	212	1							1

Table 2.3-16 (Sheet 52 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	15	19	35	61	1							
	15	19	36	27		2				4		
	15	20	1	4	3	4						4
	15	20	2	10		1				1		
	15	20	3	10		1				2		1
	15	20	4	29		4				3		1
	15	20	5	18		3				5		
	15	20	6	22								
	15	20	7	119		1				2		
	15	20	8	76						1		
	15	20	9	577								2
	15	20	10	155	1	2						1
	15	20	11	10		1						
	15	20	12	26	1							
	15	20	13	46		4				2		12
	15	20	14	22		1						
	15	20	15	37								1
	15	20	16	104	4	7						7

Table 2.3-16 (Sheet 53 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	15	20	17	85	1	5				1		9
	15	20	18	236		3				1		1
	15	20	19	96		2				1		2
	15	20	20	24		8				6		
	15	20	21	10		1						
	15	20	22	4	1							
	15	20	23	9		7						
	15	20	24	57		5	1			1		2
	15	20	25	61		1						1
	15	20	26	15	1							1
	15	20	27	9		3						
	15	20	28	20		2						
	15	20	29	5								
	15	20	30	13	2	1				2		1
	15	20	31	46		5				6		1
	15	20	32	97		1						1
	15	20	33	52								
	15	20	34	6		2						

Table 2.3-16 (Sheet 54 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	15	20	35	2								
	15	20	36	91		4				2		2
	15	21	6	17	3	2						20
	15	21	7	104		6	1					5
	15	21	17	10	20	4						93
	15	21	18	90	7	4						40
	15	21	19	282		3		1				17
	15	21	20	5	1	3						1
	15	21	29	17	4	3						8
	15	21	30	15	5	2				1		8
	15	21	31	2								
	15	21	32	8	5	1				1		13
	15	21	33	17	4	10						6
	16	18	1	11	5	1				1		2
	16	18	2	82		1						1
	16	18	3	8								1
	16	18	4	3		1						1
	16	18	5	6								

Table 2.3-16 (Sheet 55 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	16	18	6	8		2						
	16	18	7	5								
	16	18	9	4								
	16	18	10	58	2	4						3
	16	18	11	388	1	3						7
	16	18	12	33	6	30						5
	16	18	13	32	2	179						2
	16	18	14	230	1	11						7
	16	18	15	121		3						4
	16	18	16	7								1
	16	18	17	1		1						3
	16	18	18	4								
	16	18	19	3	1							
	16	18	20	2		1						1
	16	18	21	1								
	16	18	22	9								5
	16	18	23	62	2	1						17
	16	18	24	31	1	54	1					22

Table 2.3-16 (Sheet 56 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	16	18	25	24		8						3
	16	18	26	11	3	11	1					37
	16	18	27	20		2				1		
	16	18	28	6		1						
	16	18	29	16	1	1						5
	16	18	30	7		2						
	16	18	31	33		3						4
	16	18	32	39								1
	16	18	33	149	4	4						7
	16	18	34	59	4							3
	16	18	35	23	3	12						256
	16	18	36	20	2	6	1					6
	16	19	1	6						1		4
	16	19	2	6		1						
	16	19	3	3		2						
	16	19	4	39		4						1
	16	19	5	5	2	3						8
	16	19	6	62		1						1

Table 2.3-16 (Sheet 57 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	16	19	7	91		4						
	16	19	8	5	1	4						
	16	19	10	1								
	16	19	11	7		1						
	16	19	12	7		7				5		
	16	19	13	23		28						
	16	19	14	4		1				3		
	16	19	15	3								
	16	19	16			2						
	16	19	17							1		
	16	19	18	38	5	16						5
	16	19	19	37	3	8						1
	16	19	20		4	2				1		1
	16	19	21	1								
	16	19	22			1						
	16	19	23	5		1						
	16	19	24	9		12						
	16	19	25	20		2				2		1

Table 2.3-16 (Sheet 58 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	16	19	26	5								4
	16	19	27	1								
	16	19	28	9								2
	16	19	29	29		4				1		1
	16	19	30	16	1	4						1
	16	19	31	24								17
	16	19	32	10		2						1
	16	19	33	7								
	16	19	34	3		1						
	16	19	35	3			1	1				
	16	19	36	25	3	1				1		2
	16	20	1	2	2	3						3
	16	20	2			1						
	16	20	3	2								
	16	20	4	1								
	16	20	5	84								1
	16	20	6	116		1						2
	16	20	7	90		1						

Table 2.3-16 (Sheet 59 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	16	20	8	70								8
	16	20	9	1								
	16	20	10	3								9
	16	20	11	1		2						
	16	20	12	5	1	2						6
	16	20	13	4		2						4
	16	20	14	1	1	1						1
	16	20	15	2								
	16	20	16			1						
	16	20	17	57								
	16	20	18	85								1
	16	20	19	88		3				1		1
	16	20	20	70								
	16	20	22	4								
	16	20	23	2	5	1				1		11
	16	20	24	5	3	3						9
	16	20	25	74	22	19					1	16
	16	20	26	44	15	21				1		14

Table 2.3-16 (Sheet 60 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	16	20	27	72	2	3						
	16	20	28	82	1							1
	16	20	29	50		6						1
	16	20	30	181						1		
	16	20	31	142	1	2						2
	16	20	32	36	3	2						
	16	20	33	39	2	4				1		
	16	20	34	32	2	8						7
	16	20	35	9	11	11					1	25
	16	20	36	5		8						4
	16	21	4	15	12	12				1		15
	16	21	5	39	5	4				1		2
	16	21	6	1		2						
	16	21	7	62	1					1		2
	16	21	8	36	12	7				1		12
	16	21	9	5	2	1						1
	16	21	16	25	4	5				1		1
	16	21	17	12	12	14						15

Table 2.3-16 (Sheet 61 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	16	21	18	82	5	2				1		8
	16	21	19	86	5	3						2
	16	21	20	30		16						1
	16	21	21	26		14				1		4
	16	21	28	122		51						2
	16	21	29	150	3	64				1		6
	16	21	30	56	2	23						2
	16	21	31	5	1							
	16	21	32	30		7		1				1
	16	21	33	57		42						2
	17	19	1	7								
	17	19	2	18		1						2
	17	19	3	3						1		1
	17	19	5	3								1
	17	19	8	7								
	17	19	10	6								5
	17	19	11	1								
	17	19	12	2		1						

Table 2.3-16 (Sheet 62 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

County	Township	Range	Section	Number of Well Permits by Well Use Type								
				Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	17	19	13	6								
	17	19	14	1								
	17	19	15	13								
	17	19	24	3							1	
	17	20	1	20	1							
	17	20	2			1						
	17	20	3	7	1	1						
	17	20	4	1		1						
	17	20	5			1						1
	17	20	7	1								1
	17	20	8	1	1	1						12
	17	20	9	1	3	4						7
	17	20	10	2								
	17	20	11	1								
	17	20	12	31	1	5						
	17	20	13	67		3						4
	17	20	14	1								
	17	20	15	3								

Table 2.3-16 (Sheet 63 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Marion cont.	17	20	16	56		2						1
	17	20	17	7	2	2						6
	17	20	18	3		1						
	17	20	19	10	1	3						
	17	20	20	11		2						1
	17	20	21	47		2						
	17	20	22	180		2						3
	17	20	23	111		1					1	4
	17	20	24	85	1	41						5
	17	20	25	7								
	17	20	26	2								
	17	20	27	1								
	17	20	28	2								
	17	20	33	2								
	17	20	34	1								
	17	20	35	4								
	17	20	36	5								
	17	21	4	17		3						1

Table 2.3-16 (Sheet 64 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	**Township**	**Range**	**Section**	**Domestic**	**Public Supply**	**Irrigation**	**Industrial**	**Mining**	**Power**	**Livestock**	**Essential Services (Fire Protection)**	**Other**
Marion cont.	17	21	5	34		3						1
	17	21	6	38								1
	17	21	7	86	1	3						4
	17	21	8	48		3						4
	17	21	9	4	1	1						
	17	21	16	1		5						
	17	21	17	23		10						
	17	21	18	27	1							
	17	21	19	78	1	2						1
	17	21	20	43		3						2
	17	21	21	15	1	10						1
	17	21	29	5		2						1
	17	21	30	2								
	17	21	31	1								
	17	21	32			1						
Marion Total				**12,784**	**327**	**1303**	**6**	**4**		**186**	**4**	**1162**

Table 2.3-16 (Sheet 65 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	**Township**	**Range**	**Section**	**Domestic**	**Public Supply**	**Irrigation**	**Industrial**	**Mining**	**Power**	**Livestock**	**Essential Services (Fire Protection)**	**Other**
Sumter	18	20	1	17								
	18	20	2	8		1						
	18	20	3	3								
	18	20	11	6		1						
	18	20	12	5								1
	18	20	13	1								
	18	20	23	7								3
	18	20	24	12		1						
	18	20	25	4								1
	18	21	5	3								
	18	21	6	2								
	18	21	7	2								
Sumter Total				**70**		**3**						**5**

Table 2.3-16 (Sheet 66 of 66)
Southwest Florida Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type								
County	Township	Range	Section	Domestic	Public Supply	Irrigation	Industrial	Mining	Power	Livestock	Essential Services (Fire Protection)	Other
Total SWFWMD				41,484	995	4637	43	26	12	271	27	6175

Notes:

Domestic well use category includes permits for "Domestic" and "Repair Domestic" well use types.

Public Supply well use category includes permits for "Public Supply" and "Repair Public Supply" well use types.

Irrigation well use category includes permits for "Irrigation" and "Repair Irrigation" well use types.

Other well use category includes permits for "Air Conditioning Supply - Heat Pump", "Aquaculture", "Back Plugged", "Geothermal Well", "Grounding Rod", "Injection Well", "Observation or Monitor Well", "Plugged", "Recovery of Contaminants", "Repair or Deepen (Use not Specified)", "Return Air/Heat", "Sealing Water", "Test Well/Piezometer", and unspecified well use types.

Source: Reference 2.3-050

Table 2.3-17 (Sheet 1 of 7)
Suwannee River Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type				
County	Township	Range	Section	Self-Supplied Residential	Public Supply	Irrigation	Fire Protection	Other
Levy	12	15	26	1				
	12	15	32	1				
	12	16	21					2
	12	16	24	1				
	12	16	25	1				
	12	16	34	1				
	12	17	18	5				5
	12	17	19	12				
	12	17	20	24				
	12	17	29	3				
	12	17	30	3				
	12	17	31	1				
	12	17	32	4				
	13	14	11	23		1		
	13	14	12	18	1	2		
	13	14	13	4				
	13	14	14	6				
	13	14	22	3				
	13	14	23	2				
	13	14	27	6				

Table 2.3-17 (Sheet 2 of 7)
Suwannee River Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type				
County	Township	Range	Section	Self-Supplied Residential	Public Supply	Irrigation	Fire Protection	Other
Levy, cont.	13	14	31	1				
	13	14	32	1				
	13	14	33	4				
	13	14	34	1				
	13	14	35	4				
	13	14	36	2				
	13	15	6	25				
	13	15	12	1				
	13	15	15	1				
	13	15	16	4				
	13	15	17	1				
	13	15	18	1				
	13	15	22	1				
	13	15	25					20
	13	15	26	5				
	13	15	27	1				
	13	15	28	1				
	13	15	29	2				
	13	15	30	1				
	13	15	32	1				

Table 2.3-17 (Sheet 3 of 7)
Suwannee River Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type				
County	Township	Range	Section	Self-Supplied Residential	Public Supply	Irrigation	Fire Protection	Other
Levy, cont.	13	15	33	1				
	13	15	34	5				
	13	15	35	2				
	13	15	36	1				
	13	16	1	1				
	13	16	32	1				
	13	17	4	2				
	13	17	5	3		1		
	13	17	7	1				
	13	17	8	3				
	13	17	9	2				
	13	17	17		2	1	1	
	13	17	30					1
	13	17	34		1			
	14	13	12	3				
	14	13	13	1				
	14	13	14	3				
	14	13	22	1				
	14	13	24	5				
	14	13	25	19				
	14	13	26	17				

Table 2.3-17 (Sheet 4 of 7)
Suwannee River Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type				
County	Township	Range	Selection	Self-Supplied Residential	Public Supply	Irrigation	Fire Protection	Other
Levy, cont.	14	13	27	22				
	14	13	34	43		1		
	14	13	35	52		2		
	14	13	36	53	5	1	1	4
	14	14	4	2				
	14	14	5	4				
	14	14	7	3				
	14	14	8	1				
	14	14	9	1				
	14	14	10	2				
	14	14	12	1				
	14	14	14	2				
	14	14	15	2				
	14	14	16	11				
	14	14	17	6				
				4				
	14	14	19	49				
	14	14	20	6				
	14	14	22	1				
	14	14	26	1				
	14	14	27	2				

Table 2.3-17 (Sheet 5 of 7)
Suwannee River Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type				
County	Township	Range	Selection	Self-Supplied Residential	Public Supply	Irrigation	Fire Protection	Other
Levy, cont.	14	14	28	4				
	14	14	29	16	2	1		1
	14	14	30	55	4			
	14	14	31	4	2			
	14	14	36	1				
	14	15	3	1				
	14	15	5	2				
	14	15	11	1				
	14	15	20	4				3
	14	15	21	2				
	14	15	33	2				
	14	15	36	5				
	14	16	11	4				
	14	16	12	8				
	14	16	13	1				
	14	16	15	2				
	14	16	16	7				
	14	16	17	12				4
	14	16	20	1	1			15

Table 2.3-17 (Sheet 6 of 7)
Suwannee River Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

				Number of Well Permits by Well Use Type				
County	Township	Range	Selection	Self-Supplied Residential	Public Supply	Irrigation	Fire Protection	Other
Levy, cont.	14	16	21	7	1			2
	14	16	22	6				
	14	16	28	6				
	14	16	29	17				
	14	16	30	13				
	14	16	31	8				
	14	16	32	11		2		
	14	16	33	11				
	14	17	3	2				
	14	17	7	1	1			16
	14	17	8	1				
	14	17	10	8				
	14	17	15	2				
	14	17	23	9				
	14	17	30	2				
	15	13	2		1			
	15	13	3		1			
	15	13	4	33	1			
	15	13	9	3	1			1

Table 2.3-17 (Sheet 7 of 7)
Suwannee River Water Management District Permitted Wells within 40.2 Km (25 Mi.) of the LNP Site

County	Township	Range	Selection	Number of Well Permits by Well Use Type				
				Self-Supplied Residential	Public Supply	Irrigation	Fire Protection	Other
Levy, cont.	15	13	16	2				
	15	14	8	1				
	15	15	24	2				
	15	16	5	3				
	15	16	6	4				
	15	16	22	1				
	15	16	24	2				
	15	17	19					2
	15	17	28	1				
SRWMD Total				**804**	**24**	**12**	**2**	**76**

Notes:

Irrigation category includes "Agricultural Irrigation", "Landscape Irrigation (not including residential)", and "Home Garden or Residential Landscape" well use types.

Other category includes "Monitor" and "Other" wells use types.

Source: Reference 2.3-051

Table 2.3-18 (Sheet 1 of 6)
USGS County Water Use Data – Florida 2000

		All Counties within 16 km (10 mi.) of LNP Site			Additional Counties within 40.2 km (25 mi.) of LNP Site	Additional Counties within 80 km (50 mi.) of LNP Site						
	Units	**Citrus**	**Levy**	**Marion**	**Sumter**	**Alachua**	**Dixie**	**Gilchrist**	**Hernando**	**Lake**	**Pasco**	**Putnam**
Federal Information Processing Standards (FIPS)		12,017	12,075	12,083	12,119	12,001	12,029	12,041	12,053	12,069	12,101	12,107
State		FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL
State FIPS Code		12	12	12	12	12	12	12	12	12	12	12
County FIPS Code		17	75	83	119	1	29	41	53	69	101	107
Year		2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Total Population of County	Thousands	118.09	34.75	258.92	53.35	217.96	13.83	14.44	130.8	210.8	344.77	70.42
		Public Supply			**Public Supply**	**Public Supply**						
Total Population Served	Thousands	66.23	11.07	136.84	28.24	179.12	4.62	1.85	116.03	171.14	275.8	23.31
Groundwater Withdrawals, Fresh Coded	mgd	13.97	2.16	27.99	4.44	28.26	0.67	0.27	20.26	39.92	102.67	3.2
Surface Water Withdrawals, Fresh Coded	mgd	0	0	0	0	0	0	0	0.01	0	0	0
Total Withdrawals, Fresh	mgd	13.97	2.16	27.99	4.44	28.26	0.67	0.27	20.27	39.92	102.67	3.2
		Domestic Water Use			**Domestic Water Use**	**Domestic Water Use**						
Self-Supplied Population	Thousands	51.86	23.38	122.08	25.11	38.84	9.21	12.59	14.77	39.39	68.97	47.11
Groundwater Withdrawals, Fresh Coded	mgd	7.2	3.95	16.42	4.7	4.12	0.98	1.33	1.41	4.27	4.5	4.99

Table 2.3-18 (Sheet 2 of 6)
USGS County Water Use Data – Florida 2000

		All Counties within 16 km (10 mi.) of LNP Site			Additional Counties within 40.2 km (25 mi.) of LNP Site	Additional Counties within 80 km (50 mi.) of LNP Site						
		Citrus	Levy	Marion	Sumter	Alachua	Dixie	Gilchrist	Hernando	Lake	Pasco	Putnam
	Units	Mining			Mining	Mining						
		Domestic Water Use			Domestic Water Use	Domestic Water Use						
Surface Water Withdrawals, Fresh Coded	mgd	0	0	0	0	0	0	0	0	0	0	0
Total Withdrawals, Fresh	mgd	7.2	3.95	16.42	4.57	4.12	0.98	1.33	1.41	4.27	4.5	4.99
		Industrial Water Use			Industrial Water Use	Industrial Water Use						
Groundwater Withdrawals, Fresh Coded	mgd	0.14	0.01	1.1	0.26	0.45	0.02	0	6.01	3.69	3.72	16.79
Total Withdrawals, Ground-water	mgd	0.14	0.01	1.1	0.26	0.45	0.02	0	6.01	3.69	3.72	16.79
Surface Water Withdrawals, Fresh Coded	mgd	0	0	0	0	0	0	0	0	0	0.27	30.28
Total Withdrawals, Surface-water	mgd	0	0	0	0	0	0	0	0	0	0.27	30.28
Total Withdrawals, Fresh	mgd	0.14	0.01	1.1	0.26	0.45	0.02	0	6.01	3.69	3.99	47.07
Total Withdrawals	mgd	0.14	0.01	1.1	0.26	0.45	0.02	0	6.01	3.69	3.99	47.07

Table 2.3-18 (Sheet 3 of 6)
USGS County Water Use Data – Florida 2000

		All Counties within 16 km (10 mi.) of LNP Site			Additional Counties within 40.2 km (25 mi.) of LNP Site	Additional Counties within 80 km (50 mi.) of LNP Site						
		Citrus	Levy	Marion	Sumter	Alachua	Dixie	Gilchrist	Hernando	Lake	Pasco	Putnam
	Units		Mining		Mining				Mining			
			Irrigation		Irrigation				Irrigation			
Irrigation, acres irrigated, sprinkler	Thousands	2.95	14.37	13.26	3.68	15.28	0.38	6.74	3.12	9.95	9.53	3.15
Irrigation, acres irrigated, micro irrigation	Thousands	0.25	0.07	1.39	0.2	0.38	0	0	1.12	17.38	9.55	0.4
Irrigation, acres irrigated, surface (flood)	Thousands	0	0.2	0	0	0	0	0	0	0.51	0.77	5.5
Irrigation, acres irrigated, total	Thousands	3.2	14.64	14.65	3.88	15.66	0.38	6.74	4.24	27.84	19.85	9.05
Irrigation, ground water withdrawals, fresh	mgd	6.31	21.16	20.74	15.29	21.48	1.55	11.99	7.41	36.21	26.76	12.33
Irrigation, surface water withdrawals, fresh	mgd	0.97	0.61	2.09	0.64	0.54	0.03	0.21	0.91	9.17	1.42	3.9
Irrigation, total withdrawals, fresh	mgd	7.28	21.77	22.83	15.93	22.02	1.58	12.2	8.32	45.38	28.18	16.23
			Livestock Water Use		Livestock Water Use				Livestock Water Use			
Groundwater Withdrawals, Fresh Coded	mgd	0.2	1.11	0.45	2.14	0.59	0.04	1.98	0.68	0	0.89	0
Surface Water Withdrawals, Fresh Coded	mgd	0.04	0.06	0.02	0.07	0.03	0	0.11	0	0	0.1	0
Total Withdrawals, Fresh	mgd	0.24	1.17	0.47	2.21	0.62	0.04	2.09	0.68	0	0.8	0

Table 2.3-18 (Sheet 4 of 6)
USGS County Water Use Data – Florida 2000

		All Counties within 16 km (10 mi.) of LNP Site			Additional Counties within 40.2 km (25 mi.) of LNP Site	Additional Counties within 80 km (50 mi.) of LNP Site						
		Citrus	Levy	Marion	Sumter	Alachua	Dixie	Gilchrist	Hernando	Lake	Pasco	Putnam
	Units	Mining			Mining	Mining						
Groundwater Withdrawals, Fresh Coded	mgd	0.62	0	0	0	0	0	0	13.69	5.65	0.11	2.26
Surface Water Withdrawals, Fresh Coded	mgd	0.29	1.96	0	16.98	0	0	0	0.07	0.6	0.54	0.84
Total Withdrawals, Fresh	mgd	0.91	1.96	0	16.98	0	0	0	13.76	6.25	0.65	3.1
		Thermoelectric Power Water Use			Thermoelectric Power Water Use	Thermoelectric Power Water Use						
Ground water Withdrawals, Fresh Coded	mgd	1.55	0	0	0	2.63	0	0	0	0	0.14	0.69
Surface Water Withdrawals, Fresh Coded	mgd	0	0	0	0	0	0	0	0	0	0	13.9
Surface Water Withdrawals, Saline	mgd	393.9	0	0	0	0	0	0	0	0	1956.5	0
Total Withdrawals, Surface Water	mgd	393.9	0	0	0	0	0	0	0	0	1956.5	13.9
Total Withdrawals, Fresh	mgd	1.55	0	0	0	2.63	0	0	0	0	0.14	0.69
Total Withdrawals	mgd	395.45	0	0	0	2.63	0	0	0	0	1956.64	14.59

Table 2.3-18 (Sheet 5 of 6)
USGS County Water Use Data – Florida 2000

		All Counties within 16 km (10 mi.) of LNP Site			Additional Counties within 40.2 km (25 mi.) of LNP Site	Additional Counties within 80 km (50 mi.) of LNP Site						
		Citrus	**Levy**	**Marion**	**Sumter**	**Alachua**	**Dixie**	**Gilchrist**	**Hernando**	**Lake**	**Pasco**	**Putnam**
	Units	**Mining**			**Mining**	**Mining**						
		Thermoelectric Power Once-Through			**Thermoelectric Power Once-Through**	**Thermoelectric Power Once-Through**						
Surface Water Withdrawals, Fresh Coded	mgd	0	0	0	0	0	0	0	0	0	0	0
Surface Water Withdrawals, Saline	mgd	291.62	0	0	0	0	0	0	0	0	1956.5	0
Total Withdrawals, Surface Water	mgd	291.62	0	0	0	0	0	0	0	0	1956.5	0
		Thermoelectric Power Closed-Loop			**Thermoelectric Power Closed-Loop**	**Thermoelectric Power Closed-Loop**						
Groundwater Withdrawals, Fresh Coded	mgd	1.55	0	0	0	2.63	0	0	0	0	0.14	0.69
Surface Water Withdrawals, Fresh Coded	mgd	0	0	0	0	0	0	0	0	0	0	13.9
Surface Water Withdrawals, Saline	mgd	102.28	0	0	0	0	0	0	0	0	0	0
Total Withdrawals, Fresh	mgd	1.55	0	0	0	2.63	0	0	0	0	0	13.9
Total Withdrawals	mgd	103.83	0	0	0	2.63	0	0	0	0	0.14	14.59
		Totals			**Totals**	**Totals**						
Total Groundwater Withdrawals, Fresh Coded	mgd	29.99	28.39	66.7	26.7	57.53	3.26	15.57	49.46	89.94	138.79	48.26
Total Withdrawals, Groundwater	mgd	29.99	28.39	66.7	26.7	57.53	3.26	15.57	49.46	89.94	138.97	40.26
Total Surface Water Withdrawals, Fresh Coded	mgd	1.3	2.63	2.11	17.69	0.57	0.03	0.32	0.99	9.77	2.24	48.92

Table 2.3-18 (Sheet 6 of 6)
USGS County Water Use Data – Florida 2000

		All Counties within 16 km (10 mi.) of LNP Site			Additional Counties within 40.2 km (25 mi.) of LNP Site	Additional Counties within 80 km (50 mi.) of LNP Site						
		Citrus	Levy	Marion	Sumter	Alachua	Dixie	Gilchrist	Hernando	Lake	Pasco	Putnam
	Units		Mining		Mining				Mining			
Total Surface Water Withdrawals, Saline	mgd	393.9	0	0	0	0	0	0	0	0	1956.5	0
Total Withdrawals, Surface Water	mgd	395.2	2.63	2.11	17.69	0.57	0.03	0.32	0.99	9.77	1958.74	48.92
Total Withdrawals, Fresh	mgd	31.29	31.02	68.81	44.39	58.1	3.29	15.89	50.45	99.51	141.03	89.18
Total Withdrawals	mgd	425.19	31.02	68.81	44.39	58.1	3.29	15.89	50.45	99.51	2097.53	89.18

Notes:

FIPS - Federal Information Processing Standards
km = kilometers
mgd = million gallons per day
mi. = miles

Source: Reference 2.3-055

Table 2.3-19
Nearest Residences Relative to the LNP Site

Sector	Nearest Residence Distance From LNP 1/LNP 2 (miles)
N	3.2
NNE	4.1
NE	–
ENE	–
E	4.8
ESE	3.7
SE	2.6
SSE	2.9
S	4.2
SSW	2.8
SW	2
WSW	1.7
W	–
WNW	–
NW	1.6
NNW	2.4

Notes:

Distances measured from the center point of LNP 1 and LNP 2.

"–" indicates that no receptor was identified within 8 km (5 mi.).

E = east, W = west, N = north, S = south

Table 2.3-20 (Sheet 1 of 2)
Projected Water Use by County to 2025 (mgd)

		Average					One-in-Ten Drought				
County	**Use**	**2005**	**2010**	**2015**	**2020**	**2025**	**2005**	**2010**	**2015**	**2020**	**2025**
Levy	Non-Irrigated Agricultural Use	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---
	Irrigated Agricultural Use	6.55	6.23	6.04	6.17	6.17	7.52	7.18	6.96	7.12	7.12
	Industrial/Commercial Use	0.035	0.036	0.037	0.038	0.039	---	---	---	---	---
	Mining/Dewatering Use	0.000	0.000	0.000	0.000	0.000	---	---	---	---	---
	Power Generation Use	0.000	0.000	0.000	0.000	0.000	---	---	---	---	---
	Public Use	3.681	4.109	4.506	4.874	5.203	3.902	4.355	4.776	5.166	5.516
	Aesthetic/Recreational Use	0.021	0.024	0.026	0.028	0.30	0.405	0.446	0.486	0.526	0.565
Citrus	Non-Irrigated Agricultural Use	0.1	0.1	0.1	0.1	0.1	---	---	---	---	---
	Irrigated Agricultural Use	0.54	0.41	0.40	0.40	0.40	0.57	0.42	0.41	0.41	0.41
	Industrial/Commercial Use	0.397	0.409	0.421	0.434	0.447	---	---	---	---	---
	Mining/Dewatering Use	0.396	0.408	0.420	0.433	0.446	---	---	---	---	---
	Power Generation Use	1.309	1.309	1.309	1.309	1.309	---	---	---	---	---
	Public Use	20.226	22.495	24.586	26.494	28.173	21.439	23.845	26.061	28.083	29.863
	Aesthetic/Recreational Use	0.132	0.144	0.155	0.166	0.177	0.481	0.524	0.565	0.605	0.644
Marion	Non-Irrigated Agricultural Use	0.4	0.4	0.4	0.4	0.4	---	---	---	---	---
	Irrigated Agricultural Use	5.91	6.16	6.57	6.57	7.41	6.16	7.30	7.80	7.80	8.81
	Industrial/Commercial Use	0.128	0.132	0.136	0.140	0.145	---	---	---	---	---

Table 2.3-20 (Sheet 2 of 2)
Projected Water Use by County to 2025 (mgd)

		Average					One-in-Ten Drought				
County	**Use**	**2005**	**2010**	**2015**	**2020**	**2025**	**2005**	**2010**	**2015**	**2020**	**2025**
	Mining/Dewatering Use	0.000	0.000	0.000	0.000	0.000	---	---	---	---	---
	Power Generation Use	0.000	0.000	0.000	0.000	0.000	---	---	---	---	---
	Public Use	19.259	22.163	24.854	27.355	29.578	20.415	23.493	26.345	28.996	31.353
	Aesthetic/Recreational Use	0.083	0.092	0.100	0.108	0.117	0.720	0.796	0.868	0.941	1.012

Notes:

“---“ = no projection
mgd = million gallons per day

Source: Reference 2.3-054

**Table 2.3-21 (Sheet 1 of 7)
Field Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida**

Date Units:	Temperature	Specific Conductance	Dissolved Oxygen	pH
	°C	µS/cm	mg/L	SU
5/31/1966	N/A	260	N/A	7.6
1/6/1967	15	282	N/A	N/A
4/5/1967	23.9	270	N/A	N/A
5/17/1967	23.9	262	7.6	7.4
8/25/1967	27.8	282	N/A	N/A
8/28/1967	26.7	220	N/A	N/A
9/28/1967	20.6	210	N/A	N/A
1/3/1968	21	230	N/A	N/A
4/3/1968	24	335	N/A	N/A
4/10/1968	24	189	N/A	N/A
5/3/1968	24	290	7	7.4
7/30/1968	28	180	N/A	N/A
1/3/1969	17	280	N/A	N/A
3/24/1969	21	310	N/A	N/A
5/2/1969	24	270	7.2	7.2
6/20/1969	32	249	N/A	N/A
6/20/1969	28	259	N/A	N/A
8/7/1969	26	289	N/A	N/A
8/7/1969	28	229	N/A	N/A
10/3/1969	25	200	N/A	N/A
1/9/1970	11	209	N/A	N/A
3/3/1970	19	208	N/A	N/A
4/30/1970	25	250	5	8.1
6/25/1970	26.5	275	N/A	N/A
7/23/1970	26	255	5.6	N/A
7/31/1970	27.5	260	N/A	N/A
1/14/1971	21.5	290	6.9	N/A
2/17/1971	18	396	8.9	N/A
4/7/1971	19.5	269	8.4	N/A
5/26/1971	26	N/A	7	N/A
5/26/1971	26	250	7	N/A
7/23/1971	26.5	248	7.5	N/A
9/8/1971	26.5	224	3.7	N/A

Table 2.3-21 (Sheet 2 of 7)
Field Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
11/5/1971	23.5	254	6.1	N/A
12/16/1971	22	279	7.3	N/A
2/3/1972	20.5	280	7.1	N/A
5/18/1972	24	N/A	4.2	N/A
5/18/1972	24	255	4.2	N/A
7/12/1972	25.5	N/A	6.8	N/A
7/12/1972	25.5	804	6.8	N/A
8/29/1972	26	N/A	5.1	N/A
8/29/1972	26	270	5.1	N/A
10/25/1972	23	N/A	5.1	N/A
10/25/1972	23	260	5.1	N/A
12/5/1972	20.5	N/A	8.7	N/A
12/5/1972	20.5	278	8.7	N/A
1/26/1973	20	N/A	7.4	N/A
1/26/1973	20	284	7.4	N/A
3/14/1973	24.5	N/A	5.1	N/A
3/14/1973	24.5	262	5.1	N/A
5/8/1973	23.5	N/A	5.6	N/A
5/8/1973	23.5	250	5.6	N/A
6/27/1973	27.5	N/A	8.8	N/A
6/27/1973	27.5	264	8.8	N/A
8/21/1973	26	N/A	5.6	N/A
8/21/1973	26	250	5.6	N/A
10/10/1973	24	220	3.7	N/A
11/29/1973	20	223	5.9	N/A
1/21/1974	21.5	280	4.1	N/A
3/25/1974	23	288	6.3	N/A
5/14/1974	25	310	7.3	N/A
6/26/1974	23	241	4.6	N/A
8/29/1974	25.5	276	3.8	N/A

Table 2.3-21 (Sheet 3 of 7)
Field Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
10/22/1974	19	242	7.3	N/A
12/10/1974	17.5	318	5.8	N/A
2/12/1975	21	379	8.2	N/A
2/17/1975	17	270	8.1	N/A
3/26/1975	22	324	6.8	N/A
6/4/1975	26	261	5	N/A
8/1/1975	25	288	4.6	N/A
10/6/1975	25	242	6.2	N/A
12/3/1975	19	192	8.5	N/A
1/30/1976	17.5	270	8.5	N/A
3/17/1976	20	263	8.5	N/A
5/21/1976	21.5	418	6.4	N/A
7/1/1976	27	342	5	N/A
9/13/1976	23	200	6.8	N/A
1/5/1977	17	262	7.6	N/A
4/21/1977	23.5	260	8.3	N/A
6/15/1977	25	250	6.3	N/A
8/16/1977	25	248	6.2	N/A
10/11/1977	24.5	340	7.6	N/A
1/13/1978	17	310	7	N/A
3/16/1978	22	215	5.8	N/A
6/2/1978	26	265	7.2	7.2
6/14/1978	26.5	N/A	N/A	N/A
8/8/1978	26	236	4.5	6.1
9/22/1978	26	253	6.4	7.7
11/22/1978	22	263	6.2	7.7
1/23/1979	18	285	6.7	6.3
3/15/1979	20	305	6.4	7.2
5/17/1979	25	237	4.9	7.4
7/25/1979	28	260	7.2	7.1
9/10/1979	28	205	4.9	7.2

Table 2.3-21 (Sheet 4 of 7)
Field Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date Units:	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L	pH SU
11/15/1979	19.5	233	5.3	7.3
1/16/1980	18	258	6	N/A
3/4/1980	18	272	9	8
5/6/1980	25	264	7.2	7.8
6/27/1980	23	190	4.1	6.6
8/28/1980	27	255	N/A	N/A
10/29/1980	21.5	270	8.2	6.9
12/12/1980	19.5	290	7.9	7.1
2/6/1981	17.5	300	8.2	7.1
4/14/1981	24.5	270	6.7	7.1
5/28/1981	24	260	6.8	7.4
10/26/1981	23.5	255	6	7.7
12/15/1981	21.5	245	9.2	7.4
2/19/1982	23	250	7.2	7.5
4/21/1982	25.5	305	5.5	6.4
6/29/1982	26.5	240	5.8	7.1
8/30/1982	26	250	7.8	7.1
11/5/1982	21.5	240	6	6.2
1/5/1983	18	300	5.9	6.3
2/28/1983	17.5	220	8.2	7.7
4/19/1983	21	185	5.4	7.7
6/7/1983	26	275	4.8	7.2
8/9/1983	26	210	4	7.3
10/5/1983	25	220	N/A	7.4
12/8/1983	19.5	260	5.8	7.8
2/1/1984	16.5	255	6.3	6.1
4/3/1984	21	255	6.3	6.5
6/14/1984	26	245	5	7.7
8/28/1984	24.5	248	4.4	7.3
10/12/1984	24	238	6	7
12/7/1984	19	250	6	7.5
12/7/1984	N/A	N/A	N/A	7.5
1/30/1985	17	260	8.2	7.9
3/27/1985	22.5	256	9.9	8.1

Table 2.3-21 (Sheet 5 of 7)
Field Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
5/22/1985	25	245	6	7.7
7/23/1985	26	275	5.6	7.5
8/12/1985	26.5	319	3.5	7.1
11/12/1985	22	263	4.7	7.5
1/8/1986	18	295	8	7.4
3/3/1986	19	243	8.2	8
5/1/1986	24	240	6.8	7.9
6/18/1986	25	230	13.2	N/A
8/14/1986	25	250	6.2	7.8
10/17/1986	23.5	250	5.4	7.7
12/4/1986	21	260	5.6	7.9
2/13/1987	19	312	7.2	7.9
4/9/1987	18	260	6.7	7.6
6/5/1987	26	260	4.3	7.3
7/23/1987	26	272	5.2	8
8/10/1995	27.5	283	6.9	7
8/29/1995	26.5	223	4.2	7.2
9/27/1995	26	183	4.2	6.9
4/12/1996	N/A	237	6.2	N/A
5/29/1996	N/A	272	5.6	7
8/6/1996	26.5	250	6.5	7.3
10/7/1996	23.4	268	N/A	6.9
12/2/1996	20.9	267	5.7	N/A
1/24/1997	19.3	290	7.9	6.2
3/20/1997	22.5	275	5.3	6.8
4/30/1997	23.5	277	5	7.5
7/10/1997	25.1	276	5.3	6.4
10/20/1997	22.7	227	7.3	7.2
1/21/1998	17.5	165	4.8	5.2
2/26/1998	17.3	194	9.4	6.1
6/9/1998	25.7	276	9.3	7.1

Table 2.3-21 (Sheet 6 of 7) Field Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
8/8/1998	25.6	270	4.5	6.4
9/23/1998	26	268	5.4	7.5
11/19/1998	23	272	4.8	6.2
1/21/1999	21.8	266	7.8	5.9
3/9/1999	20.9	264	8.9	7.4
5/6/1999	24	269	6.9	6.6
9/2/1999	25.4	296	5.5	7.7
10/26/1999	22	291	7.4	7.1
12/14/1999	21.5	268	6.2	7.7
1/23/2000	19.6	269	9.2	7.4
2/9/2000	20	274	9.5	8
4/4/2000	23.7	258	6.7	7.7
6/7/2000	25.5	252	7.8	8.1
7/25/2000	25.5	303	6	7.2
9/20/2000	25.7	331	7.7	7.6
11/22/2000	19	270	5.8	7.2
1/23/2001	19.5	269	9.2	7.4
3/13/2001	22.5	282	5.4	7.1
5/10/2001	23.5	272	7.4	6.6
7/26/2001	26	270	5.8	7.2
8/30/2001	26	296	9.2	7.9
2/12/2002	N/A	357	8.4	7.9
4/16/2002	24.8	290	8.4	6.6
8/2/2002	26.7	408	4.5	6.9
9/24/2002	26.2	234	3	6.9
11/22/2002	19.7	327	5.1	8.2
1/29/2003	13.6	202	7.1	7.3
3/18/2003	22.4	256	4.3	6.3
5/13/2003	26.5	292	5.2	5.9
7/16/2003	28.5	178	2.9	6.7
8/28/2003	26.3	178	2.9	6.7
10/27/2003	23.3	268	4.6	7.5
12/11/2003	18.2	307	7.1	7.8

Table 2.3-21 (Sheet 7 of 7)
Field Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date Units:	Temperature	Specific Conductance	Dissolved Oxygen	pH
	°C	µS/cm	mg/L	SU
2/12/2004	20.2	329	7.2	7.1
4/8/2004	22.3	287	6.9	7.5
6/9/2004	26.2	276	6.2	6.9
8/9/2004	25.7	327	5.8	7.7
10/12/2004	24.6	176	0.9	7.3
12/6/2004	18.4	285	5.7	8
1/25/2005	16.2	308	8.1	8.4
3/21/2005	20.6	313	7	8.2
5/16/2005	24.7	291	6.1	7.3
7/18/2005	27.4	236	4.5	7.3
9/7/2005	25.6	242	3.8	7.5
11/2/2005	20.1	289	7.1	6.9
12/12/2005	17.7	271	7.2	7.8
3/27/2006	21	289	7.8	7.5
5/9/2006	24.2	294	6.5	7.5
7/26/2006	27.4	305	6.7	6.8
MAX	**32.0**	**804**	**13.2**	**8.4**
MIN	**11.0**	**165**	**0.9**	**5.2**
Mean	**23.0**	**267**	**6.4**	**N/A[(a)]**
Number of Occurrences	**203**	**195**	**182**	**123**
Florida Water Quality Standard	**N/A**	**See note[(b)]**	**>5**	**6 - 8.5**

Notes:

a) Average pH values cannot be calculated.

b) Shall not be increased more than 50% above background.

°C = degree Celsius
mg/L = milligrams per liter
µS/cm = microSiemens per centimeter
N/A = not available
SU = standard units

Source: Reference 2.3-056

Table 2.3-22 (Sheet 1 of 2)
Water Quality Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	BOD, unfiltered, 5 days at 20°C	Total nitrogen, unfiltered	Organic Nitrogen, unfiltered	Ammonia, unfiltered,	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, filtered	Hardness	Sulphate, filtered	Ammonia, unfiltered	Ammonia, filtered	Nitrate, filtered	Phosphorus, water, unfiltered
Units:	JTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
5/31/1966	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.17	120	15	N/A	N/A	0.9	N/A
5/17/1967	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.47	130	14	N/A	N/A	4.2	N/A
5/3/1968	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	0.08	N/A	150	19	N/A	N/A	0.6	N/A
5/2/1969	N/A	40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	140	16	N/A	N/A	0	N/A
4/30/1970	N/A	25	N/A	N/A	0.36	N/A	N/A	N/A	0.13	0.1	120	9.6	N/A	0.08	0.8	N/A
5/26/1971	3	N/A	N/A	N/A	0.25	N/A	N/A	N/A	N/A	0.04	N/A	N/A	N/A	0.07	0.8	0.12
6/2/1978	N/A	N/A	0.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/17/1979	N/A	N/A	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/10/1979	N/A	N/A	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/6/1980	N/A	N/A	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/28/1980	N/A	N/A	0.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/14/1981	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	130	22	N/A	N/A	N/A	N/A
5/28/1981	N/A	N/A	0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/20/1997	N/A	N/A	N/A	0.94	0.32	0.02	0.34	0.6	0.061	N/A	N/A	N/A	0.03	N/A	N/A	N/A
MAX	**3**	**40**	**0.7**	**0.94**	**0.36**	**0.02**	**0.34**	**0.6**	**0.13**	**0.47**	**150**	**22**	**0.03**	**0.08**	**4.2**	**0.12**
MIN	**3**	**0**	**0.1**	**0.94**	**0.25**	**0.02**	**0.34**	**0.6**	**0.061**	**0.04**	**120**	**9.6**	**0.03**	**0.07**	**0**	**0.12**
Mean	**3**	**15**	**0.45**	**0.94**	**0.31**	**0.02**	**0.34**	**0.6**	**0.090**	**0.20**	**132**	**15.9**	**0.03**	**0.075**	**1.2**	**0.12**
Number of Occurrences	**1**	**6**	**6**	**1**	**3**	**1**	**1**	**1**	**3**	**4**	**6**	**6**	**1**	**2**	**6**	**1**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**≤0.02**	**N/A**	**N/A**	**≤0.1**	**N/A**	**N/A**	**N/A**	**≤0.02**	**N/A**	**N/A**	**≤0.1**

Table 2.3-22 (Sheet 2 of 2)
Water Quality Parameters at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Notes:

BOD = biological oxygen demand
JTU = Jackson turbidity units
mg/L = milligrams per liter
N/A = not available
PCU = platinum-cobalt unit

Source: Reference 2.3-056

Table 2.3-23
Metals Data at USGS Station 02313200 Withlacoochee River at Dunnellon, Florida

Date Units:	Calcium, filtered mg/L	Magnesium, filtered mg/L	Sodium, filtered mg/L	Potassium, filtered mg/L	Silica, filtered mg/L	Iron, filtered µg/L	Manganese, filtered µg/L
5/31/1966	42	4.3	3.8	0.1	5.7	40	N/A
5/17/1967	43	4.6	3.9	0.6	5.8	0	0
5/3/1968	50	5.1	3.2	0.3	7.5	20	10
5/2/1969	51	4.3	4.3	0.2	8.2	90	N/A
4/30/1970	41	4	4.2	0.1	5.4	N/A	N/A
5/26/1971	N/A	N/A	N/A	N/A	4.5	N/A	N/A
5/8/1973	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/14/1981	44	5	3.6	0.2	2.3	N/A	N/A
MAX	**51**	**5.1**	**4.3**	**0.6**	**8.2**	**90**	**10**
MIN	**41**	**4**	**3.2**	**0.1**	**2.3**	**0**	**0**
Mean	**45**	**4.6**	**3.8**	**0.3**	**5.6**	**38**	**5**
Number of Occurrences	**6**	**6**	**6**	**6**	**7**	**4**	**2**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**≤1.0**	**N/A**

Notes:

a) Average pH values cannot be calculated.

µg/L = micrograms per liter
mg/L = milligrams per liter
N/A = not available

Source: Reference 2.3-056

Table 2.3-24 (Sheet 1 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
3/21/1963	N/A	252	N/A	7.2
1/7/1964	N/A	265	N/A	7.7
5/31/1966	N/A	260	N/A	7.5
1/6/1967	15.6	270	N/A	N/A
2/14/1967	17.8	272	N/A	N/A
4/6/1967	23.9	462	N/A	N/A
5/18/1967	26.1	239	8.2	7.6
9/28/1967	25	210	N/A	N/A
11/9/1967	16	245	N/A	N/A
12/29/1967	17	265	N/A	N/A
2/23/1968	14	278	N/A	N/A
4/10/1968	24	282	N/A	N/A
5/6/1968	25	235	9	7.2
6/24/1968	29	252	N/A	N/A
7/30/1968	30	220	N/A	N/A
9/30/1968	27	170	N/A	N/A
11/21/1968	16	260	N/A	N/A
1/3/1969	15	260	N/A	N/A
2/13/1969	16	270	N/A	N/A
3/28/1969	19	245	N/A	N/A
5/8/1969	26	244	7.6	7.7
6/20/1969	32	249	N/A	N/A
7/23/1969	27	210	3.5	7.2
8/7/1969	28	229	N/A	N/A
9/23/1969	28	230	5.5	7.3
10/6/1969	25.5	210	N/A	N/A
11/17/1969	16.5	220	N/A	N/A
1/13/1970	10.5	210	N/A	N/A

Table 2.3-24 (Sheet 2 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
1/21/1970	14	182	5.7	7.6
5/20/1970	28	255	6.2	7.8
9/18/1970	29.5	237	N/A	7.9
12/2/1970	19	208	N/A	N/A
2/3/1971	16	260	N/A	N/A
2/3/1971	17	260	10.6	N/A
3/3/1971	22	284	N/A	N/A
5/4/1971	22.5	N/A	8.4	N/A
5/4/1971	22.5	209	8.4	N/A
5/4/1971	22.5	N/A	8.4	N/A
5/4/1971	22.5	N/A	8.5	N/A
5/17/1971	27	N/A	5.5	8.5
5/17/1971	27	175	N/A	N/A
5/17/1971	N/A	N/A	8.4	N/A
5/17/1971	22.5	N/A	8.5	N/A
6/4/1971	27.5	187	N/A	N/A
7/6/1971	28.5	211	N/A	N/A
8/4/1971	30	240	N/A	N/A
9/3/1971	28.5	270	N/A	N/A
9/16/1971	28.5	N/A	2.5	7.4
9/16/1971	28.5	235	2.5	N/A
10/5/1971	26.5	240	N/A	N/A
11/3/1971	25	250	N/A	N/A
12/2/1971	17.5	262	N/A	N/A
1/4/1972	22.5	277	N/A	N/A
2/3/1972	19.5	286	N/A	N/A
3/3/1972	20	295	N/A	N/A
5/3/1972	26	N/A	N/A	N/A

Table 2.3-24 (Sheet 3 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
5/3/1972	26	260	N/A	N/A
5/15/1972	25.5	N/A	4	8.2
5/15/1972	25.5	268	4	8.2
6/5/1972	25.5	N/A	N/A	N/A
6/5/1972	25.5	260	N/A	N/A
7/6/1972	30.5	N/A	N/A	N/A
7/6/1972	30.5	242	N/A	N/A
8/7/1972	30	N/A	N/A	N/A
8/7/1972	30	204	N/A	N/A
9/7/1972	25.5	N/A	N/A	N/A
9/7/1972	25.5	232	N/A	N/A
9/18/1972	27	N/A	6.2	7.8
9/18/1972	27	248	6.2	N/A
10/4/1972	25.5	N/A	N/A	N/A
10/4/1972	25.5	152	N/A	N/A
11/2/1972	25	N/A	N/A	N/A
11/2/1972	25	245	N/A	N/A
12/5/1972	19.5	N/A	N/A	N/A
12/5/1972	19.5	267	N/A	N/A
1/3/1973	19	N/A	N/A	N/A
1/3/1973	19	286	N/A	N/A
3/2/1973	16.5	N/A	N/A	N/A
3/2/1973	16.5	270	N/A	N/A
4/3/1973	22	N/A	N/A	N/A
4/3/1973	22	268	N/A	N/A
5/2/1973	23.5	N/A	N/A	N/A
5/2/1973	23.5	250	N/A	N/A
5/24/1973	27	N/A	4.8	N/A

Table 2.3-24 (Sheet 4 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
5/24/1973	27	242	4.8	N/A
6/4/1973	28	N/A	N/A	N/A
6/4/1973	28	228	N/A	N/A
7/3/1973	30.5	N/A	N/A	N/A
7/3/1973	30.5	236	N/A	N/A
8/13/1973	28.5	N/A	N/A	N/A
8/13/1973	28.5	225	N/A	N/A
9/17/1973	29.5	N/A	8.3	8.3
9/17/1973	29.5	230	5.3	N/A
10/10/1973	25	220	N/A	N/A
10/12/1973	26	N/A	N/A	N/A
11/20/1973	22	186	N/A	N/A
1/16/1974	18.5	225	N/A	N/A
3/13/1974	20	205	N/A	N/A
5/13/1974	25	210	6.6	7.6
6/18/1974	26.5	224	N/A	N/A
9/3/1974	28	N/A	N/A	N/A
9/3/1974	28	282	N/A	N/A
9/16/1974	26.5	254	2.7	6.6
12/10/1974	13.5	287	N/A	N/A
1/21/1975	17	291	7.9	7.7
2/5/1975	20	355	N/A	N/A
2/21/1975	21	292	7.9	N/A
2/21/1975	21	298	7.8	N/A
2/21/1975	21	298	7.8	N/A
2/21/1975	21	300	7.7	N/A
2/21/1975	21	300	7.7	N/A
2/21/1975	21	300	7.6	N/A

Table 2.3-24 (Sheet 5 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
2/21/1975	21	300	7.6	N/A
2/21/1975	21	300	7.6	N/A
2/21/1975	21	300	7.5	N/A
2/21/1975	20.5	305	3.5	N/A
2/21/1975	21	292	7.9	7.9
3/25/1975	21.5	285	N/A	N/A
3/26/1975	22	262	8.3	8.1
4/22/1975	23	220	8.7	8.3
5/14/1975	28.5	250	6.8	7.9
5/14/1975	29	200	9.9	8.4
5/14/1975	28	200	9.8	N/A
5/14/1975	28	200	10	N/A
5/14/1975	27.5	203	9.7	N/A
5/14/1975	27	203	9.7	N/A
5/14/1975	27	203	9.6	N/A
5/14/1975	26.5	203	9.5	N/A
5/14/1975	26.5	205	7.5	N/A
5/14/1975	26	220	2.6	N/A
5/14/1975	25	275	0.4	N/A
5/14/1975	26	220	3.1	N/A
6/18/1975	30.5	180	10.8	8.9
7/22/1975	28	203	7	7.7
8/13/1975	28	208	6.3	8.2
8/18/1975	29.5	222	14	N/A
8/18/1975	29	229	12.9	N/A
8/18/1975	29	230	12.7	N/A
8/18/1975	29	230	12.6	N/A
8/18/1975	28.5	245	11	N/A

**Table 2.3-24 (Sheet 6 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida**

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
8/18/1975	28.5	270	2.2	N/A
8/18/1975	28	280	2	N/A
8/18/1975	28	280	1.6	N/A
8/18/1975	28	280	1	N/A
8/18/1975	28	280	0.8	N/A
8/18/1975	28	285	0.5	N/A
8/18/1975	N/A	N/A	N/A	8.5
9/18/1975	25	255	5.7	8
10/21/1975	23	260	2.8	7.7
11/12/1975	25	245	9.8	7.8
11/12/1975	25	250	9.1	N/A
11/12/1975	25	255	8.2	N/A
11/12/1975	24.5	260	7	N/A
11/12/1975	24.5	265	6.1	N/A
11/12/1975	24	270	4.4	N/A
11/12/1975	23.5	275	2.5	N/A
11/12/1975	23.5	280	1.7	N/A
11/12/1975	23	280	1.3	N/A
11/12/1975	23	280	1.1	N/A
11/12/1975	23	280	0.9	N/A
12/8/1975	18.5	257	N/A	N/A
12/10/1975	16.5	259	4.4	7.9
3/19/1976	20	290	N/A	N/A
5/12/1976	25	450	N/A	N/A
5/21/1976	25.5	223	7.1	8
7/23/1976	29.5	264	5.2	7.5
7/30/1976	30	310	N/A	N/A
9/20/1976	27.5	234	9.4	7.5

Table 2.3-24 (Sheet 7 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
1/6/1977	18	290	N/A	N/A
2/16/1977	14	275	N/A	N/A
4/21/1977	26	270	N/A	N/A
5/20/1977	27.5	270	N/A	8.4
6/17/1977	32.5	250	N/A	N/A
6/17/1977	29.5	250	6.8	N/A
8/16/1977	30.5	218	N/A	N/A
8/16/1977	29	310	6	N/A
10/13/1977	24.5	260	N/A	N/A
2/1/1978	12	285	N/A	N/A
3/17/1978	20	245	N/A	N/A
8/8/1978	29	243	N/A	N/A
10/26/1981	25	175	6.2	9
10/17/1984	26	230	8.5	7.8
6/30/1999	35	250	N/A	N/A
MAX	**35**	**462**	**14**	**9**
MIN	**10.5**	**152**	**0.4**	**6.6**
Mean	**24.4**	**252**	**6.5**	**N/A[(a)]**
Number of Occurrences	**178**	**154**	**88**	**39**
Florida Water Quality Standard	**N/A**	**See note[(b)]**	**>5**	**6 - 8.5**

Table 2.3-24 (Sheet 8 of 8)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Notes:

a) Average pH values cannot be calculated.

b) Shall not be increased more than 50% above background.

°C = degree Celsius
mg/L = milligrams per liter
μS/cm = microSiemens per centimeter
N/A = not available
SU = standard units

Source: Reference 2.3-057

Table 2.3-25 (Sheet 1 of 3)
Water Quality Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered, as Nitrogen	Nitrite, unfiltered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Hardness	Sulphate, filtered	Total coliform, M-Endo MF method, immediate	Fecal coliform, M-FC MF (0.45 micron) method	Orthophosphate, unfiltered	Ammonia, unfiltered, as NH_4	Ammonia, filtered
Units:	JTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL	mg/L	mg/L	mg/L
3/21/1963	N/A	90	N/A	N/A	N/A	N/A	N/A	0.16	N/A	N/A	0.17	N/A	120	22	N/A	N/A	0.06	N/A	N/A
1/7/1964	N/A	30	N/A	N/A	N/A	N/A	N/A	0.04	N/A	N/A	N/A	N/A	130	24	N/A	N/A	N/A	N/A	N/A
5/31/1966	N/A	15	N/A	N/A	N/A	N/A	N/A	0.16	N/A	N/A	0.11	N/A	120	14	N/A	N/A	0.04	N/A	N/A
5/18/1967	N/A	10	N/A	N/A	N/A	N/A	N/A	0.23	N/A	N/A	0.01	N/A	110	15	N/A	N/A	N/A	N/A	N/A
5/6/1968	N/A	0	N/A	N/A	N/A	N/A	N/A	0.32	N/A	N/A	N/A	0.006	120	18	N/A	N/A	N/A	N/A	N/A
5/8/1969	N/A	40	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	0.02	0.023	110	15	N/A	N/A	0.01	N/A	N/A
7/23/1969	N/A	80	0.5	0.68	0.55	0.054	0.003	0.07	N/A	N/A	0.1	0.042	110	N/A	1800	N/A	0.03	0.07	0.07
9/23/1969	15	80	0.4	0.85	0.76	0.093	0	0	N/A	N/A	N/A	N/A	100	16	3200	N/A	N/A	0.12	0.12
1/21/1970	12	80	0.7	1	0.93	0.062	0.003	0.02	N/A	N/A	0.09	0.036	88	N/A	60	N/A	0.03	0.08	0.08
5/20/1970	5	30	0.8	0.43	0.41	0.016	0.003	0	N/A	N/A	0.04	0.029	120	14	1800	N/A	0.01	0.02	0.02
9/18/1970	14	N/A	3.1	0.38	0.31	0.047	0.003	0.02	N/A	N/A	0.06	0.033	N/A	N/A	100	N/A	0.02	0.06	0.06
5/4/1971	4	N/A	N/A	0.26	0.22	0.023	0.018	0	N/A	N/A	0.03	0.02	N/A	N/A	N/A	N/A	0.01	0.03	0.03
5/17/1971	9	0	1	0.28	0.26	0.016	0.006	0	N/A	N/A	0.02	0.026	82	N/A	120	N/A	0.01	0.02	0.02
9/16/1971	10	100	4.2	0.61	0.48	0.054	0.006	0.07	N/A	N/A	0.11	0.042	120	N/A	120	N/A	0.04	0.07	0.07
5/15/1972	5	30	0.9	1.6	1.2	0.31	0.005	0.04	N/A	N/A	N/A	0.032	120	N/A	50	N/A	0.01	0.4	N/A
9/18/1972	2	20	0.7	0.82	0.67	0.03	0.002	0.12	N/A	N/A	N/A	0.027	130	N/A	0	N/A	0.02	0.04	N/A
5/24/1973	20	40	2.5	0.74	0.71	0.03	0.002	0	N/A	N/A	N/A	0.007	130	N/A	530	N/A	N/A	0.04	N/A
9/17/1973	3	30	1.8	0.67	0.67	< 0.010	0.002	0	N/A	N/A	N/A	0.02	110	N/A	400	N/A	0.01	N/A	N/A

Table 2.3-25 (Sheet 2 of 3)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered, as Nitrogen	Nitrite, unfiltered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Hardness	Sulphate, filtered	Total coliform, M-Endo MF method, immediate	Fecal coliform, M-FC MF (0.45 micron) method	Orthophosphate, unfiltered	Ammonia, unfiltered, as NH_4	Ammonia, filtered
Units:	**JTU**	**PCU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**colonies/ 100 mL**	**colonies/ 100 mL**	**mg/L**	**mg/L**	**mg/L**
5/13/1974	2	20	0.7	0.25	0.2	0.04	0.01	0	N/A	N/A	N/A	0.03	120	N/A	113	N/A	0.01	0.05	N/A
9/16/1974	6	80	3.6	1.4	1.4	0.03	0.01	0	1.4	0.01	N/A	0.09	120	N/A	2050	N/A	0.03	0.04	N/A
1/21/1975	1	20	0.5	0.43	0.27	0.03	0.01	0.12	0.3	0.13	N/A	0.09	140	N/A	30	0	0.07	0.04	N/A
2/21/1975	1	10	0.6	0.44	0.3	0.1	< 0.010	0.04	0.4	0.04	N/A	0.1	140	N/A	50	5	0.07	0.13	N/A
3/26/1975	3	15	2.6	0.43	0.36	0.05	0.01	0.01	0.41	0.02	N/A	0.05	130	N/A	210	25	0.03	0.06	N/A
4/22/1975	2	10	1.5	0.56	0.49	0.06	< 0.010	0.01	0.55	0.01	N/A	0.03	110	N/A	75	50	0.02	0.08	N/A
5/14/1975	2	5	0.9	0.35	0.3	0.03	0.01	0.01	0.33	0.02	N/A	0.02	97	N/A	1800	120	0.01	0.04	N/A
6/18/1975	2	10	1.1	0.49	0.43	0.02	0.01	0.03	0.45	0.04	N/A	0.03	76	N/A	2550	25	0.01	0.03	N/A
7/22/1975	5	5	1.8	0.64	0.48	0.15	< 0.010	0.01	0.63	0.01	N/A	0.05	82	N/A	10	0	0.03	0.19	N/A
8/13/1975	4	0	1	0.48	0.42	0.06	< 0.010	0	0.48	< 0.100	N/A	0.02	100	N/A	130	10	0.01	0.08	N/A
9/18/1975	3	5	1.5	0.48	0.44	0.03	< 0.010	0.01	0.47	0.01	N/A	0.03	120	N/A	10	5	0.01	0.04	N/A
10/21/1975	3	55	1.6	0.88	0.73	0.03	0.01	0.11	0.76	0.12	N/A	0.04	130	N/A	80	5	0.02	0.04	N/A
11/12/1975	6	50	4.6	1	0.89	0.07	0.01	0.03	0.96	0.04	N/A	0.05	130	N/A	50	0	0.01	0.09	N/A
12/10/1975	1	50	0.8	0.55	0.37	0.04	0.01	0.13	0.41	0.14	N/A	0.03	130	N/A	50	15	0.02	0.05	N/A
5/21/1976	4	10	1.1	1.5	1.5	0.02	0.01	0	1.5	0.01	N/A	0.04	110	N/A	30	N/A	0.01	0.03	N/A
7/23/1976	2	25	N/A	0.21	0.14	0.04	0.01	0.02	0.18	0.03	N/A	0.03	120	N/A	180	N/A	0.01	0.05	N/A
9/20/1976	2	60	0.8	0.44	0.41	0.02	0.01	0	0.43	0.01	N/A	0.03	120	N/A	0	N/A	0.02	0.03	N/A
5/20/1977	5	5	2.9	0.64	0.56	0.08	< 0.010	0	0.64	< 0.100	N/A	0.04	140	N/A	0	N/A	0.01	0.1	N/A
MAX	**20**	**100**	**4.6**	**1.6**	**1.5**	**0.31**	**0.018**	**0.32**	**1.5**	**0.14**	**0.17**	**0.1**	**140**	**24**	**3200**	**120**	**0.07**	**0.4**	**0.12**
MIN	**1**	**0**	**0.4**	**0.21**	**0.14**	**0.016**	**0**	**0**	**0.18**	**0.01**	**0.01**	**0.006**	**76**	**14**	**0**	**0**	**0.01**	**0.02**	**0.02**

Table 2.3-25 (Sheet 3 of 3)
Field Parameters at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date Units:	Turbidity, unfiltered JTU	Color, filtered PCU	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius mg/L	Total nitrogen, unfiltered mg/L	Organic nitrogen, unfiltered mg/L	Ammonia, unfiltered, as Nitrogen mg/L	Nitrite, unfiltered mg/L	Nitrate, unfiltered mg/L	Ammonia plus organic nitrogen, unfiltered mg/L	Nitrite plus nitrate, unfiltered mg/L	Orthophosphate, filtered mg/L	Phosphorus, unfiltered mg/L	Hardness mg/L	Sulphate, filtered mg/L	Total coliform, M-Endo MF method, immediate colonies/ 100 mL	Fecal coliform, M-FC MF (0.45 micron) method colonies/ 100 mL	Orthophosphate, unfiltered mg/L	Ammonia, unfiltered, as NH_4 mg/L	Ammonia, filtered mg/L
Mean	5.3	32.6	1.6	0.6	0.6	0.1	0.0	0.0	0.6	0.0	0.1	0.0	115.7	17.3	537.9	21.7	0.0	0.1	0.1
Number of Occurrences	29	34	28	30	30	29	24	36	17	15	11	31	34	8	29	12	31	29	8
Florida Water Quality Standard	N/A	N/A	N/A	N/A	N/A	N/A	≤0.02	N/A	N/A	N/A	N/A	N/A	≤0.1	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

JTU = Jackson turbidity units
PCU = platinum-cobalt units
mL= milliliters
mg/L = milligrams per liter
N/A = not available

Source: Reference 2.3-057

Table 2.3-26
Metals Data at USGS Station 02313230 Withlacoochee River at Inglis Dam near Dunnellon, Florida

Date Units:	Calcium, Water, Filtered mg/L	Magnesium, Water, Filtered mg/L	Sodium, Water, Filtered mg/L	Potassium, Water, Filtered mg/L	Silica, Water, Filtered mg/L	Iron, Water, Filtered µg/L	Manganese, Water, Filtered µg/L
3/21/1963	44	2.7	5.3	0.6	4.7	N/A	N/A
1/7/1964	46	4.6	3.8	0.5	4.4	40	N/A
5/31/1966	41	4.2	4	0.1	6.3	0	N/A
5/18/1967	37	4.8	3.6	0.3	0.4	10	0
5/6/1968	38	5	3.5	0.2	5.2	0	0
5/8/1969	38	3.7	4	0.1	4.2	0	N/A
9/23/1969	36	3.7	5.2	0.3	5.2	100	N/A
5/20/1970	41	4.4	4.2	0.1	5.1	N/A	N/A
9/18/1970	N/A	N/A	N/A	N/A	5	N/A	N/A
5/4/1971	N/A	N/A	N/A	N/A	2	N/A	N/A
5/17/1971	N/A	N/A	N/A	N/A	1.9	N/A	N/A
9/16/1971	N/A	N/A	N/A	N/A	7.7	N/A	N/A
5/15/1972	N/A	N/A	N/A	N/A	5.3	N/A	N/A
9/18/1972	N/A	N/A	N/A	N/A	5.7	N/A	N/A
5/24/1973	N/A	N/A	N/A	N/A	4.2	N/A	N/A
9/17/1973	N/A	N/A	N/A	N/A	6	N/A	N/A
5/21/1976	35	4.7	N/A	N/A	N/A	N/A	N/A
7/23/1976	40	3.7	N/A	N/A	N/A	N/A	N/A
9/20/1976	40	3.9	N/A	N/A	N/A	N/A	N/A
5/20/1977	47	5	N/A	N/A	N/A	N/A	N/A
MAX	**47**	**5**	**5.3**	**0.6**	**7.7**	**100**	**0**
MIN	**35**	**2.7**	**3.5**	**0.1**	**0.4**	**0**	**0**
Mean	**40**	**4.2**	**4.2**	**0.3**	**4.6**	**25**	**0**
Number of Occurrences	**12**	**12**	**8**	**8**	**16**	**6**	**2**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Notes:

mg/L = milligrams per liter
N/A = not available

Source: Reference 2.3-057

Table 2.3-27 (Sheet 1 of 5)
Field Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
3/21/1963	N/A	246	N/A	7.3
1/7/1964	N/A	265	N/A	7.7
5/31/1966	27.2	260	N/A	7.5
11/21/1966	20	251	N/A	N/A
1/6/1967	15.6	272	N/A	N/A
2/14/1967	17.8	275	N/A	N/A
5/18/1967	25.6	238	8	7.6
6/29/1967	28.9	270	N/A	N/A
9/28/1967	25.6	210	N/A	N/A
11/9/1967	16	250	N/A	N/A
12/29/1967	16	250	N/A	N/A
2/23/1968	14	270	N/A	N/A
7/30/1968	30	210	N/A	N/A
11/21/1968	16	241	N/A	N/A
1/3/1969	15	260	N/A	N/A
2/13/1969	16	270	N/A	N/A
3/28/1969	18	249	N/A	N/A
5/8/1969	28	244	7	8
6/20/1969	32	251	N/A	N/A
8/7/1969	27	241	N/A	N/A
9/23/1969	26.5	284	5.6	7.1
9/23/1969	27	195	6.6	7.4
10/6/1969	25.5	210	N/A	N/A
11/17/1969	16.5	221	N/A	N/A
1/13/1970	10.5	210	N/A	N/A
5/20/1970	27	255	7.3	7.9
9/18/1970	28.5	239	N/A	8.1
12/2/1970	18	213	N/A	N/A
3/3/1971	22	284	7	N/A
5/4/1971	24	N/A	8.3	N/A
5/4/1971	24	220	8.3	N/A
5/17/1971	26	N/A	7.8	7.8
5/17/1971	26	195	7.8	N/A
5/17/1971	27	N/A	5	8.1
5/17/1971	27	195	5	N/A

Table 2.3-27 (Sheet 2 of 5)
Field Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
6/4/1971	31	205	3.5	N/A
7/6/1971	28.5	248	3.3	N/A
8/4/1971	27.5	375	3.7	N/A
9/16/1971	28	N/A	5.7	7.5
9/16/1971	28	235	5.7	N/A
10/5/1971	26.5	228	6.6	N/A
11/2/1971	25	447	7.1	N/A
12/2/1971	17.5	250	7.3	N/A
1/4/1972	22	350	5.2	N/A
2/2/1972	19	515	5.3	N/A
3/3/1972	19	295	5.8	N/A
5/3/1972	26	N/A	6.5	N/A
5/3/1972	26	351	6.5	N/A
5/15/1972	25	N/A	2.5	7.8
5/15/1972	25	610	2.5	8.3
6/2/1972	25.5	N/A	5.8	N/A
6/2/1972	25.5	257	5.8	N/A
7/6/1972	30	N/A	6.5	N/A
7/6/1972	30	248	6.5	N/A
8/2/1972	29	N/A	5.1	N/A
8/2/1972	29	242	5.1	N/A
9/7/1972	30	N/A	N/A	N/A
9/7/1972	30	222	N/A	N/A
9/18/1972	27.5	N/A	8	7.9
9/18/1972	27.5	244	8	N/A
10/4/1972	25.5	N/A	5.6	N/A
10/4/1972	25.5	250	5.6	N/A
11/2/1972	25	N/A	6.2	N/A
11/2/1972	25	253	6.2	N/A
12/5/1972	19.5	N/A	8.8	N/A
12/5/1972	19.5	274	8.8	N/A
1/3/1973	19	N/A	7.9	N/A
1/3/1973	19	286	7.9	N/A
3/2/1973	17	N/A	6.4	N/A

Table 2.3-27 (Sheet 3 of 5)
Field Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
3/2/1973	17	279	6.4	N/A
4/3/1973	21	N/A	3.2	N/A
4/3/1973	21	268	3.2	N/A
5/2/1973	23.5	N/A	7.2	N/A
5/2/1973	23.5	299	N/A	N/A
5/24/1973	26	N/A	6.6	N/A
5/24/1973	26	257	6.6	N/A
6/4/1973	26	N/A	4.8	N/A
6/4/1973	26	240	4.8	N/A
7/3/1973	27.5	N/A	3.1	N/A
7/3/1973	27.5	259	3.1	N/A
8/13/1973	28	N/A	6.7	N/A
8/13/1973	28	253	6.7	N/A
9/17/1973	28.5	225	7.2	8.3
10/10/1973	25	220	8.1	N/A
11/20/1973	20.5	850	4.7	N/A
1/16/1974	19	220	7.3	N/A
3/13/1974	19	244	5.4	N/A
5/13/1974	23.5	268	4.6	8.1
6/18/1974	26.5	385	3.2	N/A
9/3/1974	28	300	3.2	N/A
9/16/1974	26.5	243	8.7	7
12/10/1974	N/A	352	6.1	N/A
1/21/1975	17.5	320	7.2	7.8
2/5/1975	18.5	378	3.1	N/A
2/25/1975	18.5	2340	2.9	7.4
3/25/1975	21.5	362	5.7	N/A
3/26/1975	20.5	265	5.3	8
4/22/1975	22	246	7.9	8
5/14/1975	27.5	300	5.2	7.6
6/18/1975	28.5	243	3.9	7.7
7/22/1975	27.5	233	4.3	7.8
8/13/1975	27	265	4.3	7.6
9/18/1975	26	1500	2.4	7.8

Table 2.3-27 (Sheet 4 of 5)
Field Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
10/21/1975	22	11,300	1.6	7.4
11/12/1975	23.5	4750	1.9	7.6
12/8/1975	18.5	295	6.8	N/A
12/10/1975	17	260	5	7.9
3/19/1976	20	290	10.4	N/A
5/12/1976	27	440	8.7	N/A
5/21/1976	24.5	235	6	7.8
7/23/1976	29	263	2.9	7.3
7/30/1976	30	380	7	N/A
9/15/1976	23	155	8.5	N/A
9/20/1976	26	240	6.9	7.5
11/3/1976	19.5	240	8.3	N/A
1/6/1977	15	315	7.3	N/A
2/16/1977	14	275	10.2	N/A
4/21/1977	24.5	265	10.2	N/A
5/20/1977	28	278	N/A	8.2
10/13/1977	24.5	1020	3.8	N/A
2/1/1978	12	285	10.4	N/A
3/17/1978	20	230	9.2	N/A
6/1/1978	30	255	6.3	6.8
8/8/1978	29	250	8.4	7
11/22/1978	22	355	6.1	7.5
1/22/1979	15	N/A	7.8	6.8
3/14/1979	18	318	6.1	7.5
5/16/1979	27	245	5.4	7.3
7/25/1979	30.5	1380	3.2	7
9/11/1979	29	240	7.7	8.1
11/15/1979	19.5	219	8	7.9
1/15/1980	14	650	N/A	N/A
3/5/1980	14.5	300	8.2	7.8
5/6/1980	25	265	8.6	7.5
6/26/1980	25	250	4.8	7.8
8/27/1980	31	235	N/A	N/A
8/27/1980	30.5	N/A	N/A	N/A

Table 2.3-27 (Sheet 5 of 5)
Field Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
10/29/1980	21	300	7.9	7.1
12/4/1980	26	250	6.8	6.9
2/5/1981	14	300	8.8	7.6
4/10/1981	24.5	250	6.7	7.2
5/29/1981	26	238	6	7.4
10/26/1981	24	1950	6.4	7.2
12/15/1981	15.5	4300	9.8	7.3
2/19/1982	21.5	3800	7.6	7.5
4/21/1982	26.5	330	4.8	6.8
6/29/1982	27.5	260	5.8	8
8/31/1982	28	250	7.6	7.1
1/5/1983	17	300	6.8	6.4
3/2/1983	17	230	9.2	7.7
10/17/1984	25	230	8.9	7.7
MAX	**32**	**11,300**	**10.4**	**8.3**
MIN	**10.5**	**155**	**1.6**	**6.4**
Mean	**23.5**	**513**	**6.3**	**N/A**[a]
Number of Occurrences	**148**	**127**	**121**	**60**
Florida Water Quality Standard	**N/A**	**See note**[b]	**>5**	**6 - 8.5**

Notes:

a) Average pH values cannot be calculated.

b) Shall not be increased more than 50% above background.

°C = degree Celsius
mg/L = milligrams per liter
µS/cm = microSiemens per centimeter
N/A = not available
SU = standard units

Source: Reference 2.3-058

Table 2.3-28 (Sheet 1 of 3)
Water Quality Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Color, filtered	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Hardness	Ammonia, filtered	Nitrate, filtered	Total nitrogen, unfiltered
Units:	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
3/21/1963	100	N/A	N/A	N/A	N/A	N/A	0.14	N/A	N/A	0.02	N/A	120	N/A	0.6	N/A
1/7/1964	30	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	140	N/A	0	N/A
5/31/1966	15	N/A	N/A	N/A	N/A	0.16	0.16	N/A	N/A	0.11	N/A	120	N/A	0.7	N/A
5/18/1967	5	N/A	N/A	N/A	N/A	N/A	0.32	N/A	N/A	0.02	N/A	120	N/A	1.4	N/A
5/8/1969	40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.09	N/A	120	N/A	0.6	N/A
9/23/1969	100	N/A	0.71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	140	0.2	0.1	N/A
9/23/1969	120	N/A	0.76	N/A	N/A	N/A	N/A	N/A	N/A	0.1	N/A	110	0.13	0.4	N/A
5/20/1970	30	N/A	0.22	N/A	N/A	N/A	N/A	N/A	N/A	0.06	N/A	120	0.06	0	N/A
9/18/1970	10	N/A	0.25	N/A	N/A	N/A	N/A	N/A	N/A	0.04	N/A	120	0.06	0.1	N/A
5/4/1971	N/A	N/A	0.19	N/A	N/A	N/A	N/A	N/A	N/A	0.05	N/A	N/A	0.04	0.3	N/A
5/17/1971	5	N/A	0.16	N/A	N/A	N/A	N/A	N/A	N/A	0.04	N/A	90	0.13	0.1	N/A
5/17/1971	5	N/A	0.2	N/A	N/A	N/A	N/A	N/A	N/A	0.07	N/A	92	0.16	0.3	N/A
9/16/1971	100	N/A	0.93	N/A	N/A	N/A	N/A	N/A	N/A	0.1	N/A	120	0.07	0.2	N/A
5/15/1972	20	0.79	0.47	0.11	0.007	N/A	0.2	N/A	N/A	N/A	0.035	160	N/A	N/A	N/A
9/18/1972	10	0.66	0.53	0.03	0.002	N/A	0.1	N/A	N/A	N/A	0.025	120	N/A	N/A	N/A
5/24/1973	30	0.56	0.51	0.05	0.003	N/A	0	N/A	N/A	N/A	0.021	140	N/A	N/A	N/A
9/17/1973	25	0.78	0.77	< 0.010	0.01	N/A	0	N/A	N/A	N/A	0.014	110	N/A	N/A	N/A
5/13/1974	20	0.3	0.22	0.04	0.01	N/A	0.03	N/A	N/A	N/A	0.03	140	N/A	N/A	N/A
9/16/1974	80	0.64	0.51	0.03	0.01	N/A	0.09	0.54	0.1	N/A	0.06	120	N/A	N/A	2.8

Table 2.3-28 (Sheet 2 of 3)
Water Quality Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Color, filtered	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Hardness	Ammonia, filtered	Nitrate, filtered	Total nitrogen, unfiltered
Units:	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1/21/1975	20	0.53	0.31	0.08	0.01	N/A	0.13	0.39	0.14	N/A	0.09	150	N/A	N/A	2.3
2/25/1975	15	0.7	0.36	0.21	0.01	N/A	0.12	0.57	0.13	N/A	0.22	370	N/A	N/A	3.1
3/26/1975	15	0.42	0.35	0.03	0.01	N/A	0.03	0.38	0.04	N/A	0.06	140	N/A	N/A	1.9
4/22/1975	10	0.4	0.36	0.02	0.01	N/A	0.01	0.38	0.02	N/A	0.05	120	N/A	N/A	1.8
5/14/1975	10	1.4	1.3	0.04	0.01	N/A	0.09	1.3	0.1	N/A	0.04	110	N/A	N/A	6.4
6/18/1975	10	0.38	0.36	< 0.010	0.01	N/A	0.01	0.36	0.02	N/A	0.04	110	N/A	N/A	1.7
7/22/1975	10	0.36	0.24	0.1	< 0.010	N/A	0.02	0.34	0.02	N/A	0.03	130	N/A	N/A	1.6
8/13/1975	0	0.31	0.22	0.08	< 0.010	N/A	0.01	0.3	0.01	N/A	0.02	130	N/A	N/A	1.4
9/18/1975	50	0.55	0.38	0.06	0.01	N/A	0.1	0.44	0.11	N/A	0.04	280	N/A	N/A	2.4
10/21/1975	130	3.8	1.7	2	0.07	N/A	0	3.7	0.07	N/A	0.74	1400	N/A	N/A	17
11/12/1975	50	0.87	0.62	0.14	0.01	N/A	0.1	0.76	0.11	N/A	0.05	580	N/A	N/A	3.9
12/10/1975	50	0.56	0.34	0.04	0.01	N/A	0.17	0.38	0.18	N/A	0.04	13	N/A	N/A	2.5
5/21/1976	10	0.39	0.34	0.02	0.01	N/A	0.02	0.36	0.03	N/A	0.04	110	N/A	N/A	1.7
7/23/1976	45	0.34	0.2	0.02	0.01	N/A	0.11	0.22	0.12	N/A	0.06	120	N/A	N/A	1.5
9/20/1976	70	0.52	0.42	0.01	0.01	N/A	0.08	0.43	0.09	N/A	0.04	110	N/A	N/A	2.3
5/20/1977	5	0.44	0.35	0.09	< 0.010	N/A	0	0.44	< 0.100	N/A	0.03	140	N/A	N/A	1.9
MAX	**130**	**3.8**	**1.7**	**2**	**0.07**	**0.16**	**0.32**	**3.7**	**0.18**	**0.11**	**0.74**	**1400**	**0.2**	**1.4**	**17**
MIN	**0**	**0.3**	**0.16**	**0.01**	**0.002**	**0.16**	**0**	**0.22**	**0.01**	**0.02**	**0.014**	**13**	**0.04**	**0**	**1.4**
Mean	**37**	**0.7**	**0.5**	**0.2**	**0.01**	**0.16**	**0.1**	**0.7**	**0.08**	**0.06**	**0.08**	**183**	**0.1**	**0.4**	**3.3**

Table 2.3-28 (Sheet 3 of 3)
Water Quality Parameters at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Color, filtered	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Hardness	Ammonia, filtered	Nitrate, filtered	Total nitrogen, unfiltered
Units:	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Number of Occurrences	34	22	30	20	19	1	26	17	16	11	22	34	8	13	17
Florida Water Quality Standard	N/A	N/A	N/A	≤0.02	N/A	N/A	N/A	N/A	N/A	N/A	≤0.1	N/A	N/A	N/A	N/A

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

mg/L = milligrams per liter
N/A = not available
PCU = platinum-cobalt units

Source: Reference 2.3-058

Table 2.3-29
Metals Data at USGS Station 02313231 Withlacoochee River below Inglis Dam near Dunnellon, Florida

Date	Calcium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Iron, filtered	Manganese, filtered
Units:	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L
3/21/1963	43	5.2				
1/7/1964	46	3.7	0.5	4.2	40	N/A
5/31/1966	41	4	0.1	6.3	N/A	N/A
5/18/1967	38	3.4	0.1	4	0	0
5/8/1969	40	4.1	0	5.2	0	N/A
9/23/1969	46	4.4	1.1	6.4	310	N/A
9/18/1970	N/A	N/A	N/A	5.5	N/A	N/A
5/4/1971	N/A	N/A	N/A	2.4	N/A	N/A
5/17/1971	N/A	N/A	N/A	2.6	N/A	N/A
5/17/1971	N/A	N/A	N/A	2.5	N/A	N/A
9/16/1971	N/A	N/A	N/A	7.4	N/A	N/A
5/15/1972	N/A	N/A	N/A	5.8	N/A	N/A
9/18/1972	N/A	N/A	N/A	5.5	N/A	N/A
5/24/1973	N/A	N/A	N/A	4.6	N/A	N/A
9/17/1973	N/A	N/A	N/A	6	N/A	N/A
5/21/1976	37	N/A	N/A	N/A	N/A	N/A
7/23/1976	42	N/A	N/A	N/A	N/A	N/A
9/20/1976	39	N/A	N/A	N/A	N/A	N/A
5/20/1977	46	N/A	N/A	N/A	N/A	N/A
MAX	**46**	**5.2**	**1.1**	**7.4**	**310**	**0**
MIN	**37**	**3.4**	**0**	**2.4**	**0**	**0**
Mean	**41.8**	**4.1**	**0.4**	**4.9**	**87.5**	**0**
Number of Occurrences	**10**	**6**	**6**	**15**	**4**	**1**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Notes:

mg/L = milligrams per liter
N/A = not available

Source: Reference 2.3-058

Table 2.3-30 (Sheet 1 of 2)
Field Parameters at USGS Station 02313250 Withlacoochee River Bypass Channel near Inglis, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
5/4/1971	23	N/A	9	N/A
5/4/1971	23	225	9	N/A
10/10/1973	25.5	N/A	N/A	N/A
11/20/1973	21	N/A	N/A	N/A
1/16/1974	21	N/A	N/A	N/A
3/13/1974	23	N/A	N/A	N/A
5/14/1974	24.5	N/A	N/A	N/A
6/26/1974	26	N/A	N/A	N/A
9/3/1974	28	N/A	N/A	N/A
1/26/1978	16	280	11.4	6
3/20/1978	20	230	7.8	7.2
6/1/1978	27	250	7	7.5
6/1/1978	27	N/A	7	N/A
6/1/1978	27	N/A	7	N/A
6/1/1978	27	N/A	7	N/A
6/1/1978	27.5	N/A	7	N/A
6/1/1978	27.5	N/A	7	N/A
8/8/1978	28	238	3.7	7
9/22/1978	30	272	2.8	6.8
11/21/1978	21.5	380	5.4	7.6
1/22/1979	16	275	7.8	7.8
3/14/1979	19	300	8.3	7.6
5/16/1979	26	216	4.8	7.2
7/25/1979	28.5	252	4.6	6.6
9/10/1979	28	222	4.6	7.1
11/14/1979	20.5	227	6.9	7.4
3/5/1980	14	282	9.1	8
5/7/1980	25	260	6.6	N/A
8/27/1980	28.5	298	N/A	N/A
10/29/1980	21.5	290	7.2	7.1
5/29/1981	27	220	8.7	7.2
9/14/1981	28.5	248	N/A	7

Table 2.3-30 (Sheet 2 of 2)
Field Parameters at USGS Station 02313250 Withlacoochee River Bypass Channel near Inglis, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	**°C**	**µS/cm**	**mg/L**	**SU**
10/27/1981	23	218	4.7	7.3
12/16/1981	14.5	250	8.7	7.3
2/19/1982	21.5	318	5	7.5
4/21/1982	26	320	4.4	6.7
6/29/1982	27.5	260	5.7	7.3
8/31/1982	27.5	260	7.5	7.4
11/8/1982	19	250	4.3	6.4
1/5/1983	16.5	330	4.8	6.3
3/2/1983	16	210	6.2	7.6
4/20/1983	18.5	N/A	N/A	N/A
10/16/1984	25	232	5.1	7.2
Number of Occurrences	**43**	**29**	**33**	**26**
Minimum	**14**	**210**	**2.8**	**6**
Maximum	**30**	**380**	**11.4**	**8**
Average	**23.5**	**262.5**	**6.5**	**N/A[(a)]**
Florida Water Quality Standard	**N/A**	**See note[(b)]**	**>5**	**6 - 8.5**

Notes:

a) Average pH values cannot be calculated.

b) Shall not be increased more than 50% above background.

°C = degree Celsius
mg/L = milligrams per liter
µS/cm = microSiemens per centimeter
N/A = not available
SU = standard units

Source: Reference 2.3-059

Table 2.3-31 (Sheet 1 of 3)
Water Quality Parameters at USGS Station 02313250 Withlacoochee River Bypass Channel near Inglis, Florida

Date	Turbidity, unfiltered	Color, filtered	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered, as Nitrogen	Nitrate, unfiltered, as Nitrogen	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Chloride, filtered	Sulphate, filtered	Chlorophyll a, phytoplankton, spectro-photometric method	Chlorophyll a, phytoplankton, chromatographic- fluorometric	Nitrate, unfiltered	Nitrite, unfiltered	Total nitrogen, unfiltered, milligrams per liter as nitrate
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L
5/4/1971	N/A	N/A	N/A	0.23	N/A	N/A	N/A	N/A	N/A	0.04	N/A	N/A	N/A	N/A	N/A	0.1	0.05	N/A
1/26/1978	N/A	35	0.56	0.45	0.04	0.01	0.06	0.49	0.07	N/A	0.03	7.1	38	4.03	N/A	N/A	N/A	2.5
3/20/1978	1	N/A	0.58	0.43	0.02	0.01	0.12	0.45	0.13	N/A	0.05	N/A	N/A	N/A	0	N/A	N/A	2.6
6/1/1978	1	30	0.35	0.24	0.03	< 0.01	0.08	0.27	0.08	N/A	0.04	7.6	18	0	N/A	N/A	N/A	1.5
8/8/1978	2	N/A	0.74	0.62	0.05	0.01	0.06	0.67	0.07	N/A	0.04	N/A	N/A	0	N/A	N/A	N/A	3.3
9/22/1978	21	N/A	1	0.88	0.02	0.01	0.11	0.9	0.12	N/A	0.05	N/A	N/A	0	N/A	N/A	N/A	4.5
11/21/1978	1	N/A	0.38	0.27	0.03	0.01	0.07	0.3	0.08	N/A	0.04	N/A	N/A	0	0	N/A	N/A	1.7
1/22/1979	1	N/A	0.35	0.13	0.06	0.01	0.15	0.19	0.16	N/A	0.04	N/A	N/A	N/A	0	N/A	N/A	1.5
3/14/1979	1	N/A	0.7	0.54	0.05	0.01	0.1	0.59	0.11	N/A	0.05	N/A	N/A	N/A	7	N/A	N/A	3.1
5/16/1979	1	35	0.57	0.48	0.06	0.01	0.02	0.54	0.03	N/A	0.04	6	20	N/A	0	N/A	N/A	2.5
7/25/1979	1	N/A	0.71	0.62	0.05	< 0.01	0.04	0.67	0.04	N/A	0.05	N/A	N/A	N/A	0	N/A	N/A	3.1
9/10/1979	2	70	0.99	0.77	0.08	0.01	0.13	0.85	0.14	N/A	0.07	6.8	11	N/A	0	N/A	N/A	4.4
11/14/1979	1	N/A	0.72	0.53	0.04	0.01	0.14	0.57	0.15	N/A	0.05	N/A	N/A	N/A	N/A	N/A	N/A	3.2
3/5/1980	2	N/A	N/A	0.52	0.06	0.01	0.15	N/A	N/A	N/A	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/7/1980	N/A	11	0.41	0.37	0.03	0	0.01	0.4	0.01	N/A	0.05	7	15	N/A	N/A	N/A	N/A	1.8
8/27/1980	2	0	0.36	0.18	0.08	0.01	0.09	0.26	0.1	N/A	0.02	21	20	N/A	N/A	N/A	N/A	1.6
10/29/1980	N/A	N/A	0.29	0.06	0.04	0.01	0.18	0.1	0.19	N/A	0.04	N/A	N/A	N/A	N/A	N/A	N/A	1.3
5/29/1981	N/A	5	0.25	0.19	0.04	0	0.02	0.23	0.02	N/A	0.03	5.6	21	N/A	N/A	N/A	N/A	1.1
9/14/1981	N/A	N/A	0.31	0.24	0.02	0	0.05	0.26	0.05	N/A	0.04	N/A	N/A	N/A	N/A	N/A	N/A	1.4
10/27/1981	N/A	N/A	0.22	0.16	0.02	0	0.04	0.18	0.04	N/A	0.02	N/A	N/A	N/A	N/A	N/A	N/A	1

Table 2.3-31 (Sheet 2 of 3)
Water Quality Parameters at USGS Station 02313250 Withlacoochee River Bypass Channel near Inglis, Florida

Date	Turbidity, unfiltered	Color, filtered	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Nitrite, unfiltered, as Nitrogen	Nitrate, unfiltered, as Nitrogen	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Chloride, filtered	Sulphate, filtered	Chlorophyll a, phytoplankton, spectro-photometric method	Chlorophyll a, phytoplankton, chromatographic- fluorometric	Nitrate, unfiltered	Nitrite, unfiltered	Total nitrogen, unfiltered, milligrams per liter as nitrate
Units:	**NTU**	**PCU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**µg/L**	**µg/L**	**mg/L**	**mg/L**	**mg/L**
12/16/1981	1	N/A	0.13	0.01	0.03	0	0.09	0.04	0.09	N/A	0.02	N/A	N/A	N/A	N/A	N/A	N/A	0.6
2/19/1982	1	N/A	0.61	0.46	0.03	0	0.12	0.49	0.12	N/A	0.04	N/A	N/A	N/A	N/A	N/A	N/A	2.7
4/21/1982	0.5	N/A	0.75	0.65	0.03	0	0.07	0.68	0.07	N/A	0.05	N/A	N/A	N/A	N/A	N/A	N/A	3.3
6/29/1982	0.6	120	0.93	0.76	0.06	0.01	0.1	0.82	0.11	N/A	0.07	8.8	27	N/A	N/A	N/A	N/A	4.1
8/31/1982	0.5	N/A	0.83	0.68	0.03	0	0.12	0.71	0.12	N/A	0.06	N/A	N/A	N/A	N/A	N/A	N/A	3.7
11/8/1982	0.8	N/A	0.69	0.55	0.02	0	0.12	0.57	0.12	N/A	0.07	N/A	N/A	N/A	N/A	N/A	N/A	3.1
1/5/1983	1.1	N/A	0.65	0.35	0.05	0	0.25	0.4	0.25	N/A	0.07	N/A	N/A	N/A	N/A	N/A	N/A	2.9
3/2/1983	0.8	N/A	0.79	0.62	0.04	0.01	0.12	0.66	0.13	N/A	0.05	N/A	N/A	N/A	N/A	N/A	N/A	3.5
Number of Occurrences	**21**	**8**	**26**	**28**	**27**	**27**	**27**	**26**	**26**	**1**	**27**	**8**	**8**	**5**	**7**	**1**	**1**	**26**
Minimum	**0.5**	**0**	**0.13**	**0.01**	**0.02**	**0**	**0.01**	**0.04**	**0.01**	**0.04**	**0.02**	**5.6**	**11**	**0**	**0**	**0.1**	**0.05**	**0.6**
Maximum	**21**	**120**	**1**	**0.88**	**0.08**	**0.01**	**0.25**	**0.9**	**0.25**	**0.04**	**0.07**	**21**	**38**	**4.03**	**7**	**0.1**	**0.05**	**4.5**
Average	**2.1**	**38.3**	**0.6**	**0.4**	**0.0**	**0.0**	**0.1**	**0.5**	**0.1**	**0.0**	**0.0**	**8.7**	**21.3**	**0.8**	**1.0**	**0.1**	**0.1**	**2.5**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**≤0.02**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**≤0.1**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Table 2.3-31 (Sheet 3 of 3)
Water Quality Parameters at USGS Station 02313250 Withlacoochee River Bypass Channel near Inglis, Florida

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

µg/L = micrograms per liter
mg/L = milligrams per liter
N/A = not available
NTU = nephelometric turbidity units
PCU = platinum-cobalt units

Source: Reference 2.3-059

Table 2.3-32
Metals Data at USGS Station 02313250 Withlacoochee River Bypass Channel near Inglis, Florida

Date	Calcium, Filtered	Magnesium, Filtered	Sodium, Filtered	Potassium, Filtered	Silica, Filtered	Arsenic, Unfiltered	Copper, Filtered	Iron, Unfiltered	Iron, Filtered	Lead, suspended sediment, Recoverable	Manganese, Unfiltered, Recoverable	Manganese, Filtered	Nickel, Unfiltered, Recoverable	Zinc, Filtered	Mercury, Unfiltered, Recoverable
Units:	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
5/4/1971	N/A	N/A	N/A	N/A	2.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/26/1978	50	5	4.3	0.5	3.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/1/1978	39	4.6	3.8	0.1	5.8	1	< 2	40	40	2	< 10	< 10	N/A	< 20	< 0.5
5/16/1979	38	3.9	3.5	0.1	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/10/1979	36	3.7	4.1	0.4	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/7/1980	41	4.7	4.5	0.2	5.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/27/1980	42	6	15	0.5	8.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/1981	34	5.1	3.2	0.5	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/29/1982	43	3.7	3.6	0.2	5.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Occurrences	**8**	**8**	**8**	**8**	**9**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**1**	**1**
Minimum	**34**	**3.7**	**3.2**	**0.1**	**2.9**	**1**	**<2**	**40**	**40**	**2**	**<10**	**<10**	**0**	**<20**	**<0.5**
Maximum	**50**	**6**	**15**	**0.5**	**8.4**	**1**	**<2**	**40**	**40**	**2**	**<10**	**<10**	**0**	**<20**	**<0.5**
Mean	**40.4**	**4.6**	**5.3**	**0.3**	**5.8**	**1.0**	**<2.0**	**40.0**	**40.0**	**2.0**	**<10.0**	**<10.0**	**0.0**	**<20.0**	**<0.5**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.
mg/L = milligrams per liter
µg/L = micrograms per liter
N/A = not available

Source: Reference 2.3-059

Table 2.3-33
USGS Station 02313272 Withlacoochee River at Chambers Island near Yankeetown, Florida

Date Units:	Specific Conductance (Maximum) (TOP) µS/cm	Specific Conductance (Minimum) (TOP) µS/cm	Specific Conductance (Maximum) (BOTTOM) µS/cm	Specific Conductance (Minimum) (BOTTOM) µS/cm	Temperature (Maximum) (TOP) °C	Temperature (Minimum) (TOP) °C
Jan 2007 Avg	35812.0	14749.6	35675.9	8306.2	18.6	16.2
Feb 2007 Avg	32014.3	11689.3	32989.3	5802.7	17.0	13.9
Mar 2007 Avg	31303.2	11971.0	31845.2	5120.9	22.0	18.5
April 2007 avg	35910.0	13800.0	36523.3	8959.7	23.5	20.1
May 2007 Avg	38669.0	17696.6	38387.1	11608.1	26.5	23.6
June 2007 Avg	37540.0	15933.3	37706.7	11238.7	29.8	27.0
July 2007 Avg	33706.5	14028.4	34132.3	9434.8	32.2	29.3
August 2007 Avg	35750.0	13408.8	34837.5	7661.9	32.6	29.7
Sept 2007 Avg	40452.6	18789.5	39533.3	13633.8	29.9	24.7
Oct 2007 Avg	39625.8	17029.0	41564.5	15170.3	27.5	23.5
Nov 2007 Avg	38280.0	16743.3	44490.0	14192.7	21.1	18.1
Dec 2007 avg	38319.4	13526.8	41271.0	10772.6	21.5	17.3
MAX	**40452.6**	**18789.5**	**44490.0**	**15170.3**	**32.6**	**29.7**
MIN	**31303.2**	**11689.3**	**31845.2**	**5120.9**	**17.0**	**13.9**
Mean Monthly Average	**36448.6**	**14947.1**	**37413.0**	**10158.5**	**25.2**	**21.8**
Florida Water Quality Standard	**See note[(a)]**	**See note[(a)]**	**See note[(a)]**	**See note[(a)]**	**N/A**	**N/A**

Notes:

a) Shall not be increased more than 50% above background.

°C = degree Celsius
µS/cm = microSiemens per centimeter
N/A = not available

Source: Reference 2.3-060

Table 2.3-34
Field Parameters at USGS Station 02313274 Withlacoochee River at Bungalow Pass at Port Inglis, Florida

Date	Specific Conductance (Maximum) (TOP)	Specific Conductance (Minimum) (TOP)	Specific Conductance (Maximum) (BOTTOM)	Specific Conductance (Minimum) (BOTTOM)	Temperature (Maximum) (TOP)	Temperature (Minimum) (TOP)	Temperature (Maximum) (BOTTOM)	Temperature (Minimum) (BOTTOM)
Units:	**µS/cm**	**µS/cm**	**µS/cm**	**µS/cm**	°C	°C	°C	°C
December 2006 Avg	37683.3	18883.3	37858.3	11145.0	19.8	17.5	19.9	17.5
Jan 2007 Avg	21623.1	21623.1	37338.7	11582.3	16.3	16.3	18.7	16.1
Feb 2007 Avg	14364.3	14364.3	32957.1	9095.7	13.9	13.9	16.9	14.0
Mar 2007 Avg	13806.4	13806.4	32319.4	8729.7	18.2	18.2	21.9	18.5
April 2007 Avg	16864.3	16864.3	37293.3	11939.7	19.4	19.4	23.3	19.5
May 2007 Avg	18863.2	18863.2	39016.1	14290.6	23.3	23.3	26.7	23.6
June 2007 Avg	19923.3	19923.3	39653.3	14496.7	27.0	27.0	29.9	27.0
July 2007 Avg	13296.5	13296.5	35709.7	12798.7	29.3	29.3	32.3	29.3
August 2007 Avg	13862.8	13862.8	35222.6	14065.2	28.6	28.6	32.8	30.0
Sept 2007 Avg	11049.6	11049.6	33646.7	8656.7	25.7	25.7	30.4	27.2
Oct 2007 Avg	14816.1	14816.1	38716.1	15199.2	23.6	23.6	27.3	24.6
Nov 2007 Avg	6123.8	6123.8	43393.3	16333.3	16.1	16.1	21.2	18.4
Dec 2007 Avg	6501.8	6501.8	39777.8	13338.9	16.1	16.1	21.8	18.5
MAX	**37683.3**	**21623.1**	**43393.3**	**16333.3**	**29.3**	**29.3**	**32.8**	**30.0**
MIN	**6123.8**	**6123.8**	**32319.4**	**8656.7**	**13.9**	**13.9**	**16.9**	**14.0**
Mean Monthly Average	**15350.2**	**14203.0**	**37196.9**	**12536.9**	**21.5**	**21.5**	**25.2**	**22.2**
Florida Water Quality Standard	**See note[a]**	**See note[a]**	**See note[a]**	**See note[a]**	**N/A**	**N/A**	**N/A**	**N/A**

Notes:

a) Shall not be increased more than 50% above background.

°C = degree Celsius
µS/cm = microSiemens per centimeter
N/A = not available

Source: Reference 2.3-061

Table 2.3-35 (Sheet 1 of 5)
Cross Florida Barge Canal Field Parameters

Station ID	Depth (m)	Sample Date	Temperature	Dissolved Oxygen (DO)	Specific Conductivity	Salinity	pH	Secchi Depth	Total Depth	Oxygen Reduction Potential	Turbidity
			°C	mg/L	µS/cm	ppt	SU	meters	meters	mV	NTU
Station 1	0.15	10/16/2007	27.33	3.95	29.88	18.43	7.87	1.23	4.72	N/A	N/A
	0.15	10/19/2007	21.21	5.39	32.66	20.45	8.12	0.94	3.90	N/A	N/A
	1	10/16/2007	27.21	4.14	32.10	20.03	7.81	1.23	4.72	N/A	N/A
	1	10/19/2007	19.68	6.67	38.10	24.25	8.17	0.94	3.90	N/A	N/A
	2	10/16/2007	26.09	2.44	36.04	22.70	7.49	1.23	4.72	N/A	N/A
	2	10/19/2007	18.49	3.46	42.18	27.15	7.84	0.94	3.90	N/A	N/A
	3	10/16/2007	26.09	2.25	36.66	23.15	7.51	1.23	4.72	N/A	N/A
	3	10/19/2007	18.43	2.99	43.13	27.83	7.84	0.94	3.90	N/A	N/A
	4	10/16/2007	25.85	1.94	38.90	24.71	7.52	1.23	4.72	N/A	N/A
		Number of Occurrences	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**0**	**0**
		Minimum	**18.43**	**1.94**	**29.88**	**18.43**	**7.49**	**0.94**	**3.90**	**---**	**---**
		Maximum	**27.33**	**6.67**	**43.13**	**27.83**	**8.17**	**1.23**	**4.72**	**---**	**---**
		Average	**23.38**	**3.69**	**36.63**	**23.19**	**7.80**	**1.10**	**4.36**	**---**	**---**

Table 2.3-35 (Sheet 2 of 5)
Cross Florida Barge Canal Field Parameters

Station ID	Depth (m)	Sample Date	Temperature °C	Dissolved Oxygen (DO) mg/L	Specific Conductivity µS/cm	Salinity ppt	pH SU	Secchi Depth meters	Total Depth meters	Oxygen Reduction Potential mV	Turbidity NTU
Station 2	0.15	10/16/2007	27.12	4.94	15.65	9.21	8.02	1.94	3.96	N/A	N/A
	0.15	11/19/2007	20.68	6.37	16.10	9.45	8.12	1.40	3.23	N/A	N/A
	1	10/16/2007	27.12	5.41	22.78	13.72	8.06	1.94	3.96	N/A	N/A
	1	11/19/2007	20.64	5.82	35.66	22.53	7.95	1.40	3.23	N/A	N/A
	2	10/16/2007	25.95	3.30	40.95	26.02	7.78	1.94	3.96	N/A	N/A
	2	11/19/2007	17.92	5.40	46.82	30.48	8.00	1.40	3.23	N/A	N/A
	3	10/16/2007	25.32	2.92	44.27	28.55	7.79	1.94	3.96	N/A	N/A
	3	11/19/2007	17.74	4.52	47.30	30.83	8.01	1.40	3.23	N/A	N/A
	4	10/16/2007	25.30	2.81	44.33	28.61	7.79	1.94	3.96	N/A	N/A
		Number of Occurrences	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**0**	**0**
		Minimum	**17.74**	**2.81**	**15.65**	**9.21**	**7.78**	**1.40**	**3.23**	**---**	**---**
		Maximum	**27.12**	**6.37**	**47.30**	**30.83**	**8.12**	**1.94**	**3.96**	**---**	**---**
		Average	**23.09**	**4.61**	**34.87**	**22.16**	**7.95**	**1.70**	**3.64**	**---**	**---**

Table 2.3-35 (Sheet 3 of 5)
Cross Florida Barge Canal Field Parameters

			Temperature	Dissolved Oxygen (DO)	Specific Conductivity	Salinity	pH	Secchi Depth	Total Depth	Oxygen Reduction Potential	Turbidity
Station ID	**Depth (m)**	**Sample Date**	**°C**	**mg/L**	**µS/cm**	**ppt**	**SU**	**meters**	**meters**	**mV**	**NTU**
Station 3	0.15	10/16/2007	26.59	4.44	28.62	17.65	7.92	1.59	5.50	N/A	N/A
	0.15	11/19/2007	20.09	6.26	19.96	11.94	7.90	1.49	4.57	N/A	N/A
	0.15	12/10/2007	20.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	0.15	12/12/2007	21.23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1	11/19/2007	19.69	5.53	22.85	13.84	7.83	1.49	4.57	N/A	N/A
	1	12/10/2007	20.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1	12/12/2007	21.22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2	10/16/2007	25.27	3.10	46.64	30.28	7.89	1.59	5.50	N/A	N/A
	2	11/19/2007	17.92	4.61	47.62	31.06	7.88	1.49	4.57	N/A	N/A
	2	12/10/2007	20.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2	12/12/2007	21.24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3	10/16/2007	25.25	3.04	46.71	30.33	7.88	1.59	5.50	N/A	N/A
	3	11/19/2007	17.83	4.51	48.19	31.48	8.08	1.49	4.57	N/A	N/A
	3	12/10/2007	20.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3	12/12/2007	21.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4	10/16/2007	25.25	3.07	46.71	30.33	7.88	1.59	5.50	N/A	N/A
	4	11/19/2007	17.81	4.52	48.27	31.54	8.09	1.49	4.57	N/A	N/A

Table 2.3-35 (Sheet 4 of 5)
Cross Florida Barge Canal Field Parameters

Station ID	Depth (m)	Sample Date	Temperature °C	Dissolved Oxygen (DO) mg/L	Conductivity µS/cm	Salinity ppt	pH SU	Secchi Depth meters	Total Depth meters	Oxygen Reduction Potential mV	Turbidity NTU
Station 3	4	12/10/2007	20.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(continued)	4	12/12/2007	21.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5	10/16/2007	25.25	3.08	46.73	30.34	7.88	1.59	5.50	N/A	N/A
	5	11/19/2007	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5	12/10/2007	20.00	N/A	N/A	N/A	7.93	N/A	N/A	N/A	N/A
	5	12/12/2007	21.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Number of Occurrences	**22**	**10**	**10**	**10**	**11**	**10**	**10**	**0**	**0**
		Minimum	**17.81**	**3.04**	**19.96**	**11.94**	**7.83**	**1.49**	**4.57**	**---**	**---**
		Maximum	**26.59**	**6.26**	**48.27**	**31.54**	**8.09**	**1.59**	**5.50**	**---**	**---**
		Average	**21.30**	**4.22**	**40.23**	**25.88**	**7.92**	**1.54**	**5.04**	**---**	**---**
SS-2	N/A	3/8/2007	18.41	5.15	0.166	0.09	7.94	N/A	N/A	111.9	151.5
	N/A	6/14/2007	29.89	8.89	0.225	0.1	8.62	N/A	N/A	220.7	1.4
	N/A	9/13/2007	N/A	0.67	0.294	0.13	8.29	N/A	N/A	98.9	0
	N/A	12/4/2007	21.99	9.3	0.4	0.19	8.16	N/A	N/A	183.3	2.25
		Number of Occurrences	**3**	**4**	**4**	**4**	**4**	**0**	**0**	**4**	**4**
		Minimum	**18.41**	**0.67**	**0.17**	**0.09**	**7.94**	**---**	**---**	**98.90**	**0.00**
		Maximum	**29.89**	**9.30**	**0.40**	**0.19**	**8.62**	**---**	**---**	**220.70**	**151.50**
		Average	**23.43**	**6.00**	**0.27**	**0.13**	**8.25**	**---**	**---**	**153.70**	**38.79**

Table 2.3-35 (Sheet 5 of 5)
Cross Florida Barge Canal Field Parameters

Station ID	Depth (m)	Sample Date	Temperature °C	Dissolved Oxygen (DO) mg/L	Specific Conductivity µS/cm	Salinity ppt	pH SU	Secchi Depth meters	Total Depth meters	Oxygen Reduction Potential mV	Turbidity NTU
SS-1	N/A	3/8/2007	21.88	4.16	1.949	1.06	7.51	N/A	N/A	110.9	21.4
	N/A	6/14/2007	29.13	6.07	4.489	2.37	7.8	N/A	N/A	229.4	1.1
	N/A	9/13/2007	N/A	0.52	6.152	3.07	7.74	N/A	N/A	81.6	0.7
	N/A	12/4/2007	20.84	8.19	4.589	2.46	7.52	N/A	N/A	225.4	1.3
		Number of Occurrences	**3**	**4**	**4**	**4**	**4**	**0**	**0**	**4**	**4**
		Minimum	**20.84**	**0.52**	**1.95**	**1.06**	**7.51**	**---**	**---**	**81.60**	**0.70**
		Maximum	**29.13**	**8.19**	**6.15**	**3.07**	**7.80**	**---**	**---**	**229.40**	**21.40**
		Average	**23.95**	**4.74**	**4.29**	**2.24**	**7.64**	**---**	**---**	**161.83**	**6.13**

Notes:

°C = degree Celsius
m = meters
µg/L = milligrams per liter
µS/cm = microSiemens per centimeter
mV = millivolts
NTU = nephelometric turbidity units
N/A = not available
ppt = part per thousand
SU = standard units

Table 2.3-36 (Sheet 1 of 2)
Cross Florida Barge Canal Analytical Data

Station ID	Sample Date	Chlorophyll-a	Total Dissolved Solids (residue, filterable)	Total Suspended Solids	Hardness (as CaCO3)	Chloride (as Cl)	Sulphate (as SO4)	Alkalinity, total (as CaCO3)	Nitrogen, ammonia (as N)	Nitrogen, kjeldahl, total	Nitrogen, nitrate-nitrite	Phosphorus, Total (as P)	Phosphorus, total orthophosphate (as P)	Sulphide	Biologic Oxygen Demand, five day	Chemical Oxygen Demand	Total organic carbon
		mg/m³	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SS-1	3/8/2007	2.9	1630	<4.0	366	741	139	115	0.1J	0.55J	<0.25	0.029J	<0.10	<0.71	<2.0	20	2.8
	6/14/2007	4.5	2530	<4.0	602	1270	177	89	<0.15	<1.5	<0.75	0.058J	0.042	<2.1	2.3	60	2.2
	9/13/2007	20.8	3530	4.8	710	1790	288	89.5	<0.30	1J	0.3J	0.037J	<0.03	<2.0	3.5J	56	4.1
	12/5/2007	0.55	3100	<4.0	617	1500	237	102	<0.75	2.3	<0.75	0.038	0.034	0.67	<2.0	42.3	3.2
	Mean	**7.2**	**2697.5**	**4.2**	**574**	**1325**	**210**	**98.9**	**0.325**	**1.3**	**0.51**	**0.041**	**0.051**	**1.37**	**2.45**	**44.6**	**3.1**
SS-2	3/8/2007	2.7	184	<4.0	141	6.9	30.8	109	0.096J	<0.50	0.28J	0.024J	<0.100	<0.71	<2.0	<20	2
	6/14/2007	7.5	123	4.8	104	7.6	15.3	79	<0.15	0.69J	<0.75	0.047J	<0.030	<2.2	2.4	<60	1.7
	9/13/2007	4	267	<4.0	126	7	47.4	64.4	<0.30	0.74J	<0.75	<0.06	<0.030	<2.0	<2.0	33.7J	3
	12/5/2007	4.6	257	<4.0	158	9.8	43.9	106	<0.30	<0.30	0.5	0.023	0.026	<2.0	<2.0	20.5	3.3
	Mean	**4.7**	**208**	**4.2**	**132**	**7.8**	**34.4**	**89.6**	**0.21**	**0.56**	**0.57**	**0.0385**	**0.0465**	**1.73**	**2.1**	**33.55**	**2.5**
Station 1	10/16/2007	18	20,000	15	N/A	N/A	N/A	N/A	0.6	0.43	0.0094	0.074	N/A	N/A	N/A	N/A	N/A
	11/19/2007	43	24,000	38	N/A	N/A	N/A	N/A	0.15	0.87	0.25	0.13	N/A	N/A	N/A	N/A	N/A
	Mean	**30.5**	**22,000**	**26.5**	**---**	**---**	**---**	**---**	**0.38**	**0.65**	**0.1297**	**0.102**	**---**	**---**	**---**	**---**	**---**
Station 2	10/16/2007	11	21,000	20	N/A	N/A	N/A	N/A	0.06	0.49	0.0098	0.077	N/A	N/A	N/A	N/A	N/A
	11/19/2007	21	22,000	38	N/A	N/A	N/A	N/A	0.3	0.68	0.25	0.059	N/A	N/A	N/A	N/A	N/A
	Mean	**16**	**21,500**	**29**	**---**	**---**	**---**	**---**	**0.18**	**0.585**	**0.1299**	**0.068**	**---**	**---**	**---**	**---**	**---**

Table 2.3-36 (Sheet 2 of 2)
Cross Florida Barge Canal Analytical Data

Station ID	Sample Date	Chlorophyll-a	Total Dissolved Solids (residue, filterable)	Total Suspended Solids	Hardness (as CaCO3)	Chloride (as Cl)	Sulphate (as SO4)	Alkalinity, total (as CaCO3)	Nitrogen, ammonia (as N)	Nitrogen, kjeldahl, total	Nitrogen, nitrate-nitrite	Phosphorus, Total (as P)	Phosphorus, total orthophosphate (as P)	Sulphide	Biologic Oxygen Demand, five day	Chemical Oxygen Demand	Total organic carbon
		mg/m^3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Station 3	10/16/2007	5.3	28,000	33	N/A	N/A	N/A	N/A	0.3	0.27	0.013	0.06	N/A	N/A	N/A	N/A	N/A
	10/18/2007	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/19/2007	3.2	27,000	39	N/A	N/A	N/A	N/A	0.3	0.2	0.25	0.037	N/A	N/A	N/A	N/A	N/A
	Mean	**4.25**	**27,500**	**36**	**---**	**---**	**---**	**---**	**0.3**	**0.24**	**0.13**	**0.049**	**---**	**---**	**---**	**---**	**---**

Notes:

J = estimated value
mg/L = milligrams per liter
mg/m^3 = milligrams per cubic meter
N/A = not available

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

Table 2.3-37
Cross Florida Barge Canal Metals Data

Station ID	Sample Date	Arsenic µg/L	Boron µg/L	Calcium µg/L	Chromium, total µg/L	Copper µg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Nickel µg/L	Potassium µg/L	silica µg/L	Sodium µg/L	Zinc µg/L	Mercury µg/L
SS-1	3/8/2007	< 3.0	184	62,800	< 2.0	< 5.0	37.8 J	< 1.5	50,900	4 J	< 5.0	18,700	N/A	389,000	< 5.0	< 0.080
	6/14/2007	< 3.0	330	59,900	< 2.0	< 5.0	N/A	< 1.5	88,800	12.8 J	< 5.0	35,100	N/A	686,000	7.2 J	< 0.080
	9/13/2007	< 3.0	453	83,800	< 2.0	< 5.0	N/A	< 1.5	121,000	9.7 J	< 5.0	49,200	N/A	979,000	11.1 J	< 0.080
	12/5/2007	< 3.0	N/A	75,800	< 2.0	< 5.0	71.2	< 1.5	104,000	7.7	< 5.0	42,700	N/A	N/A	< 5.0	< 0.080
	Mean	**3.0**	**322.3**	**70,575**	**2.0**	**5.0**	**54.5**	**1.5**	**91,175**	**8.6**	**5.0**	**36,425**	**---**	**684,667**	**7.1**	**0.080**
SS-2	3/8/2007	< 3.0	10.7 J	47,500	< 2.0	< 5.0	30.3 J	< 1.5	5490	3.7 J	< 5.0	< 1000	N/A	4060 J	10.9 J	< 0.080
	6/14/2007	< 3.0	13.3 J	32,900	< 2.0	< 5.0	N/A	< 1.5	5330	5.9 J	< 5.0	< 1000	N/A	4690 J	5.1 J	< 0.080
	9/13/2007	< 3.0	15.8 J	40,900	< 2.0	< 5.0	N/A	< 1.5	5720	3.6 J	< 5.0	< 1000	N/A	4480 J	7.1 J	< 0.080
	12/5/2007	< 3.0	14.3	52,800	< 2.0	< 5.0	49.5	< 1.5	6420	3.3	5	1000	N/A	5970	67.3	< 0.080
	Mean	**3.0**	**13.5**	**43,525**	**2.0**	**5.0**	**39.9**	**1.5**	**5740**	**4.1**	**5.0**	**1000**	**---**	**4800**	**22.6**	**0.080**
Station 3	10/16/2007	N/A	N/A	N/A	N/A	0.52	333	N/A	N/A	N/A	0.31	N/A	N/A	N/A	0.53	N/A
	10/18/2007	N/A	N/A	N/A	N/A	0.36	192	N/A	N/A	N/A	0.27	N/A	N/A	N/A	0.26	N/A
	11/19/2007	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Mean	**---**	**---**	**---**	**---**	**0.44**	**263**	**---**	**---**	**---**	**0.29**	**---**	**---**	**---**	**0.40**	**---**

Notes:

µg/L = micrograms per liter
N/A = not available
J = estimated value
If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

Table 2.3-38 (Sheet 1 of 6)
Field Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
5/2/1956	N/A	253	N/A	7.4
11/9/1960	24.4	241	N/A	7.4
3/21/1963	23.3	147	N/A	7.2
5/23/1963	23.9	140	N/A	7.2
1/14/1964	N/A	140	N/A	7.4
9/24/1964	N/A	122	N/A	7.6
4/15/1965	24.4	280	N/A	7.8
7/15/1965	24	249	N/A	N/A
8/27/1965	23.5	129	N/A	N/A
5/31/1966	23.3	120	N/A	7.4
6/27/1966	23.5	142	N/A	N/A
7/25/1966	23.5	150	N/A	N/A
8/29/1966	23.5	164	N/A	N/A
9/26/1966	23.5	60	N/A	N/A
10/31/1966	23.3	160	N/A	N/A
11/27/1966	23.3	161	N/A	N/A
1/6/1967	22.8	127	N/A	N/A
2/21/1967	22.2	130	N/A	N/A
2/27/1967	23.3	160	N/A	N/A
3/27/1967	23.3	140	N/A	N/A
4/5/1967	23.3	130	N/A	N/A
5/17/1967	23.3	129	7.9	7.5
5/29/1967	23.3	140	N/A	N/A
6/26/1967	N/A	159	N/A	N/A
6/30/1967	23.9	120	N/A	N/A
7/31/1967	23.3	138	N/A	N/A
8/28/1967	23.3	140	N/A	N/A
9/28/1967	23.3	122	N/A	N/A
11/27/1967	23	150	N/A	N/A
12/25/1967	23	158	N/A	N/A
1/29/1968	N/A	161	N/A	N/A
2/26/1968	23	156	N/A	N/A
3/24/1968	23	120	N/A	N/A
4/29/1968	23	166	N/A	N/A
5/15/1968	23	140	N/A	N/A

Table 2.3-38 (Sheet 2 of 6)
Field Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
5/31/1968	23	168	N/A	N/A
6/24/1968	N/A	146	N/A	N/A
7/29/1968	23	165	N/A	N/A
8/26/1968	23	125	N/A	N/A
9/19/1968	23	120	N/A	7.1
9/27/1968	24	160	N/A	N/A
9/30/1968	N/A	130	N/A	N/A
11/22/1968	24	150	N/A	N/A
1/3/1969	23	130	N/A	N/A
1/16/1969	23	120	N/A	N/A
2/13/1969	23	103	N/A	N/A
3/20/1969	23	120	N/A	N/A
5/2/1969	23.5	150	7.8	7.4
5/16/1969	24	134	6.5	7.6
6/23/1969	24	122	N/A	N/A
7/16/1969	23	145	N/A	N/A
8/7/1969	24	250	N/A	N/A
9/22/1969	25	129	6.2	7.4
10/3/1969	23.5	241	N/A	N/A
11/17/1969	22	240	N/A	N/A
11/18/1969	23	125	N/A	7.5
1/9/1970	20	241	N/A	N/A
1/22/1970	23	130	N/A	N/A
3/20/1970	22.5	120	N/A	N/A
5/2/1970	23.5	125	5.8	7.9
9/17/1970	23	104	6.6	8.1
11/24/1970	22	124	N/A	N/A
1/18/1971	22.5	122	N/A	7.7
3/17/1971	23	122	N/A	N/A
5/18/1971	23	N/A	6.7	8.2
5/18/1971	23	123	6.7	7.3
7/21/1971	23.5	130	N/A	N/A
9/17/1971	23.5	N/A	6.1	8.1
9/17/1971	23.5	130	6.1	7.5
11/22/1971	23	125	N/A	N/A

Table 2.3-38 (Sheet 3 of 6)
Field Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
1/20/1972	23.5	122	N/A	N/A
3/15/1972	23.5	127	N/A	N/A
5/16/1972	23.5	N/A	6	8.2
5/16/1972	23.5	135	6	8.3
7/18/1972	23.5	N/A	N/A	N/A
7/18/1972	23.5	126	N/A	N/A
8/29/1972	25.5	N/A	6.7	7.9
8/29/1972	25.5	240	6.7	8.1
9/19/1972	23	N/A	6.5	8.2
9/19/1972	23	130	6.5	N/A
11/16/1972	23	N/A	N/A	N/A
11/16/1972	23	135	N/A	N/A
1/15/1973	23	N/A	N/A	N/A
1/15/1973	23	142	N/A	N/A
3/19/1973	23	125	N/A	N/A
5/21/1973	24	N/A	5.6	N/A
5/21/1973	24	240	5.6	7.7
7/18/1973	23	N/A	N/A	N/A
7/18/1973	23	130	N/A	N/A
9/18/1973	23.5	N/A	4.6	8.3
9/18/1973	23.5	130	4.6	N/A
10/11/1973	23.5	N/A	N/A	N/A
11/13/1973	23.5	127	N/A	N/A
11/29/1973	22.5	N/A	N/A	N/A
1/15/1974	23.5	134	N/A	N/A
1/21/1974	23	N/A	N/A	N/A
3/18/1974	23.5	122	N/A	N/A
3/25/1974	23.5	N/A	N/A	N/A
5/14/1974	22.5	121	6	7.8
5/17/1974	23	N/A	N/A	N/A
6/26/1974	24	N/A	N/A	N/A
7/16/1974	23	125	N/A	N/A
8/29/1974	23.5	N/A	N/A	N/A
9/17/1974	23	126	6.9	8.1
11/11/1974	24	125	N/A	N/A

Table 2.3-38 (Sheet 4 of 6)
Field Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
1/17/1975	22.5	110	6.7	7.9
3/26/1975	23	129	6.7	8.4
5/28/1975	23.5	121	6.7	8.2
7/22/1975	24	120	7.5	8.2
8/13/1975	23.5	160	6.3	8.2
9/19/1975	23	120	5.1	8.1
11/18/1975	22.5	131	6.5	7.9
1/28/1976	23	122	N/A	8.1
3/24/1976	23	116	N/A	8.5
5/20/1976	22.5	127	7.2	8.4
7/26/1976	23.5	123	6.2	8.1
9/21/1976	23.5	126	6.6	8.2
11/18/1976	23	121	N/A	7.4
1/26/1977	23	114	N/A	7.7
3/25/1977	23	121	N/A	8.1
5/20/1977	23.5	115	7.4	8.5
7/21/1977	24	122	N/A	7.9
6/2/1978	23	125	6.4	7.1
6/14/1978	23.5	N/A	N/A	N/A
5/17/1979	24	115	N/A	7.6
9/11/1979	23.5	122	7.1	7.7
5/6/1980	23	135	7.7	8.1
8/28/1980	N/A	126	7.2	7.6
5/29/1981	23	234	6.9	7.3
10/27/1981	24	N/A	N/A	N/A
6/29/1982	25	125	4.2	8
11/3/1982	23.5	260	N/A	N/A
1/4/1983	20	N/A	N/A	N/A
3/3/1983	23	N/A	N/A	N/A
4/19/1983	22.5	119	7.6	8.5
8/10/1983	24	136	7.4	8.4
2/2/1984	22.5	N/A	N/A	N/A
6/14/1984	24	120	7.5	8.2
8/22/1984	23	125	7.3	8.4
12/5/1984	23	112	7.7	8.1

Table 2.3-38 (Sheet 5 of 6)
Field Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
1/17/1985	23.5	138	7.2	7.1
2/1/1985	23	114	7.6	8.5
3/29/1985	23	119	8.2	8.4
5/24/1985	23	118	8	N/A
7/18/1985	23.5	126	7.8	7.8
11/14/1985	23.5	118	8.4	8.1
1/10/1986	23	116	N/A	7.5
3/11/1986	23	124	7.8	8.6
5/21/1986	23.5	122	7.1	7.6
6/19/1986	23	114	5.7	7.4
8/15/1986	23.5	110	6.2	8.3
10/16/1986	23.5	130	7	8.5
12/5/1986	23.5	124	7.4	8.4
2/13/1987	23.5	127	7	8.4
4/7/1987	23.5	129	7.2	8.3
6/11/1987	23.5	130	7.2	N/A
7/31/1987	23.5	131	7.9	8.5
4/28/1988	23	208	6.7	8.1
8/26/1988	23	220	6.8	7.9
4/13/1989	23.1	206	5.9	7.2
9/27/1989	23	202	N/A	8.2
5/4/1990	23.5	N/A	N/A	6.1
8/29/1990	23	220	N/A	N/A
6/13/1991	23	N/A	5.8	N/A
9/26/1991	23.5	N/A	N/A	N/A
5/1/1992	22.5	209	5.9	7.9
8/21/1992	24.5	231	N/A	8.3
5/27/1993	23.5	123	7	8.3
9/9/1993	23.5	147	7	9
4/26/1994	23.5	121	7.5	7.9
8/17/1994	23	123	8.3	8.2
8/11/1995	23.5	130	7.7	7.6
2/15/1996	N/A	253	7.4	7.4
4/11/1996	N/A	126	6.8	N/A
4/12/1996	N/A	328	5.5	N/A

Table 2.3-38 (Sheet 6 of 6)
Field Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date Units:	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L	pH SU
5/31/1996	N/A	125	6.3	6.3
10/7/1996	23.1	128	N/A	7.8
12/2/1996	23.5	125	6.1	6.6
3/18/1997	N/A	123	7.2	6.5
5/1/1997	N/A	125	7.1	7.9
7/10/1997	23	127	7	5.8
10/21/1997	23.2	125	7.7	6.3
1/21/1998	22.9	127	7.2	5.9
4/6/1998	23.5	126	7	6.4
6/9/1998	23.6	124	12.3	7.7
8/4/1998	23.2	126	7.4	6.7
10/13/1998	23	123	6.6	8.6
11/17/1998	23	121	6.6	8.2
1/21/1999	21.8	126	7.8	7.9
5/17/1999	23.7	127	6.5	8
7/1/1999	23.5	128	7.4	8.1
9/2/1999	23.2	127	7.5	8.5
MAX[a]	**25.5**	**328**	**12.3**	**9**
MIN	**20**	**60**	**4.2**	**5.8**
Mean	**23.3**	**143**	**6.9**	**N/A[a]**
Number of Occurrences	**178**	**166**	**89**	**104**
Florida Water Quality Standard	**N/A**	**See note[b]**	**>5**	**6 - 8.5**

Notes:

a) Average pH values cannot be calculated.

b) Shall not be increased more than 50% above background.

°C = degree Celsius
mg/L = milligrams per liter
µS/cm = microSiemens per centimeter
N/A = not available
SU = standard units

Source: Reference 2.3-062

Table 2.3-39 (Sheet 1 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
5/2/1956	N/A	13	N/A	N/A	N/A	N/A	N/A	0.05	0.04	N/A	N/A	N/A	N/A	N/A	5.5	130	N/A	N/A
11/9/1960	N/A	5	N/A	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	N/A	4	120	N/A	N/A
3/21/1963	N/A	5	N/A	N/A	N/A	N/A	N/A	0	0	N/A	N/A	0.061	0.02	N/A	3.5	71	N/A	N/A
5/23/1963	N/A	75	N/A	N/A	N/A	N/A	N/A	0.07	0.07	N/A	N/A	0	0	N/A	3	67	N/A	N/A
1/14/1964	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	0.25	N/A	N/A	N/A	N/A	N/A	3	70	N/A	N/A
9/24/1964	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	0.14	N/A	N/A	N/A	N/A	N/A	3	60	N/A	N/A
4/15/1965	N/A	5	N/A	N/A	N/A	N/A	N/A	0.25	0.25	N/A	N/A	N/A	N/A	N/A	6	110	N/A	N/A
5/31/1966	N/A	0	N/A	N/A	N/A	N/A	N/A	0.18	0.18	N/A	N/A	0.12	0.04	N/A	3	58	N/A	N/A
6/27/1966	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	66	N/A	N/A
7/25/1966	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6	75	N/A	N/A
8/29/1966	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.4	82	N/A	N/A
9/26/1966	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	81	N/A	N/A
10/31/1966	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	79	N/A	N/A
11/27/1966	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.7	79	N/A	N/A
2/27/1967	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.5	110	N/A	N/A
3/27/1967	N/A	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.6	88	N/A	N/A
5/17/1967	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	0.54	N/A	N/A	0.071	0.02	N/A	5	58	N/A	N/A
5/29/1967	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	67	N/A	N/A
6/26/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	71	N/A	N/A
7/31/1967	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	68	N/A	N/A

Table 2.3-39 (Sheet 2 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
11/27/1967	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	74	N/A	N/A
12/25/1967	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	78	N/A	N/A
1/29/1968	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	81	N/A	N/A
2/26/1968	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	84	N/A	N/A
3/24/1968	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	74	N/A	N/A
4/29/1968	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	N/A	N/A	N/A
5/15/1968	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	73	N/A	N/A
5/31/1968	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	N/A	N/A	N/A
6/24/1968	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.5	90	N/A	N/A
7/29/1968	N/A	0	N/A	N/A	N/A	N/A	0.015	N/A	N/A	N/A	N/A	0.04	0.01	0.013	3	78	N/A	N/A
8/26/1968	N/A	0	N/A	N/A	N/A	N/A	0.003	N/A	0	N/A	N/A	N/A	N/A	N/A	3	68	N/A	N/A
9/19/1968	N/A	0	N/A	0.41	0.09	0	0	N/A	0.32	N/A	N/A	0.07	0	0.023	4	64	N/A	N/A
9/30/1968	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	72	N/A	N/A
11/22/1968	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	74	N/A	N/A
1/16/1969	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	58	N/A	N/A
3/20/1969	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	64	N/A	N/A
5/2/1969	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	0.03	0	0.01	4	73	N/A	N/A
5/16/1969	N/A	0	0.3	0.4	0.04	0	0	N/A	0.36	N/A	N/A	0.09	0.04	0.029	2	60	200	N/A
7/16/1969	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	70	N/A	N/A
9/22/1969	N/A	0	0.3	0.24	0	0.008	0.006	N/A	0.23	N/A	N/A	0.11	0.03	0.036	2.5	66	640	N/A

Table 2.3-39 (Sheet 3 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Date Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
11/18/1969	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.5	58	N/A	N/A
1/22/1970	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	60	N/A	N/A
3/20/1970	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	57	N/A	N/A
5/2/1970	N/A	5	1.2	0.27	0	0.031	0.006	N/A	0.23	N/A	N/A	0.1	0.03	0.033	3.5	56	110	N/A
5/25/1970	N/A	N/A	N/A	N/A	N/A	N/A	0.006	N/A	0.63	N/A	N/A	0.11	N/A	0.036	N/A	N/A	N/A	N/A
6/30/1970	N/A	N/A	N/A	N/A	N/A	N/A	0.03	N/A	0.56	N/A	N/A	0.29	0.06	0.095	N/A	N/A	N/A	N/A
9/17/1970	N/A	0	0.4	0.23	0.15	0.031	0.003	N/A	0.04	N/A	N/A	0.1	0.03	0.033	3.5	58	110	N/A
11/24/1970	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	58	N/A	N/A
1/18/1971	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.5	62	N/A	N/A
3/17/1971	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	70	N/A	N/A
5/18/1971	N/A	0	0.3	0.34	0.02	0.062	0.003	N/A	0.25	N/A	N/A	0.1	0.02	0.033	2.5	58	260	N/A
7/21/1971	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	74	N/A	N/A
9/17/1971	N/A	0	0.2	0.63	0.35	0.031	0	0.25	0.25	N/A	N/A	0.089	0.03	0.029	4	61	420	N/A
11/22/1971	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	57	N/A	N/A
1/20/1972	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	44	N/A	N/A
3/15/1972	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	65	N/A	N/A
5/16/1972	N/A	0	0.1	0.48	0.14	0.02	0	N/A	0.32	N/A	N/A	0.086	0.03	0.028	3	60	210	N/A
7/18/1972	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.5	70	N/A	N/A
8/29/1972	N/A	10	0.1	0.5	0.12	0.04	0.005	N/A	0.33	N/A	N/A	0.077	0.03	0.035	8	120	N/A	N/A
9/19/1972	N/A	5	0	0.4	0.07	0.03	0	N/A	0.3	N/A	N/A	0.077	0.03	0.03	2	79	150	N/A

Table 2.3-39 (Sheet 4 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
11/16/1972	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5	64	N/A	N/A
1/15/1973	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	60	N/A	N/A
3/19/1973	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	170	N/A	N/A
5/21/1973	N/A	15	0.9	0.6	0.38	0.02	0.001	N/A	0.2	N/A	N/A	0.064	0.02	0.026	N/A	110	200	N/A
7/18/1973	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	64	N/A	N/A
9/18/1973	N/A	0	0.2	0.26	0.07	< 0.010	< 0.010	N/A	0.19	N/A	N/A	0.061	0.02	0.02	N/A	57	150	N/A
11/13/1973	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	90	N/A	N/A
1/15/1974	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	94	N/A	N/A
3/18/1974	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.8	57	N/A	N/A
5/14/1974	N/A	0	0	0.32	0.13	0.02	0.01	N/A	0.16	N/A	N/A	0.092	0.03	0.03	3.3	63	30	N/A
7/16/1974	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.4	60	N/A	N/A
9/17/1974	N/A	5	0.1	0.37	0.06	0.01	0.01	N/A	0.29	0.07	0.3	0.092	0.03	0.03	4.2	58	100	N/A
11/11/1974	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6	58	N/A	N/A
1/17/1975	N/A	5	0.6	0.26	0	0.01	0.01	N/A	0.24	0.01	0.25	0.092	0.03	0.03	2.5	57	10	0
3/26/1975	N/A	0	0.1	0.26	0	0.01	0.01	N/A	0.24	0.01	0.25	0.092	0.03	0.03	2.9	57	13	0
5/28/1975	N/A	0	0.1	0.41	0.37	0.02	0.01	N/A	0.01	0.39	0.02	0.031	0.01	0.02	3.2	63	0	0
7/22/1975	N/A	0	0.1	0.46	0.19	0.02	< 0.010	N/A	0.25	0.21	0.25	0.092	0.03	0.03	3.1	60	N/A	N/A
8/13/1975	N/A	0	0	0.33	0.12	0.04	< 0.010	N/A	0.17	0.16	0.17	0.092	0.03	0.03	3.1	61	25	0
9/19/1975	N/A	0	0.1	0.28	0.03	0.02	< 0.010	N/A	0.23	0.05	0.23	0.061	0.02	0.04	3.8	68	60	0
11/18/1975	N/A	0	0.8	0.43	0.13	0.03	< 0.010	N/A	0.27	0.16	0.27	0.092	0.03	0.03	3.1	58	25	0

Table 2.3-39 (Sheet 5 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
1/28/1976	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	58	N/A	N/A
3/24/1976	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.7	58	N/A	N/A
5/20/1976	N/A	0	0.2	0.19	0	0.01	< 0.010	N/A	0.18	0.01	0.18	0.123	0.04	0.04	2.9	67	10	N/A
7/26/1976	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.9	56	N/A	N/A
9/21/1976	N/A	5	0.3	0.26	0.01	0.01	0.01	N/A	0.23	0.02	0.24	0.123	0.04	0.04	3.2	60	160	N/A
11/18/1976	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.3	58	N/A	N/A
1/26/1977	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.2	58	N/A	N/A
3/25/1977	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.7	55	N/A	N/A
5/20/1977	N/A	0	0.5	0.45	0	0.01	< 0.010	N/A	0.44	0.01	0.44	0.092	0.03	0.03	3.4	58	50	N/A
7/21/1977	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.7	54	N/A	N/A
6/2/1978	N/A	0	0.3	N/A	N/A	< 0.010	< 0.010	N/A	0.19	N/A	0.19	0.092	0.03	0.03	4.2	58	N/A	N/A
6/14/1978	1	N/A	N/A	0.39	0.18	0.01	< 0.010	N/A	0.2	0.19	0.2	0.092	0.03	0.03	N/A	N/A	N/A	N/A
5/17/1979	1	0	0.3	0.25	0.02	0.02	< 0.010	N/A	0.21	0.04	0.21	0.092	0.03	0.03	3.2	56	N/A	N/A
9/11/1979	0	3	0.2	0.34	0.15	< 0.010	< 0.010	N/A	0.19	0.15	0.19	0.092	0.03	0.03	3	58	N/A	N/A
5/6/1980	0	0	0.4	0.48	0.21	0.02	0	N/A	0.25	0.23	0.25	0.092	0.03	0.05	3.3	58	N/A	N/A
8/28/1980	1	0	0.3	0.26	0.02	0.01	0	N/A	0.23	0.03	0.23	0.092	0.03	0.03	3.1	53	N/A	N/A
5/29/1981	1	0	0.4	0.41	0.01	0.03	0	N/A	0.37	0.04	0.37	0.061	0.02	0.11	5	120	N/A	N/A
6/29/1982	0.5	5	N/A	0.37	0	0.03	0	N/A	0.34	0.03	0.34	0.092	0.03	0.03	3.7	61	N/A	N/A
4/19/1983	0.2	0	0.2	0.47	0.07	0.02	> 0.010	N/A	N/A	0.09	0.38	0.123	0.04	0.04	3.5	58	N/A	N/A
8/10/1983	0.4	< 1	< 0.1	0.38	N/A	0.03	< 0.010	N/A	N/A	0.03	0.35	0.061	0.02	0.03	2.7	60	N/A	N/A

Table 2.3-39 (Sheet 6 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
6/14/1984	<1.0	3	N/A	0.6	0.19	0.11	< 0.010	N/A	N/A	0.3	0.3	0.092	0.03	0.03	3.5	57	N/A	N/A
8/22/1984	0.4	1	N/A	0.9	0.49	0.01	< 0.010	N/A	N/A	0.5	0.4	0.123	0.04	0.03	3.6	55	N/A	N/A
1/17/1985	N/A	< 5	N/A	0.66	0.11	0.02	< 0.010	N/A	N/A	0.13	0.53	0.092	0.03	0.03	3.5	63	N/A	N/A
5/24/1985	0.03	5	N/A	0.43	0.05	0.01	< 0.010	N/A	N/A	0.06	0.37	0.092	0.03	0.03	3.1	57	N/A	N/A
7/18/1985	0.6	< 5	N/A	N/A	N/A	0.03	< 0.010	N/A	N/A	< 0.05	< 0.010	0.092	0.03	0.07	3.2	57	N/A	N/A
5/21/1986	N/A	< 5	N/A	N/A	N/A	0.02	0.06	N/A	0.34	< 0.05	0.4	0.092	0.03	0.04	3.6	56	N/A	N/A
8/15/1986	0.5	< 5	N/A	N/A	N/A	0.02	< 0.010	N/A	N/A	< 0.20	0.3	0.092	0.03	0.07	2.3	58	N/A	N/A
6/11/1987	0.1	< 5	N/A	N/A	N/A	0.02	0.02	N/A	0.33	< 0.20	0.35	0.092	0.03	0.04	3	55	N/A	N/A
7/31/1987	0.3	< 5	N/A	N/A	N/A	0.04	< 0.010	N/A	N/A	< 0.20	0.32	0.092	0.03	0.03	3.3	57	N/A	N/A
4/28/1988	N/A	< 5	N/A	N/A	N/A	0.01	< 0.010	N/A	N/A	< 0.20	0.97	0.123	0.04	0.05	3.5	100	N/A	N/A
8/26/1988	N/A	< 5	N/A	N/A	N/A	0.02	< 0.010	N/A	N/A	< 0.20	0.93	0.123	0.04	0.06	3.3	100	N/A	N/A
4/13/1989	N/A	< 5	N/A	N/A	N/A	< 0.010	< 0.010	N/A	N/A	< 0.20	1	0.092	0.03	0.03	3.9	96	N/A	N/A
9/27/1989	N/A	< 5	N/A	N/A	N/A	< 0.010	< 0.010	N/A	N/A	< 0.20	1	0.092	0.03	0.03	4.5	100	N/A	N/A
5/4/1990	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.5	110	N/A	N/A
8/29/1990	N/A	5	N/A	1.5	0.41	0.01	< 0.01	N/A	N/A	0.42	1.1	0.123	0.04	0.04	2.8	110	N/A	N/A
6/13/1991	N/A	< 5	N/A	N/A	N/A	< 0.01	< 0.01	N/A	N/A	< 0.20	0.98	0.092	0.03	0.06	5.3	95	N/A	N/A
9/26/1991	N/A	5	N/A	N/A	N/A	0.01	< 0.01	N/A	N/A	< 0.20	1	0.092	0.03	0.04	4.3	99	N/A	N/A
5/1/1992	N/A	< 5	N/A	N/A	N/A	0.02	< 0.01	N/A	N/A	< 0.20	1	0.092	0.03	0.06	4.4	110	N/A	N/A
8/21/1992	N/A	< 5	N/A	N/A	N/A	0.03	< 0.01	N/A	N/A	< 0.20	0.73	0.092	0.03	0.07	4.8	110	N/A	N/A

Table 2.3-39 (Sheet 7 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
5/27/1993	N/A	< 5	N/A	0.95	0.45	0.02	< 0.01	N/A	N/A	0.47	0.48	0.123	0.04	0.04	3.3	55	N/A	N/A
9/9/1993	N/A	< 5	N/A	1	0.26	0.02	< 0.01	N/A	N/A	0.28	0.74	0.092	0.03	< 0.02	3.7	66	N/A	N/A
4/26/1994	N/A	< 5	N/A	0.79	0.3	0.03	< 0.01	N/A	N/A	0.33	0.46	0.092	0.03	0.06	3.6	55	N/A	N/A
8/17/1994	N/A	< 5	N/A	N/A	N/A	0.02	< 0.01	N/A	N/A	< 0.20	1.1	0.061	0.02	0.02	3.5	55	N/A	N/A
5/25/1995	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.20	N/A	N/A	N/A	0.05	3.3	57	N/A	N/A
8/11/1995	N/A	< 5	N/A	N/A	N/A	0.01	< 0.010	N/A	N/A	< 0.20	0.6	0.092	0.03	0.02	1.6	61	N/A	N/A
5/31/1996	N/A	5	N/A	N/A	N/A	0.01	< 0.010	N/A	N/A	< 0.20	0.5	0.061	0.02	< 0.02	3.4	58	N/A	N/A
10/7/1996	N/A	5	N/A	N/A	N/A	< 0.01	< 0.010	N/A	N/A	< 0.20	0.49	0.092	0.03	< 0.02	3.4	60	N/A	N/A
3/18/1997	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.5	0.061	0.02	N/A	N/A	N/A	N/A	N/A
5/1/1997	N/A	5	N/A	N/A	N/A	< 0.01	< 0.01	N/A	N/A	< 0.20	0.51	0.061	0.02	0.02	3.5	55	N/A	N/A
10/21/1997	N/A	5	N/A	N/A	N/A	0.02	< 0.01	N/A	N/A	< 0.20	0.51	0.092	0.03	< 0.02	4.2	57	N/A	N/A
6/9/1998	N/A	< 5	N/A	N/A	N/A	< 0.01	< 0.01	N/A	N/A	< 0.20	0.52	0.092	0.03	< 0.02	3.8	57	N/A	N/A
10/13/1998	N/A	< 5	N/A	N/A	N/A	< 0.01	< 0.01	N/A	N/A	< 0.20	0.58	0.061	0.02	0.03	3.5	57	N/A	N/A
5/17/1999	N/A	5	N/A	N/A	N/A	0.02	< 0.01	N/A	N/A	< 0.20	0.75	0.092	0.03	0.04	6.8	61	N/A	N/A
9/2/1999	N/A	< 5	N/A	N/A	N/A	0.03	< 0.01	N/A	N/A	< 0.20	0.82	0.092	0.03	< 0.02	3.7	58	N/A	N/A

Table 2.3-39 (Sheet 8 of 8)
Water Quality Parameters at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Total nitrogen, unfiltered	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Nitrite plus nitrate, unfiltered	Phosphate, unfiltered	Orthophosphate, unfiltered	Phosphorus, unfiltered	Chloride, water, filtered	Hardness	Total coliform, M-Endo MF method	Fecal coliform, M-FC MF (0.45 micron) method
Units:	NTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 mL	colonies/ 100 mL
MAX	1	75	1.2	1.5	0.49	0.11	0.06	0.25	0.63	0.5	1.1	0.29	0.06	0.11	8	170	640	0
MIN	0	0	0	0.19	0	0	0	0	0	0.01	0.02	0	0	0.01	1.6	44	0	0
Mean	0.5	3	0.3	0.46	0.13	0.02	0.01	0.11	0.23	0.16	0.49	0.09	0.03	0.04	3.5	71	140	0
Number of Occurrences	15	104	30	41	40	55	27	7	47	28	52	74	73	64	128	128	21	6
Florida Water Quality Standard	≤29	N/A	N/A	N/A	N/A	≤0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤0.1	Not increased more than 10% above normal back-ground.	N/A	N/A	N/A

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

mg/L = milligrams per liter
mL = milliliter
N/A = not available
NTU = nephelometric turbidity units
PCU = platinum-cobalt units

Source: Reference 2.3-062

Table 2.3-40 (Sheet 1 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Calcium filtered	Magnesium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, unfiltered	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Lead, unfiltered, recoverable	Manganese, suspended sediment, recoverable	Manganese, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Mercury, unfiltered, recoverable
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
5/2/1956	43	4.5	2.8	0.1	6.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/9/1960	42	3.9	2.9	0.2	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/21/1963	23	3.3	0.6	0.2	7.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/23/1963	23	2.3	1.4	0	7.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/14/1964	28	0	1.8	0.1	7.1	N/A	N/A	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/24/1964	20	2.4	2.1	0	6.8	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/15/1965	36	5.5	3.4	0.3	66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/31/1966	18	3.1	2.5	0.3	6.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/27/1966	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/25/1966	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/29/1966	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/26/1966	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/31/1966	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/27/1966	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/27/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/27/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/17/1967	18	3	2.4	0.4	7.5	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A
5/29/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/26/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2.3-40 (Sheet 2 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Calcium filtered	Magnesium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, unfiltered	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Lead, unfiltered, recoverable	Manganese, suspended sediment, recoverable	Manganese, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Mercury, unfiltered, recoverable
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
7/31/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/27/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/25/1967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/29/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/26/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/24/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/29/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/15/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/31/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/29/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/26/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/19/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/16/1969	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/20/1969	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/2/1969	23	3.7	2.2	0.1	6.6	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2.3-40 (Sheet 3 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Calcium filtered	Magnesium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, unfiltered	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Lead, unfiltered, recoverable	Manganese, suspended sediment, recoverable	Manganese, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Mercury, unfiltered, recoverable
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
5/16/1969	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/16/1969	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/22/1969	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/18/1969	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/22/1970	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/20/1970	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/2/1970	14	5	2.6	0.1	7.3	N/A	0	N/A	10	N/A	N/A	N/A	N/A	0	10	N/A
9/17/1970	18	3	2.2	0.2	6.4	N/A	10	N/A	10	N/A	N/A	N/A	N/A	10	30	N/A
11/24/1970	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/18/1971	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/17/1971	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/18/1971	18	3.1	2.2	0.1	6.7	N/A	10	N/A	30	N/A	N/A	N/A	N/A	0	70	0
7/21/1971	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/17/1971	19	3.3	2.9	0.3	6.8	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	0	10	0
11/22/1971	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/20/1972	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/15/1972	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/16/1972	18	3.5	2	0.1	6.4	N/A	N/A	100	40	N/A	N/A	N/A	30	N/A	N/A	0
7/18/1972	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2.3-40 (Sheet 4 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Calcium filtered	Magnesium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, unfiltered	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Lead, unfiltered, recoverable	Manganese, suspended sediment, recoverable	Manganese, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Mercury, unfiltered, recoverable
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
8/29/1972	42	4.9	3.4	0.2	5.6	0	N/A	10	0	N/A	M	N/A	0	N/A	N/A	< 0.5
9/19/1972	N/A	N/A	N/A	N/A	6.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/16/1972	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/15/1973	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/21/1973	38	3.4	2	0.1	6.8	N/A	M	< 10	< 10	N/A	M	N/A	< 10	< 10	U	N/A
7/18/1973	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/18/1973	N/A	N/A	N/A	N/A	6.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/13/1973	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/15/1974	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/18/1974	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/14/1974	20	3.1	2	0.1	6.9	4	M	< 10	< 10	4	M	0	< 10	< 10	U	< 0.5
7/16/1974	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/17/1974	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/11/1974	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/17/1975	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/26/1975	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/28/1975	20	3.1	2	1	7.2	< 1	U	< 10	< 10	1	< 2	0	< 10	< 10	< 20	< 0.5
7/22/1975	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/13/1975	19	3.3	2.2	< 0.10	7.5	< 1	U	80	20	7	M	0	< 10	< 10	80	< 0.5
9/19/1975	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2.3-40 (Sheet 5 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Calcium filtered	Magnesium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, unfiltered	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Lead, unfiltered, recoverable	Manganese, suspended sediment, recoverable	Manganese, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Mercury, unfiltered, recoverable
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
11/18/1975	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/28/1976	18	3.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/24/1976	18	3.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/20/1976	22	2.8	2.1	0.1	7.1	< 1	U	20	< 10	9	M	0	< 10	< 10	U	< 0.5
7/26/1976	18	2.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/21/1976	19	3.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/18/1976	18	3.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/26/1977	18	3.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/25/1977	17	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/20/1977	18	3.1	2.1	0.1	6.9	2	U	< 10	< 10	3	M	0	< 10	< 10	< 20	< 0.5
7/21/1977	15	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/2/1978	18	3.1	2	0.1	6.9	1	< 2	40	< 10	0	U	10	< 10	< 10	20	< 0.5
5/17/1979	17	3.3	2	0.1	7	1	< 2	60	< 10	0	U	0	< 10	< 10	20	< 0.5
9/11/1979	18	3.1	2.1	0.1	7.1	1	M	40	20	1	< 2	0	< 10	M	< 20	< 0.5
5/6/1980	18	3.1	2.3	0.1	7	1	0	10	0	1	M	10	10	0	0	< 0.1
8/28/1980	16	3.2	1.8	0.1	8.1	0	0	30	10	0	M	10	10	0	10	< 0.1
5/29/1981	40	5	2.7	0.6	6.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/29/1982	19	3.2	2.1	0.1	6.6	< 1	M	100	10	0	M	0	10	10	10	< 0.1
4/19/1983	18	3.2	2	0.1	7.1	1	M	100	< 10	0	M	N/A	< 10	< 10	< 10	< 0.1
8/10/1983	19	3.1	2	0.1	7	1	M	90	10	N/A	M	N/A	10	10	20	< 0.1

Table 2.3-40 (Sheet 6 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date Units:	Calcium filtered mg/L	Magnesium, filtered mg/L	Sodium, filtered mg/L	Potassium, filtered mg/L	Silica, filtered mg/L	Arsenic, unfiltered µg/L	Copper, filtered µg/L	Iron, unfiltered, recoverable µg/L	Iron, filtered µg/L	Lead, suspended sediment, recoverable µg/L	Lead, unfiltered, recoverable µg/L	Manganese, suspended sediment, recoverable µg/L	Manganese, unfiltered, recoverable µg/L	Manganese, filtered µg/L	Zinc, filtered µg/L	Mercury, unfiltered, recoverable µg/L
6/14/1984	18	2.9	2.2	0.2	6.7	1	M	< 10	M	N/A	M	N/A	< 10	< 1	20	0.1
8/22/1984	17	3	2.1	0.1	6.4	< 1	M	190	M	N/A	M	N/A	10	< 1	20	< 0.1
1/17/1985	20	3.1	2.3	0.2	6.6	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	0.1
5/24/1985	18	3	2.2	0.2	6.8	< 1	1	40	4	1	4	N/A	< 10	< 1.0	< 3	< 0.1
7/18/1985	18	3	2	0.1	6.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/21/1986	17	3.3	2.2	0.2	6.8	< 1	M	20	< 10	N/A	< 5	N/A	20	< 10	80	< 0.1
8/15/1986	18	3.1	2.1	0.1	6	< 1	M	40	< 10	N/A	< 5	N/A	10	< 10	< 10	< 0.1
6/11/1987	17	3	1.9	0.2	7.3	< 1	M	50	< 10	N/A	M	N/A	< 10	< 10	< 10	< 0.1
7/31/1987	18	3	1.7	0.1	7	< 1	M	< 10	< 10	N/A	< 5	N/A	< 10	< 10	< 10	< 0.1
4/28/1988	34	4.1	2.5	0.2	5.8	< 1	M	10	< 10	N/A	< 5	N/A	< 10	< 10	< 10	0.1
8/26/1988	33	4.3	2.1	0.1	6	< 1	M	40	10	N/A	M	N/A	< 10	< 10	< 10	< 0.1
4/13/1989	32	3.9	2.5	0.1	5.8	< 1	< 1	40	< 10	N/A	< 5	N/A	< 10	< 10	< 10	0.4
9/27/1989	34	4.2	2.8	0.1	6	< 1	M	20	10	N/A	< 1	N/A	< 10	< 10	< 10	0.3
5/4/1990	36	4.4	2.6	0.2	5.7	< 1	3	20	< 10	N/A	2	N/A	< 10	< 10	10	0.5
8/29/1990	36	4.4	2.6	0.1	6	1	1	20	10	N/A	< 1.0	N/A	< 10	< 10	10	< 0.1
6/13/1991	31	4.2	2.7	0.5	5.9	< 1	2	10	< 10	N/A	2	N/A	< 10	< 10	10	< 0.1
9/26/1991	33	4.1	2.7	0.4	5.8	< 1	1	10	10	N/A	< 1.0	N/A	< 10	< 10	20	< 0.1
5/1/1992	35	4.5	3.4	0.6	5.5	< 1	2	M	< 5	N/A	1	N/A	< 5	< 5.0	20	< 0.1
8/21/1992	37	4.4	2.7	0.4	5.9	< 1	2	60	< 5	N/A	< 1.0	N/A	< 5	< 5.0	6	< 0.1
5/27/1993	17	3	2.1	0.13	7.2	< 1	< 1.0	M	< 3	N/A	2	N/A	< 1	< 1.0	< 4	< 0.1

Table 2.3-40 (Sheet 7 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Calcium filtered	Magnesium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, unfiltered	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Lead, unfiltered, recoverable	Manganese, suspended sediment, recoverable	Manganese, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Mercury, unfiltered, recoverable
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
9/9/1993	21	3.2	2.3	0.13	6.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/26/1994	17	3	2.1	0.13	6.6	< 1	< 1.0	20	4	N/A	7	N/A	< 1	< 1.0	8	0.1
8/17/1994	17	3.1	2.4	0.14	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/25/1995	18	3	2.2	<0.10	6.8	< 1	1	10	3	N/A	1.2	N/A	< 1	< 1.0	< 10	< 0.1
8/11/1995	19	3.2	2.1	0.1	6.9	< 1	< 1.0	M	< 3	N/A	2	N/A	< 1	< 1.0	< 10	N/A
5/31/1996	18	3.1	2.1	0.1	8.2	< 1	< 1.0	4	< 1	N/A	< 1.0	N/A	< 1	< 0.2	2	N/A
10/7/1996	19	3	2.2	0.2	7.4	< 1	< 1.0	4	< 1	N/A	< 1.0	N/A	< 0.2	< 0.2	< 1	N/A
5/1/1997	17	3	1.8	0.1	7.1	< 1	< 1.0	4	< 1	N/A	< 1.0	N/A	1	< 0.2	< 1	N/A
10/21/1997	18	3	2.2	0.1	7.2	< 1	< 1.0	7	< 1	N/A	< 1.0	N/A	M	< 0.2	< 1	N/A
6/9/1998	18	3	2.5	0.1	7.3	< 1	< 1.0	26	2	N/A	< 1.0	N/A	< 0.2	< 0.2	1	N/A
10/13/1998	18	3	3.2	0.2	7.2	< 1	< 1.0	6	5	N/A	< 1.0	N/A	< 0.2	M	10	N/A
5/17/1999	19	3.2	2.2	<0.10	6.9	< 1	< 1.0	3	2	N/A	< 1.0	N/A	< 0.2	< 0.2	< 1	N/A
9/2/1999	18	3.1	2.2	0.1	6.8	< 1	1.5	4	1	N/A	< 1.0	N/A	< 0.2	< 0.2	< 1	N/A
MAX	**43**	**5.5**	**3.4**	**1**	**66**	**4**	**10**	**190**	**40**	**9**	**7**	**10**	**30**	**10**	**80**	**0.5**
MIN	**14**	**0**	**0.6**	**0**	**5.5**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
Mean	**22.50**	**3.36**	**2.28**	**0.18**	**7.65**	**1.17**	**2.30**	**37.17**	**8.88**	**2.08**	**2.65**	**2.73**	**11.10**	**3.33**	**20.71**	**0.16**

Table 2.3-40 (Sheet 8 of 8)
Metals Data at USGS Station 02313100 Rainbow Springs near Dunnellon, Florida

Date	Calcium filtered	Magnesium, filtered	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, unfiltered	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Lead, unfiltered, recoverable	Manganese, suspended sediment, recoverable	Manganese, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Mercury, unfiltered, recoverable
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Number of Occurrences	72	72	64	61	66	12	15	36	26	13	8	11	10	9	24	10
Florida Water Quality Standard	N/A	N/A	N/A	N/A	N/A	≤50	See note (a)	≤1.0	N/A	N/A	See note (b)	N/A	N/A	N/A	N/A	≤0.012

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

a) $Cu \leq e^{(0.8545[lnH]-1.702)}$

b) $Pb \leq e^{(1.273[lnH]-4.705)}$

µg/L = micrograms per liter
mg/L = milligrams per liter
N/A = not available

Source: Reference 2.3-062

Table 2.3-41 (Sheet 1 of 3)
Field Parameters at USGS Station 02313700 Waccasassa River near Gulf Hammock, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
3/21/1963	19.4	267	N/A	7.8
5/23/1963	27.8	9770	N/A	7.4
9/24/1964	N/A	169	N/A	7.1
5/31/1966	N/A	160	N/A	7.3
2/13/1967	11.1	129	N/A	N/A
5/19/1967	24.4	830	7.9	7.6
6/15/1967	26.1	7000	N/A	N/A
11/3/1967	21	3000	N/A	N/A
2/23/1968	14	1200	N/A	N/A
3/18/1968	18	342	N/A	N/A
5/8/1968	24	24,600	8.2	7.5
7/15/1968	26	392	N/A	N/A
12/3/1968	22	N/A	N/A	N/A
1/21/1969	18	310	N/A	N/A
5/1/1969	23	425	7.3	7.4
6/6/1969	24	850	N/A	N/A
7/23/1969	26	390	N/A	N/A
2/19/1970	16	210	N/A	N/A
4/29/1970	23.5	213	4.9	7.8
6/25/1970	27	225	N/A	N/A
7/29/1970	26.5	360	N/A	N/A
10/7/1970	23.5	N/A	6.4	7.7
10/7/1970	23.5	240	6.4	7.9
5/12/1971	32	N/A	6.6	7.7
5/12/1971	32	387	6.6	7.9
9/9/1971	25	N/A	4.6	7.2
9/9/1971	25	970	4.6	7.2
5/18/1972	24	N/A	7	N/A
5/18/1972	24	275	7	N/A
6/12/1972	28	N/A	N/A	6.6
6/12/1972	28	3600	N/A	7.7
7/10/1972	27.5	N/A	6.6	N/A
7/10/1972	27.5	9900	6.6	N/A

Table 2.3-41 (Sheet 2 of 3)
Field Parameters at USGS Station 02313700 Waccasassa River near Gulf Hammock, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
8/30/1972	27	N/A	3.7	7.2
8/30/1972	27	180	3.7	7.4
10/24/1972	22	N/A	5.8	N/A
10/24/1972	22	3300	5.8	N/A
12/7/1972	21	N/A	7	N/A
12/7/1972	21	445	7	N/A
2/9/1973	16	N/A	4.4	N/A
2/9/1973	16	284	4.4	N/A
3/14/1973	22	N/A	5.3	N/A
3/14/1973	22	190	5.3	N/A
5/21/1973	24	N/A	5.3	6.7
5/21/1973	24	300	N/A	7.5
8/7/1973	24	N/A	5.4	N/A
8/7/1973	24	318	5.4	N/A
10/11/1973	25	280	6.3	7.7
12/3/1973	17.5	15,400	7.4	N/A
1/18/1974	17.5	303	7.4	N/A
3/14/1974	19	640	7	N/A
5/8/1974	24	416	6.3	7.6
7/3/1974	24	350	6.2	N/A
7/16/1974	24.5	N/A	N/A	N/A
8/20/1974	25	300	5.5	N/A
10/16/1974	23	3280	5.5	7.3
2/5/1975	19.5	740	4.7	N/A
4/3/1975	22	1480	6.4	N/A
5/28/1975	25.5	1480	6.2	7.5
8/4/1975	27	267	4.2	N/A
10/8/1975	25	200	4.7	6.8
11/20/1975	16	N/A	8.6	N/A
1/29/1976	12	340	9.3	N/A
3/18/1976	15	318	8.8	N/A
5/4/1976	20	575	7.6	7.5
5/18/1976	22	1770	5.8	N/A

Table 2.3-41 (Sheet 3 of 3)
Field Parameters at USGS Station 02313700 Waccasassa River near Gulf Hammock, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	**°C**	**µS/cm**	**mg/L**	**SU**
7/27/1976	28	420	N/A	N/A
9/20/1976	24.5	1000	6.9	N/A
10/7/1976	24	410	5.2	7.2
1/10/1977	16	320	7.9	N/A
2/15/1977	15	330	8.3	N/A
4/19/1977	22	810	7.2	N/A
5/25/1977	24	3300	7.1	7
5/25/1977	24	N/A	7.1	N/A
5/25/1977	24	N/A	7.3	N/A
5/25/1977	24	N/A	7.2	N/A
5/25/1977	24	N/A	7	N/A
5/25/1977	24	N/A	6.8	N/A
6/17/1977	26	940	5.9	N/A
10/15/1977	20.5	980	8	N/A
11/9/1977	20.5	1500	6.6	7.3
MAX	**32**	**24,600**	**9.3**	**7.9**
MIN	**11.1**	**129**	**3.7**	**6.6**
Mean	**22.7**	**1823**	**6.4**	**N/A[(a)]**
Number of Occurrences	**79**	**60**	**59**	**29**
Florida Water Quality Standard	**N/A**	**See note[(b)]**	**>5**	**6 - 8.5**

Notes:

a) Average pH values cannot be calculated.

b) Shall not be increased more than 50% above background.

°C = degree Celsius
µS/cm = microSiemens per centimeter
mg/L = milligrams per liter
N/A = not available
SU = standard units

Source: Reference 2.3-063

Table 2.3-42 (Sheet 1 of 2)
Water Quality Parameters at USGS Station 02313700 Waccasassa River near Gulf Hammock, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Organic nitrogen, unfiltered, milligrams per liter	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Orthophosphate, filtered, milligrams per liter	Phosphorus, unfiltered	Hardness	Sulphate, filtered	Suspended solids, dried at 110 degrees Celsius
Units:	JTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
3/21/1963	N/A	80	N/A	N/A	N/A	N/A	0.07	N/A	N/A	0	N/A	160	22	N/A
5/23/1963	N/A	30	N/A	N/A	N/A	N/A	11	N/A	N/A	0.09	N/A	1300	472	N/A
9/24/1964	N/A	250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	75	5.6	N/A
5/31/1966	N/A	110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.12	N/A	80	10	N/A
5/19/1967	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.07	N/A	160	33	N/A
5/8/1968	N/A	25	N/A	N/A	N/A	N/A	N/A	0.02	N/A	N/A	0.059	2900	1180	N/A
5/1/1969	N/A	10	N/A	N/A	N/A	N/A	N/A	0	N/A	0.08	0.033	160	27	N/A
4/29/1970	N/A	100	0.9	0.5	0.07	0.009	N/A	0.04	N/A	0.16	0.068	110	14	N/A
10/7/1970	5	50	2.3	0.3	0.054	0.012	N/A	0.04	N/A	0.11	0.046	110	16	N/A
5/12/1971	3	10	0.6	0.2	0.047	0.021	N/A	0	N/A	0.09	0.036	140	22	N/A
9/9/1971	4	120	1.4	0.4	0.047	0.009	N/A	0	N/A	0.12	0.046	270	46	N/A
5/18/1972	N/A	80	0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/12/1972	2	30	N/A	0.76	0.03	0.003	N/A	0.01	N/A	N/A	0.065	460	130	N/A
8/30/1972	2	240	1.3	0.92	0.03	0.014	N/A	0	N/A	N/A	0.55	78	16	N/A
5/21/1973	3	40	0.4	0.23	0.01	0.001	N/A	0	N/A	N/A	0.03	130	18	8
10/11/1973	6	25	0.8	0.27	0.01	0.012	N/A	0.01	N/A	N/A	0.075	140	30	6
5/8/1974	4	9	0.7	0.14	0.02	< 0.010	N/A	0	N/A	N/A	0.06	150	24	1
10/16/1974	5	50	0.9	0.4	0.03	0.01	N/A	0.01	0.43	N/A	0.04	460	150	7

Table 2.3-42 (Sheet 2 of 2)
Water Quality Parameters at USGS Station 02313700 Waccasassa River near Gulf Hammock, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Organic nitrogen, unfiltered, milligrams per liter	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, filtered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Orthophosphate, filtered, milligrams per liter	Phosphorus, unfiltered	Hardness	Sulphate, filtered	Suspended solids, dried at 110 degrees Celsius
Units:	**JTU**	**PCU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
5/28/1975	2	7	0.6	0.25	0.01	0.01	N/A	0.01	0.26	N/A	0.05	200	46	6
10/8/1975	3	270	0.9	0.83	0.02	0.01	N/A	0.03	0.85	N/A	0.06	97	11	7
5/4/1976	3	0	0.3	0.25	0.02	0.01	N/A	0.02	0.27	N/A	0.06	150	26	6
10/7/1976	2	7	0.8	0.11	0.02	0.01	N/A	0	0.13	N/A	0.06	150	25	7
5/25/1977	4	0	1	0.24	0.03	< 0.010	N/A	0	0.27	N/A	0.05	N/A	150	10
11/9/1977	4	33	0.6	0.47	0.02	0.01	N/A	0.01	0.49	N/A	0.05	2000	150	17
MAX	**6**	**270**	**2.3**	**0.92**	**0.07**	**0.021**	**11**	**0.04**	**0.85**	**0.16**	**0.55**	**2900**	**1180**	**17**
MIN	**2**	**0**	**0.2**	**0.11**	**0.01**	**0.001**	**0.07**	**0**	**0.13**	**0**	**0.03**	**75**	**5.6**	**1**
Mean	**3**	**65.88**	**0.9**	**0.39**	**0.03**	**0.010**	**5.5**	**0.01**	**0.39**	**0.09**	**0.08**	**431**	**114**	**7.5**
Number of Occurrences	**15**	**24**	**16**	**16**	**16**	**14**	**2**	**18**	**7**	**9**	**18**	**22**	**23**	**10**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**≤0.02**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**≤0.1**	**N/A**	**N/A**	**N/A**

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.
JTU = Jackson turbidity units
mg/L = milligrams per liter
PCU = platinum-cobalt units
N/A = not available

Source: Reference 2.3-063

Table 2.3-43 (Sheet 1 of 2)
Metals Data at USGS Station 02313700 Waccasassa River near Gulf Hammock, Florida

	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, filtered	Cadmium, filtered	Chromium, unfiltered, recoverable	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Manganese, suspended sediment, recoverable	Manganese, water, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Zinc, unfiltered, recoverable
Date Units:	**mg/L**	**mg/L**	**mg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
3/21/1963	6.8	0.4	6.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/23/1963	2360	65	7.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/24/1964	5.5	0.1	3.8	N/A	N/A	N/A	N/A	N/A	540	N/A	N/A	N/A	N/A	N/A	N/A
5/31/1966	3.5	0.2	3.6	N/A	N/A	N/A	N/A	N/A	140	N/A	N/A	N/A	N/A	N/A	N/A
5/19/1967	98	3.7	6.8	N/A	N/A	N/A	N/A	N/A	10	N/A	N/A	N/A	0	N/A	N/A
5/8/1968	4600	180	8.1	N/A	N/A	N/A	N/A	N/A	40	N/A	N/A	N/A	60	N/A	N/A
5/1/1969	25	1	5.3	N/A	N/A	N/A	N/A	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A
4/29/1970	5.4	0.2	5.2	10	N/A	0	10	N/A	410	N/A	N/A	N/A	10	400	N/A
10/7/1970	9.3	0.6	6.2	10	N/A	0	20	N/A	260	N/A	N/A	N/A	10	60	N/A
5/12/1971	24	1.1	4.8	10	0	N/A	10	N/A	30	N/A	N/A	N/A	20	60	N/A
9/9/1971	120	6.7	5.8	0	0	N/A	0	N/A	520	N/A	N/A	N/A	20	20	N/A
6/12/1972	500	19	5	N/A	N/A	N/A	N/A	230	60	N/A	N/A	30	N/A	N/A	0
8/30/1972	8.5	0.6	4	N/A	N/A	0	N/A	610	420	N/A	N/A	20	N/A	N/A	20
5/21/1973	14	0.8	4.7	N/A	N/A	N/A	70	240	100	N/A	N/A	< 10	< 10	120	N/A
10/11/1973	10	0.8	7	N/A	N/A	N/A	< 20	940	120	N/A	N/A	30	< 10	20	N/A
5/8/1974	27	1.4	5.3	N/A	N/A	N/A	N/A	310	30	0	100	100	< 10	20	N/A
10/16/1974	550	20	6.6	N/A	N/A	N/A	20	470	130	4	33	50	20	20	N/A

Table 2.3-43 (Sheet 2 of 2)
Metals Data at USGS Station 02313700 Waccasassa River near Gulf Hammock, Florida

Date	Sodium, filtered	Potassium, filtered	Silica, filtered	Arsenic, filtered	Cadmium, filtered	Chromium, unfiltered, recoverable	Copper, filtered	Iron, unfiltered, recoverable	Iron, filtered	Lead, suspended sediment, recoverable	Manganese, suspended sediment, recoverable	Manganese, water, unfiltered, recoverable	Manganese, filtered	Zinc, filtered	Zinc, unfiltered, recoverable
Units:	**mg/L**	**mg/L**	**mg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
5/28/1975	140	5	5.4	N/A	N/A	N/A	N/A	150	30	3	0	< 10	20	< 20	N/A
10/8/1975	7.7	0.4	5	N/A	N/A	N/A	10	1400	750	0	10	30	20	U	N/A
5/4/1976	11	0.5	5.4	N/A	N/A	N/A	U	240	40	5	10	< 10	< 10	40	N/A
10/7/1976	24	1.3	6.2	N/A	N/A	N/A	U	210	100	10	10	20	< 10	< 20	N/A
5/25/1977	650	23	4.4	N/A	N/A	N/A	U	190	< 10	0	10	30	20	< 20	N/A
11/9/1977	3300	110	6.4	N/A	N/A	N/A	U	360	80	1	10	40	30	< 20	N/A
MAX	**4600**	**180**	**8.1**	**10**	**0**	**0**	**70**	**1400**	**750**	**10**	**100**	**100**	**60**	**400**	**20**
MIN	**3.5**	**0.1**	**3.6**	**0**	**0**	**0**	**0**	**150**	**10**	**0**	**0**	**20**	**0**	**20**	**0**
Mean	**543**	**19**	**5.6**	**7.5**	**0**	**0**	**20**	**446**	**191**	**2.9**	**23**	**39**	**21**	**84**	**10**
Number of Occurrences	**23**	**23**	**23**	**4**	**2**	**3**	**7**	**12**	**20**	**8**	**8**	**9**	**11**	**9**	**2**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**≤86**

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.
mg/L = milligrams per liter
µg/L = micrograms per liter
N/A = not available
Source: Reference 2.3-063

Table 2.3-44 (Sheet 1 of 2)
Field Parameters at USGS Station 02313237 Cross Florida Barge Canal at Inglis Lock near Inglis, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	μS/cm	mg/L	SU
5/20/1970	26	26,500	4.5	7.6
9/18/1970	26.5	16,000	1.3	7.6
1/19/1971	16	20,200	N/A	7.9
5/17/1971	28	N/A	3.5	7.4
5/17/1971	28	18,000	3.5	N/A
9/16/1971	27	N/A	4.1	7.2
9/16/1971	27	7700	4.1	N/A
5/15/1972	27	N/A	2.5	7.3
5/15/1972	27	18,000	2.5	8.2
9/18/1972	29.5	N/A	4.1	7.4
9/18/1972	29.5	16,500	4.1	N/A
5/24/1973	27	N/A	5.3	N/A
5/24/1973	27	2500	5.3	N/A
9/17/1973	28	N/A	3.1	7.3
9/17/1973	28	16,300	3.1	N/A
5/13/1974	24	15,300	4.2	7.3
9/16/1974	27	632	7.7	7
1/20/1975	17	18,600	8.4	7.8
2/25/1975	19.5	19,100	4.9	7.8
3/21/1975	20.5	12,200	5.8	7.7
4/22/1975	22.5	21,900	1.1	7.7
5/14/1975	26	15,000	6.3	7.5
6/18/1975	29.5	15,400	3.9	7.5
7/22/1975	28.5	18,200	6.6	7.5
8/13/1975	28	9400	0.9	7.1
9/18/1975	31.5	28,600	4.6	7.7
10/21/1975	27.5	25,000	1.6	7.6
11/18/1975	21	10,000	3.9	7.5
12/10/1975	15	10,100	5	8

Table 2.3-44 (Sheet 2 of 2)
Field Parameters at USGS Station 02313237 Cross Florida Barge Canal at Inglis Lock near Inglis, Florida

Date	Temperature	Specific Conductance	Dissolved Oxygen	pH
Units:	°C	µS/cm	mg/L	SU
5/21/1976	25	25,200	2.9	7.5
9/20/1976	29.5	15,000	7	7.5
5/24/1977	27	24,500	1.7	7.4
MAX	**31.5**	**28,600**	**8.4**	**8.2**
MIN	**15**	**632**	**0.9**	**7**
Mean	**25.6**	**16,378**	**4.1**	**N/A[a]**
Number of Occurrences	**32**	**26**	**31**	**26**
Florida Water Quality Standard	**N/A**	**See note[b]**	**N/A**	**6 - 8.5**

Notes:

a) Average pH values cannot be calculated.

b) Shall not be increased more than 50% above background.

°C = degree Celsius
µS/cm = microSiemens per centimeter
mg/L = milligrams per liter
N/A = not available
SU = standard units

Source: Reference 2.3-064

Table 2.3-45 (Sheet 1 of 2)
Water Quality Parameters at USGS Station 02313237 Cross Florida Barge Canal at Inglis Lock near Inglis, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Chloride, filtered	Hardness	Total coliform, M-Endo MF method, immediate	Fecal coliform, M-FC MF (0.45 micron) method	Orthophosphate, unfiltered	Total nitrogen, unfiltered
Units:	JTU	PCU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	colonies/ 100 milliliters	colonies/ 100 milliliters	mg/L	mg/L
5/20/1970	12	20	0.6	0.86	N/A	N/A	N/A	N/A	0.15	N/A	8800	3000	350	N/A	N/A	N/A
9/18/1970	13	10	2.6	0.16	N/A	N/A	N/A	N/A	0.09	N/A	5100	N/A	25	N/A	N/A	N/A
1/19/1971	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6900	2500	N/A	N/A	N/A	N/A
5/17/1971	25	5	2.2	0.59	N/A	N/A	N/A	N/A	0.11	N/A	5900	2000	65	N/A	N/A	N/A
9/16/1971	15	70	0.7	0.67	N/A	N/A	N/A	N/A	0.27	N/A	2400	990	180	N/A	N/A	N/A
5/15/1972	20	20	0.2	0.78	0.15	0.005	0.01	N/A	N/A	0.039	6300	2100	290	N/A	0.04	N/A
9/18/1972	2	10	1.5	0.45	0.15	0.002	0.01	N/A	N/A	0.048	5400	1800	200	N/A	0.04	N/A
5/24/1973	7	30	1.7	0.57	0.08	0.004	0	N/A	N/A	0.018	620	350	480	N/A	0.01	N/A
9/17/1973	8	10	0.8	0.52	0.15	0.002	0	N/A	N/A	0.05	3800	1900	380	N/A	0.05	N/A
5/13/1974	6	30	1.6	0.55	0.09	0.01	0	N/A	N/A	0.12	4400	1700	300	N/A	0.07	N/A
9/16/1974	9	80	2.1	0.43	0.13	0.01	0.05	0.56	N/A	0.11	100	180	450	N/A	0.06	2.7
1/20/1975	5	20	1.8	0.35	0.02	0.01	0.03	0.37	N/A	0.04	5400	1900	200	60	0.03	1.8
2/25/1975	5	10	0.7	0.2	0.16	0.01	0.04	0.36	N/A	0.07	6400	2300	200	20	0.04	1.8
3/21/1975	6	30	0.7	0.3	0.08	0.01	0	0.38	N/A	0.04	4200	1600	750	0	0.04	1.7
4/22/1975	7	10	0.7	0.33	0.06	< 0.010	0.01	0.39	N/A	0.11	7100	2900	75	0	0.08	1.8
5/14/1975	6	15	0.7	0.33	0.07	0.01	0.01	0.4	N/A	0.09	4400	1600	310	30	0.07	1.9
6/18/1975	5	10	0.6	0.55	0.01	0.01	0	0.56	N/A	0.11	4800	1800	30	0	0.09	2.5
7/22/1975	5	10	0.5	0.53	0.08	< 0.010	0	0.61	N/A	0.08	5500	2000	0	0	0.07	2.7
8/13/1975	4	0	0.9	0.29	0.11	< 0.010	0.01	0.4	N/A	0.1	4600	1700	10	5	0.1	1.8

Table 2.3-45 (Sheet 2 of 2)
Water Quality Parameters at USGS Station 02313237 Cross Florida Barge Canal at Inglis Lock near Inglis, Florida

Date	Turbidity, unfiltered	Color, filtered	Biochemical oxygen demand, unfiltered, 5 days at 20 degrees Celsius	Organic nitrogen, unfiltered	Ammonia, unfiltered	Nitrite, unfiltered	Nitrate, unfiltered	Ammonia plus organic nitrogen, unfiltered	Orthophosphate, filtered	Phosphorus, unfiltered	Chloride, filtered	Hardness	Total coliform, M-Endo MF method, immediate	Fecal coliform, M-FC MF (0.45 micron) method	Orthophosphate, unfiltered	Total nitrogen, unfiltered
Units:	**JTU**	**PCU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**colonies/ 100 milliliters**	**colonies/ 100 milliliters**	**mg/L**	**mg/L**
9/18/1975	8	15	1.5	0.53	0.11	0.01	0	0.64	N/A	0.15	8800	3100	50	0	0.07	2.9
10/21/1975	8	10	1.2	0.48	0.27	0.01	0	0.75	N/A	0.11	7900	3000	10	0	0.08	3.4
11/18/1975	9	10	1.7	0.21	0.24	0.01	0.03	0.45	N/A	0.08	10000	3400	25	0	0.05	2.2
12/10/1975	5	40	1.5	0.44	0.08	0.01	0.11	0.52	N/A	0.05	4500	1600	190	5	0.03	2.8
5/21/1976	6	15	4.1	0.5	0.01	0.01	0	0.51	N/A	0.06	12000	3200	650	N/A	0.04	2.3
9/20/1976	3	40	0.8	0.5	0.05	0.01	0.02	0.55	N/A	0.06	4800	1600	160	N/A	0.05	2.6
5/24/1977	3	5	1.8	0.35	0.12	< 0.010	0.01	0.47	N/A	0.06	8000	2900	75	N/A	0.05	2.1
MAX	**25**	**80**	**4.1**	**0.86**	**0.27**	**0.01**	**0.11**	**0.75**	**0.27**	**0.15**	**12000**	**3400**	**750**	**60**	**0.1**	**3.4**
MIN	**2**	**0**	**0.2**	**0.16**	**0.01**	**0.002**	**0**	**0.36**	**0.09**	**0.018**	**100**	**180**	**0**	**0**	**0.01**	**1.7**
Mean	**8**	**20**	**1.3**	**0.46**	**0.11**	**0.008**	**0.02**	**0.50**	**0.16**	**0.076**	**5697**	**2045**	**218**	**10**	**0.06**	**2.3**
Number of Occurrences	**25**	**26**	**25**	**25**	**21**	**17**	**21**	**16**	**4**	**21**	**26**	**25**	**25**	**12**	**21**	**16**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**	**N/A**	**≤0.02**	**N/A**	**N/A**	**N/A**	**N/A**	**≤0.1**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Notes:
If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.
JTU = Jackson turbidity units
mg/L = milligrams per liter
N/A = not available
PCU = platinum-cobalt units
Source: Reference 2.3-064

Table 2.3-46
Metals Data at USGS Station 02313237 Cross Florida Barge Canal at Inglis Lock near Inglis, Florida

Date Units:	Calcium, filtered mg/L	Magnesium, filtered mg/L	Silica, filtered mg/L
9/18/1970	N/A	N/A	5.2
5/17/1971	N/A	N/A	3
9/16/1971	N/A	N/A	6.3
5/15/1972	N/A	N/A	3.7
9/18/1972	N/A	N/A	4.1
5/24/1973	N/A	N/A	5
9/17/1973	N/A	N/A	5
5/21/1976	200	650	N/A
9/20/1976	140	310	N/A
5/24/1977	220	560	N/A
MAX	**220**	**650**	**6.3**
MIN	**140**	**310**	**3**
Mean	**187**	**507**	**5**
Number of Occurrences	**3**	**3**	**7**
Florida Water Quality Standard	**N/A**	**N/A**	**N/A**

Notes:

mg/L = milligrams per liter
N/A = not available

Source: Reference 2.3-064

Table 2.3-47 (Sheet 1 of 4)
Gulf of Mexico Field Parameters

Station ID	Depth (m)	Sample Date	Temperature	Dissolved Oxygen (DO)	Specific Conductivity	Salinity	pH	Secchi depth	Total Depth
			°C	mg/L	µS/cm	ppt	SU	meters	meters
Station 4	0.15	10/16/2007	25.76	4.49	38.51	24.89	7.97	1.02	5.50
	0.15	11/19/2007	19.00	4.91	37.84	24.07	7.98	1.68	5.15
	0.15	12/10/2007	20.26	N/A	N/A	N/A	N/A	N/A	N/A
	0.15	12/12/2007	21.46	N/A	N/A	N/A	N/A	N/A	N/A
	1	10/16/2007	25.50	4.22	41.31	27.11	7.94	1.02	5.50
	1	11/19/2007	18.45	4.75	43.22	27.89	8.03	1.68	5.15
	1	12/10/2007	20.18	N/A	N/A	N/A	N/A	N/A	N/A
	1	12/12/2007	21.10	N/A	N/A	N/A	N/A	N/A	N/A
	2	10/16/2007	25.32	3.61	46.94	30.39	7.94	1.02	5.50
	2	11/19/2007	17.64	4.44	46.89	30.53	8.10	1.68	5.15
	2	12/10/2007	20.14	N/A	N/A	N/A	N/A	N/A	N/A
	2	12/12/2007	21.05	N/A	N/A	N/A	N/A	N/A	N/A
	3	10/16/2007	25.25	3.58	48.35	31.56	7.95	1.02	5.50
	3	11/19/2007	17.41	4.47	47.64	31.08	8.10	1.68	5.15
	3	12/10/2007	20.07	N/A	N/A	N/A	N/A	N/A	N/A
	3	12/12/2007	21.03	N/A	N/A	N/A	N/A	N/A	N/A
	4	10/16/2007	25.24	3.50	48.65	31.82	7.95	1.02	5.50
	4	11/19/2007	17.44	4.19	41.84	26.90	8.10	1.68	5.15
	4	12/10/2007	20.06	N/A	N/A	N/A	N/A	N/A	N/A
	4	12/12/2007	21.03	N/A	N/A	N/A	N/A	N/A	N/A
	5	10/16/2007	25.24	3.46	48.82	31.85	7.95	1.02	5.50
	5	11/19/2007	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2.3-47 (Sheet 2 of 4)
Gulf of Mexico Field Parameters

Station ID	Depth (m)	Sample Date	Temperature	Dissolved Oxygen (DO)	Specific Conductivity	Salinity	pH	Secchi depth	Total Depth
			°C	mg/L	µS/cm	ppt	SU	meters	meters
Station 4 (continued)	5	12/12/2007	21.03	N/A	N/A	N/A	7.92	N/A	N/A
		Number of Occurrences	**22**	**11**	**11**	**11**	**12**	**11**	**11**
		Minimum	**17.41**	**3.46**	**37.84**	**24.07**	**7.92**	**1.02**	**5.15**
		Maximum	**25.76**	**4.91**	**48.82**	**31.85**	**8.10**	**1.68**	**5.50**
		Average	**21.35**	**4.15**	**44.55**	**28.92**	**N/A**	**1.32**	**5.34**
Station 5	0.15	11/19/2007	17.13	6.02	49.44	32.39	8.10	2.23	2.90
	1	10/16/2007	25.19	4.33	47.44	30.92	8.00	1.26	2.50
	1	11/19/2007	17.09	5.79	49.47	32.41	8.11	2.23	2.90
	2	10/16/2007	24.88	4.10	48.78	31.83	8.00	1.26	2.50
	2	11/19/2007	17.03	5.79	49.52	32.45	8.12	2.23	2.90
		Number of Occurrences	**5**	**5**	**5**	**5**	**5**	**5**	**5**
		Minimum	**17.03**	**4.10**	**47.44**	**30.92**	**8.00**	**1.26**	**2.50**
		Maximum	**25.19**	**6.02**	**49.52**	**32.45**	**8.12**	**2.23**	**2.90**
		Average	**20.26**	**5.21**	**48.93**	**32.00**	**N/A**	**1.84**	**2.74**
Station 6	0.15	10/16/2007	25.14	4.85	50.08	32.79	8.03	1.49	4.00
	0.15	11/19/2007	17.37	7.49	50.56	33.21	7.96	2.55	4.42
	1	10/16/2007	25.11	4.63	50.23	32.87	8.03	1.49	4.00
	1	11/19/2007	17.24	7.18	50.57	33.22	8.00	2.55	4.42
	2	10/16/2007	25.05	4.52	50.55	33.15	8.04	1.49	4.00

Table 2.3-47 (Sheet 3 of 4)
Gulf of Mexico Field Parameters

Station ID	Depth (m)	Sample Date	Temperature °C	Dissolved Oxygen (DO) mg/L	Specific Conductivity µS/cm	Salinity ppt	pH SU	Secchi depth meters	Total Depth meters
Station 6	2	11/19/2007	17.33	7.09	50.81	33.39	8.03	2.55	4.42
(continued)	3	10/16/2007	25.07	4.31	51.93	34.18	8.04	1.49	4.00
	3	11/19/2007	17.31	7.11	50.99	33.53	8.04	2.55	4.42
	4	10/16/2007	25.10	4.20	52.03	34.23	8.03	1.49	4.00
	4	11/19/2007	17.30	6.99	51.05	33.57	8.04	2.55	4.42
		Number of Occurrences	**10**	**10**	**10**	**10**	**10**	**10**	**10**
		Minimum	**17.24**	**4.20**	**50.08**	**32.79**	**7.96**	**1.49**	**4.00**
		Maximum	**25.14**	**7.49**	**52.03**	**34.23**	**8.04**	**2.55**	**4.42**
		Average	**21.20**	**5.84**	**50.88**	**33.41**	**N/A**	**2.02**	**4.21**
Station 7	0.15	10/16/2007	25.25	4.39	52.16	34.31	8.03	1.66	7.50
	0.15	11/19/2007	17.71	7.56	51.65	34.02	8.08	2.62	5.80
	1	10/16/2007	25.23	4.42	52.21	34.36	8.03	1.66	7.50
	1	11/19/2007	17.71	7.43	51.79	34.12	8.08	2.62	5.80
	2	10/16/2007	25.19	4.41	52.46	34.57	8.03	1.66	7.50
	2	11/19/2007	17.71	7.42	51.80	34.13	8.08	2.62	5.80
	3	10/16/2007	25.20	4.39	53.04	34.94	8.03	1.66	7.50
	3	11/19/2007	17.72	7.37	51.90	34.20	8.08	2.62	5.80
	4	10/16/2007	25.25	4.41	53.42	35.25	8.03	1.66	7.50
	4	11/19/2007	17.74	7.35	51.91	34.21	8.08	2.62	5.80
	5	10/16/2007	25.31	4.43	53.75	35.49	8.04	1.66	7.50

Table 2.3-47 (Sheet 4 of 4)
Gulf of Mexico Field Parameters

Station ID	Depth (m)	Sample Date	Temperature °C	Dissolved Oxygen (DO) mg/L	Specific Conductivity µS/cm	Salinity ppt	pH SU	Secchi depth meters	Total Depth meters
Station 7	5	11/19/2007	17.78	7.30	52.08	34.34	8.08	2.62	5.80
(continued)	6	10/16/2007	25.40	4.44	54.28	35.72	8.04	1.66	7.50
	6	11/19/2007	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7	10/16/2007	25.50	4.45	54.77	36.30	8.00	1.66	7.50
		Number of Occurrences	**14**	**14**	**14**	**14**	**14**	**14**	**14**
		Minimum	**17.71**	**4.39**	**51.65**	**34.02**	**8.00**	**1.66**	**5.80**
		Maximum	**25.50**	**7.56**	**54.77**	**36.30**	**8.08**	**2.62**	**7.50**
		Average	**22.05**	**5.70**	**52.66**	**34.71**	**N/A**	**2.07**	**6.77**

Notes:

°C = degree Celsius
mg/L = milligrams per liter
µS/cm = milliSiemens per centimeter
N/A = not available
NTU = nephelometric turbidity units
ppt = parts per thousand
SU = standard units

Table 2.3-48
Gulf of Mexico Water Quality Data

Station ID	Sample Date	Total Dissolved Solids (residue, filterable)	Total Suspended Solids	Nitrogen, kjeldahl, total	Nitrogen, nitrate-nitrite	Ammonia	Phosphorus	Chlorophyll-a, (corrected for Pheophytin)
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/m³
Station 4	10/16/2007	27,000	43	0.18	0.013	0.3	0.047	2
	11/19/2007	26,000	37	0.33	0.25	0.3	0.03	2.1
	Mean	**26,500**	**40**	**0.255**	**0.1315**	**0.3**	**0.0385**	**2.05**
Station 5	10/16/2007	28,000	29	0.2	0.05	0.6	0.029	2
	11/19/2007	28,000	33	0.33	0.25	0.3	0.019	2.1
	Mean	**28,000**	**31**	**0.265**	**0.15**	**0.45**	**0.024**	**2.05**
Station 6	10/16/2007	30,000	24	0.2	0.05	0.6	0.03	2
	11/19/2007	27,000	36	0.27	0.25	0.3	0.018	2.1
	Mean	**28,500**	**30**	**0.235**	**0.15**	**0.45**	**0.024**	**2.05**
Station 7	10/16/2007	32,000	31	0.2	0.05	0.6	0.022	2
	11/19/2007	33,000	42	0.2	0.015	0.3	0.019	3.2
	Mean	**32,500**	**36.5**	**0.2**	**0.0325**	**0.45**	**0.0205**	**2.6**

Notes:

mg/L = milligrams per liter
mg/m³ = milligrams per cubic meter
N/A = Not Available

Table 2.3-49
Gulf of Mexico Metals Data

		Copper	Iron	Nickel	Zinc
Station ID	**Sample Date**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
Station 4	10/16/2007	N/A	N/A	N/A	0.55
	Mean	**---**	**---**	**---**	**0.55**
Station 5	10/16/2007	0.41	140	0.24	0.28
	10/18/2007	0.46	130	0.25	0.26
	Mean	**0.44**	**135**	**0.25**	**0.27**
Station 6	10/16/2007	0.39	114	0.3	0.29
	10/18/2007	0.4	88.3	0.25	0.17
	Mean	**0.40**	**101.15**	**0.28**	**0.23**
Station 7	10/16/2007	0.34	98.4	0.22	0.19
	10/18/2007	0.21	48.4	0.15	0.11
	Mean	**0.28**	**73.4**	**0.19**	**0.15**

Notes:

µg/L = micrograms per liter
N/A = not available

Table 2.3-50
Groundwater Field Parameters

Well ID	Sample Date	pH	Specific Conductivity	Temperature	DO	ORP	Turbidity	Salinity
Units:		SU	mS/cm	°C	mg/L	mV	NTU	ppt
	MCL:	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW16D	3/6/2007	6.45	0.369	22.00	0.11	-83.1	2.16	N/A
	6/14/2007	6.78	0.59	21.84	0.52	-95.2	0.25	0.29
	9/13/2007	6.53	0.583	22.16	0.07	-36.7	0.67	0.28
	12/5/2007	6.68	0.49	21.85	0.15	-168.30	0.17	0.23
	Mean	**N/A**	**0.507**	**21.96**	**0.21**	**-95.8**	**0.81**	**0.27**
MW15S	3/6/2007	6.48	0.378	23.22	0.64	-91.9	4.75	N/A
	6/14/2007	6.66	0.615	22.68	0.74	-101.4	6.5	0.3
	9/13/2007	6.60	0.624	22.84	0.34	-104.4	4.09	0.3
	12/5/2007	6.66	0.51	23.65	0.33	-146	48.4	0.25
	Mean	**N/A**	**0.532**	**23.10**	**0.51**	**-110.9**	**15.94**	**0.28**
MW-14D	3/7/2007	6.68	0.359	22.05	0.36	-69.4	0.4	N/A
	6/15/2007	7.01	0.55	22.13	1.74	-105.5	0.55	0.27
	9/13/2007	6.85	0.611	22.58	0.06	-74.3	0	0.3
	12/5/2007	6.93	0.491	21.97	0.19	-268	5.57	0.24
	Mean	**N/A**	**0.503**	**22.18**	**0.59**	**-129.3**	**1.63**	**0.27**
MW-13S	3/7/2007	6.45	0.266	21.93	0.62	-69.2	10	N/A
	6/15/2007	6.78	0.385	21.67	1.96	-85.4	7	0.18
	9/13/2007	6.58	0.373	N/A	0.02	-79.3	6.36	0.16
	12/5/2007	6.54	0.339	22.91	0.19	-209.8	6.16	0.16
	Mean	**N/A**	**0.341**	**22.17**	**0.70**	**-110.9**	**7.38**	**0.17**

Notes:

°C = degree Celsius
DO = dissolved oxygen
MCL = maximum contaminant level
mg/L = milligrams per liter
mS/cm = milliSiemens per centimeter
mV = millivolts
N/A = Not Available
NTU = nephelometric turbidity units
ORP = oxygen reduction potential
ppt = parts per thousand
SU = standard units

Table 2.3-51 (Sheet 1 of 2)
Groundwater Analytical Data

Station ID	Date	Carbon Dioxide, free	Total Dissolved Solids (residue, filterable)	Total Suspended Solids	Hardness (as $CaCO_3$)	Chloride (as Cl)	Fluoride	Sulphate (as SO_4)	Alkalinity, total (as $CaCO_3$)	Nitrogen, ammonia (as N)	Nitrogen, kjeldahl, total	Nitrogen, nitrate-nitrite	Phosphorus, Total (as P)	Phosphorus, total orthophosphate (as p)	Sulphide	BOD, 5-day	COD	Total Organic Carbon	Alkalinity, bicarbonate (as $CaCO_3$)
	Units:	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
	MCL:	N/A	500	N/A	N/A	250	4.0	N/A	N/A	N/A	N/A	10.0	N/A	N/A	250	N/A	N/A	N/A	N/A
MW14D	**3/7/2007**	272	336	7.2	306	10.6	0.18	2.0	301	0.21	< 0.68	0.25 J	0.14	0.079	0.7 J	4.0	< 22.8	8.2	299
	6/15/2007	268	320	10.4	320	10.6	0.18	< 1.3	283	< 0.12	< 0.84	0.75 J	0.15	0.077	2.1 J	8.0	< 44	9.6	282
	9/13/2007	310	407	11.6	303	12.3	0.56	4.5	306	< 0.16	< 1.3	0.75 J	0.1	< 1.5	2.0 J	< 9.8	< 20.3	10.7	306
	12/1/2007	300	360	8.4	297	10.8	N/A	6.9	294	< 0.75	< 1.5	0.75 J	0.16	0.059	< 2.0	< 2.0	241	6.4	293
	Mean	**287.5**	**355.8**	**9.4**	**306.5**	**11.1**	**0.31**	**3.7**	**296.0**	**0.31**	**1.08**	**0.63**	**0.14**	**0.429**	**1.7**	**6.0**	**82.0**	**8.7**	**295.0**
MW13S	**3/7/2007**	179	235	54.4	212	13.6	0.18	4.6	196	0.16	< 0.8	0.25 J	0.14	0.034	0.73 J	2.5	< 27.8	10	195
	6/15/2007	209	221	19.2	194	15.2	0.17	1.5 J	172	0.18	< 0.83	0.75 J	0.17	0.094	2.1 J	4.4	< 51.4	11.3	172
	9/13/2007	179	279	18.4	168	19.4	0.21	1.5 J	134	< 0.19	< 1.0	0.75 J	0.13	< 1.5	2.0 J	< 5.6	< 27	11.1	134
	12/1/2007	182	236	38.4	187	19.1	N/A	1.3	136	< 0.3	< 1.5	< 3.0	0.13	< 0.03	< 2.5	2.1	164	7.4	136
	Mean	**187.3**	**242.8**	**32.6**	**190.3**	**16.8**	**0.19**	**2.2**	**159.5**	**0.21**	**1.03**	**1.19**	**0.14**	**0.415**	**1.8**	**3.7**	**67.6**	**10.0**	**159.3**
MW15S	**3/7/2007**	243	322	27.2	294	18.8	< 0.078	2.7	274	< 0.053	< 0.51	0.25 J	0.12	0.049	0.71 J	2.4	< 32.8	14.3	270
	6/14/2007	317	357	124	593	18.8	< 0.11	< 0.9	280	0.15 J	< 0.54	0.75 J	0.49	0.3	2.1 J	4.5	< 56.4	17.1	280
	9/13/2007	300	445	4 J	324	20.6	0.18	1.7	266	0.30 J	< 0.82	0.75 J	0.22	< 1.5	2.0 J	< 4.3	44.8	16.9	266
	12/1/2007	347	398	< 4	330	17.5	N/A	2.3	288	< 0.30	< 1.5	< 3.0	0.18	0.1	< 2.0	< 0.3	56.9	14.6	288
	Mean	**301.8**	**380.5**	**39.8**	**385.3**	**18.9**	**0.12**	**1.9**	**277.0**	**0.20**	**0.84**	**1.19**	**0.25**	**0.487**	**1.7**	**2.9**	**47.7**	**15.7**	**276.0**
MW16D	**3/7/2007**	271	312	7.2	303	17.5	< 0.091	0.5 J	304	0.23	< 1.1	0.25 J	0.16	0.069	0.68 J	5.6	< 55.4	17.7	300
	6/14/2007	274	335	12	310	16.7	0.18	1.5 J	265	< 0.24	< 0.83	0.75 J	0.26	0.21	2.2 J	5.6	< 51.4	17.3	265
	9/13/2007	297	424	4 J	278	18.5	0.2	< 0.52	282	< 0.23	1.6	0.75 J	0.36	< 1.5	< 0.67	< 12.4	53.7	18.7	282
	12/1/2007	284	375	17.6	291	17.2	N/A	2.4	280	< 0.3	0.92	0.75 J	0.2	0.13	< 2.5	6.2	78.7	16	280
	Mean	**281.5**	**361.5**	**10.2**	**295.5**	**17.5**	**0.16**	**1.2**	**282.8**	**0.25**	**1.11**	**0.63**	**0.25**	**0.477**	**1.5**	**7.5**	**59.8**	**17.4**	**281.8**

Table 2.3-51 (Sheet 2 of 2)
Groundwater Analytical Data

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

B = analyte was detected in the associated method and/or calibration blank
BOD = biological oxygen demand
$CaCO_3$ = calcium carbonate
COD = chemical oxygen demand
J = estimated value
JB = estimated value - analyte was detected in the associated field blank, method and/or calibration blank
mg/L = milligrams per liter
N/A = not analyzed
UJ = value non-detected estimated

Table 2.3-52
Groundwater Metals

Station ID	Sample Date	Arsenic	Boron	Calcium	Chromium, total	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Silica	Sodium	Zinc	Mercury
	Units:	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**mg/L**	**mg/L**	**µg/L**	**µg/L**
	MCL:	10	N/A	N/A	100	1000	300	15	N/A	50	100	N/A	N/A	160	500	2
MW-14D	**3/7/2007**	< 3.0	15.4 J	85,400	< 2.0	< 5.0	2380	< 1.5	22,700	38.3	< 5.0	< 1000	8.3	9220	6.5 J	< 0.080
	6/15/2007	< 3.0	18.6 J	89,000	< 2.0	< 5.0	1990	< 1.5	23,900	40.1	< 5.0	< 1000	8.3	9920	15.4 J	< 0.080
	9/13/2007	< 3.0	19.6 J	85,200	< 2.0	< 5.0	1450	< 1.5	21,800	35.2	< 5.0	< 1000	8.4	10,700	11 J	< 0.080
	12/6/2007	< 3.0	18.4	81,500	<2.0	< 5.0	1550	< 1.5	22,700	41.7	< 5.0	< 1000	N/A	17,500	28.5	< 0.080
	Average	**3.0**	**18.0**	**85,275**	**2.0**	**5.0**	**1843**	**1.5**	**22,775**	**38.8**	**5.0**	**1000**	**8.3**	**11,835**	**15.4**	**0.080**
MW13S	**3/7/2007**	9.0 J	19.9 J	53,200	4.0 J	< 5.0	15,300	1.6 J	19,100	46.5	< 5.0	< 1000	9.5	8400	6.0 J	< 0.080
	6/15/2007	13.8	22.4 J	50,400	4.0 J	< 5.0	18,700	< 1.5	16,500	52.1	< 5.0	< 1000	8.8	8900	10.4 J	< 0.080
	9/13/2007	12.2	22.2 J	45,800	2.9 J	< 5.0	15,400	2.4 J	13,000	51	< 5.0	< 1000	8.1	7950	11.9 J	< 0.080
	12/6/2007	12.3	23.2	48,300	4.2	< 5.0	15,000	2.1	16,300	64.6	< 5.0	< 1000	N/A	8390	15	< 0.080
	Average	**11.8**	**21.9**	**49,425**	**3.8**	**5.0**	**16,100**	**1.9**	**16,225**	**53.6**	**5.0**	**1000**	**8.8**	**8410**	**10.8**	**0.080**
MW15S	**3/7/2007**	< 3.0	25.4 J	98,800	< 2.0	< 5.0	7270	< 1.5	11,400	43.3	< 5.0	< 1000	6.3	10,700	< 5.0	< 0.080
	6/14/2007	< 3.0	34.8 J	169,000	19.7	< 5.0	9290	< 1.5	41,500	76.8	< 5.0	< 1000	10.4	10,900	6.6 J	< 0.080
	9/13/2007	< 3.0	31.9 J	110,000	5.6 J	< 5.0	7350	3.7	12,300	50.5	< 5.0	< 1000	7.6	10,500	11 J	< 0.080
	12/6/2007	< 3.0	31.8	111,000	3.4	< 5.0	8580	< 1.5	12,600	52.2	< 5.0	< 1000	N/A	11,300	10.6	< 0.080
	Average	**3.0**	**31.0**	**122,200**	**7.7**	**5.0**	**8123**	**2.1**	**19,450**	**55.7**	**5.0**	**1000**	**8.1**	**10,850**	**8.3**	**0.080**
MW16D	**3/7/2007**	< 3.0	16.8 J	86,400	2.3 J	5.3 J	3920	< 1.5	21,200	61.2	< 5.0	< 1000	9.6	12,200	10.4 J	< 0.080
	6/14/2007	< 3.0	19 J	88,600	3.5 J	< 5.0	4800	< 1.5	21,600	65.8	< 5.0	< 1000	9.7	11,500	14.3 J	< 0.080
	9/13/2007	< 3.0	20 J	80,200	3.0 J	< 5.0	3810	< 1.5	18,900	59.1	< 5.0	< 1000	10.1	17,300	9.1 J	< 0.080
	12/6/2007	< 3.0	21.7	82,100	2.6	8.8	2720	2.3	20,900	58.7	< 5.0	< 1000	N/A	18,200	43	< 0.080
	Average	**3.0**	**19.4**	**84,325**	**2.9**	**6.0**	**3813**	**1.7**	**20,650**	**61.2**	**5.0**	**1000**	**9.8**	**14,800**	**19.2**	**0.080**

Notes:

If the results are lower than the reporting limit, then the reporting limit is used as the lowest detected concentration for calculations.

J = estimated value
µg/L = micrograms per liter
mg/L = milligrams per liter
N/A = not available or not analyzed

Table 2.3-53
Impaired Waters

River Basin	Water Body	State Impairment	Parent Impairment	Potential Sources
Waccasassa	Black Point Swamp	Fecal Coliform	Pathogens	None
Waccasassa	Black Point Swamp	Nutrients	Nutrients	None
Waccasassa	Horsehole Creek	Dissolved Oxygen	Oxygen Depletion	None
Waccasassa	Little Waccasassa River	Dissolved Oxygen	Oxygen Depletion	None
Waccasassa	Waccasassa River Gulf 1	Bacteria (Shellfish)	Pathogens	None
Waccasassa	Waccasassa River Gulf 1	Mercury (Fish Tissue)	Mercury	None
Waccasassa	Waccasassa River Gulf 2	Bacteria (Shellfish)	Pathogens	None
Waccasassa	Waccasassa River Gulf 2	Mercury (Fish Tissue)	Mercury	None
Waccasassa	Waccasassa River	Fecal Coliform	Pathogens	None
Waccasassa	Waccasassa River	Total Coliform	Pathogens	None
Withlacoochee	Big Gant Canal	Coliforms	Pathogens	None
Withlacoochee	Big Gant Canal	Dissolved Oxygen	Oxygen Depletion	None
Withlacoochee	Dade City Canal	Biochemical Oxygen Demand	Oxygen Depletion	None
Withlacoochee	Dade City Canal	Dissolved Oxygen	Oxygen Depletion	None
Withlacoochee	Dade City Canal	Nutrients	Nutrients	None
Withlacoochee	Lake Lindsey	Coliforms	Pathogens	None
Withlacoochee	Lake Lindsey	Dissolved Oxygen	Oxygen Depletion	None
Withlacoochee	Lake Mattie Outlet	Nutrients	Nutrients	None
Withlacoochee	Lake Rousseau	Coliforms	Pathogens	None
Withlacoochee	Lake Rousseau	Dissolved Oxygen	Oxygen Depletion	None
Withlacoochee	Lake Rousseau	Nutrients	Nutrients	None
Withlacoochee	Leslie + Hefner Canal	Dissolved Oxygen	Oxygen Depletion	None
Withlacoochee	Little Withlacooche River	Coliforms	Pathogens	None
Withlacoochee	Little Withlacooche River	Dissolved Oxygen	Oxygen Depletion	None
Withlacoochee	Rainbow River	Nutrients	Nutrients	None

Source: Reference 2.3-065

Table 2.3-54
Aquifer Test Results Data Reduction

Well ID	Fully or Partially Penetrating Well [a]	Well Screen Diameter (ft.)	Borehole Diameter (ft.)	Depth to Top of Screen (ft. BTOC)	Depth to Bottom of Screen (ft. BTOC)	Measured Total Depth[b] (ft. BTOC)	Depth to Static Water Level[c] (ft. BTOC)	Calculated Aquifer Thickness[d] (ft.)	Is Water Level in the Well Screen?	Transmissivity[e,f] (ft^2/d)	Storage Coefficient[e,f]	Beta (B)[e,f]	Specific Yield[e,f]
MW-13S	Partially	0.17	0.50	23.33	33.33	33.58	3.84	29.5	No	1.3E+03	1.6E-03	2.7E-03	1.7E-01
OW-1	Partially	0.17	0.50	23.31	33.31	33.56	3.93	29.4	No	2.1E+03	3.4E-04	1.7E-03	1.2E-02
OW-2	Partially	0.17	0.50	22.96	32.96	33.21	3.53	29.4	No	2.0E+03	7.1E-04	4.3E-03	2.7E-02
OW-3	Partially	0.17	0.50	22.97	32.97	33.22	3.36	29.6	No	2.2E+03	5.4E-04	2.1E-03	1.7E-02
OW-4	Partially	0.17	0.50	23.05	33.05	33.30	3.51	29.5	No	2.2E+03	5.3E-04	1.0E-03	1.6E-02

Notes:

a) Fully penetrating means the entire saturated aquifer was screened.

b) Total well depth = length of casing + length of screen + 3-inch sump.

c) Depth-to-groundwater measurements were collected on March 6, 2007.

d) Software uses the value of Aquifer Thickness = depth to bottom of screen - depth to static water level.

e) Pressure heads were measured using a Level Troll 700, manufactured by In-Situ Inc.

f) AquiferWin32 software (developed by Environmental Simulations, Inc., Version 3, 1999) and the Neuman, 1974 method were used.

ft. = foot
BTOC = Below top of casing
ft^2/d = square foot per day

Table 2.3-55
Aquifer Properties Computed from MLU Analysis

MLU Layer	Layer Thickness (feet)	Horizontal Conductivity (Kh) (feet/day)	Vertical Conductivity (Kv) (feet/day)[1]	Transmissivity (feet^2/day)	Leakance (1/day)[(a)]	Storativity	Aquifer
Unit 1 Aquifer Test Results							
1	35	13	8	450	0.20	4E-08	Surficial
2	45	13	10	580	0.29	4E-08	Surficial
3	25	120	120	3000	4.8	2E-08	Upper Floridan
4	25	120	120	3000	4.8	2E-08	Upper Floridan
5	25	120	120	3000	0.51	2E-08	Upper Floridan
6	445	120	--	53,000	--	2E-08	Upper Floridan
Unit 2 Aquifer Test Results							
1	35	13	8	450	0.20	5E-08	Surficial
2	45	13	10	580	0.27	5E-08	Surficial
3	30	130	130	4000	4.4	4E-10	Upper Floridan (top interval)
4	30	130	130	4000	4.4	4E-10	Upper Floridan (middle interval)
5	30	130	130	4000	4.4	4E-10	Upper Floridan (deep interval)
6	30	130	130	4000	0.62	4E-10	Upper Floridan (PW-2 deep interval)
7	400	130	--	53,000	--	5E-09	Upper Floridan (below screened interval)

Notes:

a) Vertical conductivity and leakance values apply to the interface between layers (i.e., the leakance value given for Layer 1 applies to the interface between Layer 1 and Layer 2).

2.4 ECOLOGICAL DESCRIPTION

This section provides ecological descriptions of the terrestrial and aquatic communities that are located on and within the vicinity of the LNP site and its associated facilities. A description of the terrestrial ecology is presented in ER Subsection 2.4.1. ER Subsection 2.4.2 presents a description of the aquatic ecology. This section also provides an evaluation of the relationships of important floral and faunal species to the habitats on the LNP site.

2.4.1 TERRESTRIAL ECOLOGY

Terrestrial ecological resources were evaluated through published reports, consultation with agencies, and site reconnaissance. Descriptions of the terrestrial ecological resources on and in the vicinity of the LNP site are provided in ER Subsection 2.4.1.1, and descriptions of these resources in the areas of associated facilities are described in ER Subsection 2.4.1.2.

2.4.1.1 LNP Site

The LNP site is located in the Gulf Coastal Lowlands region of the Atlantic Coastal Plain Physiographic Province, which extends parallel to the Gulf Coast of Florida from Ft. Myers north and west to the Alabama state line. The region in which the LNP site is located is characterized by broad, flat marine erosional plains that are low, generally less than 18.3 m (60 ft.) msl in elevation. (Reference 2.4-001) Elevation of the LNP site ranges from approximately 11.9 to 16.5 m (39 to 54 ft.) msl. Figure 2.4-1 presents a description of the physiographic provinces of the area.

The LNP site encompasses approximately 1257 ha (3105 ac.) in southwestern Levy County, 6.6 km (4.1 mi.) north of the Town of Inglis and 12.8 km (7.9 mi.) east of the Gulf of Mexico. The LNP site is bounded by Goethe State Forest to the north, a pine plantation to the east and south, and an exotic animal hunting ranch and US-19 to the west. The local terrain is typified by broad, low flats interspersed with shallow depressions. Pine flatwoods are the predominant vegetative community type in the region, with many of these systems having been converted from natural longleaf pine (*Pinus palustris*) and slash pine (*P. elliottii*) communities to slash and loblolly pine (*P. taeda*) plantations (Reference 2.4-002).

Until it was purchased by PEF in September 2007, the site property was in active silvicultural use and leased for hunting and target practice. The LNP site is undeveloped except for a network of limerock roads that were constructed for logging and hunting access. Surface drainage is generally to the west (Figure 2.4-3), but localized drainage patterns on the site have been altered through silvicultural activities such as grading, construction of logging roads, and limited ditching.

The plant site is defined as the proposed location of the two reactors (LNP 1 and LNP 2) and ancillary power production support facilities, encompassing about

121 ha (300 ac.) near the center of the LNP site. Land cover in the plant site area comprises clearcut fields, planted pine, cypress swamps, and depressional marshes that occur mostly as isolated basins in stands of planted pine.

Soils in the study area have been extensively disturbed through clearing, logging road construction, and bedding. The predominant soils on the site are Smyrna fine sands and Placid and Samsula soils, depressional. Figure 2.4-4 presents a description of the area soils composition. Smyrna fine sands are described as poorly drained and level soils in flatwoods, with a seasonal high water table at 6 to 46 cm (18 in.) for 1 to 4 months. Placid and Samsula soils, depressional, are described as very poorly drained and nearly level soils in depressions in flatwoods. They are ponded, with the seasonal high water table typically above the surface for more than 6 months and within a depth of 30.5 cm (12 in.) during the rest of the year. The predominant soils map unit on the site is common across the region, covering approximately 28 percent of the Levy County acreage. (Reference 2.4-001)

2.4.1.1.1 Existing Cover Types

The LNP site comprises a range of cleared and forested cover types, as evident in an aerial photograph of the property (Figure 2.4-5). Existing vegetative cover types on the LNP site that are described below are based on the FLUCCS, as interpreted and mapped by the SWFWMD and field-verified during ecological surveys performed by CH2M HILL ecologists between September 2006 and January 2008 (Figure 2.4-6). (References 2.4-003 and 2.4-004)

Major vegetative cover types on the LNP site are listed in Table 2.4-1 and are described below in order of decreasing prevalence (Reference 2.4-004). Species lists are based on observations made in the field between September 2006 and January 2008.

Natural communities located on the LNP site have been logged and are in various stages of regeneration. Remnant natural systems, such as logged cypress swamps in which cypress no longer comprises the dominant vegetative canopy cover, are described below under the classification that reflects current vegetative composition.

2.4.1.1.1.1 Tree Plantations (Code 440)

Encompassing approximately 720 ha (1780 ac.), or 57 percent of the site acreage, tree plantations comprise the predominant cover class on the LNP site. Most of the site is planted with slash pine, and to a lesser extent, loblolly pine (*Pinus taeda*). The silvicultural operations represent stages of short-rotation (less than [<] 30 years) pine production from newly planted seedlings to early-maturity pine stands for the pulpwood market. After harvest the land is graded, bedded, and replanted with pine seedlings. Bedding is the technique of forming continuous mounds of soil alternating with furrows. It is a common site preparation practice, especially under moist soil conditions. The practice enhances local drainage and seedling survival. (Reference 2.4-005)

Individual planted pine stands are monospecific and even-aged. The understory and groundcover strata are generally sparse, with common species including gallberry (*Ilex glabra*), saw palmetto (*Serenoa repens*), sand blackberry (*Rubus cuneifolis*), wax myrtle (*Myrica cerifera*), wiregrass (*Aristida stricta*), broomsedge (*Andropogon virginicus*), bristlegrass (*Setaria geniculata*), blue maidencane (*Amphicarpum muhlenbergium*), musky mint (*Hyptis alata*), muscadine grape (*Vitis rotundifolia*) and greenbrier (*Smilax spp.*). In wetter areas, understory and groundcover species may include buttonbush (*Cephalanthus occidentalis)*, Virginia chain fern (*Woodwardia virginica*), maidencane (*Panicum hemitomon*), and soft rush (*Juncus effusus*).

2.4.1.1.1.2 Cypress (Code 621)

Cypress swamp is the predominant wetland cover class on the LNP site, encompassing 290 ha (717 ac.) or 23 percent of the site acreage. These wetlands are characterized by a canopy cover of predominantly pond cypress (*Taxodium ascendens*). Cypress swamps on the LNP site are poorly drained with water at or above ground surface during much of the year. A few of the cypress swamps support small, semi-permanent pools of open water in deeper areas and clearings. Some of the cypress communities on the LNP site are isolated, circular depressions, while others are linked as shallow slough systems or drainage-ways during wet weather periods, such as early spring.

Woody species, including slash pine, redbay (*Persea palustris*), swamp tupelo (*Nyssa sylvatica* var *biflora*), red maple (*Acer rubrum*), buttonbush, fetterbush (*Lyonia lucida*), Virginia willow *(Itea virginica*), and doghobble *(Leucothoe racemosa*) are associated with the pond cypress. Groundcover is generally sparse due to high water, but includes lizard's tail (*Saururus cernuus*), maidencane, and a variety of fern species that frequently grow in elevated tussocks, such as royal fern (*Osmunda regalis*), cinnamon fern (*Osmunda cinnamomea*), and Virginia chain fern.

Under natural conditions, flooding and fire restrict the encroachment of less tolerant hardwoods into cypress swamps (Reference 2.4-006). Without fire, cypress swamps are succeeded by hardwoods such as redbay, sweetbay (*Magnolia virginiana*), red maple, and swamp tupelo, eventually evolving from cypress swamp to a hardwood-dominated system (Reference 2.4-007).

2.4.1.1.1.3 Wetland Forested Mixed (Code 630)

Approximately 73 ha (181 ac.) or 6 percent of the total LNP site acreage are classified as Wetland Forested Mixed. This classification is defined as forested wetlands in which hardwoods and conifers are co-dominant in the crown canopy composition. On the LNP site these systems are frequently found as inclusions in, or on the periphery of, cypress swamps. Common species are similar to those found in cypress swamps, but with a higher prevalence of hardwood trees such as redbay, sweetbay, tupelo, red maple, and dahoon holly (*Ilex cassine*). Left undisturbed, these mixed forests eventually will become dominated by hardwoods (Reference 2.4-008).

2.4.1.1.1.4 Stream and Lake Swamps (Bottomland) (Code 615)

Approximately 59 ha (146 ac.) or 4.7 percent of the LNP site acreage are classified as Stream and Lake Swamps. This bottomland cover type consists of low-lying forest with mostly hardwoods in the vegetative canopy, often associated with streams, lakes, floodplains, or overflow areas. On the LNP site this community type surrounds cypress swamp and wetland forested mixed systems and is seasonally flooded. Dominant canopy species are red maple, sweetgum (*Liquidambar styraciflua*), swamp laurel oak (*Quercus laurifolia*), water ash (*Fraxinus caroliniana*), black gum (*Nyssa sylvatica*), Florida elm (*Ulmus floridana*), redbay, and sweetbay. Cypress stumps are also common. Associated subcanopy species include Carolina willow (*Salix caroliniana*), stiff cornel (*Cornus foemina*), black haw (*Viburnum obovatum*), wax myrtle, saw palmetto and buttonbush. Groundcover species include bristlegrass, panic grasses (*Panicum spp.*), frog-fruit (*Phyla nodiflora*), poison ivy (*Toxicodendron radican*s), and musky mint.

2.4.1.1.1.5 Freshwater Marshes (Code 641)

Freshwater marshes encompass 58 ha (143 ac.), or just under 5 percent of the total acreage of the LNP site. Freshwater wetlands with predominantly herbaceous emergent vegetation are classified under the broad category of freshwater marshes. On the LNP site, most of these systems are successional habitats that develop after cypress swamps or pine flatwoods are logged. Vegetative composition of these systems varies depending on several factors, including hydroperiod, the nature of the community prior to disturbance, and the length of time since the disturbance occurred.

Wet prairie-type vegetation occupies small, shallow depressions within planted pine stands, in clearings, and in borrow areas for road construction and bedding. Vegetation in these freshwater marshes is typically dominated by grasses, sedges, and forbs that are tolerant of wet conditions. Common species include maidencane, blue maidencane, bushy bluestem (*Andropogon glomeratus)*, sand cordgrass (*Spartina bakeri*), sawgrass (*Cladium jamaicense*), yellow-eyed grass (*Xyris* spp.), redroot, bogbutton (*Lachnocaulon* spp.), spikerush (*Eleocharis spp*.), red ludwigia (*Ludwigia repens*), sedges (*Carex* spp.), and beakrush (*Rhynchospora* spp.) with scattered groundsel bush (*Baccharis halimifolia*), St. Andrew’s Cross (*Hypericum hypericoides*), and buttonbush.

The depressional marshes on the LNP site are shallow, often circular basins deepening towards the center, with herbaceous and shrub vegetation in concentric bands. The central portion of these systems is vegetated by emergent plant species such as pickerelweed (*Pontedaria cordata*), firelag (*Thalia geniculata*), and cattail (*Typha latifolia*), surrounded by shrubs such as buttonbush, St. Peter’s Wort (*Hypericum crux-andreae*), St. Andrew’s cross, and wax myrtle, as well as various graminoids and forbs including maidencane, rushes (*Juncus repens, J. marginatus, J. effusus)*, beakrushes, sedges, yellow-eyed grass, and bogbutton.

Where logging is very recent and the soil is exposed, early successional species associated with disturbance, like redroot, broomsedge, bushy bluestem, dog fennel, and annual ragweed *(Ambrosia artemisiifolia*), vegetate the area. Later colonizers include wax myrtle, blackberry, groundsel bush, buttonbush, and persimmon (*Diospyros virginiana*). Some cypress stands are not clearcut; instead, a few widespread individual cypress trees are left for regeneration.

2.4.1.1.1.6 Other Open Lands, Rural (Code 260)

Approximately 43 ha (106 ac.), or 3 percent of the LNP site, are classified as Other Open Lands. This land cover class describes agricultural lands of indeterminant nature. On the LNP site, the clear-cut portions of the plant site are classified as Other Open Lands, vegetated by broomsedge, redroot, dog fennel, annual ragweed, red top panicum (*Panicum rigidulum*), bracken fern (*Pteridium aquilinum*), and slash pine saplings. Relative to other areas of the LNP site, this central portion shows the most conspicuous results of prolonged silvicultural operations with a heavily scarified ground surface, scattered piles of woody debris, and a network of existing and relict logging roads.

2.4.1.1.1.7 Hardwood Conifer Mixed (Code 434)

The Hardwood Conifer Mixed land cover classification describes forests in which upland conifers and hardwoods share dominance in the crown canopy. A fragment of this forest type encompasses approximately 6.5 ha (16 ac.), or less than 0.5 percent of the LNP site, in the northwestern corner just east of US-19/US-98. Common species include laurel oak, sweet gum, slash pine, loblolly pine, live oak (*Quercus virginiana*), and cabbage palm (*Sabal palmetto*).

2.4.1.1.1.8 Utilities (Code 830)

Encompassing close to 2 ha (4 ac.), or 0.1 percent of the total acreage of the LNP site, the Utilities land cover class is represented by a natural gas pipeline corridor in the northwest corner of the site, roughly parallel to US-19/US-98. Vegetative communities along the corridor are maintained in herbaceous to shrub strata, and are dominated by early successional species including dog fennel, bluestem, goldenrod (*Solidago* spp.), bracken fern, flat-topped goldenrod (*Euthamia minor*), winged sumac (*Rhus copallina*), groundsel bush, and blackberry. Wetter areas support hydrophytic grasses and forbs, including cattail, pickerelweed, maidencane, and blue maidencane.

2.4.1.1.1.9 Upland Coniferous Forest (Code 410)

The Upland Coniferous Forest land cover classification is defined as any natural forest stand in which at least 66 percent of the canopy is dominated by conifers. On the LNP site this area includes small patches of natural pine forest. This class comprises just over 4 ha (11 ac.), or 0.3 percent of the total site area. Nearly all of the upland area on the LNP site that is capable of supporting planted pine is either planted in pine (Tree Plantations, Code 440) or has been recently cleared of pine; very little natural pine forest remains on the LNP site.

2.4.1.1.1.10 Pine Flatwoods (Code 411)

Natural pine flatwoods cover a little over 1 ha (3 ac.), or 0.1 percent of the LNP site. These systems are dominated by slash pine or longleaf pine with an understory of saw palmetto, wax myrtle, and gallberry. This category represents a small remnant of pine flatwoods that was replaced with planted pine.

Shrub and Brushland (Code 320) and Wet Prairie (Code 643) land cover classifications comprise less than 1 ha of the LNP site acreage.

2.4.1.1.2 Wildlife Resources

Wildlife resources on and in the vicinity of the LNP site were identified based on literature reviews and site reconnaissance visits conducted between September 2006 and January 2008. Site reconnaissance activities consisted of habitat characterizations, wetland delineations, and wildlife observations. Direct observations of individuals, as well as signs of wildlife (e.g., tracks, scat) were recorded.

By definition, even-aged and monospecific planted pine stands generally exhibit lower biodiversity compared to native systems. Pine plantations are often managed to exclude vegetative strata and species that provide habitat for a variety of wildlife species. (Reference 2.4-008) With the short rotation scale characteristic of pulpwood operations, for example, trees are harvested before reaching their maximum growth, thereby excluding species such as cavity-dwelling birds that use mature trees (Reference 2.4-002). A closed canopy in mid-growth planted pine stands can block sunlight and restrict the growth of grasses and forbs that support species such as white-tailed deer, bobwhites, cottontails, and wild turkeys (Reference 2.4-008).

Although individual pine stands at the LNP site are even-aged, they are at different stages of production, expanding the habitat types available to wildlife. The landscape matrix of cypress swamps, clearcut fields, and hardwoods interspersed within the planted pine stands provides habitat for common species of mammals, birds, reptiles, and amphibians.

Mammalian species that occur at the LNP site are those widespread in the pine plantation/cypress swamp landscape mosaic of the region. These include whitetail deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), feral hog (*Sus scrofa*), nine-banded armadillo (*Dasypus novemeinctus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), eastern cottontail rabbit (*Sylvilagus floridanus*), striped skunk (*Mephitis mephitis*), gray squirrel (*Scuirus caroliniensis*), eastern mole (*Scalopus aquaticus*), and southeastern shrew (*Sorex longirostris*). Most of the common mammals on the LNP site are generalists in that they are not exclusive to any one habitat type, but use various habitats for different purposes. Mammalian species that have been observed or are likely to inhabit the area are listed in Table 2.4-2.

Bird species that were observed on the LNP site or are considered likely to use the site include northern cardinal (*Cardinalis cardinalis*), eastern kingbird (*Tyrannus tyrannus*), black vulture (*Coragyps atratus*), turkey vulture (*Cathartes aura*), and northern mockingbird (*Mimus polyglottus*) (Table 2.4-3). Wood ducks (*Aix sponsa*) use the bottomlands and cypress swamps, as do barred owls (*Strix vamria*), red-shouldered hawks (*Buteo lineatus*), woodcocks (*Scolopax minor*), hairy woodpeckers (*Picoides villosus*), and pileated woodpeckers (*Drycopus pileatus*). Several species of wading birds forage in wetland areas, such as great blue heron (*Ardea herodias*), little blue heron (*Ardea caerulescens)*, and white ibis (*Eudocimus albus*). (Reference 2.4-009)

Nesting colonies of wading birds have not been observed nor is it considered likely that colonies will become established on the LNP site because of the absence of open water habitats that are preferred by these species. Wading bird nesting colonies are usually located over or near water, which helps protect the nests from terrestrial predators, such as raccoons and rats (*Rattus* spp.) (Reference 2.4-010).

Near the Gulf of Mexico and along the path of the Eastern Atlantic Flyway, the site is well-situated as a stopover for migratory birds; although, the proximity of natural areas such as the Goethe State Forest and Waccasassa Bay Preserve State Park may make the LNP site a relatively less attractive alternative for some avifauna (Reference 2.4-011). Figure 2.4-7 provides a description of the natural resource areas. Migratory bird species observed on the LNP site include American robin (*Turdus migratorius*), yellow-rumped warbler (*Dedroica coronata*), yellow-throated warbler (*Dendroica dominica*), and cedar waxwing (*Bombycilla cedrom*).

Reptile and amphibian species that have been observed or are likely to live on the site are listed in Table 2.4-4. These species include black racer (*Coluber constrictor*), eastern indigo snake (*Drymarchon corais couperi*), eastern mud snake (*Farancia abacura*), cottonmouth (*Agkistrodon piscivorus*), gopher tortoise (*Gopherus polyphemus*), river cooter (*Pseudemys floridana floridana*), southern leopard frog (*Rana utricularia*), broadhead skink (*Eumeces laticeps*), and ground skink (*Scincella lateralis*) (Reference 2.4-012). Depression marshes on the LNP site are likely provide breeding and foraging habitat for such species as the Southeastern five-lined skink (*Eumeces inexpectatus*), mole salamander (*Ambystoma talpoideum*), tiger salamander (*Ambystoma tigrinum tigrinum*), striped newt (*Notophthalmus perstriatus*), oak toad (*Bufo quercicus*), cricket frog (*Acris gryllus gryllus*), and squirrel treefrog (*Hyla squirella*) (Reference 2.4-009).

2.4.1.1.3 Important Species

Important species are defined in NUREG-1555 as those animal or plant species that meet the following criteria:

- Commercially or recreationally valuable.
- Federally or state-listed as threatened or endangered.
- Critical to the well-being of important species.
- Critical to the structure and function of a valuable ecological system.
- Biological indicators of radionuclides in the environment.

Important species identified at the LNP site include several game species and certain protected species that either have been observed on the site, or may occur on-site based on occurrence records (Reference 2.4-013). These species are discussed below and are presented in Table 2.4-5. Species that are critical to the well-being of important species or a valuable ecosystem, or that can function as suitable bioindicators, have not been identified for the LNP site.

2.4.1.1.3.1 Recreationally Valuable Species

Recreationally valuable game species inhabiting the LNP site are white-tail deer, bobwhite quail (*Colinus virginianus*), and wild turkey *(Meleagris gallopavo)*. These species are locally plentiful. White-tail deer prefer habitats with abundant “edge,” or ecotonal areas between grassy openings and forest cover. Bobwhite quail thrive in early successional environments, such as open fields or very young planted pine stands. Wild turkeys prefer open, mature stands of hardwoods interspersed with clearings and conifers. (Reference 2.4-008) Feral hogs are also hunted on the site but are considered a nuisance species (Reference 2.4-014). Feral hogs are discussed further in ER Subsection 2.4.1.1.4.

2.4.1.1.3.2 Threatened or Endangered Species

Threatened or endangered species are defined by the Federal Endangered Species Act of 1973 (ESA) (16 United States Code [USC] 1531 et seq.), as amended, as follows:

> The term “endangered species” means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man . . . The term “threatened species” means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

The U.S. Fish and Wildlife Service (USFWS) is responsible for administering the ESA for federally protected species. The Florida Fish and Wildlife Conservation Commission (FFWCC) has jurisdiction over state-protected wildlife species, while

FDAC is responsible for issues related to rare and protected plant species. The Florida Natural Areas Inventory (FNAI) compiles and maintains a comprehensive database of biological resources in Florida, including documented occurrences of both federally and state-listed protected plant and animal species. In order to identify protected species that may occur on the LNP site, applicable agency databases and literature pertaining to the site were reviewed, and an FNAI Occurrence Report for the LNP site was requested and evaluated.

Based on the FNAI Occurrence Report, several protected species are known to occur in the vicinity of the site (Tables 2.4-6, 2.4-7, 2.4-8, and 2.4-9) (Reference 2.4-013). Although the report identifies no documented occurrences of protected species on the LNP site, it identified the site as having the potential to provide for several protected species. Several species, including the gopher tortoise, gopher frog, red-cockaded woodpecker, bald eagle, and sandhill crane, were documented as occurring in the Goethe State Forest just north of the LNP site.

Pedestrian surveys were conducted between October 2006 and June 2007 to characterize on-site habitats and identify areas that may support protected plant and/or wildlife species. Additional surveys for targeted areas are ongoing. Species observed on the LNP site or considered likely to occur on the site are discussed below.

2.4.1.1.3.2.1 Eastern Indigo Snake (*Drymarchon corais couperi*)

The Eastern Indigo snake is federally and state-listed as a threatened species (Reference 2.4-015). It is a large, heavy-bodied snake, shiny black or bluish-black above and below with chin and throat often tinged with red. Eastern Indigo snakes inhabit a variety of habitats from high pine and scrub communities to moister communities such as wet prairies and swamps. Common prey animals include fish, frogs, toads, lizards, snakes, birds, and small mammals. (Reference 2.4-016) The indigo snake frequently uses gopher tortoise burrows for shelter, especially in areas such as northern Florida, where cool winter temperatures represent a threat. The indigo snake was not observed on the LNP site during pedestrian surveys; although, its presence is likely.

The home range of adult indigo snakes is large, ranging from approximately 19 ha (45 ac.) to nearly 200 ha (470 ac.) (Reference 2.4-017). Threats to this species include over-collecting, road mortality, habitat loss, and habitat fragmentation (Reference 2.4-015).

2.4.1.1.3.2.2 Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is currently classified by the State of Florida as a threatened species, its status having been elevated in 2007 from a Florida Species of Special Concern. Gopher tortoises prefer dry upland habitats such as sandhills, scrub oak, xeric oak, and dry pine flatwoods, as well as disturbed sites such as pastures, old fields, and road shoulders. They excavate burrows that serve as refuge for many other commensal species. (Reference 2.4-015)

Gopher tortoise burrow locations were documented by pedestrian surveys to assist with facility siting and future detailed survey efforts. A total of 58 gopher tortoise burrows were identified within the LNP site and south along the planned pipeline and heavy haul road corridor. The majority of burrows were located in relatively open canopy and shrub layer areas, along existing roads, edges of wetlands, and on spoil areas. Around the LNP site, the density of gopher tortoise burrows was low due partly to the shallow groundwater depth. The occurrence and density of gopher tortoises increased significantly toward the south, immediately north of CR-40 and along the spoil areas of the CFBC. Surveyed gopher tortoise habitat is shown on Figure 2.4-2. Several listed species are known to co-exist in gopher tortoise burrows, including the eastern indigo snake (*Drymarchon corais couperi*), gopher frog (*Rana capito*), and Florida mouse (*Podomys floridanus*). No evidence of activity or occurrence of these commensal species was noted during field surveys.

2.4.1.1.3.2.3 Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagles were recently de-listed under the ESA but are federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles are locally common, preferring coastal areas or inland waterways where fish, waterfowl, and other prey are plentiful. Most bald eagles in northern and central Florida migrate north after the breeding season in late May through July. (Reference 2.4-015)

An active bald eagle nest is located just south of the LNP site, west of the proposed heavy haul road (see ER Subsection 2.4.1.2.2.1). Bald eagles are occasionally observed in flight over the LNP site.

2.4.1.1.3.2.4 Florida Black Bear (*Ursus americanus floridanus*)

The Florida black bear is listed as a threatened species by the FFWCC (except in Apalachicola National Forest and Baker and Columbia counties) (Reference 2.4-015). Florida black bears are known to inhabit the adjacent Goethe State Forest (Reference 2.4-018), and it is likely that they occasionally use the LNP site to forage or as a travel corridor. Individual bears have large home ranges, from approximately 65 to 260 km^2 (25 to 100 $mi.^2$) or more. Black bears are omnivorous, eating berries, fruits, seeds, nuts, roots, insects, lizards, frogs, armadillos, snakes, and carrion. (Reference 2.4-019)

2.4.1.1.3.2.5 Red-Cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker is listed as endangered by the USFWS and threatened by the FFWCC. This woodpecker has a black and white-barred back and wings, black cap and nape, and white cheek patches. Its preferred habitat in northern Florida is open, mature longleaf pine flatwoods. It forages in forested community types with pines of various ages but only within a small radius from its nest. The red-cockaded woodpecker is a cooperative breeder and habitat specialist that excavates cavities in live, usually mature pine trees. (Reference 2.4-020)

The Goethe State Forest, which is directly north of the LNP site, supports a community of red-cockaded woodpeckers (Reference 2.4-018). This species is not known to nest on the LNP site and is considered unlikely to do so because of the absence of its preferred nesting habitat.

2.4.1.1.3.2.6 American Alligator (*Alligator mississippiensis*)

The American alligator is listed as a Florida Species of Special Concern by the FFWCC because of its similarity in appearance to the endangered American crocodile (*Crododylus acutus*) (Reference 2.4-015). This reptile is a common inhabitant of most types of freshwater bodies in the state, including marshes and swamps such as those on the LNP site. One juvenile American alligator was observed on the LNP site during field surveys.

2.4.1.1.3.2.7 Wood Stork (*Mycteria americana*)

The wood stork is both federally and state-listed as an endangered species. These birds are large, white with black along the wing margins, and have a short black tail. They nest colonially in inundated forested wetlands. Wood storks forage mainly on small fish. They are tactile rather than visual feeders, using their bills to probe in shallow water and snapping the bill shut when a fish touches it. For this reason, wood storks preferentially feed in areas where the prey are concentrated, such as ditches or shallow marshes where there are seasonal drawdowns in water level. (Reference 2.4-020)

Wood storks have been observed feeding in on-site ditches and wetlands. No known nesting colonies have been observed on the LNP site, based on field surveys and according to the Florida Waterbird Colony database; nor is it likely that colonies will become established due to the lack of open water habitat (see ER Subsection 2.4.1.2).

2.4.1.1.3.2.8 Other Wading Birds

Several species of wading birds, including the great blue heron, little blue heron, and white ibis, have occasionally been observed feeding in wetland areas on the LNP site. These species are classified by the FFWCC as Florida Species of Special Concern and are locally common (Reference 2.4-013).

2.4.1.1.3.2.9 Protected Plants

The FNAI Occurrence Report for 2007 identifies several documented protected plant species in the vicinity of the LNP site, although none were identified on the property in either the FNAI report or during on-site surveys (Reference 2.4-013). Table 2.4-6 presents the protected plant species occurring on the LNP site.

A Godfrey’s privet (*Forestiera godfreyi*) specimen was documented in 1937 just outside of the northwestern site boundary, close to US-19/US-98 (Reference 2.4-013). No recent documentation of this shrub on the LNP site is recorded, nor has this species been identified on the site during ecological surveys. Pinewood dainties (*Phyllanthus leibmannianus*) were documented as occurring west of the LNP site and are classified as endangered. The conversion of native vegetative communities to planted pine reduces the likelihood that rare plants occur on the LNP site. (Reference 2.4-013)

2.4.1.1.4 Nuisance Species

Nuisance plant species on the LNP site include exotic and invasive plants such as cogon grass (*Imperata cylindrical*), Japanese honeysuckle (*Lonicera japonica*), and Chinese privet (*Ligustrum sinense*). These species can be highly invasive in disturbed environments where they may out-compete native vegetation. However, at the time of the survey the infestation of each of these species appeared mild, occupying small and widely-scattered patches on the site.

Feral hogs were identified during the survey as the major nuisance animal species on the LNP site based on field observations. The site is infested with a large population of feral hogs, a nonnative species descended from domestic animals. Hogs can destroy native vegetative communities through rooting and wallowing. The LNP site shows abundant evidence of damage to wetland systems where hogs have rooted up the vegetative cover. They eat ground-nesting birds, reptiles and amphibians, and compete with native wildlife species for seeds, acorns, and other foods. Hogs can harbor diseases and parasites that may spread to native wildlife and people, such as cholera, pseudorabies, brucellosis, tuberculosis, anthrax, ticks, fleas, lice, and various flukes and worms. (Reference 2.4-014)

Other disease vectors present on the LNP site are mosquitos and ticks. Mosquitos can carry West Nile Virus and Eastern Equine Encephalitis, and deer ticks may carry Lyme disease, each of which can be transferred to humans through a bite (Reference 2.4-021).

2.4.1.1.5 Important Terrestrial Habitats

Important terrestrial habitats are defined in NUREG-1555 as the following:

- Wildlife sanctuaries, refuges, and preserves.
- Habitats identified by federal or state agencies as unique, rare, or a protection priority.
- Wetlands and floodplains.
- Land areas identified as critical habitat for species listed as threatened or endangered.

These habitats and their presence on and in the vicinity of the LNP site are described in the following subsections.

2.4.1.1.5.1 Wildlife Sanctuaries, Refuges, and Preserves

Levy County, along with adjacent Gulf Coast counties, is an area known as Florida's Nature Coast, valued for its vast natural areas, water, wildlife resources, and scenic beauty. Several conservation areas are located in the vicinity of the LNP site. Figure 2.4-7 presents the natural resource areas, which include the following:

- Goethe State Forest
- Waccasassa Bay Preserve State Park
- Big Bend Seagrasses Aquatic Preserve
- Crystal River State Buffer Preserve
- CFG State Recreation and Conservation Area

No unique or rare habitats or habitats with priority for protection were identified on the site. However, some of these areas occur in the vicinity, such as the Withlacoochee River, which is located approximately 2 mi. south of the LNP site (Figure 2.4-7) and designated by the State of Florida as an OFW (Reference 2.4-022). Wildlife sanctuaries, refuges, and preserves associated with the transmission corridors are also discussed in ER Subsection 2.2.2.4.

Wetlands are defined jointly by the USACE and the U.S. Environmental Protection Agency (USEPA) as the following (Reference 2.4-023):

> Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetlands include swamps, marshes, bogs, and similar areas. The USACE currently uses the *Corps of Engineers Wetlands Delineation Manual* to establish jurisdiction under Section 404 of the CWA (Reference 2.4-023). The State of Florida uses the *Florida Wetlands Delineation Manual* (Reference 2.4-024) to determine wetland boundaries pursuant to Chapter 62-340, F.A.C. *Delineation of the Landward Extent of Wetlands and Surface Waters*.

Wetlands in the study area were delineated in accordance with the definitions and routine methodologies described in the manuals listed above. The limits of jurisdictional wetland boundaries are based on the dominance of hydrophytic vegetation, the presence of hydric soils, and evidence of wetland hydrology (Reference 2.4-023).

Wetlands on and in the vicinity of the LNP site were initially identified and characterized through review of agency databases, published documents, and subsequently through field delineation. Formal jurisdictional determinations of wetlands on the LNP site by the FDEP Wetland Evaluation and Delineation Section are ongoing.

The most common wetland systems on-site are cypress swamps, cypress-hardwood mixed swamps, and freshwater marsh. These and other wetland systems on the site are described in ER Subsection 2.4.1.1. There were no USFWS-designated critical habitats for protected species found on the LNP site.

2.4.1.1.6 Preexisting Environmental Stresses

In addition to feral hogs (see ER Subsection 2.4.1.1.4), the major preexisting environmental stresses on the LNP site are associated with the prolonged silvicultural operations that re-shaped the local landscape and converted diverse native vegetative communities to even-aged, monospecific planted pine stands. Earthwork can alter the soil substrate, distort local drainage patterns, and profoundly transform natural communities.

The predominant forces shaping the succession of vegetative communities in pine plantations are fire and logging. Fire suppression encourages the proliferation of dense understory vegetation and the buildup of peat, which can fill what were formerly open water areas. Fire suppression also facilitates succession from cypress swamps to hardwood swamps (Reference 2.4-007). Heavy equipment may compact and damage wetland soils, and logging directly alters the vegetative composition of forests and changes drainage patterns through the construction of dikes, roads, and bedding (Reference 2.4-012). Clear-cutting can exacerbate localized flooding, at least temporarily, through the loss of transpiring vegetation (Reference 2.4-025).

2.4.1.2 Associated Facilities

The facilities associated with the LNP site comprise the following:

- Access roads.
- Heavy haul road and barge slip access road.
- Barge slip.
- Makeup and blowdown pipeline corridor.
- Transmission line corridors.

The access roads, heavy haul road, barge slip access road, barge slip, makeup and blowdown pipelines, and the portion of the transmission corridor north of CR-40 are identified collectively as early infrastructure facilities, because they will be constructed in advance of the LNP generating facilities. Locations for the early infrastructure facilities are depicted on Figure 2.4-8 and land cover classes are listed in Table 2.4-10. Transmission corridors are described in ER Subsection 2.2.2. Locations of the transmission corridors (south of CR-40) are depicted on Figure 2.4-9, and land cover classes for the transmission corridors are listed on Table 2.4-11.

2.4.1.2.1 Existing Cover Types

Existing vegetative cover types crossed by the early infrastructure facilities that are described below are based on FLUCCS, as interpreted and mapped by the SWFWMD (Figure 2.4-8) (References 2.4-003 and 2.4-004). Vegetative cover types crossed by the early infrastructure facilities are described below in order of decreasing prevalence (Reference 2.4-004). Species lists are based on either FLUCCS code descriptions or observations made during field surveys performed by CH2M HILL ecologists between September 2006 and January 2008 (References 2.4-003 and 2.4-004).

2.4.1.2.1.1 Tree Plantations (Code 440)

Tree Plantations represent the largest land area crossed by the early infrastructure facilities. Approximately 135 ha (333 ac.) or 41 percent of the early infrastructure facilities acreage are classified as Tree Plantations. These areas are predominantly planted with slash pine. Understory and groundcover vegetation generally includes gallberry, saw palmetto, sand blackberry, wax myrtle, broomsedge, or blue maidencane.

2.4.1.2.1.2 Open Lands (Rural) (Code 260)

Open Lands (Rural) encompass 40 ha (100 ac.), representing 12 percent of land covered by the early infrastructure facilities. In the areas crossed by early infrastructure facilities, this land cover generally consists of tree plantations that have been clear-cut. Remaining vegetation includes broomsedge, redroot, dog fennel, annual ragweed, or slash pine saplings.

2.4.1.2.1.3 Other Open Lands (Code 190)

Other Open Lands represent nine percent or 31 ha (76 ac.) of land covered by the early infrastructure facilities. Parcels that are undeveloped and are without indicators of the intended land use are generally classified as Other Open Lands. These areas are generally comprised of turf grass or ruderal species such as bahia grass (*Panicum notatum*), dog fennel, or annual ragweed.

2.4.1.2.1.4 Cypress (Code 621)

Cypress swamps encompass approximately 21.96 ha (54.26 ac.), representing seven percent of the total early infrastructure facilities land area. These wetlands are characterized by a dominant canopy cover of pond cypress with a subdominant cover of slash pine, redbay, swamp tupelo, or red maple. The understory and groundcover strata are generally composed of woody or herbaceous vegetation including buttonbush, fetterbush, Virginia willow, lizard's tail, maidencane, cinnamon fern, and Virginia chain fern.

2.4.1.2.2 Important Species

2.4.1.2.2.1 Early Infrastructure Facilities

Field surveys by CH2M HILL ecologists on and in the vicinity of the early infrastructure facilities are ongoing. Recreationally valuable species that were identified during these field surveys included white-tail deer, bobwhite quail, and wild turkey. These species are common in the area. Feral hogs are also widespread, but are considered a nuisance species (Reference 2.4-014).

One active bald eagle nest was identified approximately 1000 m (3281 ft.) west of the proposed heavy haul road area. In addition, an FNAI Occurrence Report generated for the LNP site and vicinity identified several protected species known to occur within the areas surrounding the early infrastructure facilities (see Tables 2.4-6, 2.4-7, 2.4-8, and 2.4-9) (Reference 2.4-013). Although the report identifies no documented occurrences of protected species on early infrastructure sites, some areas were identified as having the potential to provide habitat for protected species including the gopher tortoise, gopher frog, red-cockaded woodpecker, bald eagle, and sandhill crane.

2.4.1.2.2.2 Transmission Corridors

2.4.1.2.2.2.1 500-kilovolt (kV) transmission lines from the LNP to proposed Citrus Substation (LPC)

Listed species refers to those plant and animal species that are designated by the USFWS as threatened, endangered, or of special concern (Reference 2.4-026). Wildlife habitat in the area of the LPC corridor has been altered significantly from its natural state for mixed forest land, cropland and pasture, roadways, and residential use. However, several wildlife species do utilize the area within and adjacent to the LPC corridor for foraging and cover. Wildlife resources were evaluated through site reconnaissance, literature reviews, and availability of suitable habitat. In addition, the FNAI Geographic Information System (GIS) database of documented occurrences of listed species was queried. Wildlife observations recorded during site reconnaissance activities conducted in November 2007, including direct visual observation, calls, tracks, scat, burrows, or other signs, and those wildlife species (including listed species) that are reasonably expected to inhabit the corridor based on habitats present, are presented in Appendix 2.4-1.

According to the FNAI database, several documented occurrences of listed species lie within, adjacent to or near (generally equal to or less than 610 m [2000 ft.]) from the LPC corridor (Reference 2.4-013). Locations of FNAI-documented occurrences and listed species were observed during the November 2007 field reconnaissance.

No listed plant species were observed along the LPC corridor during site reconnaissance activities. Additionally, there are no FNAI-listed plant species occurrences within or adjacent to the LPC corridor.

Several gopher tortoise (*Gopherus polyphemus*) burrows were observed throughout the LPC corridor, in deciduous forest land intermixed with low-density residential and along the existing PEF 69-kV transmission line ROW. Gopher tortoises are currently classified by the FFWCC as threatened, but are not listed federally by the USFWS.

Based on habitats present within the LPC corridor, site reconnaissance, and literature review, several other listed species may be present but were not observed during the site visit, such as gopher frog (*Rana capito*), American alligator (*Alligator mississippiensis*), Eastern Indigo snake (*Drymarchon couperi*), Florida pine snake (*Pituophis melanoleucus mugitus*), short-tailed snake (*Stilosoma extenuatum*), Suwannee cooter (*Pseudemys concinna suwanniensis*), black skimmer (*Rynchops niger*), Florida sandhill crane (*Grus canadensis pratensis*), limpkin (*Aramus guarauna*), little blue heron (*Egretta caerulea*), peregrine falcon (*Falco peregrinus*), roseate spoonbill (*Platalea ajaja*), snowy egret (*Egretta thula*), southeastern American kestrel (*Falco sparverius paulus*), tricolored heron (*Egretta tricolor*), white ibis (*Eudocimus albus*), wood stork (*Mycteria americana*), bald eagle (*Haliaeetus leucocephalus*), Florida mouse (*Podomys floridanus*), and Sherman's fox squirrel (*Sciurus niger shermani*). Appendix 2.4-1 contains a list of these and other listed species that may reasonably be expected to inhabit the LPC corridor.

According to FNAI data (Reference 2.4-013), two documented occurrences of listed animal species occur within or adjacent to the LPC corridor. They are the gopher tortoise (*Gopherus polyphemus*), which is identified by FNAI within the LPC corridor, south of the CFG in deciduous forest lands, and the bald eagle, which is formerly classified as threatened by the USFWS and FFWCC, and recently delisted by the USFWS. The bald eagle has been identified 366 m (1,200 ft.) east of the westernmost portion of the LPC corridor, within a cropland and cropland and pasture area.

Non-listed wildlife observed during field reconnaissance or expected to occur based upon available habitat include common species typical of central Florida, such as white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), gray squirrel (*Sciurus carolinensis*), feral pig (*Sus scrofa*), nine-banded armadillo (*Dasypus novemcinctus*), and common bird species such as black vulture (*Coragyps atratus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo* *lineatus*), wild turkey (*Meleagris gallopava*), great blue heron (*Ardea herodias*), American coot (*Fulvica americana*), common moorhen (*Gallinula chloropus*), great egret (*Ardea alba*), red winged blackbird (*Agelaius phoeniceus*), cattle egret (*Bubulcus ibis*), northern mockingbird (*Mimus polyglottos*), and mourning dove (*Zenaida macroura*).

2.4.1.2.2.2.2 500-kV transmission line from the LNP to CREC 500-kV switchyard (LCR)

Listed species refers to those plant and animal species that are designated by FFWCC, FDAC, and/or the USFWS as threatened, endangered, or of special concern. Wildlife habitat in the area of the LCR corridor has been altered significantly from its natural state for planted pine, pastureland, utilities, and residential use. However, based on site observations, several wildlife species do utilize the area within and adjacent to the LCR corridor for foraging and cover. Wildlife resources were evaluated through site reconnaissance, literature reviews, and availability of suitable habitat. In addition, the FNAI GIS database of documented occurrences of listed species was queried. Wildlife observations recorded during site reconnaissance activities conducted in October 2007, including direct visual observation, calls, tracks, scat, burrows, or other signs, and those wildlife species (including listed species) that are reasonably expected to inhabit the corridor based on habitats present, are listed in Appendix 2.4-1.

According to the FNAI database, several documented occurrences of listed species lie within, adjacent to or near (generally equal to or less than 610 m [2000 ft.] from) the LCR corridor (Reference 2.4-013).

No listed plant species were observed along the LCR corridor during site reconnaissance activities. Additionally, there are no FNAI-listed plant species occurrences within or adjacent to the LCR corridor.

According to FNAI data (Reference 2.4-027) and FFWCC (Reference 2.4-028) several documented occurrences of listed animal species occur within or adjacent to the LCR corridor:

- Gopher Tortoise: Currently classified by the FFWCC as threatened, but not listed federally by the USFWS, eight gopher tortoise burrows were identified by FNAI (Reference 2.4-027) within the corridor, south of the CFG in mixed forest land within the CFG State Recreation and Conservation Area.

- Bald Eagle: Listed as threatened by the FFWCC, three bald eagle nests are known to occur along the corridor. One nest is located within the northern section of the corridor, two miles east of US-19 (Reference 2.4-029); the second is located in cropland and pasture directly east of the corridor, south of Lake Rousseau (Reference 2.4-028), and the third is located west of the CREC, in forested wetlands adjacent to Crystal Bay (Reference 2.4-028). To avoid disturbance, the corridor in these areas will be located at least 457 m (1500 ft.) from each of the nests.

- Manatee (*Trichechus manatus*): Listed as endangered by both the USFWS and the FFWCC, manatees inhabit coastal waters, bays and rivers (Reference 2.4-030). Manatees have been observed within the CFG (Reference 2.4-031), and are likely to inhabit the Withlacoochee River within the corridor. There is a designated manatee aggregation site adjacent to the corridor, within the effluent canal west of the CREC. According to USFWS staff, up to five manatees use this area for short periods of cool weather, mostly during the spring when manatees disperse northward from Crystal River (Reference 2.4-027).

Based on habitats present within the LCR corridor, site reconnaissance, and literature review, several other listed species may be present but were not observed during the site visit, such as gopher frog, American alligator, Eastern Indigo snake, Florida pine snake, green turtle (*Chelonia mydas*), Kemp's ridley (*Lepidochelys kempii*), loggerhead (*Caretta caretta*), short-tailed snake, Suwannee cooter, American oystercatcher (*Haematopus palliatus*), black skimmer, brown pelican (*Pelecanus occidentalis*), Florida sandhill crane, least tern (*Sterna antillarum*), limpkin, little blue heron, Marian's marsh wren (*Cistothorus palustris marianae*), peregrine falcon, piping plover (*Charadrius melodus*), roseate spoonbill, Scott's seaside sparrow (*Ammodramus maritimus*), snowy egret, southeastern American kestrel, tricolored heron, white ibis, wood stork, bald eagle, Florida mouse, and Sherman's fox squirrel. Appendix 2.4-1 contains a list of these and other listed species that may reasonably be expected to inhabit the LCR corridor.

Non-listed wildlife observed during field reconnaissance or expected to occur based upon available habitat include common species typical of central Florida, such as white-tailed deer, eastern cottontail, raccoon, opossum, gray squirrel, feral pig, nine banded armadillo, and common bird species such as black vulture, red-tailed hawk, red-shouldered hawk, wild turkey, great blue heron, American coot, common moorhen, great egret, red winged blackbird, cattle egret, northern mockingbird, and mourning dove.

2.4.1.2.2.2.3 500-kV transmission line from the LNP to proposed Central Florida South Substation (LCFS)

Listed species refers to those plant and animal species that are designated by the FFWCC, FDAC, and/or the USFWS as threatened, endangered, or of special concern (Reference 2.4-026). Wildlife habitat in the area of the LCFS corridor has been altered significantly from its natural state for cropland and pasture, mixed forest land, transmission line ROWs, roadways, and residential use. However, several wildlife species do utilize the area within and adjacent to the LCFS corridor for foraging and cover. Wildlife resources were evaluated through site reconnaissance, literature reviews, and availability of suitable habitat. In addition, the FNAI GIS database of documented occurrences of listed species was queried. Wildlife observations recorded during site reconnaissance activities conducted in November 2007, including direct visual observation, calls, tracks, scat, burrows, or other signs, and those wildlife species (including listed species) that are reasonably expected to inhabit the LCFS corridor based on habitats present, are summarized in Appendix 2.4-1.

According to the FNAI database, several documented occurrences of listed species lie within or adjacent to (generally equal to or less than 610 m [2000 ft.] from) the LCFS corridor (Reference 2.4-013). Locations of FNAI-documented occurrences and listed species observed during the November 2007 field reconnaissance are discussed below.

No listed plant species were observed along the LCFS corridor during site reconnaissance activities. According to FNAI data (Reference 2.4-013), one plant species, the long-spurred mint (*Dicerandra cornutissima*) has a documented occurrence within the LCFS corridor, along the existing ROW adjacent to large tracts of evergreen forest lands south of Marion Oaks and west of I-75. The long-spurred mint is classified as endangered by the USFWS and FFWCC.

2.4.1.2.2.2.4 Fauna

One listed bird species, the Florida scrub jay and two reptile species, the gopher tortoise and eastern indigo snake, were observed along the LCFS corridor and are described below.

- Florida Scrub Jay: The Florida scrub jay is classified as threatened by both the FFWCC and the USFWS. The scrub jay inhabits fire-dominated, low-growing deciduous forest lands found on well-drained sandy soils. Five individual scrub jays were observed and one individual scrub jay was heard calling within the transmission line right-of-way adjacent to large tracts of evergreen forest lands south of Marion Oaks and west of I-75.

- Gopher Tortoise: Several gopher tortoises and their burrows were observed within areas of cropland and pasture, deciduous forest lands, and transmission line corridors.

- Eastern Indigo Snake: The eastern indigo snake is classified as threatened by both the FFWCC and USFWS. Eastern indigo snakes inhabit a broad range of habitats, from mixed rangelands, deciduous forest lands, and evergreen forest lands to nonforested and coastal forested wetlands. They often winter in gopher tortoise burrows in sandy uplands but typically forage in more hydric habitats. They generally require very large tracts to survive. An eastern indigo snake was observed in the transmission line ROW adjacent to large tracts of evergreen forest lands south of Marion Oaks and west of I-75.

Based on habitats present within the LCFS corridor, several other listed species may be present, but were not observed during the site visit. These include gopher frog, American alligator, eastern indigo snake, short-tailed snake, Suwannee cooter, black skimmer, Florida sandhill crane, limpkin, peregrine falcon, roseate spoonbill, snowy egret, southeastern American kestrel, tricolored heron, white ibis, wood stork, and Florida mouse. Appendix 2.4-1 contains a list of these and other listed species that may reasonably be expected to inhabit the LCFS corridor.

According to FNAI data (Reference 2.4-013), several documented occurrences of listed animal species occur within or adjacent to the LCFS corridor:

- Bald eagle: Identified 366 m (1200 ft.) east of the westernmost portion of the LCFS corridor, within a cropland and pasture area.

- Florida pine snake: Classified as a species of special concern by the FFWCC. Identified within the LCFS corridor near residential area intermixed with deciduous forest lands, about ½-mile north of the North Deltona Boulevard and North Lecanto Highway (CR-491) intersection.

- Sherman's fox squirrel: Identified by FNAI within the LCFS corridor, approximately 183 m (600 ft.) southwest of CR-39 in an area of cropland and pasture.

- Florida scrub jay: Identified by FNAI approximately 1800 ft. south of the LCFS corridor, in an area of deciduous forest land adjacent to the large nonforested wetland southwest of the intersection of SW Highway 200 and CR-39; identified by FNAI within the LCFS corridor, approximately 61 m (200 ft.) northeast of CR-39 in deciduous forest land habitat.

- Gopher tortoise: Identified by FNAI within the LCFS corridor, south of the CFBC in an area of deciduous forest land; identified by FNAI within the LCFS corridor, west of SR-495 in a cropland and pasture area; identified by FNAI within the LCFS corridor, southeast of the intersection of SR-44 and US-301 in a non-forested wetland.

- Little blue heron: Classified as a species of special concern by the FFWCC; identified by FNAI within the LCFS corridor, north of SR-44 in an area of deciduous forest land.

Non-listed wildlife observed during field reconnaissance or expected to occur based upon available habitat include common species typical of central Florida, such as white-tailed deer, eastern cottontail, raccoon, opossum, gray squirrel, southeastern pocket gopher (*Geomys pinetis*), feral pig, nine banded armadillo, and common bird species such as black vulture, red-tailed hawk, red-shouldered hawk, wild turkey, great blue heron, American coot, common moorhen, great egret, red-winged blackbird, cattle egret, northern mockingbird, eastern phoebe (*Sayornis phoebe*), eastern meadowlark (*Sturnella magna*), and mourning dove.

2.4.1.2.3 Important Terrestrial Habitats

2.4.1.2.3.1 Early Infrastructure Facilities

Wildlife sanctuaries, refuges, and preserves located in the vicinity of the early infrastructure facilities include the following:

- Goethe State Forest
- CFG State Recreation and Conservation Area

The Goethe State Forest is located just north of the proposed plant location, while a portion of the makeup and blowdown pipe corridor would be located within the CFG State Recreation and Conservation Area. The CFG State Recreation and Conservation Area is owned by the State of Florida and is managed by the FDEP Office of Greenways and Trails. As described in Section 1.2 and Table 1.2-1, FDEP will coordinate approval for construction and operation in lands owned and/or managed by the state.

No unique or rare habitats, habitats with priority for protection or USFWS-designated critical habitats for protected species were identified at the early infrastructure facility sites.

2.4.1.2.3.2 Transmission Corridors

Wildlife sanctuaries, refuges, and preserves associated with the transmission corridors are discussed in ER Subsection 2.2.2.4.

2.4.2 AQUATIC ECOLOGY

Aquatic ecological resources were evaluated through published reports, consultation with agencies, and site studies. Descriptions of the aquatic habitats in the vicinity of the LNP site are provided in ER Subsection 2.4.2.1, physicochemical characteristics of the aquatic environment are provided in ER Subsection 2.4.2.2, descriptions of biological characteristics are provided in ER Subsection 2.4.2.3, and a description of biological and anthropogenic stressors is provided in ER Subsection 2.4.2.4. A biological characterization of the CREC discharge area is provided in ER Subsection 2.4.2.5.

2.4.2.1 Aquatic Habitat Description

The CFBC was authorized in 1942 but was terminated in 1971 after one-third of the canal had been completed. The segment of the CFBC that is associated with the LNP site falls within a completed portion of the canal, extending from Inglis Lock and the Inglis Dam at the western end of Lake Rousseau westward into the Gulf of Mexico. This reach of the CFBC was excavated to 27.0 km (16.8 mi.), which extends from land into the Gulf. The material dredged from the land-cut portion was placed on both sides of the canal, while material excavated from the Gulf of Mexico was placed in multiple spoil piles along the south side of the alignment. (Reference 2.4-032) The CFBC reach also bisects the Withlacoochee River.

Water control structures at the western end of Lake Rousseau include the Inglis Lock, Inglis Dam, and the Inglis Bypass Channel facilities, which are currently managed by the FDEP Office of Greenways and Trails. The Inglis Lock was completed in 1968 and was designed to transfer vessels between Lake Rousseau and the CFBC, with a maximum lift of about 8.8 m (29 ft. (Reference 2.4-032). The lock has not been functional since 1999 (Reference 2.4-033). The dam at the southwestern end of Lake Rousseau controls water flow from the lake into an isolated segment of the Withlacoochee River, which flows into the CFBC downstream of the lock. The bypass channel diverts water from Lake Rousseau, through a canal around the northern side of Inglis Lock, then through a regulated spillway into the original Withlacoochee River, which ultimately connects to the Gulf of Mexico.

The CFBC discharges into the Withlacoochee Bay estuary in the Gulf of Mexico. This estuary is part of a large complex of estuaries and bays within the Springs Coast region, which extends from the Pithlachascotee River Basin north of Tampa, northward to the Waccasassa River area south of the Suwannee River mouth (Reference 2.4-034).

The influence of freshwater flowing into the bay from various coastal rivers near the LNP site, such as Crystal River, Withlacoochee River, and Wacassassa River, creates a range of salinities that contribute to various habitat types. In addition, small changes in tidal inundation, elevation, and substrate characteristics contribute to the mosaic of coastal marshes and hammocks in the area. The Withlacoochee Bay (and Springs Coast) area is considered low energy, meaning that wave energy is dampened over the wide, shallow west Florida Continental Shelf. (Reference 2.4-034)

The dominant intertidal habitats in the area include brackish marshes, salt marshes, intertidal mud flats, and oyster reefs. Brackish and salt marshes are dominated by sawgrass and black needlerush, serve as critical nursery for many commercially important fish and crabs, and support a variety of wildlife including wading birds and mammals such as river otter, raccoon, and marsh rabbit. Intertidal mud flats lie between low and high tide, with common organisms including diatoms, dinoflagellates, filamentous algae, fiddler crab, blue crab, horseshoe crab, stingray, polychaetes, amphipods, and mollusks. Oyster reefs are found primarily outside of river mouths, and influence estuaries by removing suspended sediment particles, changing currents, and by filter-feeding plankton and other particles, and providing habitat for many other estuarine organisms.

Seagrass beds also represent a significant nearshore habitat. The most common seagrass species include turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), *Halodule wrightii*, *Halophila engelmannii*, and *Halophila decipiens*. Seagrass beds serve to trap and stabilize sediment, contribute to primary productivity and as a food source to herbivores, create large quantities of detritus, and provide a substrate for epiphytic algae. (Reference 2.4-034) The

Withlacoochee Bay area contains a diversity of fish and wildlife habitat, and is important for commercial and recreational fisheries.

The CFBC also serves as a significant recreational area. The FDEP Office of Greenways and Trails maintains the Withlacoochee Bay Trail and Felburn Park, which is located along the southern side of the CFBC, and supports exercise opportunities, wildlife observing, and bank fishing. The CFBC boat ramp, which is located on US-19, provides ready boating access to the CFBC and the Gulf of Mexico.

2.4.2.2 Physicochemical Characterization of the Cross Florida Barge Canal

2.4.2.2.1 Physical Description

2.4.2.2.1.1 Size

The length of the CFBC, extending from the western side of the Inglis Lock structure to its confluence with the Gulf of Mexico, is 11.9 km (7.4 mi.). The width of the CFBC is fairly uniform beginning at approximately 1-mile west of the Inglis Lock and extending to the Gulf of Mexico, ranging from 63 to 80 m (207 to 262 ft.). The greatest variation occurs within 1.6-km (1-mi.) of the Inglis Lock, ranging from 28 m (92 ft.) at the dam to 118 m (387 ft.) approximately 0.80-km (0.5-mi.) from the dam. The surface acreage of this segment of the barge canal is 91.5 ha (226 ac.). In addition, the dredged portion of the canal extends the canal seaward to 27.0 km (16.8 mi.).

2.4.2.2.1.2 Depth Profile

Cross-sectional (4-point) depth profiles of the CFBC were conducted at Stations 1, 2, and 3 on October 3, 2007. Depths were measured at 4 points equidistant (approximately 15.2 m (50 ft.) intervals) from shore to shore. In addition, mid-channel total depth was measured at 0.80-km (0.5-mi.) distances starting at the Inglis Lock, downstream to the mouth of the CFBC. A total of 26 depth measurements were collected. At each station, a telescoping survey rod was lowered from the side of the boat to the canal bottom to determine total water depth.

Canal depth ranged from 2.6 to 5.6 m (8.6 to 18.2 ft.), and averaged 4.5 m (14.7 ft.) (Figure 2.4-10). Depth was typically shallower at the cross-sectional measurement closest to the shoreline (as measured at approximately 15.2 m [50 ft.] from each shoreline). Mid-channel depth measurements varied from the Inglis Lock to the mouth of the CFBC. Mid-channel depth measurements within 1.6 km (1-mi.) from the lock averaged 4.9 m (16.2 ft.). An average depth of 3.9 m (12.9 ft.) occurred between 2.4 and 5.6 km (1.5 and 3.5 mi.). A trend of increasing depth occurred from 6.4 km (4.0 mi.) (depth 4.3 m [14.2 ft.]) to 8.9 km (5.5 mi.) (depth 5.6 m [18.2 ft.]), but then decreased between 9.7 and 12.9 km (6 and 8 mi.) averaging 5.3 m (17.4 ft.)

2.4.2.2.1.3 Substrates

Sediment samples were collected from four stations of the CFBC (Stations 1, 2, 3 and 4) and four stations in the dredged canal channel that extends into the nearshore Gulf of Mexico (Stations 4, 5, 6, and 7). At each station, three replicate sediment samples were collected: one from the center of the channel, and one between the center and edge of the channel in each direction. Each sample was collected with a Petite Ponar dredge, which captured the upper 0.15 m (6 in.) of the sediment profile. Samples were analyzed for TOC and particle size.

TOC decreased from the Inglis Lock to the CFBC mouth. TOC was higher at stations in the CFBC (Stations 1, 2, and 3), and was highest at Station 1 near the Inglis Lock (Table 2.4-12). The CFBC sediment was predominantly silt, ranging from 54 to 69 percent, and averaging 60.7 percent. Sand in the CFBC sediment averaged 20.8 percent, while clay averaged 18.4 percent. The nearshore Gulf of Mexico sediment samples within the dredged portion of the extended canal (Stations 4, 5, 6, and 7) were very different from the CFBC sediments. At Station 4, near the mouth of the CFBC, TOC decreased to 9800 milligrams per kilogram (mg/kg), while further offshore at Stations 5, 6, and 7, TOC concentrations decreased slightly more to an average of 4225 mg/kg. Sand was the dominant particle size at these four stations, ranging from 75.9 to 90.8 percent, and averaging 83.5 percent. Gravel, primarily in the form of shell fragments, ranged widely from 1.5 to 19.6 percent (average of 8.9 percent), while lesser amounts of silt (average of 3.4 percent) and clay (average of 4.2 percent) were present at these stations.

2.4.2.2.2 Water Quality

Water quality sampling included the collection of laboratory analytical parameters (ammonia, nitrate+nitrite, total Kjeldahl nitrogen [TKN], total phosphorous, chlorophyll a, TDS, and TSS) and field-measured parameters (DO, temperature, pH, conductivity, salinity, and water clarity). Analytical water samples were collected from the middle of the water column at each station, while field parameters were measured starting near the water surface (0.15 m (0.5 ft.) and at 1-m (3.3 ft.) depth intervals.

Analytical parameters were collected at Stations 1 through 7 on October 16, 2007 during peak low tide, and on November 19, 2007, during peak high tide. Field parameters were collected on October 16, 2007 at Stations 1 through 7, on October 18, 2007 and October 19, 2007 at Stations 1 through 4, and on November 15, 2007 and November 19, 2007 at 20 stations, including Stations 1 through 7 and at water quality stations WQ 0.0 through 7.5 (Figure 2.4-11). Water quality sampling is ongoing.

2.4.2.2.2.1 Analytical Parameters

The surface water analytical results of the two rounds of sampling are presented in Table 2.4-13. Sampling was conducted in conjunction with the collection of biological samples in October and December of 2007. These data reflect the average concentration collected at each station; Station 3 had four samples averaged (two samples and two field duplicates), and Stations 1, 2, 4, 5, 6, and 7 had two samples averaged. The analytical results are summarized as follows:

- Ammonia was not detected at any of the seven stations.
- Nitrate plus nitrite was detected at low average concentrations within the CFBC (Stations 1, 2, and 3) and just outside the CFBC mouth (Station 4), ranging from 0.130 to 0.132 mg/L. At offshore Stations 5 and 6 the concentrations were below detection, and at Station 7 the detection was 0.033 mg/L, much lower than in the CFBC.
- TKN was detected at all seven stations. The highest average concentration (0.65 J mg/L) occurred at Station 1 near the Inglis Lock, and decreased gradually toward the CFBC mouth (Station 3) where the concentration was 0.29 mg/L. This was similar to concentrations at the remaining offshore stations (Stations 4, 5, 6, and 7), which ranged from 0.20 to 0.26 mg/L.
- Total phosphorus was detected at all seven stations. The highest average concentration (0.102 J mg/L) occurred at Station 1 near the Inglis Lock, with concentrations showing a decreasing trend downstream to Station 4 just outside the CFBC mouth where the concentration was 0.039 mg/L. Concentrations were slightly lower at offshore Stations 5, 6, and 7, with concentrations ranging from 0.021 to 0.024 mg/L.
- Chlorophyll a was detected at all seven stations. The highest average concentration (30.5 milligrams per cubic meter [mg/m^3]) occurred at Station 1 near Inglis Lock, and is indicative of an algal bloom. Further downstream at Station 2 the concentration decreased to 16 mg/m^3. The remaining downstream samples (Stations 3, 4, 5, 6, and 7) had similar concentrations ranging from 2.1 to 3.1 mg/m^3, with concentrations showing a decreasing trend downstream to Station 4 just outside the CFBC mouth where the concentration was 0.039 mg/ m^3. Concentrations were slightly lower at offshore Stations 5, 6, and 7, with concentrations ranging from 0.021 to 0.024 mg/L.
- Average TDS concentrations were lowest upstream at Stations 1 and 2, ranging from 21,500 to 22,000 mg/L, and steadily increased to a high of 32,500 mg/L at the furthest offshore Station 7.
- Average TSS concentrations ranged from 26.5 to 40 mg/L across all seven stations. The peak of 40 mg/L occurred at Station 4 (just outside the CFBC mouth). This may be related to the higher energy environment caused by the combination of incoming and outgoing tidal flows moving through the relatively constricted canal mouth in an area that is generally mud bottom.

2.4.2.2.2.2 Field Parameters

2.4.2.2.2.2.1 Salinity Profile

The salinity profile data are illustrated in Figures 2.4-12, 2.4-13, 2.4-14, 2.4-15, and 2.4-16. Each graph shows all salinity data points collected at specific depth intervals of 0.15, 1, 2, 3, and 4 m (0.5, 3.3, 6.6, 9.8 and 13.1 ft.). The data are also presented in an upstream to downstream order, ranging from Inglis Lock (0.0 km) to Station 7, which is located approximately 25.8 km (16 mi.) west in the nearshore waters of the Gulf of Mexico.

The salinity data represent a time period of about one month, from October 16 to November 17, 2007. In general, the salinity of the Gulf of Mexico, as represented by the average of all data measured at Stations 5, 6, and 7 during this period, is 33.2 ppt. These stations range between approximately 6.4 and 13.8 km (4.0 and 8.6 mi.) offshore. Salinity was relatively stable during the sampling period, varying about 3 to 4 ppt.

Variations in salinity were wide ranging at Stations 1, 2, and 3 in the CFBC and at Station 4 near the CFBC mouth. This is primarily the result of tidal fluctuations and the variable mixing of fresh and saltwater in this narrow canal. Freshwater is released from the dam upstream at Lake Rousseau, through an isolated segment of the Withlacoochee River, and into the CFBC about 2.1 km (1.3 mi.) downstream of the Inglis Lock. Some freshwater is also released at the lock, and an unknown number of underwater springs also contribute freshwater to the CFBC. Saltwater from the Gulf of Mexico moves in and out of the CFBC during tidal cycles. The salinity profiles (Figures 2.4-12, 2.4-13, 2.4-14, 2.4-15, and 2.4-16) illustrate that a dense saltwater wedge from the Gulf of Mexico extended all the way upstream to the Inglis Lock during the five rounds of salinity sampling. Within the first 0.8 km (0.5 mi.) downstream of the Inglis Lock, surface (0.15 m) salinities were variable, ranging from 6.2 to 23.6 ppt. However, bottom (4 m) salinities within this same stretch were much higher, ranging from 21.8 to 29.7 ppt. In general, the upper 2 m (6.6 ft.) of the water column within the CFBC and just outside of its mouth often showed a wide range of salinities between both sampling stations and sampling dates; whereas, below 2 m (6.6 ft.), the salinities were generally more stable with all depths typically showing an increase in salinity with increased proximity to the Gulf of Mexico.

2.4.2.2.2.2.2 Temperature Profile

The temperature profile data are illustrated in Figures 2.4-17, 2.4-18, 2.4-19, 2.4-20, and 2.4-21. Each graph shows all temperature data points collected at specific depth intervals 0.15, 1, 2, 3, and 4 m (0.5, 3.3, 6.6, 9.8, and 13.1 ft.). The data are also presented in an upstream to downstream order, ranging from Inglis Lock (0.0 km) to Station 7, which is located approximately 25.8 km (16 mi.) west in the nearshore waters of the Gulf of Mexico.

The water temperature in the CFBC and Gulf of Mexico illustrated general temporal trends; mid-October temperatures were warmer than they were in mid-November. In October, surface (0.15 m [0.5 ft.]) temperatures for all stations ranged between 24.9 and 28.6 °C (76.8 and 83.5 °F]), while in November surface temperatures ranged between 17.0 and 21.9°C (62.6 and 71.4°F).

Water temperatures measured at all stations in the CFBC and west to Station 4 (just outside the CFBC mouth) exhibited a clear trend of being warmer than Stations 5, 6, and 7 in the Gulf of Mexico, regardless of the date sampled. This trend was more clearly defined in the upper water column between the surface and 2 m (6.6 ft.), whereas at 3 and 4 m (9.8 and 13.1 ft.) the temperature difference was somewhat less distinct. Table 2.4-14 illustrates these differences by comparing the average temperature of stations within the barge canal/ Station 4, by depth, to the average for Gulf of Mexico Stations 5, 6, and 7.

2.4.2.2.2.2.3 Dissolved Oxygen, pH, and Water Clarity

Table 2.4-15 summarizes the average results for DO, pH, and water clarity (i.e., Secchi depth) at each station. Results were averaged for all sample depths and all sample dates at each station to provide an overall evaluation for each parameter at a station.

Average station DO ranged from a 4.83 to 7.30 mg/L. In general, DO concentrations were highest near the water surface and lowest at the bottom of the water column. Stations WQ 0.0 and 1 had the lowest individual DO concentrations, with values frequently less than 3.0 mg/L near the bottom in the first 0.8 km (0.5 mi.) downstream of Inglis Lock.

The pH results showed a general increasing trend from the Inglis Lock to nearshore Gulf of Mexico. Average concentrations ranged from 7.73 SU at Station 1, to 8.07 SU at each of Stations 5, 6, and 7 in the Gulf of Mexico.

Average water clarity showed an increasing trend from the Inglis Lock to nearshore Gulf of Mexico. The station with the least water clarity was WQ 0.0 with a value of 0.83 m (2.72 ft.). The greatest water clarity occurred at Stations 5, 6, and 7 in the Gulf of Mexico, with values ranging from 1.92 to 2.14 m (6.30 to 7.02 ft.).

2.4.2.3 Biological Characterization of the Cross Florida Barge Canal

Aquatic sampling was conducted in October and December of 2007 to characterize the biological community along the length of the CFBC and nearshore areas of the Gulf of Mexico. The October 2007 results are included in this discussion. Sampling included the collection of benthic invertebrates, zooplankton, meroplankton, ichthyoplankton, and fish. These data are summarized in the subsections that follow. Additional biological sampling was conducted in 2008 to characterize the aquatic community over an annual cycle. These additional data, along with the analyzed results from the December 2007 sampling effort, were provided as supplemental information in response to an NRC request for additional information.

2.4.2.3.1 Benthic Invertebrates

Benthic invertebrate samples were collected using four techniques per the approved Aquatic Sampling Work Plan: Petite Ponar dredge, crab traps, shoreline hand picking, and trawls.

2.4.2.3.1.1 Benthic Infauna

Benthic infaunal samples were collected at Stations 1 through 7 in October 2007 (Figure 2.4-11). A Petite Ponar dredge was used to sample three locations at each station, which covered a total area of 0.0697 m^2 (0.750 $ft.^2$) per station. A total of 21 samples were collected. Stations 1 through 4 were located within the CFBC channel at a sampling depth approximately 3.7 to 4.6 m (12 to 15 ft.) deep. One sample at each station was collected near the center of the canal and two more samples were collected approximately 15.2 m (50 ft.) to the north and south of the canal center towards the shoreline. Stations 5 through 7 were located west of the mouth of the CFBC, outside of the canal channel in the Gulf of Mexico; sampling depths ranged from 1.8 to 6.1 m (6 to 20 ft.).

One sample at each station was collected at the approximate centerpoint of the station and two more samples collected approximately 15.2 m (50 ft.) to the north and south of the center point. Immediately after collection, samples were sieved through a 0.5-millimeter (mm) (0.02-in.) screen. The organisms retained by the sieve were preserved in buffered 10-percent formalin and stained with Rose Bengal solution for enhanced visibility during sorting. Petite Ponar dredge sampling and preservation processes for benthic infaunal macroinvertebrates followed FDEP Standard Operating Procedure (SOP) 7450. Taxonomic identification, species abundance counts, and diversity indices were performed by Water and Air Research, Inc. in Gainesville, Florida.

The benthic infauna collected were comprised of polychaetes, crustaceans, cnidarians, bivalves, and oligochaetes (Table 2.4-16 and Figure 2.4-22). Although a large variety of phyla, classes, orders, and families were collected, Class Polychaeta (Phylum Annelida) dominated the infauna, comprising 74 percent of the individuals and 48 percent of the species. Polychaetes dominated the benthic community at all stations and accounted for 51 to 99 percent of the organisms collected per station. Dominant polychaetes included *Stebliospio sp., Prionospio cristata, Galathowenia oculata,* and *Lumbrineridae sp.* Crustaceans ranked second with 73 species collected and were dominated by the amphipods *Ampelisca sp., Bemlos sp.*, and *Apocorophium louisianum.*

The maximum variation of abundance was between Station 2 and Station 1. Maximum variation between these stations was 15-fold, from 113 individuals per square meter (ind/m^2) at Station 1 to 15,502 ind/m^2 at Station 2 (Table 2.4-17). The composition of the benthic community was fairly even at most stations, except for Station 2 where 8 taxa accounted for 15,502 ind/m^2. Station 2 was dominated by one species of polychaete, *Stebliospio sp*, which accounted for 92 percent of the total organisms collected at that station. Richness increased from Station 1 (5 taxa) through Station 7 (116 taxa). Species diversity was greatest at Stations 4 through 7, outside the mouth of the CFBC where habitats were more typically marine. Differences in richness and diversity may be attributed to the substrate type. Stations located within the CFBC (Stations 1 to 3) were uniform fine sandy muck with a sulfidic odor. Stations in the nearshore Gulf of Mexico (Stations 5 to 7) were broken shell hash mixed with limestone rocks and coarser sands which provide more habitat types and surface area for benthic infauna to colonize. Station 4 substrate contained a mixture of fine sandy muck and oyster shell hash. No particularly identifiable odors were noted in the sampled sediments at Stations 4 to 7.

2.4.2.3.1.2 Macroinvertebrates

Macroinvertebrates were collected using three sampling techniques at Stations 1 to 4 (Figure 2.4-11). A total of five baited crab traps were deployed across the 1-mi. segment for each station. Blue crab (*Callinectes sapidus*) was the only invertebrate species collected in the crab traps. A total of 26 blue crabs was collected of the 20 crab traps deployed. Station 3 presented the highest number with 12 blue crabs, followed by Station 2 (11 crabs) and Station 4 (three crabs). No blue crabs were collected at Station 1. Of the 26 blue crabs collected, 62 percent were females and 38 percent were males. Blue crab carapace length ranged from 76 to 175 millimeters (mm).

Duplicate hand-picked samples of benthic invertebrates associated with shallow water mud, rocks, vegetation, or other structures were collected at Stations 1, 2, and 3. A variety of invertebrate taxa were collected represented by three phyla: Annelida, Arthropoda, and Mollusca (Table 2.4-18). Station 1 was dominated by False dark mussels (*Mytilopsis leucophaeata*) and barnacles (*Chthamalus fragilis*). Other abundant organisms at Station 1 were isopods, oligochaete worms (Tubificidae), and chironomid midges (*Dicrotendipes lobus*). Barnacles (*Balanus sp.*) and Atlantic mud crabs (*Panopeus herbstii*) were abundant at both Stations 2 and 3. Olive nerite (*Neritina usnea*) and scorched mussel (*Brachidontes exustus*) were abundant at only Station 2 and amphipods (*Melita sp.*), the invasive green porcelain crab (*Petrolisthes armatus*), and hooked mussles (*Ischadium recurvum*) were abundant at only Station 3.

2.4.2.3.1.3 Motile Invertebrates Collected Trawls

A total of four individuals, representing four invertebrate species were collected in the 10 trawls taken at the five sampling stations: Atlantic brief squid (*Lolliguncula brevis*), blue crab (*Callinectes sapidus*), brown shrimp (*Farfantepenaeus aztecus*) and decorator crab (*Stenocionops furcata*). One blue crab and one brown shrimp were collected at Station 2. One Atlantic brief squid was collected at Station 3 and one Decorator crab was collected at Station 4. No invertebrates were collected using trawls at Station 1.

2.4.2.3.2 Phytoplankton

Phytoplankton are the producing (autotroph) component of the ocean and are the foundation of the marine food chain. Chlorophyll a concentration samples were collected as a surrogate for phytoplankton biomass. Chlorophyll a concentrations decreased from 30.5 mg/m^3 at Station 1 just downstream of the Inglis Lock to 0.039 mg/m^3 at Station 4 near the CFBC mouth.

2.4.2.3.3 Zooplankton

Zooplankton are the heterotrophic (or detritivorous) component of the plankton that drift in the water column of oceans, seas, and bodies of fresh water. Plankton tow samples were collected per the approved Aquatic Sampling Work Plan. Conical nets (0.5-m [1.6-ft.] diameter) with standard flow meters were used for plankton collection. A 330-micrometer (μm) net was used to quantify ichthyoplankton, meroplankton, and holoplankton at each station. Duplicate 330-μm oblique plankton tows were taken during the day and night at Stations 1 through 4 (Figure 2.4-11). A tow time of 100 seconds was selected to achieve the desired volume of water sampled. Samples were preserved and submitted to Ecological Associates, Inc. for plankton enumeration and identification.

2.4.2.3.3.1 Total Zooplankton

Total zooplankton abundance increased from the Inglis Lock (Station 1) to the CFBC mouth (Station 4) during the day and night. Total zooplankton abundance ranged between 691 individuals per cubic meter (ind/m^3) at Station 1 (night) and 19,374 ind/m^3 at Station 4 (night) (Figure 2.4-23). Meroplankton represented over 92 percent of the total zooplankton in the day sampling per station, and represented 32 to 42 percent of the total zooplankton in the night sampling. Holoplankton accounted for 1 to 6 percent of the day sampling and 7 to 55 percent of the night sampling. The mean abundance of ichthyoplankton varied between less than 1 individual per 100 cubic meters (ind/100m^3) at Station 1 to 32 ind/100m^3 at Station 4 during the day sampling. During night samplings, the maximum variation was from 148 ind/100m^3 at Station 3 to 340 ind/100m^3 at Station 1.

The taxonomic structure of zooplankton sampled during the day was characterized by the numerical dominance of mud crab (*Panopeidae sp.*) zoea and megalopae and pea crab (*Pinnotheridae*) zoea (Figure 2.4-24). These two taxa comprised 57 percent of the total zooplankton collected during the day. Other dominant zooplankton taxa collected in the day sampling included prawns (*Luciferidae*), unidentified shrimp, cleaner shrimp (*Hippolytidae*) and copepods. Night sampling was dominated by copepods and mud crab (*Panopeidae*) zoea and megalopae, collectively accounting for 56 percent of the total zooplankton collected at night (Figure 2.4-25). Mysids, pea crab (*Pinnotheridae*) zoea and prawns (*Hippolytidae*) were also dominant in the zooplankton samples collected at night.

2.4.2.3.3.2 Holoplankton

Holoplankton are organisms that are planktonic for their entire life cycle. Examples of holoplankton include diatoms, radiolarians, dinoflagellates, foraminifera, amphipods, krill, copepods, and salps. Holoplankton accounted for one to 6 percent of the day sampling at Station 1 and Station 3, respectively. Holoplankton represented 7 percent to 55 percent of the total zooplankton during the night at Station 1 and Station 2 respectively. Copepods were the most numerically dominant taxonomic component during the day and night samplings for all stations. Copepods represented 78 percent of the total holoplankton during the night and 89 percent during the day. Other prominent taxonomic components of the holoplankton were chaetognaths and mysids. Euphausiids were present at night. Species composition varied little between stations.

Holoplankton abundance ranged from 6 to 150 times higher at night than during the day (Figure 2.4-26). The mean abundance of holoplankton varied by three orders of magnitude between stations, from a maximum of 10,609.2 ind/m^3 at Station 4 (night) to a minimum of 7.4 ind/m^3 at Station 1 (day).

2.4.2.3.3.3 Meroplankton

Meroplankton are organisms that are planktonic for only a part of their life cycles, usually the larval stage. Examples of meroplankton include the larvae of sea urchins, starfish, crustaceans, and marine worms. Meroplankton represented 92 to 98 percent of the total zooplankton during the day at Station 3 and Station 1, respectively. Meroplankton represented 32 to 45 percent of the total zooplankton during the night at Station 2 and Station 3, respectively. Mud crab (*Panopeidae*) larvae were the numerically dominant taxonomic component during day and night samplings for all stations, representing 44 percent during the day and 34 percent during the night of the total meroplankton. Other predominant taxa collected in the day and night sampling were pea crab (*Pinnotheridae*), prawns (*Luciferidae*), unidentified shrimp, and cleaner shrimp (*Hippolytidae*). Species composition varied little between stations.

Meroplankton abundance at night was almost 2 times higher than the total abundance during the day (Figure 2.4-27). The maximum variation of total meroplankton abundance was between Station 1 and Station 4. Maximum variation between these stations was 29 fold, from 281.5 ind/m^3 at Station 1 (night) to 8209.8 ind/m^3 at Station 4 (night).

2.4.2.3.3.4 Ichthyoplankton

Ichthyoplankton are the eggs and larvae of fish drifting in the water column. Ichthyoplankton represented less than 1 percent of the total zooplankton during the day and ranged from 1 percent to 49 percent of the total zooplankton during the night. No eggs were collected in the day or night sampling. Larvae were represented by seven major fish taxa: Engraulidae, Blennidae, Gobidae, Gerridae, Perciformes, Achiridae, and Gobiesocidae. Engraulidae (anchovy) larvae were the most dominant taxa in the day and night sampling at all stations, except Station 1 and Station 3 during the day (Figures 2.4-28 and 2.4-29). Blennidae (combtooth blennies) larvae were the most dominant at Station 1 and Station 3 during the day. Perciformes larvae were collected only at Station 3 and Achiridae (American soles) were collected only at Station 4 during the day sampling (Figure 2.4-28). Gerridae (mojarras) larvae were collected only at night at Stations 1, 2, and 3. Gobiosocidae (clingfishes) larvae were collected only at night at Station 4 (Figure 2.4-29).

Ichthyoplankton abundance at night was over 16 times higher than the total ichthyoplankton abundance during the day (Figure 2.4-30). The mean abundance of ichthyoplankton varied between less than 1 ind/100m^3 at Station 1 to 32 ind/100m^3 at Station 4 during the day sampling. During night samplings, the maximum variation was from 148 ind/100m^3 at Station 3 to 340 ind/100m^3 at Station 1.

2.4.2.3.3.5 Zooplankton Diversity

Statistics were calculated for each station per sampling effort (day and night) for the zooplankton taxonomic groups (Tables 2.4-19 and 2.4-20). Statistics calculated included the number of taxa, density (individuals/100m^3), Shannon-Wiener diversity (H’), Pielou’s evenness (J’) and Margalef’s richness (d1). Shannon-Wiener diversity was calculated using log base 2.

Station 3 presented the highest number of taxonomic groups (32 taxa), diversity (H’ = 1.93), evenness (J’ = 0.84) and richness values (d1 = 2.79) during the day sampling. Station 4 had the highest density and second highest of all the diversity values. Station 1 presented the lowest number of taxonomic groups, diversity, richness and evenness as compared to other sampling stations. The relatively low diversity indices from Station 1 resulted from the lowest total abundance of 700.2 ind/100m^3 strongly dominated by mud crab (*Panopeidae*) zoea and megalopae (88 percent of total individuals). Such high proportion of individuals from one taxonomic group has the effect of depressing diversity indices.

During the night sampling, Station 4 presented the highest diversity (H’ = 3.25) and evenness (J’ = 0.61) among sampling stations. Station 3 had the highest number of taxonomic groups with 41 and second highest index of taxonomic richness (d1 = 4.50). The relatively high diversity indices at Stations 3 and 4 resulted from the high proportion of taxonomic groups relative to the total abundance of individuals. Similar to the day sampling results, Station 1 displayed the lowest number of taxonomic groups, density, diversity, and richness as compared to other sampling stations. The relatively low diversity indices from Station 1 resulted from a lowest total abundance of 691.0 ind/100m^3 dominated by Engraulidae (anchovy) larvae and mud crab (*Panopeidae*) zoea and megalopae, which collectively comprised 79 percent of total individuals sampled at Station 1.

2.4.2.3.4 Fisheries

Adult and juvenile fish were collected using five different gear types at Stations 1 through 4 (Figure 2.4-11). Fisheries data were collected using beach seines, otter trawls, gill nets, minnow traps and cast nets. Data were collected per the approved Aquatic Sampling Work Plan.

A total of 1765 fish representing 44 taxa were collected at the four sampling stations using the five gear types. Since the collection success of the gear types vary, fisheries data are presented by gear type on a Catch per Unit Effort (CPUE) basis. Macroinvertebrates were excluded from the following analysis and are presented in ER Subsection 2.4.2.3.1.2.

2.4.2.3.4.1 Beach Seine

Shoreline fish species were sampled using a 50-ft. beach seine with a bag. Duplicate samples were collected at Stations 1, 2, and 3. Beach seine samples were not collected at Station 4, at which point the CFBC channel connects to the Gulf of Mexico. At Station 4, the linear shoreline of the canal gives way to salt marsh and oyster reef making the use of a beach seine as a viable sampling gear problematic. Samples were collected by anchoring one end of the seine to the shoreline, while the opposite end was drawn by boat back to the shoreline. Fish were identified to species and enumerated.

A total of 52 individuals representing 7 fish species were collected using beach seines. CPUE per station was calculated by the number of individuals per beach seine haul for comparison of abundance and composition between stations. Station 2 had the highest CPUE with 17.5 individuals, followed by Station 3 with 9.5 individuals (Table 2.4-21). Station 3 collected the highest number of species (6). No fish were collected in the two beach seines conducted at Station 1. Spotfin mojarra (*Eucinostomus argenteus*) was the most dominant species accounting for 59 percent of the CPUE for all three stations. Fourteen of the 16 spotfin mojarra were collected at Station 2. Bay anchovy were only collected at Station 3 and comprised 11 percent of the total CPUE. Other species in which more than one individual was collected were pinfish (*Lagodon rhomboides*), Atlantic needlefish (*Strongylura marina*), and ladyfish (*Elops saurus*).

2.4.2.3.4.2 Otter Trawl

Trawling was conducted to assess demersal fish species near the mid-depth and bottom of the water column. A 1.8-m (6-ft.) otter trawl was pulled along the bottom at multiple locations within the 1-mi. segment for each station (Stations 1 to 4). Duplicate trawls were taken for 5 minutes at a speed typically 3.2 kilometers per hour (km/h) (2 miles per hour [mph]) or less at each sampled location. Fish were identified to species and enumerated.

A total of 1342 individuals representing 19 fish species were collected using trawls. Since the number of trawls per station varied, CPUE per station was calculated by number of individuals per trawl for comparison of abundance and composition between stations. Station CPUE ranged from 4 to 429 individuals per trawl (Table 2.4-22). Station 2 had the highest CPUE with 429 individuals, represented by eight fish species. Station 3 collected 337 individuals, followed by Station 4 with 231 individuals. Station 4 collected the highest number of fish taxa (nine species). Station 1 had the lowest number of individuals (four) and species (four). Two species collectively accounted for 88 percent of the total. Bay anchovy (*Anchoa mitchilli*) was the most dominant species with 670 individuals and comprised 67 percent of the total. Bay anchovy was collected at all four stations, but were caught in high abundance at Stations 2 and 4. Silver perch (*Bairdiella chrysoura*) ranked second, representing 21 percent of the total, followed by spotfin mojarra (7 percent), pinfish (2 percent), spot (1 percent) and sand seatrout (1 percent). All other species accounted for less than 1 percent of the total. Silver perch were collected at only Stations 3 and 4 and 204 of the 207 individuals were collected at Station 4. The majority of spotfin mojarra and pinfish were collected at Station 2.

2.4.2.3.4.3 Gill Net

Gill nets 22.9 m (75 ft.) long, 1.8 m (6 ft.) deep with varying mesh size were deployed within the 1-mi. segment for each station (Stations 1 to 4). The smallest mesh end of each gill net was secured at the shoreline with a cinder block, and stretched perpendicular to the shoreline into deeper water and anchored with a cinder block. Net soak times were limited by terms of the approved state collector's permits and concerns for netting manatees, and did not exceed two hours between being pulled completely out of the water and fish removed. Fish were identified to species and enumerated.

A total of 69 individuals representing 11 fish species were collected using gill nets. Since the net soak times varied, CPUE per station was calculated by number of individuals per hour for comparison of abundance and composition between stations. Station CPUE ranged from 0.5 to 30 individuals per hour (Table 2.4-23). Station 2 had the highest CPUE and number of taxa with 30 individuals, represented by eight fish species. Station 1 had the second highest CPUE with 4.7 individuals, followed by Station 4 with 2.2 individuals. Station 3 had the lowest CPUE (0.5) and species (1). Three species collectively accounted for 82 percent of the total: Spotfin mojarra (*Eucinostomus argenteus*), ladyfish (*Elops saurus*) and bull shark (*Carcharhinus leucas*). Spotfin mojarra was the most dominant species with 22.9 individuals and comprised 61 percent of the total, primarily due to high abundance recorded at Station 2 (20.4). Spotfin mojarra were only recorded at Stations 1 and 2. Ladyfish was the second most abundant species (11.5) and the only species collected at all four stations. Bull shark ranked third due to the high abundance collected in gill nets at Station 2. All of the other recorded species were collected in relatively low abundances at only one station.

2.4.2.3.4.4 Cast Netting

Cast netting was conducted at various locations across the 1.6-km (1-mi.) segment for each station (Stations 1 to 4). Cast nets with up to a 2.1-m (7-ft.) radius were used, and nets were tossed multiple times from a boat.

A total of 272 individuals representing 24 fish species were collected using cast nets. Since the number of casts per station varied, CPUE per station was calculated by number of individuals per 25 casts for comparison of abundance and composition between stations. Station CPUE ranged from 16.3 to 58.5 individuals per 25 casts (Table 2.4-24). Station 3 had the highest CPUE and number of taxa with 58.5 individuals, represented by 11 fish species. Stations 1, 2, and 4 recorded 9 species per station. Station 1 had the second highest CPUE with 41.7 individuals, followed by Station 4 with 2.2 individuals. Station 4 had the lowest CPUE (16.3) and was dominated by one species. Six species collectively accounted for 81 percent of the total: spotfin mojarra (*Eucinostomus argenteus*), scaled sardine (*Harengula jaguana*), pinfish (*Lagodon rhomboids*), mullet (*Mugil* sp.), bay anchovy (*Anchoa mitchilli*), and gray snapper (*Lutjanus griseus*). Spotfin mojarra was the most dominant species, comprising 21 percent of the total catch and the only species to be recorded at every station. Scaled sardine, collected in high abundances at Stations 1 and 4, was the second most dominant species representing 17 percent of the total. Pinfish and mullet (mullet sp., striped mullet, and white mullet) were collected in relatively high abundances at Stations 1, 2, and 3, but not collected at Station 4. Bay anchovy was collected at Stations 2, 3, and 4, and gray snapper was collected at Stations 1, 2, and 3.

2.4.2.3.4.5 Minnow Trap

Ten minnow traps (0.4 x 0.2 m (16 x 9 in.) were baited and deployed across the 1.6-km (1-mi.) segment for each station (Stations 1 to 4). A total of 30 individuals representing six fish species were collected using minnow traps. Since the trap soak time varied, CPUE per station was calculated by number of individuals per day for comparison of abundance and composition between stations. Station CPUE ranged from 4.2 to 22.9 individuals per day (Table 2.4-25).

Station 2 had the highest CPUE and number of taxa with 22.9 individuals, represented by four fish species. Stations 1 and 2 had similar CPUE with 15.8 individuals and 15.3 individuals, respectively. Station 3 had the lowest CPUE (4.2) but had the second highest richness (3 species). Three species collectively accounted for 93 percent of the total: Frillfin goby (*Bathygobius soporator*), spotfin mojarra (*Eucinostomus argenteus*), and pinfish (*Lagodon rhomboids*).

2.4.2.3.5 Macroalgae and Seagrass Survey

A live bottom survey was conducted by qualified professional divers from the barge canal mouth to approximately 9144 m (30,000 ft.) into the Gulf of Mexico to assess sensitive areas (seagrasses and live bottom taxa). In situ visual assessment of live bottom coverage was conducted using three 0.25-m^2 (2.7-$ft.^2$)

diver-deployed quadrats per station to determine percent cover for all seagrass, macroalgae, octocoral, sponge, or other biota present within the quadrat using the Braun-Blanquet (1972) method for vegetation classification. A total of 261 quadrats and 87 sites were sampled.

Live bottom taxa were recorded in 129 (49.4 percent) of the quadrats and at 45 (51.7 percent) of the sites. Macroalgae was present at 23 (26.4 percent) of the sampled sites (Figure 2.4-31), with 95.4 percent of these sites having less than 25 percent macroalgal cover. Identified macroalgae included *Caulerpa mexicana*, *C. ashmeadii*, *C. prolifera*, *Hypnea musciformis*, *Chondria sp*., and unidentified branching red algae. Seagrass occurred at two (2.3 percent) nearshore sites (Figure 2.4-32). Recorded seagrass species were shoal grass (*Halodule wrightii*), turtle grass (*Thalassia testudinum*), and star grass (*Halophila englemanni*).

2.4.2.3.6 Important Species and Habitats

2.4.2.3.6.1 Threatened and Endangered Species

The potential for federally and state-listed species to occur within the vicinity of the LNP site was evaluated using published species lists, online database searches, and field observations. Aquatic habitats within the vicinity of the LNP site were also evaluated with emphasis on natural communities known to support federally or state-listed species.

As discussed in ER Subsection 2.4.1.1.3.2, most federally listed wildlife species are protected under the auspices of the USFWS. The FFWCC maintains jurisdiction over most state-listed fish and wildlife species. In addition to regulatory agencies, the FNAI, with funds from the FDEP, maintains a database of information on federally and state-listed plant and animal species and their habitats. This database, supplemented by agency information, served as the basis for the list of protected species and habitats that potentially occur in the study area.

Eight federally listed threatened or endangered aquatic species were either directly observed or identified from the published listings as having the potential to occur in the vicinity of the LNP site (Table 2.4-26). Nine State of Florida listed endangered, threatened, or species of special concern were either observed or identified as having the potential to occur in the vicinity of the LNP site (Table 2.4-26). No federally or state-listed species that are currently proposed for listing were found to have the potential to occur within the LNP site vicinity. Species-specific life history information and any observations recorded during field activities are presented in the subsections that follow.

2.4.2.3.6.1.1 Manatee (*Trichechus manatus*)

The manatee is a federally and state-listed endangered large aquatic mammal found in slow moving rivers, estuaries, salt water bays, and freshwater springs. The species can be found in coastal waters from Texas to North Carolina during summer months but is restricted to Florida during the winter. Within Florida, the manatee may be found in any coastal or estuarine waters but is most common along peninsular Florida. During cold weather months, manatees require warm-water refugia. The current United States population is estimated to be in the vicinity of 2000 individuals but has been difficult to census. The population may be considered stable but has been susceptible to increased boat collisions and rapid decreases in water temperature. (Reference 2.4-015)

Four factors influence manatee choice of habitat: (1) availability of vascular aquatic vegetation, (2) proximity of channels at least 1.5 m deep for migration, (3) winter warm-water refuges, and (4) a source of freshwater (Reference 2.4-017). Sheltered coves are important to manatee for feeding, resting, and calving (Reference 2.4-015).

No critical habitat has been designated for manatees within the vicinity of the LNP site. The nearest critical habitat for manatees occurs in Crystal River and its headwaters, King's Bay, which is approximately 10.1 km (6.25 mi.) southeast of the LNP site. Manatees were observed on several occasions at multiple locations within the LNP site vicinity. On May 8, 2007, three manatees (age indeterminate) were observed immediately downstream of the Inglis Lock. One manatee (age indeterminate) was observed near Station 3 on October 16, 2007. One adult manatee was observed near Station 4 during an aerial survey on November 13, 2007.

Very few manatees have been observed in the CREC intake area during the operation of the CREC, and no manatee injuries or deaths have occurred in the intake area.

2.4.2.3.6.1.2 American Alligator (*Alligator mississippiensis*)

The American alligator is a federally listed threatened species due to its similarity in appearance to the endangered American crocodile. The alligator is common to all of Florida, and is potentially present in large or small freshwater waterways. Alligators occasionally wander into brackish and salt water. The State of Florida lists the American alligator as a Species of Special Concern. (Reference 2.4-015)

The alligator is a large reptile most often observed at the surface of a water body or sunning on river banks or lake shores. They are most active during warmer months, nesting during late spring and hatching during summer. Alligator populations have rebounded substantially since the 1960s and are present on most federal, state, and private conservation lands. (Reference 2.4-015)

American alligators were observed on two occasions within the CFBC. On October 16, 2007, one adult alligator was observed on the bank of the canal near Station 2. On October 19, 2007 one alligator (age indeterminate) was observed near Station 1 and one alligator (age indeterminate) near Station 3 within the canal at nighttime.

2.4.2.3.6.1.3 Loggerhead Sea Turtle (*Caretta caretta*)

The nearby CREC has conducted a sea turtle monitoing and rescue program for turtles entering the facility's intake forebay. Those turtles impinged on the rotating screens or collected in the forebay between the trash rack bar screens and the rotating screens are collected and either (1) returned live to the nearby Crystal River Bay; (2) delivered to the Clearwater Marine Lab, if injured, for rehabilitation and eventual release; or (3) necropcies are conducted, if a dead turtle is collected, to determine the likely cause of mortality. The program has been operational since 1999, and annual summary reports are delivered to the State. Since 1999, 151 juvenile and sub-adult turtles have been collected and processed, 137 live turtles were returned to the estuary, 22 non-plant-related dead turtles were necropsied, and six intake-caused mortalities were recorded. Necropsies revealed that the major causes of mortalities were boat strikes and disease. Only six mortalities appeared to be directly related to screen impingement. Of the total 151 turtles, 91 (60 percent) were Kemp's Ridley, 48 (32 percent) were green turtles, and 11 (7 percent) were loggerhead turtles. One small hawksbill turtle was collected.

The loggerhead sea turtle is a federally and state-listed threatened species. As noted above, 11 loggerhead turtles were collected in the CREC intake forebay. No loggerhead turtles were observed or collected during the October 2007 ecological sampling in the CFBC. Loggerhead turtles are found circumglobally inhabiting the continental shelf, bays, lagoons, and estuaries in temperate, subtropical and tropical waters of the Atlantic, Pacific, and Indian Oceans. (Reference 2.4-035)

Threats to the loggerhead sea turtle include loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; disease; and incidental take from channel dredging and commercial trawling, longline, and gill net fisheries. The extensive incidental take of juvenile loggerheads in the eastern Atlantic by longline fishing vessels from several countries is of particular concern. (Reference 2.4-035)

In the United States, nesting occurs from Texas to Virginia, but the major nesting concentrations are found in Florida, Georgia, South Carolina, and North Carolina (Reference 2.4-035). Adults nest on coastal sand beaches above the tidal inundation. There are no confirmed nesting areas within the vicinity of the LNP site as beach and dune habitats above tidal inundation are absent. Hatchlings utilize offshore floating sargasum mats and juveniles occupy coastal bays, inlets, and lagoons. Loggerhead sea turtles are present in Florida year-round. Nesting occurs spring through late summer and hatchlings emerge from July through November. (Reference 2.4-015)

2.4.2.3.6.1.4 Green Sea Turtle (*Chelonia mydas*)

The green sea turtle is a federally and state-listed endangered species for the breeding colony populations in Florida and on the Pacific Coast of Mexico (Reference 2.4-036). Green sea turtles are found in tropical and subtropical marine waters worldwide but are primarily restricted to Florida in the United States. In Florida, they are found in coastal waters. (Reference 2.4-015) As previously noted, 48 green turtles were collected in the CREC intake forebay. No green turtles were observed or collected during the October 2007 ecological sampling in the CFBC.

The green turtle generally occupies three habitat types: high energy oceanic beaches, convergence zones in the pelagic habitat, and benthic feeding grounds in relatively shallow protected waters. Females deposit eggs in high-energy beaches, usually on islands where a nest cavity can be dug. After hatchlings leave the beach, they move into convergence zones in the open ocean. The green turtle is herbivorous and forages primarily on seagrasses. Feeding grounds are most commonly seagrass or algae beds, but smaller individuals may be found over coral reefs, worm reefs, and rocky bottoms. (Reference 2.4-036)

A number of threats exist to the green sea turtle in the nesting and marine environments. They include beach erosion and armoring; artificial lighting, beach development and transportation; pollution; trawl, purse seine, hook and line, gill net, pound net, longline, and trap fisheries; entanglement in debris; ingestion of marine debris; and poaching. (Reference 2.4-036)

The green sea turtle nests on coastal sand beaches above tidal inundation. Nesting occurs from spring through late summer and hatchlings emerge between August and November. Nesting occurs most commonly along the Atlantic coast, particularly between Volusia and Miami-Dade County and in the Florida Keys. The Gulf coast of Citrus and Levy counties, immediately adjacent to the LNP site, are known to be important to young green turtles although no nesting sites within either of the counties has been confirmed. (Reference 2.4-015)

2.4.2.3.6.1.5 Leatherback Sea Turtle (*Dermochelys coriacea*)

The leatherback sea turtle is a federally and state-listed endangered species. The leatherback is the largest of the living sea turtles and reaches weights up to 1300 lb. (Reference 2.4-015). Leatherbacks are highly migratory and nest on shores of the Atlantic, Pacific, and Indian Oceans. Non-breeding animals have been recorded as far north as the British Isles and the maritime Provinces of Canada, and as far south as Argentina and the Cape of Good Hope. (Reference 2.4-037) Leatherbacks can be found along the entire coast of Florida year-round. Adults concentrate from Nassau to Brevard counties between fall and early spring.

The leatherback turtle population is considered to be in severe decline worldwide (Reference 2.4-015). Loss of habitat, incidental catch in commercial and recreational fisheries, and harvesting of eggs and flesh are the primary threats to the recovery of the leatherback. Artificial lighting, shoreline management activities including raking and nourishment (in which beaches are built up by the addition of sand), and human disturbance are also factors adversely affecting leatherback recovery. (Reference 2.4-038)

The diet of leatherbacks consists mainly of soft-bodied animals including pelagic medusae (jellyfish), siphonophores, and salpae (Reference 2.4-038). Leatherbacks are rarely seen in coastal waters. Nesting takes place during early spring and continues into early summer. Hatchlings emerge during late spring and summer. Approximately half of the known Florida nests are found in Palm Beach County. No confirmed nesting sites have been reported along the west coast of Florida except in the panhandle. (Reference 2.4-015)

2.4.2.3.6.1.6 Hawksbill Sea Turtle (*Eretmochelys imbricata*)

The hawksbill sea turtle is a federally and state-listed endangered species. Hawksbill sea turtles are found in tropical and subtropical marine waters worldwide. In the United States, they are found primarily in southern Florida where they occur year-round. Populations are concentrated in peninsular southeastern Florida and the Florida Keys. Hawksbill sea turtles frequent coral reefs, keys and mangrove habitats. Worldwide populations of hawksbill sea turtles have decreased substantially from centuries of harvest, pollution, and reef degradation. (Reference 2.4-015) As previously noted, only one hawsbill turtle was collected in the CREC intake forebay. No hawksbill turtles were observed or collected during the October 2007 ecological sampling in the CFBC.

Hawksbill sea turtles nest on coastal sand beaches. Nesting occurs late spring through fall and hatchlings emerge late summer and fall. Nests have been recorded on the east coast of Florida from Volusia County to the Marquesas. No nesting sites for the Hawksbill sea turtle have been reported along the west coast of Florida or within the vicinity of the LNP site. (Reference 2.4-015)

2.4.2.3.6.1.7 Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)

The Kemp's Ridley sea turtle is a federally and state-listed endangered species. The range of the Kemp's Ridley includes the Gulf coasts of Mexico and the United States, and the Atlantic coast of North America as far north as Nova Scotia and Newfoundland (Reference 2.4-039). Some immature turtles are known to migrate as far north as New England. In Florida, the Kemp's Ridley is found in coastal waters year-round throughout the state but is considered rare off the southeastern coast. The entire Florida Gulf coast is considered important habitat for the growth of young turtles of this species. The turtles typically inhabit marine coastal waters with sand or mud bottoms. (Reference 2.4-015) As previously noted, 91 Kemp's Ridley turtles were collected in the CREC intake forebay. No Kemp's Ridley turtles were observed or collected during the October 2007 ecological sampling in the CFBC.

The population has declined historically from entrapment in commercial shrimp nets. The juvenile population that uses Florida for feeding and developmental habitat is susceptible to pollution and coastal development. (Reference 2.4-015)

The nesting range of the Kemp's Ridley is restrictive and occurs primarily on the coastal beaches of the Mexican states of Tamaulipas and Veracruz. A small amount of nesting occurs at Padre Island National Seashore, Texas (Reference 2.4-039). Historically this species did not nest in Florida but some nests have been recorded from conservation efforts. Nests are typically on coastal sandy beaches. (Reference 2.4-015)

Adult Kemp's Ridley turtles are carnivorous benthic feeders favoring portunid crabs (Reference 2.4-038). Eggs and hatchlings are subject to a wide variety of predators including coyotes, ghost crabs, vultures, caracaras, hawks, bony fish, sharks, and humans whereas juvenile and adult Kemp's Ridley turtles are vulnerable only to large predators such as sharks, other predatory fish. (Reference 2.4-040)

No critical habitat has been designated for any of the sea turtles described above in the vicinity of the LNP site. Several observations of sea turtles were recorded during field activities within the vicinity of the LNP site. Sea turtles were observed exclusively near Station 7 and very briefly during each encounter, making species identification difficult. Sea turtles were observed approximately five times between October and December 2007.

2.4.2.3.6.1.8 Suwannee Cooter (Pseudemys concinna suwanniensis)

The Suwannee cooter is listed as a Florida Species of Special Concern and is found almost exclusively in Florida and along the Suwannee River system into Southern Georgia. The Suwannee cooter is a subspecies of river cooter whose other members inhabit much of the southeastern United States. In Florida, the species is found year-round in coastal rivers between the Alafia River north and westward to the Ochlockonee River near Tallahassee. In this range, the Suwannee cooter prefers rivers and large streams where it feeds on aquatic vegetation, only occasionally entering estuarine habitats. The species is typically seen basking on logs or floating vegetation mats on sunny days. Nests areas are typically on high banks and above the river floodplain. (Reference 2.4-015)

Populations of the Suwannee cooter have declined but the species is still fairly common in some rivers. Pollution entering water bodies from upland sources is a potential threat to rivers and Suwannee cooter populations. (Reference 2.4-015) No Suwannee cooters were observed within the vicinity of the LNP site.

2.4.2.3.6.1.9 Gulf Sturgeon (Acipenser oxyrinchus desotoi)

The Gulf sturgeon is a federally listed as threatened and is listed as a Florida Species of Special Concern. This large anadromous fish is found within the Gulf of Mexico and associated drainages west to the Mississippi River Basin. In Florida, the reproducing populations are found in the Gulf of Mexico and in river systems from the panhandle eastward to the Suwannee River. Non-reproducing individuals have been observed as far south as Florida Bay during cold years. The Gulf sturgeon spends most of the year in rivers where it spawns, migrating out into the Gulf during the winter. Spawning typically takes place between February and April in rivers with limestone outcrops. (Reference 2.4-015)

Populations of the Gulf sturgeon has declined due to damming of rivers connected to the Gulf of Mexico greatly reducing spawning habitat. Only a few major Florida river systems still provide quality habitat for Gulf sturgeon spawning including the Suwannee, Choctawhatchee, and Yellow Rivers. (Reference 2.4-015) Critical habitat has been designated by the USFWS approximately 48.3 km (30 mi.) northwest of the LNP site, immediately offshore of the Suwannee River and within the Suwannee River and some of its major tributaries. No Gulf sturgeon were observed or collected during field activities at the LNP site.

2.4.2.3.6.1.10 Smalltooth Sawfish (*Pristis pectinata*)

The smalltooth sawfish is a federally listed endangered species. Sawfish belong to the same order as sharks and rays and can be identified by a distinctive long, narrow flattened snout with a series of transverse teeth along either edge (References 2.4-041 and 2.4-042). The smalltooth sawfish occurs in tropical and warm-temperate waters of the western Atlantic from New York to Florida, the Gulf of Mexico, the Caribbean, and south to Brazil. The smalltooth sawfish is one of two species of sawfish that occur in the western Atlantic but is the only species typically found along the Florida coast. In Florida, the species can be found year-round in coastal waters including bays, estuaries, and freshwater habitats with saltwater connections. (Reference 2.4-042) The smalltooth sawfish was historically found in shallow water throughout the northern Gulf of Mexico, especially near river mouths and in large bays and was common in peninsular Florida (Reference 2.4-043).

The possible reason for the decline of the smalltooth sawfish population has been by catch in various commercial and recreational fisheries. Little is known about the biology and life history of the smalltooth sawfish in Florida. Smalltooth sawfish are ovoviviparous and young are born measuring approximately 1.5 to 2.5 ft. in length. Young are likely born in late spring through summer in southern Florida (Reference 2.4-041). Juvenile smalltooth sawfish generally inhabit the shallow coastal waters of bays, banks, estuaries, and river mouths, particularly shallow mud banks and mangrove habitats. Larger sawfish can be found in the same habitat, but are also found offshore at depths from 70 to 122 m (230 to 400 ft.). (References 2.4-044 and 2.4-045) Juveniles have been reported to inhabit shallow mud or sand banks less than 0.3-m (1-ft. deep and within red mangrove prop roots to avoid predation (Reference 2.4-045). National Marine Fisheries Service stated in the smalltooth sawfish listing document that critical habitat for the species was not determinable at the time of listing and continued research will be necessary to identify sawfish nursery and breeding areas (Reference 2.4-045).

Sawfish feed primarily on locally abundant small schooling fish, such as mullets and members of the herring family and also subsist to some extent on crustacean and other benthic inhabitants (Reference 2.4-045). Smalltooth sawfish attack schools of small fishes by swinging its rostrum side-to-side, slashing sideways with its saw and then eating the wounded prey (Reference 2.4-046). No smalltooth sawfish were observed or collected during field activities within the vicinity of the LNP site.

2.4.2.3.6.2 Commercial and Recreational Fisheries

Local commercial and recreational fish and invertebrate data were obtained to assess important species of value near the CFBC. Information on commercially valuable fish and invertebrate species were gathered from the FFWCC Marine Fisheries Information System Annual Landings Summary online database (Reference 2.4-047). Records for Citrus and Levy counties were examined and summaries of the most abundant (representing a significant portion of the total harvest) species caught are presented below. The period of record used for average harvest calculations was 1994 through 2007.

The most commercially important finfish species based on average pounds per year landed from Citrus and Levy counties were black mullet, red grouper, crevalle jack, ladyfish, black grouper, gag grouper, grunts, and porgies (Table 2.4-27). Average pounds landed per year in Citrus County exceed those from Levy County for all species listed except for gag grouper (Table 2.4-27).

The most commercially important invertebrate species based on average pounds per year landed from Citrus and Levy counties were blue hard crab, oysters, and stone crab (claws only). Average pounds landed per year in Citrus County exceed those from Levy County for blue hard crab. Blue hard crab landings exceeded the most abundant finfish landings for both Citrus and Levy counties (Table 2.4-28). Descriptions of abundant invertebrate species are provided at the end of the section. Species specific life history information is presented below.

Recreationally valuable species information was available from the FFWCC Florida Marine Research Institute. Species considered important to recreational fisheries in Citrus and Levy Counties include spotted seatrout, cobia, black mullet (striped mullet), snook, red drum, flounder, and sheepshead. (Reference 2.4-048) Species-specific life history information is presented below.

2.4.2.3.6.2.1 Black Mullet (*Mugil cephalus*)

The black mullet (or striped mullet) are found in Florida along all coasts and both near- and offshore. The black mullet is one of the most common finfish and supports a valuable fishery on the Gulf coast of Florida. The species is a primary consumer feeding on planktonic organisms and both living and dead plant material providing an important pathway of energy flow in estuarine systems. Spawning takes place offshore during the fall. Larvae and juveniles occupy inshore habitats while adults can be found both inshore and offshore. Black mullet can tolerate a wide range of salinities and temperatures. (Reference 2.4-049)

2.4.2.3.6.2.2 Red Grouper (*Epinephelus morio*)

The red grouper is found in the western Atlantic from New England to Brazil and throughout the Gulf of Mexico. Grouper are considered one of the most valuable commercial fisheries in Florida. (Reference 2.4-050) Spawning takes place between April and May in the eastern Gulf of Mexico. Juveniles inhabit seagrass beds and inshore reefs. Adults are found in water depths between 50 and 100 m (164 and 328 ft.) over soft bottoms. Food sources include invertebrates and ray-finned fishes. (Reference 2.4-051)

2.4.2.3.6.2.3 Crevalle Jack (*Caranx hippos*)

The crevalle jack is found in the northern and southern Gulf of Mexico along the continental shelf. Juveniles are typically pelagic and congregate around rafts of *Sargassum* weed. Adults can be found in offshore waters. Food sources include shrimps, other invertebrates, and ray-finned fishes. (Reference 2.4-051)

2.4.2.3.6.3 Ladyfish (*Elops saurus*)

The ladyfish is a common species found in the Gulf of Mexico (Reference 2.4-042). Spawning takes place offshore throughout the year with larvae peaking during the fall (Reference 2.4-052). Food sources include crustaceans and small fishes. (Reference 2.4-042).

2.4.2.3.6.3.1 Black Grouper (*Mycteroperca bonaci*)

The black grouper is typically found in southern Gulf of Mexico near the Florida Keys and is somewhat rare in the eastern Gulf of Mexico. Grouper are considered one of the most valuable commercial fisheries in Florida. Juveniles occupy coastal lagoons and mangrove habitats. Adults are found among rocky bottoms, rock walls, and coral reefs typically in depths greater than 18.3-m (60-ft). (Reference 2.4-050) Food sources include crustaceans and ray-finned fishes (Reference 2.4-051).

2.4.2.3.6.3.2 Gag Grouper (*Mycteroperca microlepis*)

The gag grouper is found throughout the Gulf of Mexico. Grouper are considered one of the most valuable commercial fisheries in Florida. (Reference 2.4-050) Juveniles occupy estuaries and seagrass beds. Adults are found offshore in depths between 39.6 and 152.4 m (130 and 500 ft.) among rocky outcrops. Food sources include squid, shrimp, crab, and ray-finned fishes. (Reference 2.4-051)

2.4.2.3.6.3.3 Grunts (Family *Haemulidae*)

Grunts are a family found in coastal waters, estuaries, and some freshwater habitats. In the Gulf of Mexico grunts are comprised of 18 species and five genera. (Reference 2.4-051) Species found off of Citrus and Levy Counties include pigfish (*Orthopristis chysoptera*), white grunt (*Haemulon plumierii*), and tomtate (*Haemulon aurolineatum*). Grunts typically school around patches of reef during the day, feeding at night. (Reference 2.4-051)

2.4.2.3.6.3.4 Porgies (Family *Sparidae*)

Porgies are a family found in coastal waters, estuaries, and some freshwater habitats. In the Gulf of Mexico porgies are comprised of 16 species in 6 genera. (Reference 2.4-051) Species found off of Citrus and Levy Counties include sheepshead and pinfish. Adults typically occupy rock outcrops, coral reefs, and sea grass beds depending on the species. The eggs and larvae of porgies are pelagic. Food sources include benthic invertebrates, mollusks, crustaceans, and echinoderms. (Reference 2.4-051)

2.4.2.3.6.3.5 Spotted Seatrout (*Cynoscion nebulosus*)

Spotted sea trout are found throughout the Gulf of Mexico in shallow nearshore and estuarine waters. Spotted seatrout inhabit sea grass beds and can tolerate salinity ranges between 0 and 37 ppt. Spawning takes places in estuaries throughout the summer (Reference 2.4-053) and juveniles rely on grass flats for refugia and food sources (Reference 2.4-054). Food sources include crustaceans and ray-finned fishes (Reference 2.4-051). Spotted seatrout are considered a valuable recreational and commercial fishery in Florida (Reference 2.4-053).

2.4.2.3.6.3.6 Cobia (*Rachycentron canadum*)

Cobia are found throughout the Gulf of Mexico. Cobia are typically pelagic but can be found around natural and man-made structures including coral reefs, rocky outcrops, buoys, and channel markers. Food sources include crabs, squid, and ray-finned fishes. (Reference 2.4-051)

2.4.2.3.6.3.7 Common Snook (*Centropomus undecimalis*)

Snook are found in the southern Gulf of Mexico (Reference 2.4-051). The common snook are the most abundant of the four snook species found in Florida and have the widest distribution throughout the state. The three other species, the sword-spined snook, tarpon snook, and fat snook are uncommon along the coast of Citrus and Levy counties. Snook are tolerant to a range of salinities but are sensitive to rapid changes in temperature. Snook seek winter refuge in rivers, springs, and power plant thermal discharges. (Reference 2.4-055) They spawn in the mouths of estuaries and inlets throughout the summer (Reference 2.4-051) and return to the same spawning sites each year (Reference 2.4-055). Larvae are planktonic and juveniles occupy the upper reaches of estuaries for refugia (Reference 2.4-055). Food sources include crustaceans and ray-finned fishes (Reference 2.4-051). Snook are a prohibited species in regards to commercial fishing in Florida and can only be harvested recreationally (Reference 2.4-051).

2.4.2.3.6.3.8 Red Drum (*Sciaenops ocellata*)

Red drum are found throughout the Gulf of Mexico. They inhabit coastal waters most estuary systems in Florida. Red drum can tolerate a wide range of salinities and temperatures and can be found offshore and in freshwater riverine systems. Spawning takes place at the mouth estuaries and passes from August through mid November. Red drum have very high fecundity producing millions of eggs during a spawning season. Larvae feed on plankton and grow best at higher salinities. Juveniles inhabit seagrass beds for refugia and food sources and spread further out into estuaries as they mature. Adults can be found most often in groups offshore with other sexual mature red drum. (Reference 2.4-056) Food sources include copepods (Reference 2.4-056), crabs, mollusks, and ray-finned fishes (Reference 2.4-051). Red drum is one of the most popular recreationally harvest fish in Florida. (Reference 2.4-056)

2.4.2.3.6.3.9 Flounder (*Paralichthys sp.*)

Flounder are a group of three species common in Florida including the southern flounder, the gulf flounder, and the summer flounder (Reference 2.4-057). The southern flounder and gulf flounder are commonly found inshore and offshore of Citrus and Levy counties). However the summer flounder is found only along the Atlantic coast of northeast Florida. Southern and Gulf flounder commonly inhabit estuaries and coastal bays although they prefer different substrate types. Southern flounder prefer muddy bottoms while gulf flounder prefer sandy bottoms. Flounder spawning takes place offshore during the fall and winter. Eggs and larvae are carried inshore by currents to estuaries where juveniles mature to adults. Adults remain in shallow inshore waters until they are mature enough to spawn and migrate offshore. Adults migrate from inshore to offshore seasonal for spawning. (Reference 2.4-057) Juvenile food sources are typically zooplankton and adult food sources include shrimp, crab, and ray-finned fishes (Reference 2.4-051).

Southern flounder are tolerant of a range of salinities and are frequently found in rivers with access to the ocean. Flounder use seasonal temperature changes to determine migration and spawning times. (Reference 2.4-057) Flounder as a group is an important commercial and recreational fishery in Florida (Reference 2.4-048)

2.4.2.3.6.3.10 Blue Crab (*Callinectes sapidus*)

Blue crabs are an abundant invertebrate found along all Florida coasts to a depth of approximately 30.5 m (100 ft). Blue crabs inhabit bays and estuaries with muddy bottoms. Males are abundant in upper estuarine habitats near the mouths of rivers while females migrate between the estuary and offshore waters to spawn. Spawning takes place throughout the spring, summer, and fall. Larvae develop offshore and in the lower estuary where salinities are more favorable becoming benthic as they mature and enter the estuary. Once in the estuarine habitat, juvenile and adult blue crabs tolerate a wide range of salinities. (Reference 2.4-058)

Blue crabs are import components of coastal ecosystems serving as energy pathways from detritus and food sources for fish, birds, and mammals (Reference 2.4-059). They also provide valuable commercial and recreational fisheries in Florida (Reference 2.4-058).

2.4.2.3.6.3.11 Oysters (*Crassostrea virginica*)

The American oyster is abundant in the Gulf of Mexico from Florida to Texas, where they inhabit estuaries. Oysters form reef communities, providing habitat for a large number of estuarine fish and invertebrate species. (Reference 2.4-060)

Oyster spawning occurs from April to October in the Gulf of Mexico, with females spawning several times in one season. Larvae are planktonic after hatching for several weeks until they mature into juveniles and begin to attach themselves to bottom substrates. Juvenile oysters typically attach themselves to other shells or stones within the subtidal zone. Adults are non-motile and remain attached to these substrates throughout their lives. (Reference 2.4-060)

Oysters are filter feeders, and their food sources are typically flagellates. Oysters can filter a volume of water approximately 1500 times their own volume per hour. They can tolerate a wide range of salinities, temperatures, and concentrations of suspended solids. (Reference 2.4-060) The American oyster supports a valuable commercial fishery in the United States, where they are also the dominant mariculture fishery. (Reference 2.4-060)

2.4.2.3.6.3.12 Stone Crab (*Menippe mercenaria*)

Stone crabs can be found throughout the Gulf of Mexico. Females occupy grass flats throughout the year migrating to deeper waters when water temperatures increase. Males typically inhabit deeper waters but move onto shallower grass flats to mate. Spawning can occur year round in Florida but is greatest during warmer months. Larvae are planktonic and feed on zooplankton. Stone crabs settle to bottom substrates during the post larval phase where they mature to juveniles and adults. Juveniles inhabit deep channels, sea grass beds, oyster reefs, sponges, rocks, and jetties. Adult stone crabs excavate burrows in sea grass beds. (Reference 2.4-061) Adults feed primarily on mollusks and are the dominant predator of the American oyster (References 2.4-060 and 2.4-061).

Stone crabs can tolerate a range of temperatures and salinities. Larval stone crabs are sensitive to low salinities but are more tolerant to salinity changes as adults. Post-larval stone crabs are highly sensitive to poor water quality conditions. (Reference 2.4-061)

Stone crabs support a valuable commercial fishery in Florida. Only the larger crusher claw is harvested and the live stone crab is returned to the water after capture. (Reference 2.4-061)

2.4.2.3.6.4 Key Indicator Organisms

Key indicator organisms are defined as organisms that are expected to gauge changes in the distribution and abundance of species populations that are particularly vulnerable to impacts from plant construction or operation. To be considered a key indicator organism, each species had to be either an ecologically, recreationally, or commercially important species and observed in the biological data surveys. The selection of key indicator organisms was based on the macroinvertebrate and fisheries data collected and the Selected Important Organisms (SIOs) in the CREC 316 Studies. Key indicator organisms and the rationale for selection are presented in Table 2.4-29.

2.4.2.3.6.4.1 Pink Shrimp (*Penaeus duorarum*)

Pink shrimp are the most abundant shrimp in Florida and are found along the Atlantic and Gulf coasts. They are found in the greatest abundance along the Gulf coast and are common in shallow bays, estuaries, and shallower offshore waters. The pink shrimp commercial fishery is one of the largest in Florida, and the Big Bend Grounds occurs offshore of Citrus and Levy counties. The species is a predacious consumer feeding on range of food sources throughout its life history. Food sources include microplankton, algae, polychaetes, and crustaceans. Pink shrimp are prey for other important finfish found in the vicinity of the LNP site including snook, spotted seatrout, and grouper. (Reference 2.4-062)

Spawning takes place throughout the year but peaks when bottom water temperatures reach their maximum. Adults migrate from shallow coastal waters to deeper offshore waters to spawn. Larval abundance peaks in waters above 18.9°C (66°F). Pink shrimp are transported to estuaries and coastal bays by currents and tides. Juveniles and adults utilize soft substrates and vegetation in estuaries for habitat. (Reference 2.4-062)

Pink shrimp can tolerate a range of temperatures 10 to 35.5°C (50 to 95.9°F) but prefer moderate to high salinities (Reference 2.4-062)

2.4.2.3.6.4.2 Brief Squid (*Lolliguncula brevis*)

The brief squid is a common invertebrate species found in estuaries throughout Florida and the Gulf of Mexico (Reference 2.4-063). Little is known about the life histories of the brief squid but the species is considered a good indicator of the health of marine environments due to its abundance. Eggs are attached to solid objects such as oyster and clam shells in estuaries. Juvenile squid are planktonic and become nektonic as adults. Food sources for juvenile and adult squid include crustaceans, small fish, and other squid. Brief squid are themselves food sources for many carnivorous fish found in estuarine environments. (Reference 2.4-064)

Most squid are found in the lower portions of estuaries in moderate to high salinities. Brief squid however are osmoconformers and have the ability to change the salinity within their body to match the surrounding water. This enables the brief squid to tolerate a wider range of salinities although it is most common at higher salinities. (Reference 2.4-064)

2.4.2.3.6.4.3 Pinfish (*Lagodon rhomboides*)

The pinfish is an estuarine dependent species often found around vegetated bottoms and jetties. In the coastal waters of Florida spawning occurs offshore primarily in February and March. Larval pinfish migrate to shallow estuaries for summer growth, but are known to seek deeper cooler water when surface temperatures exceed 32°C (89.6°F). (Reference 2.4-065)

Pinfish diet changes with age, and overall includes amphipods, mysids, shrimp, and sometimes vegetation. High abundance in coastal waters likely affects aquatic flora and fauna. They are a dominant fish in seagrass habitat where amphipods are the primary prey, as well as plant material, and they are an important forage fish to larger fish species. (Reference 2.4-065)

In estuaries, pinfish tolerate a range of 10 to 35°C (50 to 95°F). In the Gulf of Mexico pinfish live in water with salinity ranging from 0 to 37.5 ppt. (Reference 2.4-065)

2.4.2.3.6.4.4 Silver perch (*Bairdiella chrysoura*)

The silver perch is abundant in coastal waters of the Atlantic and Gulf of Mexico. It is associated with sandy and muddy bottom areas. In the summer it utilizes estuaries and occasionally freshwater as nursery grounds. Food consists of crustaceans, polychaetes, and occasionally small ray-finned fishes. (Reference 2.4-066). Spawning occurs in shallow portions of bays and other inshore areas between May and September (Reference 2.4-067)

2.4.2.3.6.4.5 Spotfin mojarra (*Eucinostomus argenteus*)

The spotfin mojarra occurs throughout the Gulf of Mexico (Reference 2.4-068). It occurs in shallow (less than 12 m [39.3 ft.]) in depth) areas near shore, and soft bottom areas of bays. The diet consists of a variety of benthic organisms, including amphipods, copepods, isopods, polychaetes, and various mollusks. The spotfin mojarra occurs in salinities ranging from fresh to marine. (Reference 2.4-068)

2.4.2.3.6.4.6 Spot (*Leiostomus xanthurus*)

Spot is one of the most common fish in estuarine and coastal waters of the Atlantic (including the Gulf of Mexico), and is both recreationally and commercially important. It is typically found in association with sandy or muddy bottoms. Juveniles use estuaries as nursery grounds year-round, while adults migrate offshore to spawn. (Reference 2.4-069) Spawning in the Gulf of Mexico peaks in January and February (Reference 2.4-070).

Spot larvae are plankton feeders (e.g., ciliates, invertebrate eggs, copepod nauplii), while juveniles feed on infaunal and epibenthic invertebrates including polychaetes, amphipods, cumaceans, copepods, mysids, and gastropods. (Reference 2.4-070)

Spot are found in a wide range of physiochemical conditions. Larvae are more tolerant of temperature extremes than adults. Larvae tolerate temperatures as low as 5°C, (41°F) and as high as 35°C (95°F), while adult mortality has been observed at 5°C (41°F) to 10°C (50°F). (Reference 2.4-070) Spot have been successfully cultured at salinities ranging from 30 to 35 ppt, and may avoid areas of rapidly changing salinity (e.g., 10 ppt/hour). (Reference 2.4-069)

2.4.2.3.6.4.7 Bay Anchovy (*Anchoa mitchilli*)

The bay anchovy is an inshore schooling species, but is also found in estuaries and brackish-water bays (Reference 2.4-042). It is one of the most abundant estuarine fish in the northern Gulf of Mexico. Its diet consists largely of zooplankton, including gastropods, copepods, isopods, mysid shrimps, and small fishes. Spawning takes place in water typically less than 20 m (65.6 ft.) deep, and nearly year-round. In Tampa Bay, Florida, spawning began after water temperatures reached 20°C (68°F), with spawning occurring from early spring through early summer, with egg densities peaking from April through July. Bay anchovies are an important forage fish species for aquatic organisms because of their small size and large numbers, and are heavily fed upon by sea birds. (Reference 2.4-071)

The bay anchovy is often the dominant fish species in areas of environmental stress. For example, this species was the second most numerous in a power plant thermal discharge area in Galveston Bay, Texas. This species has been collected in water with temperature ranging from 4.5 to 39.8°C (40.1 to 103.6°F. (Reference 2.4-071)

The bay anchovy is euryhaline, found in coastal water ranging from freshwater to 45 ppt, but is more frequently collected in low salinity water (Reference 2.4-071).

2.4.2.3.6.5 Important Habitats

Important habitats within the vicinity of and near the LNP site with the potential to be affected by cooling water intake and blowdown discharges were investigated. These habitats included federal and state-listed areas, wildlife sanctuaries, refuges, parks, preserves, and areas proposed for protection.

2.4.2.3.6.5.1 Critical Habitat

Critical habitat is designated by USFWS and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries for certain federally listed threatened and endangered species. Federally listed threatened and endangered species that have the potential to occur with the vicinity of the

LNP site were listed above. No federally listed critical habitat occurs within the vicinity of the LNP site or in close proximity to the LNP site.

Two areas of critical habitat occur outside the LNP site. Critical habitat for the West Indian manatee occurs approximately 10.1 km (6.25 mi.) southeast in Crystal River and its headwaters, King's Bay. Critical habitat for the gulf sturgeon occurs approximately 48.3 km (30 mi.) northwest in the Suwannee Sound, the Suwannee River, and some of its major tributaries.

2.4.2.3.6.5.2 Essential Fish Habitat

The LNP blowdown discharge will be located in waters that are defined as essential fish habitat (EFH) as designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). EFH identification for a managed species is based on the biological requirements and the distribution of the species. The LNP site is located in Ecoregion 2 (Tarpon Springs to Pensacola Bay, Florida) as designated by the Gulf of Mexico Fisheries Management Council (GMFMC) in 2004 (Reference 2.4-072). Federally managed species, life stages, and categories of EFH identified in Ecoregion 2 are presented in Table 2.4-30.

It is unlikely that much of the CFBC will be considered as EFH because the constructed shoreline is steep and lined with rip-rap and is devoid of sea grass beds and other submerged or emergent vegetation. In particular, the proposed LNP intake location is near the Inglis Lock, and the rip-rapped, steep slopes are the dominant feature of the habitat. It is possible that the very lower portion of the CFBC could be included in the Ecoregion 2 waters, but these waters are unlikely to be adversely affected by the LNP intake because they are outside of the calculated 8-km (5-mi.) zone of influence.

2.4.2.3.6.5.3 State-Managed Lands

Portions of the LNP site occur within two greenways; the Florida Springs Coastal Greenway and the CFG in Citrus County, Florida (Reference 2.4-013). The Florida Springs Coastal Greenway is managed by the FDEP Division of Recreation and Parks and the Division of Forestry. Coastal habitats within this greenway are tidal marshes located near the mouth of the CFBC. Recreational activities are predominantly fishing. (Reference 2.4-013)

The CFG is managed by the FDEP Office of Greenways and Trails. The CFG is a 177-km (110-mi.) corridor from the St. Johns River to the Gulf of Mexico in central Florida, encompassing all of the former CFBC. Recreational activities include hiking, biking, fishing, and horseback riding. (Reference 2.4-073)

Other state-managed lands with aquatic and marine uses that occur outside of the LNP site include:

- Big Bend Seagrasses Aquatic Preserve. This preserve is located in Waccasassa Bay approximately 6.4 km (4 mi.) west of the LNP site (Reference 2.4-074).

- Waccasassa Bay Preserve State Park. This park is located along the Gulf Coast between Cedar Key and Yankeetown, approximately 3.2 km (2 mi.) north (Reference 2.4-075).

- Crystal River Archaeological State Park. The park is located along the Crystal River approximately 16.1 km (10 mi.) south (Reference 2.4-075).

- Crystal River Preserve State Park. The park is located along the coast between the Crystal River and the Homosassa River (Reference 2.4-075).

- Etonia/Cross Florida Greenway. This greenway is the westward extension of Florida Springs Coastal Greenway including Lake Rousseau and upper reaches of the Withlacoochee River (Reference 2.4-013).

2.4.2.4 Biological and Anthropogenic Stressors

2.4.2.4.1 Invasive Species

The CFBC was evaluated for evidence of aquatic invasive species. Water bodies within the Withlacoochee River watershed have a well-documented history of aquatic plant problems from the introduction and rapid expansion of the invasive exotic species water hyacinth (*Eichhornia crassipes*), water lettuce (*Pistia stratiotes*) and hydrilla (*Hydrilla verticillata*).

The water hyacinth is a floating plant that has inflated petioles and forms large floating mats that can completely cover lakes, ponds, and streams. Water hyacinth is a prolific tropical weed now naturalized in waterways throughout the state and the frost-free coastal areas of the southeastern United States. Water lettuce is a floating perennial which can form dense mats, covering water bodies, impeding human water activities, degrading water quality, and reducing biological diversity. Hydrilla is an invasive submersed freshwater perennial herb which can form dense stands in water bodies from bottom to water surface. Their long, slender stems rapidly branch and spread through and across the water, outcompeting native submersed plants, hindering water flow and human aquatic activities, and adversely affecting water chemistry and fish growth. (Reference 2.4-076).

Water hyacinth and water lettuce have been treated on two portions of the Withlacoochee River from July through August 2006. Treatment involved the spot application of the aquatic herbicide Reward to scattered infestations. (Reference 2.4-077) Colonization is not anticipated in the vicinity of the intake structure, since these three invasive plants are freshwater species and are not expected to inhabit the CFBC near the Inglis Lock due to the salinity variation.

The Green Porcelain crab (*Petrolisthes armatus*), an invasive species in the Gulf of Mexico, was collected in the shoreline handpicked samples at Station 3. The Green porcelain crab, a South American and Caribbean species, inhabits rocky intertidal and tidal creek oyster bar habitats (Reference 2.4-078). Studies suggest that Green Porcelain crabs are prey for predators of xanthid crabs, important predators of newly settled oysters. These changes in community dynamics alter interaction webs, ultimately impacting oyster populations. (Reference 2.4-079)

2.4.2.4.2 Anthropogenic Stresses

Historic anthropogenic stresses have occurred within the vicinity of the LNP site. Historic anthropogenic stresses include the construction of the Inglis Lock, dam and bypass facilities, the CFBC, and the bisecting and rechanneling of the Withlacoochee River. The Inglis Lock, dam, and bypass facilities were part of the CFBC project and are designed for ocean-going barge traffic (Reference 2.4-033). Dams alter aquatic ecology and river hydrology upstream and downstream, affecting flow and temperature regimes, water clarity, reduce benthic invertebrate richness, and prevent the passage of migratory fish (Reference 2.4-080). Suspected anoxic conditions near the bottom of WQ 0.0 and WQ 1 and presence of hydrogen sulphide in the sediment downstream of Inglis Lock, indicate a highly enriched and likely anaerobic environment. The construction of the CFBC and rechanneling of the Withlacoochee River has impacted the surrounding physical and biological environments. Channelization can affect the environment by draining wetland, cutting off oxbows and meanders, clearing floodplain hardwoods, lowering ground water levels, reducing groundwater recharge from stream flow, and increasing erosion sedimentation, channel maintenance, and downstream flooding. (Reference 2.4-081) Physical uniformity may cause the loss of native species and change the composition of the exotic species (Reference 2.4-080).

2.4.2.4.3 Biofouling

The CFBC was evaluated for evidence of potential species that are capable of blocking or biofouling the cooling water intake system. Potential biofouling species collected during the biological sampling in the vicinity of the proposed intake structure include false dark mussels (*Mytilopsis leucophaeata*) and barnacles (*Chthamalus fragilis*). These two species were considered dominant (i.e., collected in numbers greater than 100) at Station 1.

The false dark mussel is a known biofouling and nuisance organism that causes problems in industrial cooling water systems. Settlement occurs readily in the cooling water conduits and growth can be rapid until it begins to interfere with the operational systems and finally leads to their failure. (Reference 2.4-082)

2.4.2.5 Characterization of the CREC Discharge Area

The preferred alternative for the discharge of blowdown from the LNP is to run dual discharge pipes from the northwest corner of the CFBC mouth to the existing discharge area for the CREC. The CREC contains five electric generating units. Units 1 and 2 are coal fired and Unit 3 is a nuclear fueled electric generating station. These three units utilize once-through condenser cooling and discharge cooling water under National Pollutant Discharge Elimination System (NPDES) Permit No. FL0000159. Units 4 and 5 are coal fired and utilize closed cycle cooling using natural draft cooling towers. The discharge for Units 1 to 3 is used to provide makeup water for Units 4 and 5.

The common discharge canal for all units is located just north of Units 1, 2, and 3 (Figure 2.4-33). The canal extends west northwest for almost 2.6 km (1.6 mi.) to the point of discharge at the shoreline where the canal opens into a bay. The dredged channel continues for another 1.9 km (1.2 mi.) and is bordered to the south by a spoil bank. Water depth in the canal is about 3 m (9.8 ft.). The discharges of the units enter the canal near the eastern end. Each discharge utilizes four circulating water lines which enter an open, concrete discharge chamber. The pipes turn downward, discharging flow into a basin. The discharge exits the chamber over a short weir and mixes immediately with water in the canal. (Reference 2.4-083)

A thermal effluent and intake demonstration (CWA Section 316[a] and 316[b]) study was conducted in the early 1980s in response to conditions of the NPDES discharge permit FL0000159 for CREC Units 1, 2, and 3, to determine the effects of the CREC on the local ecosystem. The 316 studies were completed in 1984. Biological, physical, and chemical oceanographic data were collected in a study area of approximately 25.9 km^2 (10 $mi.^2$). Study components included benthos, entrainment, impingement, fisheries, and physical studies. These data also served as input to hydrodynamic and hydrothermal mathematical models that simulated the station’s thermal discharge under various operating conditions. (Reference 2.4-083) Since the preferred alternative is to discharge the cooling tower blowdown water from the LNP to the CREC discharge canal, the following is a summary of the thermal impacts of the existing station discharge on the surrounding biota from the 316 studies.

The effects of the discharge of heated water on benthic infauna, macrophytes, salt marsh, oyster reefs, and fisheries were assessed. Thermal effects on the benthos varied between organisms but the effects were limited to an area within about 3.5 km of the point of discharge (Table 2.4-31). The results consistently indicated adverse effects due to the thermal discharge in Basin 1, Basin 3, and the southern section of Basin 2 (Figure 2.4-33). Central areas of Basin 2 and the offshore edge of Basin 3 were found to be transitional with organisms showing limited, if any, adverse thermal effects. Fisheries data collected using trawls, seines, creek trawls, and drop nets did not indicate a pattern of adverse effects for any SIO. Generally, fish species seemed to be more abundant outside the warmest portion of the discharge but did occur regularly in outer portions of the thermal plume (Table 2.4-32). (Reference 2.4-083)

The thermal plume simulations representing worst case, full load operation were completed to determine the plume extent over different tidal cycles (Figures 2.4-34, 2.4-35, 2.4-36, 2.4-37, 2.4-38, 2.4-39, 2.4-40, and 2.4-41).

Modeling agreed well with the results of the biological and water quality monitoring. Basin 1, nearest the point of discharge is exposed to the highest delta T's (5-8°C [9-14.4°F]). On ebb or low slack tides, however, the largest volume of the discharge is confined to the dredged channel adjacent to the discharge spoil and exits into Basin 3. The plume at that point tends toward the southwest, but rapidly becomes welt mixed in the relatively shallow water. On flood or high tides, the plume effect in Basin 3 is lacking as the discharge spreads over Basin 1 and extends further north in southern Basin 2. Little variation is seen in the summer or winter cases. (Reference 2.4-083)

2.4.2.5.1 Seagrass Surveys

Mote Marine Laboratory (MML) conducted seagrass surveys at the CREC in 1993, 1994, and 1995 following implementation of helper cooling towers designed to reduce discharge water temperature. The goal was to quantify seagrass presence and recovery. The results of these studies found that (1) several new seagrass beds occurred in formerly barren areas, (2) barren area recruitment was not extensive, (3) seagrass beds expanded in 8 of 15 surveyed beds, and (4) percent seagrass cover decreased in 10 of 15 sites. (Reference 2.4-084) After a review of this survey data it was generally concluded by the Seagrass Technical Advisory Committee that temperature may not be the primary factor affecting seagrass recolonization since there were no dramatic changes following activation of the helper cooling towers. Other factors not measured in the study that could be more critical to seagrass colonization included turbidity, light intensity, and salinity variations.

In 2001 a re-survey of select seagrass sites in Basins 1, 2, and 3 was conducted. The study generally identified an increase in percent cover and bed expansion in most areas surveyed, relative to the 1995 study. The dominant species recorded was *Halodule wrightii*, which is considered a fast growing early colonizer. (Reference 2.4-084)

In late 2007 a seagrass survey was conducted by the CREC in the vicinity of the cooling water discharge using a sonar methodology (Reference 2.4-085). Several methods of data collection were employed, including hydroacoustic transect sampling, point-intercept rake sampling, self-contained underwater breathing apparatus (SCUBA) diver random point surveys, and several underwater video random samples. Each method had unique advantages and limitations, but each contributed to an accurate overall estimation of submerged aquatic vegetation (SAV). The 2007 results indicated a modest decrease in percent cover from the 2001 study, most likely illustrating the variable rates of sea grass colonization. Because the thermal effluent from the CREC was essentially constant during the 2001-2007 period, it does not appear that the thermal plume from the CREC was causal for the percent cover reductions noted between the 2001 and 2007 surveys.

2.4.2.6 Measuring Programs

The recent ecological data presented in this report are the result of an aquatic sampling program implemented in October (Event 1) and December (Event 2), 2007. The purpose of the monitoring program was to evaluate various physical, chemical, and biological characteristics of the CFBC and nearshore Gulf of Mexico waters. Event 1 data are summarized in this report. Event 2 data was provided as supplemental information in response to an NRC request for additional information.

The sampling locations included the following:

- Station 1 (1.6 km [0.5 mi.] west of Inglis Lock, in the CFBC).
- Station 2 (11.5 km [3.5 mi.] west of Inglis Lock, in the CFBC).
- Station 3 (23.0 km [7.0 mi.] west of Inglis Lock, in the CFBC).
- Station 4 (1.6 km [0.5 mi.] west of canal mouth, in the nearshore Gulf of Mexico).
- Station 5 (9.8 km [3 mi.] west of canal mouth, in the nearshore Gulf of Mexico).
- Station 6 (16.4 km [5 mi.] west of canal mouth, in the nearshore Gulf of Mexico).
- Station 7 (23.0 km [7 mi.] west of canal mouth, in the nearshore Gulf of Mexico).

The types of data collected in the CFBC include the following:

- Field water quality measurements included salinity, conductivity, DO, pH, temperature, and water clarity. Laboratory water quality parameters included chlorophyll a, TSS, TDS, total phosphorous, nitrate plus nitrite, ammonia, and TKN. Field and laboratory parameters were measured at Stations 1 through 7, twice during each sampling event.
- Sediment characteristics were measured at each of the seven stations. Laboratory parameters included particle size and TOC, and were analyzed once in Event 1.
- The fish community was sampled at Stations 1 through 4. Collection techniques included beach seining, gill netting, trawling, cast netting, and minnow traps. Sampling was conducted during Events 1 and 2.
- The benthic community was sampled using a trawl and crab traps at Stations 1 through 4 to capture motile crustaceans (Events 1 and 2), and

using a Petite Ponar dredge at Stations 1 through 7 to capture benthic infaunal macroinvertebrates (Event 1).

- The icthyoplankton and meroplankton community at Stations 1 through 4 was sampled using a plankton net. During each event (Events 1 and 2) a total of four plankton samples were collected per station, resulting in 16 total samples. At each station, two (replicate) plankton tows were performed between low slack and high slack tides during the daytime. On the same day, two more plankton tows were conducted at each station no sooner than two hours after sunset and between low slack and high slack tides. Each plankton tow represented organisms occurring at the surface, middle, and bottom of the water column.

Continued, future monitoring of ecological conditions in the CFBC was conducted through 2008, and a new aquatic sampling program was implemented in the proposed discharge location for cooling water, the existing CREC discharge vicinity.

Continued CFBC aquatic sampling was conducted once in the late spring/early summer 2008 timeframe. Biological sampling included the collection of fish and motile crustaceans at Stations 1 through 4. In addition, the same sampling was conducted at three stations in the old Withlacoochee River channel (connecting the CFBC with the Inglis Dam) to establish a biological baseline for the old channel. Benthic infaunal macroinvertebrates were also collected at these seven stations. Sampling of ichthyoplankton and meroplankton was conducted at Stations 1 through 4 only during 12 sampling events in 2008, including once in February/March, biweekly from mid-March through June (seven events), and biweekly August through September (four events). All biological sampling was conducted using the same methods previously employed in 2007. Sediment samples were collected concurrently with benthic infaunal macroinvertebrate samples and analyzed for particle size and TOC. Field and laboratory water quality parameters were analyzed twice at all seven stations during the late spring/early summer, and field parameters were sampled during each of the 12 plankton events.

A biological monitoring program was conducted at the CREC discharge vicinity. Physical, chemical, and biological data were collected at several stations. Field and laboratory water quality parameters also were collected at several stations, twice per quarter (spring, summer, fall, and winter 2008). Field parameters included temperature, pH, DO, salinity, and water clarity (secchi depth). Laboratory parameters included chlorophyll a, TSS, TDS, total phosphorous, nitrate plus nitrite, ammonia, and TKN, biochemical oxygen demand (BOD), COD, orthophosphate, alkalinity, chlorides, sulphate, sodium, potassium, calcium, magnesium, mercury, and lead. The fish community was sampled at each station quarterly. Benthic infaunal macroinvertebrates were sampled during two of the quarterly events from sediment collected at each station, with three replicates per station. Co-located with each benthic sample, a sediment chemistry (particle size and TOC) sample was collected from each station replicate and composited, resulting in one sediment chemistry sample per station. The ichthyoplankton and meroplankton community was sampled at each station on a quarterly basis. Two daytime and two nighttime samples were collected at each station at each quarter.

2.4.3 REFERENCES

2.4-001 United States Department of Agriculture, Natural Resource Conservation Service, “Soil Survey of Levy County, Florida,”1996.

2.4-002 University of Florida Institute of Food and Agricultural Sciences Extension, “Management of Pine Forests for Selected Wildlife in Florida,” Circular 706, September 2002.

2.4-003 Florida Department of Transportation Surveying and Mapping Office Thematic Mapping Section, “Florida Land Use, Cover and Forms Classification System Handbook,” Third Edition, January 1999.

2.4-004 Southwest Florida Water Management District, Data and Maps, Website, www.swfwmd.state.fl.us/data/, accessed March 10, 2008.

2.4-005 University of Florida Institute of Food and Agricultural Sciences Extension, “Florida Forest Stewardship, Site Preparation,” Website, www.sfrc.ufl.edu/Extension/florida, accessed February 29, 2008.

2.4-006 Casey, W. P. and K. C. Ewell, “Patterns of Succession in Forested Depressional Wetlands in North Florida, USA,” *Wetlands,* Volume. 26, No. 1, March 2006, pages 146-160.

2.4-007 United States Department of Agriculture Forest Service, Fire Effects Information Service Kuchler Vegetative Types, Website, www.fs.fed.us/database/feis/kuchlers/index.html and www.fs.fed.us/database/feis/kuchlers/k091/all.html, accessed March 20, 2008.

2.4-008 United States Department of the Interior, National Biological Service, Allen, A.W., Bernal, Y.K., and R.J. Moulton, “Pine Plantations and Wildlife in the Southeastern United States: An Assessment of Impacts and Opportunities,” *Information and Technology Report 3*, January 1996.

2.4-009 Florida Natural Areas Inventory and Department of Natural Resources, “Guide to the Natural Communities of Florida,” February 1990.

2.4-010 University of Florida Institute of Food and Agricultural Sciences Extension, "Nesting Island Creation for Wading Birds," Circular 1473, May 2005.

2.4-011 Nutty Birdwatcher, "Migration Flyways: Atlantic Flyways," Website, www.birdnature.com/index.html and www.birdnature.com/atlantic.html, accessed March 20, 2008.

2.4-012 Messina, M. G. and W. H. Conner, "Southern Forested Wetlands, Ecology and Management," 1998, Boca Raton, Florida: CRC Press LLC.

2.4-013 Florida Natural Areas Inventory, "Database Summary Package," June 5, 2007, provided to CH2M HILL per email request.

2.4-014 University of Florida Institute of Food and Agricultural Sciences Extension, "Control and Management of Wild Hogs in Florida," Website, edis.ifas.ufl.edu/UW221, accessed March 2, 2008.

2.4-015 Florida Natural Areas Inventory, Hipes, D., Jackson, D. R. NeSmith, K., Printiss, D., and K. Brandt, "Field Guide to the Rare Animals of Florida," 2000, Tallahassee, Florida.

2.4-016 Ashton, R. E., Jr. and P. S. Ashton, "Handbook of Reptiles and Amphibians of Florida, The Snakes," 1988, Miami, Florida: Windward Publishing.

2.4-017 United States Fish and Wildlife Service, "South Florida Multispecies Recovery Plan," 1999, Atlanta, Georgia.

2.4-018 Florida Department of Agriculture and Consumer Services, Division of Forestry, Goethe State Forest, Website, www.fl-dof.com/state_forests/goethe.html, accessed March 10, 2008.

2.4-019 State of Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program, Brown, L. N., "Mammals of Florida," 1997, Miami, Florida: Windward Publishing, Inc.

2.4-020 State of Florida Game and Freshwater Fish Commission, "Rare and Endangered Biota of Florida," *Volume Two, Birds*, 1978, University Presses of Florida, Gainesville, Florida.

2.4-021 Georgia Division of Public Health, "Mosquitos and Ticks and the Diseases They Spread," 2005.

2.4-022 Florida Department of Environmental Protection, "Factsheet about Outstanding Florida Waters," April 2007.

2.4-023 Department of the Army Waterways Experiment Station, “Corps of Engineers Wetlands Delineation Manual,” *Technical Report Y-87-1*, Vicksburg, Mississippi, 1987.

2.4-024 Florida Department of Environmental Protection, “Florida Wetlands Delineation Manual,” 1995.

2.4-025 Bliss, C. M. and N. B. Comerford, “Forest Harvesting Influence on Water Table Dynamics in a Florida Flatwoods Landscape,” *Soil Scientist Society of America Journal,* 66:1344-1349, 2002.

2.4-026 U.S. Fish and Wildlife Service, Endangered Species Glossary, April 2005.

2.4-027 Florida Natural Areas Inventory, Element Occurrence Point Data. Tallahassee, Florida, USA, 2006.

2.4-028 FFWCC, *Eagle Nest Locations*, 2008, from Eagle Nest Locator, Website,www.floridaconservation.org/eagle/eaglenests/Default.asp, accessed May 6, 2008.

2.4-029 Miller, G., PEF Central Florida Corridor Study - Eagle Nest Location: FW: Nest Location (e-mail), December 13, 2007.

2.4-030 Field Guide to the Rare Plants and Animals of Florida Online 2001, Florida Natural Areas Inventory. Website, www.fnai.org/FieldGuide/search_001.cfm, accessed May 6, 2008.

2.4-031 Florida Department of Environmental Protection, Office of Greenways and Trails, Updated September 10, 2007, Website, www.dep.state.fl.us/gwt/about/system.htm, accessed May 6, 2008.

2.4-032 Department of the Army, “Cross Florida Barge Canal Restudy Report, Final Engineering,” February 1977.

2.4-033 Florida Department of Environmental Protection, Office of Greenways and Trails, “Inglis Lock Review,” Report No. IA-03-21-2005-128, 2005.

2.4-034 United States Department of the Interior, Fish and Wildlife Service and Minerals Management Service, “An Ecological Characterization of the Florida Springs Coast: Pithlachascotee to Waccasassa Rivers,” *Biological Report 90(21)*, December 1990.

2.4-035 United States Fish and Wildlife Service, “Loggerhead Sea Turtle (*Caretta caretta*),” 2001.

2.4-036 National Marine Fisheries Service and United States Fish and Wildlife Service, “Recovery Plan for U.S. Population of Atlantic Green Turtle,” 1991, National Marine Fisheries Service, Washington, D.C.

2.4-037 United States Fish and Wildlife Service, “South Florida Multi-Species Recovery Plan: Leatherback Sea Turtle, (*Dermochelys coriacea*),” 1999.

2.4-038 National Marine Fisheries Service and United States Fish and Wildlife Service, “Recovery Plan for Leatherback Turtles in the U.S. Caribbean, Atlantic and Gulf of Mexico,” 1992, National Marine Fisheries Service, Washington, D.C.

2.4-039 United States Fish and Wildlife Service, Kemp’s Ridley Sea Turtle Recovery Plan, Kemp’s Fact Sheet, Website, www.fws.gov/kempsridley/kempsfactsheet.html, accessed February 18, 2008.

2.4-040 National Research Council, “Decline of Sea Turtles: Causes and Prevention,” 1990, Washington, D.C.: National Academy Press, 259 pages, Website, www.nap.edu/catalog.php?record_id=1536.

2.4-041 Seitz, J. C. and G. R. Poulakis, Floridasawfish.com, Website, floridasawfish.com, accessed February 15, 2008.

2.4-042 McEachran, J. D. and J. D. Fechhelm, “Fishes of the Gulf of Mexico,” Volume 1: *Myxiniformes to Gastrerosteiformes* 1998, University of Texas Press, 1112 pages.

2.4-043 National Marine Fisheries Service, “Status Review of Smalltooth Sawfish (*Pristis pectinata*),” December 2000.

2.4-044 Poulakis, G. R. and J. C. Seitz, ”Recent Occurrence of the Smalltooth Sawfish, *Pristis pectinata* (Elasmobranchiomorphi: Pristidae), in Florida Bay and the Florida Keys, with Comments on Sawfish Ecology,” *Florida Scientist*, 2004, 67(1):27–35.

2.4-045 National Marine Fisheries Service, National Oceanic and Atmospheric Administration, “Draft Smalltooth Sawfish Recovery Plan (*Pristis pectinata*),” August 2006.

2.4-046 Florida Museum of Natural History, Biological Profiles: Smalltooth Sawfish,” Website, www.flmnh.ufl.edu/fish/Gallery/Descript/STSawfish/STSawfish.html, accessed February 15, 2008.

2.4-047 Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, Marine Fisheries Information System Annual Landings Summary, Website, research.myfwc.com/features/view_article.asp?id=19224, accessed August 14, 2008.

2.4-048 Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, "Boating and Angling Guide to Citrus County," 2001.

2.4-049 Collins, M. R., "Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Florida) – Striped Mullet," *United States Fish and Wildlife Service Biological Report 82(11.34), United States Army Corps of Engineers TR EL-82-4*, 1985, page 11.

2.4-050 Jory, D. E. and E. S. Iversen, "Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Florida) – Black, Red, and Nassau Groupers," United States Fish and Wildlife Service Biological Report 82(11.110) and United States Army Corps of Engineers TR EL-82-4, 1989, 21 pages.

2.4-051 McEachran, J. D. and J. D. Fechhelm, "Fishes of the Gulf of Mexico," Volume 2: *Scorpaeniformes to Tetraodontiformes,* 2005, University of Texas Press, 1004 pages.

2.4-052 Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute, "Ladyfish," Website, research.myfwc.com/gallery/image_details.asp?id=13883, accessed February 15, 2008.

2.4-053 Johnson, D. R. and W. Seaman, Jr., "Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Florida) – Spotted Seatrout," United States Fish and Wildlife Service Biological Report 82(11.43) and United States Army Corps of Engineers TR EL-82-4, 1986, 18 pages.

2.4-054 Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute, "Sea Stats – Spotted Seatrout, Stalkers in the Seagrass," June 2005.

2.4-055 Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute, "Sea Stats – Snook, Tackle Busters," June 2005.

2.4-056 Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute, “Sea Stats – Red Drum, Marine Musicians,” June 2005.

2.4-057 Gilbert, C. R., “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Florida) – Southern, Gulf, and Summer Flounders,” United States Fish and Wildlife Service Biological Report 82(11.54), United States Army Corps of Engineers TR EL-82-4, 1986, 27 pages.

2.4-058 Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute, “Sea Stats – Blue Crab, Beautiful, Savory Swimmer,” November 2005.

2.4-059 Perry, H. M. and T. D. McIlwain, “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Gulf of Mexico) – Blue Crab,” United States Fish and Wildlife Service Biological Report 82(11.55), United States Army Corps of Engineers TR EL-82-4, 1986, 21 pages.

2.4-060 Stanley, J. G. and M. A. Sellers. “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Gulf of Mexico) – American Oyster,” United States Fish and Wildlife Service Biological Report 82(11.65), United States Army Corps of Engineers TR EL-82-4, 1986, 25 pages.

2.4-061 Lindberg, W. J. and M. J. Marshall, “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Florida) – Stone Crab,” United States Fish and Wildlife Service, Division of Biological Services, FWS/OBS-82/11.21, United States Army Corps of Engineers TR EL-82-4, 1984, 17 pages.

2.4-062 Bielsa, L. M., Murdich, W. H., and R. F. Labisky, “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Florida) – Pink Shrimp,” United States Fish and Wildlife Service, Division of Biological Services, FWS/OBS-82/11.17, United States Army Corps of Engineers TR EL-82-4, 1983, 18 pages.

2.4-063 Chesapeake Bay Program, “Brief Squid,” Website, chesapeakebay.net/info/briefsquid.cfm, accessed February 15, 2008.

2.4-064 South Carolina Department of Natural Resources and David Whitaker, “Brief Squid,” undated.

2.4-065 Muncy, R. J., “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Gulf of Mexico) – Pinfish,” United States Fish and Wildlife Service, Division of Biological Services, FWS/OBS-82/11.26, United States Army Corps of Engineers TR EL-82-4, 1984, 18 pages.

2.4-066 Fishbase, Silver Perch Species Summary, Website, fishbase.org/Summary/SpeciesSummary.php?id=1165, accessed January 29, 2008.

2.4-067 Florida Fish and Wildlife Conservation Commission, “Fishing Lines: Angler’s Guide to Florida Marine Resources,” Fourth Edition, J. Schratwieser (editor), 2001, Florida Fish and Wildlife Conservation Commission, Division of Marine Fisheries.

2.4-068 Fishbase, “Silver Mojarra,” Summary, Website, www.fishbase.org/Summary/SpeciesSummary.php?id=1049, accessed January 29, 2008.

2.4-069 Hales, L. S. and M. J. Van Den Avyle, “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Atlantic) – Spot,” United States Fish and Wildlife Service Biological Report 82(11.91), United States Army Corps of Engineers TR EL-82-4, 1989, 24 pages.

2.4-070 Smithsonian Marine Station at Fort Pierce, "Leiostomus xanthurus (spot)," Website, sms.si.edu/irlspec/Leiosto_xanthu.htm, accessed January 29, 2008.

2.4-071 Robinette, H. Randall, “Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Gulf of Mexico) – Bay Anchovy and Striped Anchovy,” United States Fish and Wildlife Service, Division of Biological Services, FWS/OBS-82/11.14, United States Army Corps of Engineers TR EL-82-4, 1983, 15 pages.

2.4-072 Gulf of Mexico Fishery Management Council, “Final Environmental Impact Statement for the Generic Essential Fish Habitat Amendment for the Shrimp, Red Drum, Reef Fish, Stone Crab, Coral and Coral Reef, Spiny Lobster and Coastal Migratory Pelagic Resources Fisheries of the Gulf of Mexico,” 2004.

2.4-073 Florida Department of Environmental Protection, Office of Greenways and Trails, 2007, Website, dep.state.fl.us/gwt/cfg/default.htm, accessed February 15, 2008.

2.4-074 Florida Department of Environmental Protection, "Big Bend Seagrass Aquatic Preserve," Website, www.edp.state.fl.us/coastal/.sites/bigbend, accessed February 18, 2008.

2.4-075 Florida State Parks, Listing of Parks by District, 2008, "Waccassasa Bay Preserve State Park," Website, floridastateparks.org/waccasassabay/default.cfm, accessed February 15, 2008.

2.4-076 United States Fish and Wildlife Service, "Withlacoochee River Wetland/Habitat Restoration and Water Quality Enhancement Project, Polk, Lake, Sumter, Pasco, Hernando, Citrus, Marion, and Levy Counties, Tampa, Florida Region," 2005.

2.4-077 Southwest Florida Water Management District, News Releases, July 25, 2006, "District to Treat Water Hyacinths and Water Lettuce on the Withlacoochee River," Website, www.swfwmd.state.fl.us/news/viewarticle.php?id=466, accessed January 17, 2008.

2.4-078 Ray, G. L., "Invasive Marine and Estuarine Animals of the Gulf of Mexico," Document ERDC/TN ANSRP-05-4, 2005, Aquatic Nuisance Species Research Program.

2.4-079 Hollebone, A. L. and M. E. Hay, "An Invasive Crab Alters Interaction Webs in a Marine Community," *Biological Invasions,* 10(3): 347, 2007.

2.4-080 Allan, David J., "Stream Ecology: Structure and Function of Running Waters," 1995, London, United Kingdom: Chapman & Hall.

2.4-081 Schoof, Russel, "Environmental Impact of Channel Modification," *Journal of the American Water Resources Association,* 16 (4), 697–701, 1980.

2.4-082 Global Invasive Species Database, *Mytiliopsis leucophaeata*, Website, www.issg.org/database/species/ecology.asp?fr=1&si=707&sts=, accessed February 18, 2008.

2.4-083 Stone and Webster, "Final Report – Crystal River 316 Studies," January 1985, prepared for Florida Power Corporation.

2.4-084 Florida Power – a Progress Energy Company, Bruzek, D. Natural Resources Specialist, "Seagrass Survey: November 2001 Resurvey at the Florida Power Crystal River Generating Facility," March 2002.

2.4-085 Progress Energy Florida, "Seagrass Quantification Report for the Area Adjacent to the Crystal River Power Generating Facility, Florida," April 2008.

2.4-086 Florida Fish and Wildlife Conservation Commission, "Florida's Endangered Species, Threatened Species, and Species of Concern," November 2007.

Table 2.4-1
Land Cover Class Composition at the LNP Site

FLUCCS Code	Classification	LNP Site Area (ac.)	Percentage of LNP Site
260	Other Open Lands (Rural)	106	3.4
410	Upland Coniferous Forest	11	0.3
411	Pine Flatwoods	3.0	0.1
434	Hardwood Conifer Mixed	16	0.5
440	Tree Plantations	1780	57.3
615	Stream and Lake Swamps (Bottomland)	146	4.7
621	Cypress	717	23.1
630	Wetland Forested Mixed	181	5.8
641	Freshwater Marshes	143	4.6
830	Utilities	4.0	0.1
320	Shrub and Brushland	0.56	<0.1
640	Wet Prairie	0.2	<0.1

Notes:

ac. = acre
FLUCCS = Florida Land Use and Cover Classification System

Source: Reference 2.4-004

Table 2.4-2
Mammalian Species Likely to Occur on the LNP Site

Common Name	Scientific Name	Observed on the LNP Site [(a)]
Bobcat	*Lynx rufus*	X
Cotton mouse	*Peromyscus gossypinus*	
Cottontail rabbit	*Sylvilagus floridanus*	X
Coyote	*Canis latrans*	X
Eastern gray squirrel	*Sciurus carolinensis*	X
Eastern mole	*Scalopus aquaticus*	
Feral Hog	*Sus scrofa*	X
Southern flying squirrel	*Glaucomys volans*	
Gray fox	*Urocyon cinereoargenteus*	
Hispid cotton rat	*Sigmodon hispidus*	X
Marsh rabbit	*Sylvilagus palustris*	
Mink	*Mustela vison*	
Nine-banded armadillo	*Dasypus novemcinctus*	X
Raccoon	*Procyon lotor*	X
River otter	*Lutra canadensis*	
Striped skunk	*Mephitis mephitis*	
Virginia opossum	*Didelphis virginiana*	X
White-tail deer	*Odocoileus virginianus*	X

Notes:

a) The species not directly observed were based on Reference 2.4-009.

Table 2.4-3 (Sheet 1 of 2)
Bird Species Likely to Occur on the LNP Site

COMMON NAME	SCIENTIFIC NAME	OBSERVED ON THE LNP SITE (A)
Acadian Flycatcher	*Empidonax virescens*	
American Kestrel	*Falco sparverius*	X
Bachman's sparrow	*Aimophila aestivalis*	
Bald Eagle	*Haliaeetus leucocephalus*	X
Barred owl	*Strix varia*	X
Black Vulture	*Coragyps atratus*	X
Brown-headed nuthatch	*Sitta pusilla*	
Carolina Wren	*Thryothorus ludovicianus*	X
Cedar waxwing	*Bombycilla cedrorum*	
Common Crow	*Corvus brachyrhynchos*	X
Common Nighthawk	*Chordeiles minor*	X
Coopers Hawk	*Accipiter cooperii*	X
Downy Woodpecker	*Picoides pubescens*	X
Eastern Bluebird	*Sialia sialis*	X
Eastern Kingbird	*Tyrannus tyrannus*	X
Eastern Meadowlark	*Sturnella magna*	X
Eastern Screech Owl	*Otus asio*	X
Great-horned owl	*Bubo virginianus*	
Hermit thrush	*Catharus guttatus*	
Indigo Bunting	*Passerina cyanea*	X
Northern Bobwhite	*Colinus virginianus*	X
Northern Cardinal	*Cardinalis cardinalis*	X
Northern Mockingbird	*Mimus polyglottos*	X
Pileated woodpecker	*Dryocopus pileatus*	
Pine warbler	*Dendroica pinus*	
Red-bellied woodpecker	*Melanerpes carolinus*	X
Red-headed woodpecker	*Melanerpes erythrocephalus*	X
Red-shoulder Hawk	*Buteo lineatus*	X
Red-tailed Hawk	*Buteo jamaicensis*	X

Table 2.4-3 (Sheet 2 of 2)
Bird Species Likely to Occur on the LNP Site

COMMON NAME	SCIENTIFIC NAME	OBSERVED ON THE LNP SITE [(A)]
Redwing Blackbird	*Agelaius phoeniceus*	X
Ruby-throated hummingbird	*Archilochus colubris*	
Rufous-sided Towhee	*Pipilo erythrophthalmus*	X
Sandhill Crane	*Grus canadensis*	X
Southeastern American Kestrel	*Falco sparverius paulus*	
Swallow-tailed Kite	*Elanoides forficatus*	X
Tufted Titmouse	*Parus bicolor*	X
Turkey Vulture	*Cathartes aura*	X
Whippoorwill	*Caprimulgus vociferus*	X
White Ibis	*Eudocimus albus*	X
Wild Turkey	*Meleagris gallopavo*	*X*
Wood Duck	*Aix sponsa*	X
Wood Stork	*Mycteria americana*	X
Woodcock	*Scolopax minor*	X
Yellow-rumped Warbler	*Dendroica coronata*	X
Yellow-throated warbler	*Dendroica dominica*	X

Notes:

a) The species not directly observed were based on Reference 2.4-009.

Table 2.4-4 (Sheet 1 of 2)
Reptile and Amphibian Species Likely to Occur on the LNP Site

COMMON NAME	SCIENTIFIC NAME	OBSERVED ON THE LNP SITE [(A)]
Black racer	*Coluber constrictor priapus*	X
Pygmy rattlesnake	*Sistrurus miliarius barbouri*	
Eastern Cottonmouth	*Agkistrodon piscivorus*	X
Eastern indigo snake	*Drymarchon couperi*	
Common garter snake	*Thamnophis sirtalis*	
Red rat snake	*Elaphe guttata guttata*	
Yellow rat snake	*Elaphe obsoleta quadrivittata*	
Ringneck snake	*Diadophis punctatus punctatus*	
Scarlet kingsnake	*Lampropeltis triangulum elapsoides*	
American alligator	*Alligator mississippiensis*	
Squirrel Treefrog	*Hyla squirella*	
Green anole	*Anolis carolinensis*	X
Fence lizard	*Sceloporus undulatus*	X
Brown anole	*Anolis sagrei*	
Oak toad	*Bufo quercicus*	X
Narrowmouth toad	*Gastrophryne carolinensis*	
Diamondback rattlesnake	*Crotalus atrox*	X
Legless lizard	*Ophisaurus ventralis*	
Peninsula Ribbon snake	*Thamnophis sauritus sackenii*	
Ground skink	*Scincella lateralis*	X
Broadhead skink	*Eumeces laticpes*	
Five-lined skink	*Eumeces fasciatus*	
Florida cooter	*Pseudemys floridana floridana*	X
Box turtle	*Terrapene carolina major*	
Striped mud turtle	*Kinosternon bauri*	
Gopher tortoise	*Gopherus polyphemus*	X
Southern leopard frog	*Rana sphenocephala utricularia*	
Little grass frog	*Pseudacris ocularis*	
Southern cricket frog	*Acris gryllus*	

Table 2.4-4 (Sheet 2 of 2)
Reptile and Amphibian Species Likely to Occur on the LNP Site

COMMON NAME	SCIENTIFIC NAME	OBSERVED ON THE LNP SITE (A)
Southern chorus frog	*Pseudacris nigrita*	
Pinewoods treefrog	*Hyla femoralis*	
Barking treefrog	*Hyla gratiosa*	
Squirrel treefrog	*Hyla squirella*	
Ornate chorus frog	*Pseudacris ornata*	
Eastern spadefoot toad	*Scaphiopus holbrooki holbrooki*	
Gopher frog	*Rana capito*	

Notes:

a) The species not directly observed were based on Reference 2.4-009.

Table 2.4-5
Important Species Identified as Potentially Occurring on the LNP Site

Species	Scientific Name	Importance Criteria	Observed on the LNP Site [(a)]
American Alligator	*Alligator mississippiensis*	State-listed Species of Special Concern	X
Eastern Indigo Snake	*Drymarchon couperi*	Federally and State-listed Threatened	
Florida Black Bear [(b)]	*Ursus americanus floridanus*	State-listed Threatened	
Gopher Tortoise	*Gopherus polyphemus*	State-listed Threatened	X
White Ibis	*Eudocimus albus*	State-listed Species of Special Concern	X
Wood Stork	*Mycteria americana*	Federally and State-listed Endangered	X
Northern Bobwhite	*Colinus virginianus*	Recreationally important game species	X
White-tailed deer	*Odocoileus virginianus*	Recreationally important game species	X
Wild Turkey	*Meleagris gallopavo*	Recreationally important game species	X

Notes:

a) The species not directly observed were based on Reference 2.4-009.

b) Unconfirmed and anecdotal report of bear along northwestern property boundary in March 2007.

Table 2.4-6
Protected Plant Species Potentially Occurring on or near the LNP Site [(a)]

Common Name	Scientific Name	Federal Status	State Status
Incised groove-bur	*Agrimonia incisa*	N	LE
Variableleaf Indian plantain	*Arnoglossum diversifolium*	N	LT
Manyflowered grasspink	*Calopogon multiflorus*	N	LE
Chapman's sedge	*Carex chapmanii*	N	LE
Sanddune spurge	*Chamaesyce cumulicola*	N	LE
Longspurred mint	*Dicerandra cornutissima*	LE	LE
Godfrey's privet	*Forestiera godfreyi*	N	LE
Pine pinweed	*Lechea divaricata*	N	LE
Corkwood	*Leitneria floridana*	N	LT
Pondspice	*Litsea aestivalis*	N	LE
Florida spiny pod	*Matelea floridana*	N	LE
Celestial lily	*Nemastylis floridana*	N	LE
Pinewood dainties	*Phyllanthus leibmannianus ssp. platylepis*	N	LE
Giant orchid	*Pteroglossaspis ecristata*	N	LT
Smallflowered meadowbeauty	*Rhexia parviflora*	N	LE
Pinkroot	*Spigelia loganioides*	N	LE

Notes:

a) Species were based on Reference 2.4-013.

LE = Listed Endangered
LT = Listed Threatened
N = Not Listed

Table 2.4-7
Protected Mammalian Species Potentially Occurring on or near the LNP Site [a]

Common name	Scientific Name	Federal Status	State Status
Florida mouse	*Podomys floridanus*	N	LS
Sherman's fox squirrel	*Sciurus niger shermani*	N	LS
Manatee	*Trichechus manatus*	LE	LE
Florida black bear	*Ursus americanus floridanus*	N	LT

Notes:

a) Species were based on Reference 2.4-013.

LE = Listed Endangered
LS = Listed State Species of Special Concern
LT = Listed Threatened
N = Not Listed

Table 2.4-8
Protected Avian Species Potentially Occurring on or near the LNP Site [(a)]

Common name	Scientific Name	Federal Status	State Status
Scott's Seaside Sparrow	*Ammodramus maritimus peninsulae*	N	LS
Florida Burrowing Owl	*Athene cunicularia floridana*	N	LS
Piping Plover	*Charadrius melodus*	LT	LT
Marian's Marsh Wren	*Cistothorus palustris marianae*	N	LS
Red-cockaded Woodpecker	*Picoides borealis*	LE	LS

Notes:

a) Species were based on Reference 2.4-013.

LE = Listed Endangered
LS = Listed State Species of Special Concern
LT = Listed Threatened
N = Not Listed

Table 2.4-9
Protected Reptilian and Amphibian Species Potentially Occurring on or near the LNP Site [a]

Common name	Scientific Name	Federal Status	State Status
Gopher frog	*Rana capito*	N	LS
Loggerhead turtle	*Caretta caretta*	LT	LT
Green turtle	*Chelonia mydas*	LE	LE
Eastern indigo snake	*Drymarchon couperi*	LT	LT
Gopher tortoise	*Gopherus polyphemus*	N	LS
Florida pine snake	*Pituophis melanoleucus mugitus*	N	LS
Suwannee cooter	*Pseudemys concinna suwanniensis*	N	LS
Short-tailed snake	*Stilosoma extenuatum*	N	LT

Notes:

a) Species based on Reference 2.4-013.

LE = Listed Endangered
LS = Listed State Species of Special Concern
LT = Listed Threatened
N = Not Listed

Table 2.4-10
Land Cover Class Composition at the Associated Facilities

FLUCCS Code	Classification	Early Infrastructure Facilities Area (ac.)	Percentage of Total Early Infrastructure Area[a]
440	Tree Plantations	391.2	54.0
620	Wetland Coniferous Forests	83.6	11.5
190	Open Land	48.1	6.6
260	Other Open Lands (Rural)	45.7	6.3
640	Vegetated Non-Forested Wetlands	31.4	4.3
630	Wetland Coniferous Forests	30.4	4.2
410	Upland Coniferous Forests	27.8	3.8
430	Upland Hardwood Forests, Coniferous	24.1	3.3
830	Utilities	14.5	2.0
330	Mixed Rangeland	10.0	1.4
810	Transportation	5.4	0.7
160	Extractive	4.6	0.6
320	Shrub and Brushland	3.2	0.4
510	Streams and Waterways	2.5	0.3
530	Reservoirs	2.3	0.3
Total		**724.8**	

Notes:

a) Includes only the portion of the transmission corridor north of CR-40.

ac. = acre
FLUCCS = Florida Land Use and Cover Classification System

Source: Reference 2.4-003

Table 2.4-11 (Sheet 1 of 2)
Acreage of Vegetative Communities within each of the Preferred Corridors

		Acreage						
FLUCCS Code	FLUCCS Description	500 kV – Levy Nuclear Plant – Proposed Citrus Substation	230 kV – Crystal River Energy Complex – Proposed Citrus Substation	69 kV - Levy Nuclear Plant Administration Substation	500 kV - Levy Nuclear Plant - Proposed Central Florida South Substation	500 kV - Preferred Corridor A	500 kV - Alternative Alignment A-1	500 kV - Preferred Corridor B
210	Cropland and Pastureland	630	244	----	5,580	1,251	256	484
260	Other Open Lands (Rural)	141	0.4	131	581	365	----	236
310	Herbaceous Dry Prairie	----	----	----	16	13	----	5
320	Shrub and Brushland	40	12	6	218	225	----	176
330	Mixed Rangeland	----	----	----	10	----	----	----
410	Upland Coniferous Forest	78	----	68	158	336	----	39
411	Pine Flatwoods	73	----	----	159	97	----	23
412	Longleaf Pine - Xeric Oak	31	89	----	614	6,292	261	3,699
420	Upland Hardwood Forests	----	----	----	62	26	----	11
434	Hardwood-Conifer Mixed Forests	1,579	679	108	3,752	843	----	122
440	Tree Plantations	1,047	256	600	1,157	1,029	----	179
441	Coniferous Plantations	----	----	----	46	----	----	----
510 [(a)]	Streams and Waterways	60	----	----	65	60	----	----
520	Lakes	12	0.5	----	83	16	----	49
530	Reservoirs	6	2	1	42	12	----	4
615	Stream and Lake Swamps	56	34	----	682	54	----	5
617	Mixed Wetland Hardwoods	----	----	----	1	----	----	----

Table 2.4-11 (Sheet 2 of 2)
Acreage of Vegetative Communities within each of the Preferred Corridors

		Acreage						
FLUCCS Code	**FLUCCS Description**	**500 kV – Levy Nuclear Plant – Proposed Citrus Substation**	**230 kV – Crystal River Energy Complex – Proposed Citrus Substation**	**69 kV - Levy Nuclear Plant Administration Substation**	**500 kV - Levy Nuclear Plant - Proposed Central Florida South Substation**	**500 kV - Preferred Corridor A**	**500 kV - Alternative Alignment A-1**	**500 kV - Preferred Corridor B**
621	Cypress	150	3	127	169	189	----	39
630	Wetland Forested Mixed	188	48	83	216	191	----	----
641	Freshwater Marshes	172	177	22	580	172	----	43
643	Wet Prairies	5	1	2	243	8	1	1
644	Emergent Aquatic Vegetation	----	----	----	64	6	----	5
646	Treeless Hydric Savanna	----	----	----	10	----	----	----
653	Intermittent Ponds	----	10	----	16	48	12	11
740	Disturbed Land	----	5	----	106	6	----	14
830/832	Utilities/Electrical Power Transmission Line	29	546	9	1,309	1,082	30	768
	TOTAL	4,297	2,108	1,157	15,939	12,320	560	5,912

Notes:

a) Does not include acreages of ditches, which are not available in land use data.

FLUCCS = Florida Land Use and Cover Classification System

---- Habitat not identified within corridor.

Table 2.4-12
Summary of Sediment Characteristics in the Cross Florida Barge Canal and Nearshore Gulf of Mexico

Station	Description	TOC (mg/kg)	Particle Size (percent)			
			Gravel	Sand	Silt	Clay
1	0.5 mi. west of Inglis Lock in CFBC	64,667	0.0	29.8	54.0	16.1
2	3.5 mi. west of Inglis Lock in CFBC	52,333	0.0	9.8	69.0	21.3
3	7.0 mi. west of Inglis Lock in CFBC	48,750	0.2	22.9	59.2	17.7
4	0.5 mi. west of CFBC mouth	9800	1.5	84.7	7.1	6.7
5	3 mi. west of CFBC mouth	3575	12.3	82.6	1.7	3.4
6	5 mi. west of CFBC mouth	4567	2.2	90.8	2.9	4.1
7	7 mi. west of CFBC mouth	4533	19.6	75.9	1.9	2.6

Notes:

All results are an average of three station replicates, as well as TOC field duplicates for Stations 3 and 5.

CFBC = Cross Florida Barge Canal
mg/kg = milligram per kilogram
mi. = mile
TOC = total organic carbon

Table 2.4-13
Summary of Water Chemistry Characteristics in the Cross Florida Barge Canal and Nearshore Gulf of Mexico

Station	Description	Ammonia (mg/L)		Nitrate + Nitrite (mg/L)		Total Kjeldahl Nitrogen (mg/L)		Total Phosphorous (mg/L)		Chlorophyll a (mg/m^3)		Total Dissolved Solids (mg/L)		Total Suspended Solids (mg/L)	
1	0.5 mi. west of Inglis Lock	0.38	UJ	0.1297	J	0.65	J	0.102	J	30.5	=	22,000	=	26.5	=
2	3.5 mi. west of Inglis Lock	0.18	U	0.1299	J	0.585	=	0.068	=	16.0	=	21,500	=	29	=
3	7.0 mi. west of Inglis Lock	0.30	U	0.131	J	0.2925	=	0.0505	=	3.1	=	26,750	=	34	=
4	0.5 mi. west of CFBC mouth	0.30	U	0.132	J	0.255	=	0.0385	=	2.1	=	26,500	=	40	=
5	3 mi. west of CFBC mouth	0.45	U	0.15	U	0.265	=	0.024	=	2.1	=	28,000	=	31	=
6	5 mi. west of CFBC mouth	0.45	U	0.15	U	0.235	=	0.024	=	2.1	=	28,500	=	30	=
7	7 mi. west of CFBC mouth	0.45	U	0.033	J	0.2	J	0.0205	=	2.6	J	32,500	=	36.5	=

Notes:

All results are an average of samples collected 10/16/07 and 11/20/07, as well as field duplicates for at Station 3.

"=" The analyte was analyzed for and detected at the concentration shown.
J = The analyte was present but the reported value may not be accurate or precise.
U = The analyte was analyzed for but not detected above the method detection limit.
UJ = The analyte was analyzed for but qualified as not detected; the result is estimated.

mg/L = milligrams per liter
mg/m^3 = milligrams per cubic meter

Table 2.4-14
Comparison of Average Temperature in Cross Florida Barge Canal Area and Gulf of Mexico

Date	10/16/2007					11/15/2007					11/19/2007				
Depth (m)	**0.15**	**1**	**2**	**3**	**4**	**0.15**	**1**	**2**	**3**	**4**	**0.15**	**1**	**2**	**3**	**4**
CFBC Area Temp. (°C)	26.70	26.33	25.66	25.48	25.41	21.50	21.12	20.27	19.73	19.68	20.48	19.95	18.16	17.87	17.80
Gulf of Mexico Temp. (°C)	25.22	25.18	25.04	25.14	25.18	19.44	19.19	19.09	18.95	18.96	17.40	17.35	17.36	17.52	17.52

Notes:

°C = degrees Celsius
CFBC = Cross Florida Barge Canal
m = meter

Table 2.4-15
Summary of Average Dissolved Oxygen, pH, and Water Clarity Data

Station ID	Description	Dissolved Oxygen (mg/L)	pH (SU)	Secchi depth (m)
WQ 0.0	At Inglis Lock	5.82	7.87	0.83
Sta 1	0.5 mi. west of Inglis Lock	4.83	7.73	1.09
WQ 1.0	1.0 mi. west of Inglis Lock	7.30	7.95	1.07
WQ 1.5	1.5 mi. west of Inglis Lock	6.95	7.94	1.24
WQ 2.0	2.0 mi. west of Inglis Lock	5.40	7.87	1.21
WQ 2.5	2.5 mi. west of Inglis Lock	5.35	8.04	1.14
WQ 3.0	3.0 mi. west of Inglis Lock	5.00	8.04	1.14
Sta 2	3.5 mi. west of Inglis Lock	5.61	7.88	1.39
WQ 4.0	4.0 mi. west of Inglis Lock	6.73	8.01	1.21
WQ 4.5	4.5 mi. west of Inglis Lock	6.16	7.97	1.02
WQ 5.0	5.0 mi. west of Inglis Lock	6.41	7.99	1.24
WQ 5.5	5.5 mi. west of Inglis Lock	5.97	7.96	1.28
WQ 6.0	6.5 mi. west of Inglis Lock	6.23	7.99	1.34
WQ 6.5	6.5 mi. west of Inglis Lock	6.20	7.99	1.36
Sta 3	7.0 mi. west of Inglis Lock	4.93	7.86	1.42
WQ 7.5	7.5 mi. west of Inglis Lock	5.80	7.94	1.42
Sta 4	0.5 mi. west of CFBC mouth	5.17	7.95	1.37
Sta 5	3 mi. west of CFBC mouth	5.72	8.07	1.92
Sta 6	5 mi. west of CFBC mouth	6.25	8.07	1.95
Sta 7	7 mi. west of CFBC mouth	5.98	8.07	2.14

Notes:

CFBC = Cross Florida Barge Canal
m = meter
mi. = mile
mg/L = milligram per liter
SU = standard unit

Table 2.4-16 (Sheet 1 of 2)
Benthic Infauna Abundance (Number per m^2) per Station

Taxon	1	2	3	4	5	6	7	Total	Percent Composition
Polychaeta	71	15,388	2613	4967	6459	3548	4745	37,791	74.1
Amphipoda	0	0	0	918	2053	573	416	3960	7.8
Cnidaria	0	0	0	72	56	14	2585	2727	5.3
Decapoda	14	29	101	158	386	186	228	1102	2.2
Bivalvia	0	0	86	143	214	371	271	1085	2.1
Oligochaeta	0	14	488	245	14	159	129	1049	2.1
Cumacea	0	57	359	129	28	157	43	773	1.5
Nemertea	0	0	57	72	100	114	230	573	1.1
Gastropoda	28	14	43	215	43	43	114	500	1.0
Isopoda	0	0	0	29	115	14	301	459	0.9
Phoronida	0	0	0	273	0	0	0	273	0.5
Ophiuroidea	0	0	0	14	0	72	57	143	0.3
Sipuncula	0	0	0	0	29	29	71	129	0.3
Mysida	0	0	0	43	0	14	29	86	0.2
Tanaidacea	0	0	0	0	28	0	57	85	0.2
Amphiuridae	0	0	0	0	29	0	43	72	0.1
Chaetognatha	0	0	0	0	14	29	14	57	0.1
Porifera	0	0	0	0	14	14	29	57	0.1
Polyplacophora	0	0	0	0	14	0	14	28	0.1
Brachiopoda	0	0	0	0	0	14	0	14	0.0

Table 2.4-16 (Sheet 2 of 2)
Benthic Infauna Abundance (Number per m^2) per Station

Taxon	1	2	3	4	5	6	7	Total	Percent Composition
Cephalochordata	0	0	0	0	0	14	0	14	0.0
Total	**113**	**15,502**	**3747**	**7278**	**9596**	**5365**	**9376**	**50,977**	**100.0**

Notes:

m^2 = square meter

Table 2.4-17
Benthic Infauna Statistics

Station	Abundance ($number/m^2$)	Taxa Richness	Diversity [a]	Evenness [b]
1	113	5	2.00	0.86
2	15,502	8	0.50	0.17
3	3747	21	3.23	0.73
4	7278	83	5.02	0.79
5	9596	105	5.25	0.78
6	5365	76	5.10	0.82
7	9376	116	4.93	0.72

Notes:

a) Shannon-Wiener Diversity Base 2
b) Pielou's Evenness (H'/H'max)

$number/m^2$ = number per square meter

Table 2.4-18 (Sheet 1 of 2)
Organisms per Station for the Shoreline Handpicked Samples

Phylum	Subphylum	Class	Order	Family	Organism Name	01D	01E	02D	02E	03D	03E	Comments
Annelida		Polychaeta		Capitellidae	Capitella capitata						X	
Annelida		Polychaeta		Capitellidae	Mediomastus sp.					X		
Annelida		Polychaeta	Aciculata	Nereididae	Laeonereis culveri		X	X				
Annelida		Polychaeta	Aciculata	Nereididae	Neanthes succinea	X	X	X		X	X	
Annelida		Polychaeta	Aciculata	Nereididae	Platynereis dumerilii	X	X					
Annelida		Polychaeta	Aciculata	Phyllodocidae	Phyllodoce sp.				X	X	X	
Annelida		Polychaeta	Canalipalpata	Sebellidae	Sabellidae (lpil)		X					
Annelida		Polychaeta	Canalipalpata	Spionidae	Boccardiella sp.		X		X	X		
Annelida		Polychaeta	Canalipalpata	Spionidae	Dipolydora socialis					X		
Annelida		Polychaeta	Canalipalpata	Spionidae	Dipolydora sp.				`		X	
Annelida		Polychaeta	Canalipalpata	Spionidae	Dipolydora sp. A					X		
Annelida		Polychaeta	Canalipalpata	Spionidae	Streblospio sp.		X			X	X	
Annelida		Oligochaeta	Haplotaxida	Tubificidae	Paranais litoralis	X						
Annelida		Oligochaeta	Haplotaxida	Tubificidae	Monopylephorus rubroniveus			X	X		X	
Annelida		Oligochaeta	Haplotaxida	Tubificidae	Tubificidae (lpil)		X			X		Abundant at 01E.
Arthropoda	Crustacea	Malacostraca	Isopoda	Sphaeromatidae	Cassidinidea ovalis	X	X		X			
Arthropoda	Crustacea	Malacostraca	Isopoda	Cirolanidae	Cirolana parva	X	X	X	X			Abundant at 01D.
Arthropoda	Crustacea	Malacostraca	Isopoda	Ligiidae	Ligia exotica						X	
Arthropoda	Crustacea	Malacostraca	Amphipoda	Talitridae	Talitridae (lpil)		X		X			
Arthropoda	Crustacea	Malacostraca	Amphipoda	Corophiidae	Apocorophium louisianum	X	X		X			
Arthropoda	Crustacea	Malacostraca	Amphipoda	Melitidae	Melita sp.				X	X	X	Abundant at 03D.
Arthropoda	Crustacea	Malacostraca	Decapoda	Sesarmidae	Armases cinereum	X	X	X	X	X		
Arthropoda	Crustacea	Malacostraca	Decapoda	Xanthidae	Panopeus herbstii			X	X	X	X	Abundant at 02E, 03D, 03E.
Arthropoda	Crustacea	Malacostraca	Decapoda	Xanthidae	Panopeus obesa					X	X	
Arthropoda	Crustacea	Malacostraca	Decapoda	Porcellanidae	Petrolisthes armatus					X	X	Abundant at 03D.
Arthropoda	Crustacea	Malacostraca	Decapoda	Grapsidae	Sesarma reticulatum			X				
Arthropoda	Crustacea	Malacostraca	Decapoda	Ocypodidae	Uca sp.		X	X	X	X	X	
Arthropoda	Crustacea	Malacostraca	Decapoda	Xanthidae	Rhithropanopeus harrisii	X	X	X	X	X	X	

Table 2.4-18 (Sheet 2 of 2)
Organisms per Station for the Shoreline Handpicked Samples

Phylum	Subphylum	Class	Order	Family	Organism Name	01D	01E	02D	02E	03D	03E	Comments
Arthropoda	Crustacea	Malacostraca	Decapoda	Tanaidacea	Apseudomorpha (lpil)					X		
Arthropoda	Crustacea	Malacostraca	Decapoda	Tanaidacea	Leptocheliidae (lpil)				X	X		
Arthropoda	Crustacea	Malacostraca	Sessilia		Balanus sp.			X	X	X	X	Abundant at 02E, 03D, 03E.
Arthropoda	Crustacea	Malacostraca	Sessilia		Chthamalus fragilis	X	X	X	X	X	X	Abundant at 01D, 02E; Dominant at 01E.
Arthropoda	Chelicerata	Arachnida	Oribatida		Oribatida (lpil)		X					
Arthropoda		Insecta	Diptera	Chironomidae	Clunio sp.					X		
Arthropoda		Insecta	Diptera	Chironomidae	Dicrotendipes lobus	X	X	X	X			Abundant at 01E, 02E.
Arthropoda		Insecta	Collembola	Hypogastruridae	Anurida maritima	X	X		X			
Mollusca		Gastropoda	Neotaenioglossa	Hydrobiidae	Hydrobiidae (lpil)		X					
Mollusca		Gastropoda	Neotaenioglossa	Thiaridae	Melanoides turricula		X					
Mollusca		Gastropoda	Neritopsina	Neritidae	Neritina usnea	X	X	X	X			Abundant at 02D, 02E.
Mollusca		Bivalvia	Ostreoida	Anomiidae	Anomia simplex					X		
Mollusca		Bivalvia	Mytiloida	Mytilidae	Brachidontes exustus	X	X	X	X	X	X	Abundant at 02D.
Mollusca		Bivalvia	Veneroida	Crassatellidae	Crassinella sp.			X				
Mollusca		Bivalvia	Ostreoida	Ostreidae	Crassostrea virginica					X	X	
Mollusca		Bivalvia	Mytiloida	Mytilidae	Geukensia demissa				X			
Mollusca		Bivalvia	Mytiloida	Mytilidae	Ischadium recurvum				X	X	X	Abundant at 03D.
Mollusca		Bivalvia	Veneroida	Dreissenidae	Mytilopsis leucophaeata	X	X	X	X	X		Dominant at 01D, 01E; Abundant at 02D, 02E.
Mollusca		Bivalvia	Myoida	Myidae	Sphenia antillensis					X		

Notes:

Abundant = more than 10
Dominant = more than 100

Table 2.4-19
Taxonomic Diversity of Zooplankton per Station for Day Sampling

Statistic	1	2	3	4
Taxa	16	20	32	31
Mean Density (#/100m^3)	700.2	824.3	2332.9	3552.1
H'	0.54	0.80	1.93	1.76
Pielou's Evenness J'	0.24	0.35	0.84	0.76
Richness (d)	0.78	1.16	2.79	2.54

Notes:

#/100m^3 = number per 100 cubic meters

H’ calculated using H’ log base 2.

Table 2.4-20
Taxonomic Diversity of Zooplankton per Station for Night Sampling

Statistic	1	2	3	4
Taxa	19	38	41	39
Mean Density (#/100m^3)	691.0	3634.5	7306.5	19,373.8
H'	2.24	2.49	2.83	3.25
Pielou's Evenness J'	0.53	0.47	0.53	0.61
Richness (d)	2.75	4.51	4.50	3.85

Notes:

#/100m^3 = number per 100 cubic meters

H’ calculated using H’ log base 2.

Table 2.4-21
Beach Seine Sampling CPUE

Common Name	Species Name	1	2	3	Total	Percent Composition
Spotfin Mojarra	*Eucinostomus argenteus*	0	28	4	32	61.5
Bay Anchovy	*Anchoa mitchilli*	0	0	6	6	11.5
Pinfish	*Lagodon rhomboides*	0	3	2	5	9.6
Atlantic Needlefish	*Strongylura marina*	0	0	4	4	7.7
Ladyfish	*Elops saurus*	0	1	2	3	5.8
Gray Snapper	*Lutjanus griseus*	0	1	0	1	1.9
Total		**0**	**17.5**	**9.5**	**27**	**100**

Notes:

CPUE = Catch per Unit Effort

Table 2.4-22
Trawl Sampling CPUE (Number of Individuals per Trawl)

Common Name	Species Name	1	2	3	4	Total	Percent Composition
Bay Anchovy	*Anchoa mitchilli*	1	336	332	1	670	66.9
Silver Perch	*Bairdiella chrysoura*	0	0	3	204	207	20.7
Spotfin Mojarra	*Eucinostomus argenteus*	1	56	0	0	57	5.7
Pinfish	*Lagodon rhomboides*	0	22	0	0	22	2.2
Spot	*Leiostomus xanthurus*	0	0	0	13	13	1.3
Sand Seatrout	*Cynoscion arenarius*	0	6	0	6	12	1.2
Atlantic Bumper	*Chloroscombrus chrysurus*	0	6	0	0	6	0.6
Gray Snapper	*Lutjanus griseus*	1	1	0.5	0	2.5	0.3
Hardhead Catfish	*Arius felis*	0	1	0	1	2	0.2
Lady Fish	*Elops saurus*	0	0	0	2	2	0.2
Southern Kingfish	*Menticirrhus americanus*	0	0	0	2	2	0.2
Fringed Flounder	*Etropus crossotus*	0	0	0	1	1	0.1
Least Puffer	*Sphoeroides parvus*	0	1	0	0	1	0.1
Pigfish	*Orthopristis chrysoptera*	0	0	0	1	1	0.1
Atlantic Spade Fish	*Chaetodipterus faber*	0	0	0.5	0	0.5	<0.1
Black Drum	*Pogonias cromis*	0.5	0	0	0	0.5	<0.1
Lane Snapper	*Lutjanus synagris*	0	0	0.5	0	0.5	<0.1
Sheepshead	*Archosargus probatocephalus*	0.5	0	0	0	0.5	<0.1
Spanish Mackerel	*Scomberomorus maculatus*	0	0	0.5	0	0.5	<0.1
Total		**4**	**429**	**337**	**231**	**1001**	**100**

Notes:

CPUE = Catch per Unit Effort

Table 2.4-23
Gill Net Sampling CPUE (Number of Individuals per Hour)

Common Name	Species Name	1	2	3	4	Total	Percent Composition
Spotfin Mojarra	*Eucinostomus argenteus*	2.6	20.4			22.9	61.4
Ladyfish	*Elops saurus*	1.6	1.7	0.5	0.4	4.3	11.5
Bull Shark	*Carcharhinus leucas*		3.4			3.4	9.1
Gulf Menhaden	*Brevoortia patronus*		2.0			2.0	5.4
Spanish Mackerel	*Scomberomorus maculatus*				1.3	1.3	3.5
Gafftopsail Catfish	*Bagre marinus*		0.7			0.7	1.8
Gizzard Shad	*Dorosoma cepedianum*		0.7			0.7	1.8
Crevalle Jack	*Caranx hippos*		0.6			0.6	1.5
Sheepshead	*Archosargus probatocephalus*		0.6			0.6	1.5
Gray Snapper	*Lutjanus griseus*	0.5				0.5	1.4
Southern Stingray	*Dasyatis americana*				0.4	0.4	1.2
Total		**4.7**	**30.0**	**0.5**	**2.2**	**37.4**	**100.0**

Notes:

CPUE = Catch per Unit Effort

Table 2.4-24
Cast Net Sampling CPUE (Number of Individuals per 25 Casts)

Common Name	Species Name	1	2	3	4	Total	Percent Composition
Spotfin Mojarra	*Eucinostomus argenteus*	9.0	12.1	10.4	0.6	32.0	20.9
Scaled Sardine	*Harengula jaguana*	15.4	0.0	0.6	10.6	26.6	17.4
Pinfish	*Lagodon rhomboides*	5.1	3.0	15.2	0.0	23.4	15.3
Mullet	*Mugil sp.*	0.0	3.9	18.3	0.0	22.2	14.5
Bay Anchovy	*Anchoa mitchilli*	0.0	7.8	3.0	0.6	11.4	7.5
Gray Snapper	*Lutjanus griseus*	2.6	4.3	1.8	0.0	8.7	5.7
Lady Fish	*Elops saurus*	0.6	2.2	3.0	0.0	5.8	3.8
Striped Mullet	*Mugil cephalus*	4.5	0.0	0.0	0.0	4.5	2.9
White Mullet	*Mugil curema*	3.2	0.9	0.0	0.0	4.1	2.7
Atlantic Needlefish	*Strongylura marina*	0.6	0.0	1.8	0.0	2.5	1.6
Spot	*Leiostomus xanthurus*	0.0	1.3	0.0	0.0	1.3	0.8
Atlantic Thread Herring	*Opisthonema oglinum*	0.0	0.0	0.0	1.3	1.3	0.8
Grunt	*Haemulidae sp.*	0.0	0.0	1.2	0.0	1.2	0.8
Pigfish	*Orthopristis chrysoptera*	0.0	0.0	1.2	0.0	1.2	0.8
Striped Anchovy	*Anchoa hepsetus*	0.0	0.0	1.2	0.0	1.2	0.8
Sheepshead	*Archosargus probatocephalus*	0.0	0.9	0.0	0.0	0.9	0.6
Red Drum	*Sciaenops ocellatus*	0.6	0.0	0.0	0.0	0.6	0.4
Black Drum	*Pogonias cromis*	0.0	0.0	0.0	0.6	0.6	0.4
Inshore Lizardfish	*Synodus foetens*	0.0	0.0	0.0	0.6	0.6	0.4
Northern Puffer	*Sphoeroides maculatus*	0.0	0.0	0.0	0.6	0.6	0.4
Southern Stingray	*Dasyatis americana*	0.0	0.0	0.0	0.6	0.6	0.4
Whitefin Sharksucker	*Echeneis neucratoides*	0.0	0.0	0.0	0.6	0.6	0.4
Herring sp.	*Clupeidae*	0.0	0.0	0.6	0.0	0.6	0.4
Common Snook	*Centropomus undecimalis*	0.0	0.4	0.0	0.0	0.4	0.3
Total		**41.7**	**36.6**	**58.5**	**16.3**	**153.1**	**100.0**

Notes:

CPUE = Catch per Unit Effort

Table 2.4-25
Minnow Trap Sampling CPUE (Number of Individuals per Day)

Common Name	Species Name	1	2	3	4	Total	Percent Composition
Frillfin goby	*Bathygobius soporator*	0.0	17.8	2.1	7.5	27.3	46.9
Spotfin Mojarra	*Eucinostomus argenteus*	15.8	3.1	0.0	0.0	18.9	32.5
Pinfish	*Lagodon rhomboides*	0.0	0.0	0.0	7.9	7.9	13.5
Naked Goby	*Gobiosoma bosc*	0.0	1.0	1.0	0.0	2.1	3.6
Silver Perch	*Bairdiella chrysoura*	0.0	1.0	0.0	0.0	1.0	1.8
Skilletfish	*Gobiesox strumosus*	0.0	0.0	1.0	0.0	1.0	1.8
Total		**15.8**	**22.9**	**4.2**	**15.3**	**58.2**	**100.0**

Notes:

CPUE = Catch per Unit Effort

Table 2.4-26
Federally and State-Listed Threatened and Endangered Aquatic Species that have the Potential to Occur in the Vicinity of the LNP Site

Common Name	Scientific Name	Federal Status	State Status
Mammals			
West Indian manatee	*Trichechus manatus*	LE	LE
Reptiles			
American alligator[a]	*Alligator mississippiensis*	Treated as Threatened[a]	LS
Loggerhead sea turtle	*Caretta caretta*	LE	LE
Green sea turtle	*Chelonia mydas*	LE	LE
Leatherback sea turtle	*Dermochelys coriacea*	LE	LE
Hawksbill sea turtle	*Eretmochelys imbricata*	LE	LE
Kemp's Ridley sea turtle	*Lepidochelys kempii*	LE	LE
Suwannee Cooter	*Pseudemys concinna suwanniensis*	N	LS
Fish			
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	LT	LS
Smalltooth sawfish	*Pristis pectinata*	LE	N

Notes:

a) The American alligator's federal status is "Treated as Threatened" by the USFWS due to the close resemblance to the American crocodile.

LE = Listed Endangered
LS = Listed State Species of Special Concern
LT = Listed Threatened
N = Not Listed
USFWS = U.S. Fish and Wildlife Service

Source: Reference 2.4-086

Table 2.4-27
Abundant Commercially Valuable Finfish Species Landings from Citrus and Levy Counties, Florida (1994 through 2007)

	Citrus County		Levy County	
Species	**Average Harvest (pounds/year)**	**Percent of Total Harvest**	**Average Harvest (pounds/year)**	**Percent of Total Harvest**
Black mullet	435,706	41.3%	52,533	23.2%
Red grouper	327,457	31.0%	68,272	30.1%
Crevalle jack	59,514	5.6%		
Ladyfish	53,919	5.1%		
Black grouper	33,570	3.2%	8689	3.8%
Gag grouper	31,178	3.0%	48,786	21.5%
Grunts	25,030	2.4%	11,583	5.1%
Porgies	13,040	1.2%		

Source: Reference 2.4-047

Table 2.4-28
Abundant Commercially Valuable Invertebrate Species Landings from Citrus and Levy Counties, Florida (1994 through 2007)

	Citrus County		Levy County	
Species	**Average Harvest (lb/yr)**	**Percent of Total Harvest**	**Average Harvest (lb/yr)**	**Percent of Total Harvest**
Blue hard crab	1,019,862	72.7%	460,693	77.3%
Oysters			90,518	15.2%
Stone crab claws			36,944	6.2%

Notes:

lb/yr = pound per year

Source: Reference 2.4-047

Table 2.4-29
Key Indicator Organisms and Rationale for Selection

Key Indicator Organisms	Rationale for Selection
Invertebrates	
Brief squid	Collected in trawls at Station 3. SIO in CREC 316 Studies.
Pink shrimp	Commercially important species. SIO in CREC 316 Studies.
Blue crab	Commercially important species. Zoea and megalop larvae collected in plankton tows at all four stations. The most abundant macroinvertebrate collected using traps and trawls. SIO in CREC 316 Studies.
Fish	
Bay anchovy	The most abundant ichthyoplankton (larvae) collected in plankton tows. The most abundant fish collected in trawls. SIO in CREC 316 Studies.
Pinfish	Collected in beach seines, trawls, cast nets and minnow traps. Commonly caught in beach seines, trawls and cast nets. Third most abundant species collected at Stations 2 and 3. SIO in CREC 316 Studies.
Red drum	Recreationally important species. Collected in cast nets at Station 1. SIO in CREC 316 Studies.
Silver perch	Commonly caught in fisheries samples. Second most abundant species collect in trawl. SIO in CREC 316 Studies.
Spotfin mojarra	Commonly caught in fisheries samples. Collected at all four sampling stations. Most abundant fish for beach seines, gill net and cast netting.
Spotted seatrout	Recreationally important species. Commonly caught in trawls at Stations 2 and 3. SIO in CREC 316 Studies.
Spot	Commonly caught in trawls at Station 4and cast nets at Station 2. SIO in CREC 316 Studies.
Striped mullet	Recreationally important species. Commonly caught in fisheries samples. Collected in relatively high abundances at Stations 1, 2 and 3 using cast nets. SIO in CREC 316 Studies.

Notes:

CREC = Crystal River Energy Complex
SIO = Selected Important Organism

Table 2.4-30 (Sheet 1 of 5)
Ecoregion 2 Essential Fish Habitat, Tarpon Springs to Pensacola Bay, Florida

Species	Species Name	Life Stage	System[(a)]	Essential Fish Habitat
Pink shrimp[b]	*Penaeus duorarum*	eggs	M	<50 m; sand/shell bottom
		larvae	M	<50 m; planktonic, sand/shell bottom, SAV
		juvenile	E	<64 m; sand/shell substrate, SAV
		adults	M	<64 m; sand/shell substrate
White shrimp[c]	*Penaeus setiferus*	eggs	M	9-34 m; sand/shell/soft bottoms
		larvae	E/M	<64 m; plankton, soft bottom, estuarine marsh
		juvenile	E	soft bottom, estuarine marsh
Stone crab	*Menippe mercenaria*	eggs	E/M	<62 m; sand/shell/hard bottoms, SAV, reefs
		larvae	E/M	<62 m; planktonic
		juvenile	E/M	<62 m; sand/shell/hard bottoms, SAV
Gulf stone crab	*Menippe adina*	eggs	E/M	<18 m; sand/shell/soft bottom
		larvae/pos tlarvae	E/M	<18 m; planktonic, oyster reef, soft bottom
		juvenile	E	<18 m; sand/shell/soft bottom, oyster reef
Red drum	*Sciaenops ocellatus*	eggs	M	planktonic
		larvae/pos tlarvae	E	planktonic, SAV, sand/shell/soft bottom, emergent marsh
		juvenile	M/E	<5 m; SAV, sand/shell/soft/hard bottom, emergent marsh
		adults	M/E	1-46 m (9-18 m S of Crystal River); SAV, pelagic, sand/shell/soft/hard bottom, emergent marsh
Red grouper	*Epinephelus morio*	eggs	M	20-100 m; planktonic
		larvae	M	20-100 m; planktonic
		juvenile	M/E	<50 m; hard bottoms, SAV, reefs
		adults	M	3-183 m; reefs, hard bottoms

Table 2.4-30 (Sheet 2 of 5)
Ecoregion 2 Essential Fish Habitat, Tarpon Springs to Pensacola Bay, Florida

Species	Species Name	Life Stage	System[(a)]	Essential Fish Habitat
Black grouper	*Epinephelus mystacinus*	eggs	M	18-28 m; planktonic
		larvae	M	10-150 m; planktonic
		juvenile	E/M	SAV, hard bottoms, reefs
		adults	M/E	10-150 m; hard bottoms, mangrove, reefs
Gag grouper	*Mycteroperca microlepis*	eggs	M	50-120 m; planktonic
		larvae	M	50-120 m; planktonic
		juvenile	M/E	<50 m; SAV, reefs, hard bottom
		adults	M	20-120 m; hard bottom, reefs
Nassau grouper	*Epinephelus striatus*	eggs	M	planktonic
		larvae	M	2-50 m; planktonic
		juvenile	M	SAV, reefs
Warsaw grouper	*Epinephelus nigritus*	eggs	M	40-183 m; planktonic
		larvae	M	40-183 m; planktonic
		juvenile	M	20-30 m; reefs
Yellowedge grouper	*Epinephelus flavolimbatus*	eggs	M	35-183 m; planktonic
		larvae	M	35-183 m; planktonic
		postlarvae /juvenile	M	35-183 m; hard bottom
		adults	M	35-183 m; reefs bottom
Red hind	*Epinephelus guttatus*	eggs	M	18-110 m; planktonic
		larvae	M	18-110 m; planktonic
		juvenile	M	2-110 m; reefs
Rock hind	*Epinephelus adscensionis*	eggs	M	2-100 m; planktonic
		larvae	M	2-100 m; planktonic
		juvenile	M	2-110 m; reefs

Table 2.4-30 (Sheet 3 of 5)
Ecoregion 2 Essential Fish Habitat, Tarpon Springs to Pensacola Bay, Florida

Species	Species Name	Life Stage	System[(a)]	Essential Fish Habitat
Speckled hind	*Epinephelus drummondhayi*	eggs	M	146-183 m; planktonic
		larvae	M	146-183 m; planktonic
Scamp	*Mycteroperca phenax*	eggs	M	60-189 m; planktonic
		larvae	M	60-189 m; planktonic
		juvenile	M	12-33 m; hard bottoms, reefs, mangrove
Schoolmaster	*Lutjanus apodus*	eggs	M	<90 m; planktonic
		larvae	M	<90 m; planktonic
		juvenile	E/M	<90 m; SAV, mangrove, emergent marsh, reefs, hard bottom
Red snapper	*Lutjanus campechanus*	eggs	M	18-37 m; planktonic
		larvae	M	18-37 m; planktonic
		juvenile	M	17-183 m; hard/soft/sand/shell bottom
		adults	M	7-146 m; reefs, hard/sand/shell bottoms
Vermilion snapper	*Rhomboplites aurorubens*	eggs	M	>180 m; planktonic
		juvenile	M	1-25 m; reefs, hard bottom
		adult	M	>180 m; reefs, hard bottom
Gray snapper	*Lutjanus griseus*	eggs	M	<180 m; planktonic, reefs
		larvae	M/E	<180 m; planktonic, reefs
		postlarvae /juvenile	M/E	<180 m; SAV, mangrove, emergent marsh
		adults	E/M	<180 m; emergent marsh, reefs, sand/shell/soft/hard bottoms
Yellowtail snapper	*Ocyurus chrysurus*	eggs	M	1-183 m; planktonic
		juvenile	M/E	1-183 m; SAV, mangrove, soft bottom
		adults	M	1-183 m; reefs, hard bottom, shoals/banks

Table 2.4-30 (Sheet 4 of 5)
Ecoregion 2 Essential Fish Habitat, Tarpon Springs to Pensacola Bay, Florida

Species	Species Name	Life Stage	System[(a)]	Essential Fish Habitat
Lane snapper	*Lutjanus synagris*	eggs	M	4-132 m; planktonic
		larvae	E/M	4-132 m; reefs, SAV
		juvenile	E/M	<20 m; SAV, mangrove, reefs, sand/shell/soft bottom
Blackfin snapper	*Lutjanus buccanella*	eggs	M	40-183 m; planktonic
		juvenile	M	12-40 m; hard bottom
Dog snapper	*Lutjanus jocu*	eggs	M	planktonic
		larvae	M	planktonic
		juvenile	E/M	SAV, mangrove, emergent marsh
Hogfish	*Orthopristis chrysoptera*	juvenile	E/M	3-30 m; SAV
Dwarf sand perch	*Diplectrum bivittatum*	juvenile	M	hard bottom
Greater amberjack	*Seriola dumerili*	eggs	M	1-183 m; planktonic
		larvae	M	1-183 m; pelagic
		juvenile	M	1-183 m; drift algae (Sargassum)
Lesser amberjack	*Seriola fasciata*	eggs	M	planktonic
		larvae	M	pelagic
		juvenile	M	55-130 m; drift algae (Sargassum)
Almaco jack	*Seriola rivoliana*	eggs	M	15-160 m; planktonic
		juvenile	M	15-160 m; drift algae (Sargassum)
Banded rudderfish	*Seriola zonata*	larvae	M	10-130 m; planktonic
		juvenile	M	10-130 m; drift algae (Sargassum)
Blueline tilefish	*Caulolatilus bermudensis*	eggs	M	60-183 m; planktonic
		larvae	M	60-183 m; planktonic

Table 2.4-30 (Sheet 5 of 5)
Ecoregion 2 Essential Fish Habitat, Tarpon Springs to Pensacola Bay, Florida

Species	Species Name	Life Stage	System[(a)]	Essential Fish Habitat
Goldface tilefish	*Caulolatilus chrysops*	eggs	M	60-183 m; planktonic
		larvae	M	60-183 m; planktonic
Golden tilefish		eggs	M	80-183 m; planktonic
		larvae	M	80-183 m; planktonic
		juvenile	M	80-183 m; hard/soft bottom, shelf edge/slope
Gray triggerfish	*Balistes capriscus*	eggs	M	10-100 m; reefs
		larvae	M	drift algae (Sargassum)
		postlarvae/ juvenile	M	10-100 m; drift algae (Sargassum). mangroves, reefs
Spanish mackerel	*Scomberomorus maculatus*	eggs	M	<50 m; plankton
		larvae	M	9-84 m; plankton
		juvenile	M	<50 m; pelagic
		adults	E/M	<75 m; pelagic
Coral		all stages	M	planktonic, FL Middle Grounds, reefs

Notes:

a) E=estuarine, M=marine
b) Marine EFH S of Crystal River limited to 18-46 meters.
c) Shrimp EFH is generally less than 64 meters, but is less in some parts of the ecoregion, refer to the 2005 fishery management plan and final environmental impact statement.

m = meter

Table 2.4-31
Summary of Impacts of Station Operation — CREC

Study Component	Impact Assessment
Benthic infauna	Adverse thermal effects limited to area bounded by Stations 13, 17, and 18, community alterations (considered minimal) have occurred in larger area bounded by Stations 4, 5, 22, and 30.
Macrophytes	Thermal effects in the form of reduced percent cover and species richness of seagrasses and macroalgae occurred in Basins 1 and 3.
Salt Marsh	Thermal effects on *Spartina* and *Juncus* at Thermal, nearest the discharge; decreasing effects on *Spartina* at Fence, Thumb Island, and Midway and on *Juncus* at Thumb Island and Midway.
Oyster Reef	Higher oyster mortality and reduced abundance of associated fauna at Stations OR4 and OR5 in Basin 1 and to lesser extent at OR6; growth enhancement and higher condition index around Basin 3.
Water Quality	Area of greatest thermal influence defined as Stations 13, 17, 18, 19, 29; grouping includes Stations 4, 5, 14, 20, 21, 22, 28, and 30. Turbidity and TSS were affected by storms but not by barge traffic.

Notes:

TSS = total suspended solids

Table 2.4-32
Summary of Impacts of Station Operation on Selected Important Organisms — CREC

Selected Important Organisms	Thermal Discharge Assessment
Bay anchovy	Abundant in thermal area
Polka-dot batfish	N/A
Pigfish	Avoids discharge in warmest months
Pinfish	Avoids highest delta T’s
Silver perch	Avoids highest delta T's; utilizes outer plume areas
Spotted seatrout	Utilizes outer plume areas
Spot	Utilizes thermal area
Red drum	N/A
Striped mullet	N/A
Brief squid	N/A
Pink shrimp	Avoids highest delta T's; utilizes outer plume areas
Stone crab	Utilizes thermal area
Blue crab	Avoids highest delta T's; utilizes outer plume areas

Notes:

N/A = not available

2.5 SOCIOECONOMICS

This section follows the content and organization of the Standard Review Plans for Environmental Reviews for Nuclear Power Plants, also known as NUREG-1555, "U.S. Nuclear Regulatory Commission (NRC) Environmental Standard Review Standard." NUREG-1555 is designed to meet the requirements of 10 CFR 51. This section was prepared in accordance with NUREG-1555 and is organized into the following subsections:

- ER Subsection 2.5.1 — Demographics
- ER Subsection 2.5.2 — Community Characteristics
- ER Subsection 2.5.3 — Historic Properties
- ER Subsection 2.5.4 — Environmental Justice

2.5.1 DEMOGRAPHICS

This subsection discusses population within the LNP site vicinity and region, as well as the projected populations for the vicinity and region, transient and migratory population, and demographic characteristics, which include sex, race, age, and income. The scope of analysis is described in the following paragraphs and includes current population distributions, population distributions predicted at time of plant startup, which is assumed to be 2016 or later for LNP 1 and 2017 or later for proposed LNP 2, and for 10-year increments, reaching 80 years from the 2000 United States Census. (Reference 2.5-001) Projected populations were determined based on projected growth estimates, which were provided by the Warrington College of Business at the University of Florida, Bureau of Economic and Business Research (BEBR) (Reference 2.5-002). BEBR produces low, medium and high intercensal population estimates and projections in five-year increments for the State of Florida, of which the medium projection was utilized as the most likely to provide an accurate forecast of future population for the region. ER Table 2.5-38 summarizes these 2000 Census Population and BEBR medium projections by county. The scope is of sufficient detail to provide input to analyses of radiological impacts and accident impacts and to support the socioeconomic analysis.

Data from the 2000 United States Census and a GIS were used to determine the sector population distribution. In this secton populations were calculated using census blocks, the smallest unit of data collected by the U.S. Census Bureau. In this subsection, census block groups were utilized that are larger areas compared to census blocks. There were approximately 759 census blocks within the 16-km (10-mi.) radius of the site. For population calculations, it was assumed that the 2000 United States Census population data were evenly distributed throughout a census block. Using this assumption, the GIS determined the percent area of a census block contained in a particular sector. The percent area of the census block was then used to calculate the portion of the census block population within that sector. For example, if a sector contained 50 percent of a census block, it was assumed that the sector also contained 50 percent of the census block population. Transient populations were calculated and are included in the population estimates. These transient populations are further explained in ER Subsection 2.5.1.3.2.

Population projections for 10-year increments up to 80 years from the 2000 United States Census for population within the 16-km (10-mi.) radius and the 16- to 80-km (10- to 50-mi.) radius were estimated using the following methodology. County projection information was collected from the BEBR CD-ROM, "Detailed Population Projections by Age, Sex, Race, and Hispanic Origin for Florida and Its Counties." The population projections are based on the expected population percent change rates (percent change) between 2000 and 2010, 2010 and 2020, and 2020 and 2030 (Reference 2.5-002). The percent change was estimated for each county, and the expected population change rate for the 10-year increments between 2030 and 2080 were assumed to be the average of the estimated percent change for the three periods between 2000 and 2030. The county percent change rates were then used to project populations using the U.S. Census Bureau data for each census block within the county. Population projections for each sector were calculated using the same method described above, assuming even distribution throughout the census block.

A sector chart was used in determining population distribution as described in the following subsections. The current proposed plan includes the installation of two Westinghouse Electric Company, LLC (Westinghouse) AP1000 Reactor (AP1000) units. The center of the distance between the two reactor buildings was assumed to be the centerpoint for the radii and sector grid. The radii were expanded by half of the distance between the two reactor buildings for the LNP. The two proposed reactor buildings are centered at the following coordinates:

> LNP 1
> Latitude: 29° 04' 20.25" Longitude: -82° 37' 12.94"
>
> LNP 2
> Latitude: 29° 04' 29.62" Longitude: -82° 37' 16.68"

The distance between the centerpoint of the reactor buildings for LNP 1 and LNP 2 is 289.5 m (950 ft. or 0.2 mi.). Half of this distance, or 144.8 m (475 ft. or 0.1 mi.), was used to extend the radii in the grid sectors. For example, the 1.6-km (1-mi.) radius was extended to a 1.7-km (1.1-mi.) radius to provide adequate coverage of LNP 1 and LNP 2, while maintaining compliance with guidance provided in Regulatory Guide 1.206 and NUREG-1555.

2.5.1.1 Population within 16 Km (10 Mi.)

Based on the 2000 United States Census, the total residential population within 16 km (10 mi.) of the LNP site was estimated to be 17,457 persons, as shown in Table 2.5-1. The population within the 16-km (10-mi.) radius of the LNP site varies from the population of 18,325 reported in the LNP Emergency Plan, because 16-km (10-mi.) emergency planning zone (EPZ) and population radius methodologies differ slightly. The difference in reported populations is approximately 5 percent and is the result of the conservative inclusion of the full block group population numbers for those features straddling the EPZ versus clipping them and distributing the 50 percent of the population to the block group as was done for the population radius method. The significant population groupings (e.g., cities and towns) within 16 km (10 mi.) of the LNP site are shown in Figure 2.5-1, which also shows a sector chart divided into radii for 0 to 16 km (0 to 10 mi.).

Residential and transient population distribution within the sectors have been summarized and provided in Table 2.5-1. The table indicates that a majority of the population live in the eastern and southeastern sectors, 8 to 16 km (5 to 10 mi.) from the site, which include portions of the Town of Dunnellon. The southwest and west-southwest sectors include the towns of Inglis (population of 1491), which is located 6.6 km (4.1 mi.) southwest of the LNP site, and Yankeetown (population of 629), which is located 12.9 km (8.0 mi.) west-southwest of the LNP site. Population projections for 10-year increments up to 80 years from the 2000 United States Census, for populations in the 0 to 16 km (0 to 10 mi.) area, are shown in Table 2.5-2.

2.5.1.2 Population between 16 and 80 Km (10 and 50 Mi.)

Based on the 2000 United States Census, the total residential population between 16 km (10 mi.) and 80 km (50 mi.) of the LNP site was estimated to be 884,089 persons, as shown in Table 2.5-3. The significant population groupings (e.g., cities and towns) within the region (80 km [50 mi.]) are shown in Figure 2.5-2; Figure 2.5-2 also shows a sector chart divided into radii for 16 to 80 km (10 to 50 mi.).

Residential and transient population distributions within the sectors illustrated in Figure 2.5-2 for the 16- to 80-km (10- to 50-mi.) radii have been summarized and are provided in Table 2.5-3. Table 2.5-3 indicates that a majority of the residential population is concentrated in the north-northeast around the City of Gainesville, south around Crystal River, and in the eastern sectors influenced by the City of Ocala. The U.S. Census Bureau data from the 2000 United States Census and the GIS were used to determine the sector population distribution, as described in ER Subsection 2.5.1.1.

Population projections for 10-year increments up to 80 years from the latest United States Census for population between the 16-km (10 mi.) and 80-km (50-mi.) areas of the LNP site are included in Table 2.5-4. The population growth projection for the region is comparable to that of the State of Florida, and is based on the expected population percent change between 2000 and 2010, 2010 and 2020, and between 2020 and 2030. Population projections were obtained from the BEBR CD-ROM, “Detailed Population Projections by Age, Sex, Race, and Hispanic Origin for Florida and Its Counties” (Reference 2.5-002).

2.5.1.3 Demographic Characteristics of the Enclosed Population within 80 Km (50 Mi.)

Demographic characteristics were prepared for the low population zone (LPZ) (the area within a 5-km [3-mi.] radius centered on the footprint of LNP 1 and LNP 2), the EPZ (the area within an approximate 16-km [10-mi.] radius of the LNP site), and the region (the area within an 80-km [50-mi.] radius of the LNP site) (Figures 2.5-1 and 2.5-2). The LPZ is defined by 10 CFR 100.3 as the following:

> The area immediately surrounding the Exclusion Area Boundary (EAB) which contains residents, the total number and density of which are such that there is a reasonable probability that appropriate protective measures could be taken in their behalf in the event of a serious accident.

2.5.1.3.1 Age and Gender Distribution of Population

Age and gender distribution of the population within the LPZ, EPZ, and the region are summarized in Table 2.5-5. The gender distribution within the LPZ is approximately evenly distributed with males and females. Approximately 20 percent of the population was aged 50 to 64 years old, and 17 percent of the population each fell into the three age groups 5 to 17, 40 to 49, and 65 and up. The EPZ had similar gender distribution with a slightly higher female population. Age distribution is more distributed in age groups 40 and up, with 13.8 percent aged 40 to 49, 21.5 percent aged 50 to 64, and 25.7 percent aged 65 and up. The region also shows slightly higher populations of females to males. Age distribution is weighted more in age groups 40 and up, with 12.6 percent aged 40 to 49, 17.4 percent aged 50 to 64, and 23.2 percent aged 65 and up.

2.5.1.3.2 Transient Population

Transient population distribution within the sectors illustrated in Figure 2.5-1 for the 0- to 16-km (0- to 10-mi.) radii have been summarized and provided in Table 2.5-1. The table indicates that a majority of the transient population is located in the eastern and southeastern, sectors, 8 to 16 km (5 to 10 mi.) from the LNP site, which includes portions of the Town of Dunnellon. Population projections for 10-year increments up to 80 years from the 2000 United States Census, for transient populations in the 0 to 16 km (0 to 10 mi.) area is shown in Table 2.5-2.

Transient population distributions within the sectors illustrated in Figure 2.5-2 for the 16- to 80-km (10- to 50-mi.) radii have been summarized and provided in Table 2.5-3. Table 2.5-3 indicates that a majority of the transient population is concentrated in the north-northeast around the City of Gainesville, south around Crystal River, and in the eastern sectors influenced by the City of Ocala. Population projections for 10-year increments up to 80 years from the 2000 United States Census, for transient populations in the 0 to 16 km (0 to 10 mi.) area is shown in Table 2.5-4.

Transient populations were calculated and included in the population estimates. The following categories were used in estimating the transient population for each sector in the 0- to 16-km (0- to 10-mi.) radius:

- **Seasonal Population**. The GIS was used to collect information reported in the 2000 United States Census on seasonal and vacation home usage within the 16-km (10-mi.) radius. A standard housing occupancy factor of 2.49 people per house was used to estimate transient population from seasonal housing (Reference 2.5-003).

- **Transient Business Population**. For businesses located within the 16-km (10-mi.) radius, the employees for major employers were assumed to be included in the transient population estimates because the major population centers are located outside of the 16-km (10-mi.) radius. A list of the major employers and total number of employees was obtained from the Economic Development offices for Levy, Citrus, and Marion counties (References 2.5-004, 2.5-005, and 2.5-006). Major employers were defined as those employers with more than 100 employees.

- **Hotel/Motel Population**. Hotels and motels located within the 16-km (10-mi.) radius were identified using the GIS. The GIS data were sorted based on distance from the centerpoint of the two proposed reactor units. Total room numbers were obtained by phone surveys and one person was assumed to occupy each room on a given night to provide a conservative estimate in the absence of readily available occupancy rate data.

- **Recreational Areas**. Major recreational areas were identified within the 16-km (10-mi.) radius of the LNP site. Total projected occupancy estimates collected for major recreational areas were used in the transient population estimates and are presented in further detail in ER Subsection 2.5.2.7.

- **Special Populations (Schools, Hospitals, Nursing Homes, and Correctional Facilities**). GIS was used to identify schools, hospitals, nursing homes, and correctional facilities located within the 16-km (10-mi.) radius. This resulted in the identification of six schools and four nursing homes but no major correctional facilities or hospitals. Telephone interviews were conducted to identify occupancy estimates for the nursing homes while the GIS contained 2005 enrollment data for the schools. Based on this information, a total of 2393 persons considered “special” are located within the 16-km (10-mi.) radius. None of these special populations are located within 4 miles of the LNP; however, there is one school, the Forestry Youth Academy operated by Levy County, located between 4 to 5 mi. to the NE and one assisted living facility located 4 to 5 mi. to the SE near Dunnellon. The remaining three nursing homes and five schools are located between 5 and 10 mi. from the LNP.

- **Festivals**. There are no major festivals within the 16-km (10-mi.) radius that would affect the transient population estimates. The annual Nature Coast Civil War Reenactment is held on the Crystal River Quarry property and is attended by approximately 7300 people; however, this three-day event is not included in transient population estimates because of its short duration (Reference 2.5-007).

- **Migrant Workers**. Migrant worker populations were calculated using average statewide statistical information supplied by the United States Department of Agriculture (USDA) 2002 Agricultural Census (Reference 2.5-008). Migrant worker population estimates were prepared using the average number of migrant farm labor per farm multiplied by the total number of farms utilizing migrant farm labor. This analysis was performed at the county level and proportionately distributed throughout the sector grid.

The following categories were used in estimating the transient population for each sector in the 16- to 80-km (10- to 50-mi.) radius:

- **Seasonal Population**. The methodology described for the 16-km (10-mi.) radius was used to determine seasonal population for the 80-km (50-mi.) radius.

- **Transient Business Population**. For businesses located within the 80-km (50-mi.) radius, no net change was assumed to occur in population. This assumption was based on the large radial area and reasonable judgment that the number of workers commuting into the 80-km (50-mi.) area is the same as the number of workers commuting out of the 80-km (50-mi.) area on a daily basis.

- **Hotel/Motel Population**. The GIS was used to collect information on the location and number of hotels, motels, inns, and bed and breakfast establishments within the 80-km (50-mi.) radius. Based on the large area and reasonable judgment, the average hotels, motels, inns, and bed and breakfast establishments were assumed to contain 75, 25, 10, and 5 rooms, respectively. For the purposes of determining transient population estimates, one person was assumed to occupy each room on a given night.

- **Recreational Areas**. Recreational areas were defined to be public recreational areas where usage patterns are tracked based on parking permits or other entrance fees. Major recreational areas are presented in further detail in ER Subsection 2.5.2.7.

- **Special Populations (Schools, Hospitals, Nursing Homes, and Correctional Facilities)**. GIS was used to identify the schools and hospitals discussed in ER Subsection 2.5.2; it also identified eight major correctional facilities located within the 80-km (50-mi.) radius; however, these special populations were not added to the 16- to 80-km (10- to 50-mi.) population estimates based on the large area and reasonable judgment of their minor contribution to the overall regional population. Additionally, the United States Census was assumed to include university students living in dormitories and apartments, residents of correctional facilities, and long-term residents of nursing homes, hospitals, and other institutions, as part of the census survey for residential totals. Staff and residents temporarily placed in hospitals, nursing homes, and other institutions are likely to live within the 80-km (50-mi.) radial area; therefore, special populations would not contribute to transient population estimates within the region.

- **Festivals**. Several large festivals and sporting events occur in the larger regional area, such as University of Florida collegiate sporting events and festivals including the Fall Downtown Arts Festival, Spring Arts Festival, and the Hoggetowne Medieval Faire, all of which are held in Gainesville, Florida. However, these festivals occur throughout the year causing the transient population to vary on a daily basis. Any additional transient population would be small in comparison and short in duration.

- **Migrant Workers**. The methodology described for the 16-km (10-mi.) radius was used to determine migrant worker population for the 80-km (50-mi.) radius.

2.5.1.3.3 Racial and Ethnic Distribution of Population

The minority population within the LPZ is approximately 0 percent. The minority population within the EPZ is 6 percent and within the region is 15.3 percent. The national average for minority populations is 37 percent. The minority population in the LPZ, EPZ, and region are below the national average. The racial and ethnic distributions of the population in the LPZ, EPZ, and region are provided in Table 2.5-6 (Reference 2.5-001).

2.5.1.3.4 Income Distribution of Population

Within the LPZ, 16.1 percent of the population had a 1999 income below the poverty level, 10.5 percent of the population within the EPZ had a 1999 income below the poverty level, and 12.0 percent of the population within the region had a 1999 income below the poverty level. The national average of the population below the poverty level is 12.4 percent. Other income distributions for the LPZ, EPZ, and region are provided in Table 2.5-7 (Reference 2.5-001).

2.5.2 COMMUNITY CHARACTERISTICS

2.5.2.1 Economic Characteristics

2.5.2.1.1 Economic Base

Within the 80-km (50-mi.) region of influence, the principal economic centers are the City of Gainesville in Alachua County and the City of Ocala in Marion County. Of the three counties surrounding the site, the largest employers are in Marion County, followed by Citrus County, and then Levy County (References 2.5-004, 2.5-005, and 2.5-006). In 2007, the four largest employers in Marion County were the Monroe Regional Medical Center with 2100 employed in healthcare; Emergency One, Inc., with 1309 employed in fire apparatus manufacturing; the Ocala Regional Medical Center with 983 employed in healthcare; and ClosetMaid with 915 employed in wire shelving manufacturing (Reference 2.5-006). Citrus County top employers were Progress Energy employing 1100 in the utility industry, the Citrus County School Board employing 1000 in education and the Citrus Memorial Hospital employing 1000 in healthcare (Reference 2.5-005). Finally, the largest employer in Levy County was the Levy County School Board with 876 employed in education (Reference 2.5-004). Table 2.5-8 shows the 10 largest employers for each of these three counties.

Table 2.5-9 depicts trends in regional employment and earnings by sector for the 80-km (50-mi.) region of influence and each of the three counties surrounding the LNP. The sectors directly of interest to the LNP are the construction, transportation, and public utilities sectors. The percentage of employment in the construction sector has grown from 6.6 percent to 8.9 percent over the period of 1990 to 2005. The number of construction jobs has slightly more than doubled and construction earnings have risen three-fold. At the same time, the number of jobs in the transportation and public utilities sector has fallen after rising sharply in 2000. In 2005, the service sector was the largest sector, accounting for 38.8 percent of employment and generating $4.79 billion in earnings for the region. In 1990, the service sector accounted for 26.3 percent of total employment. Other important sectors in this region are government and government enterprises (17.5 percent) and retail trade (12.8 percent). Total jobs in the 80-km (50-mi.) region of influence increased from 279,701 to 439,252 over the period of 1990 to 2005.

For the three counties surrounding the LNP site, the construction sector is similarly important, accounting for 9.8 percent of total employment in Levy County, 9.6 percent of total employment in Marion County, and 11.9 percent of total employment in Citrus County. Service is the largest employment sector with 27.2 percent, 44.1 percent, and 36.7 percent of employment in Levy, Marion and Citrus counties, respectively. In 2005, Levy County earnings totaled $370 million with over 14,000 jobs. Citrus County’s more than 49,000 jobs earned $1.4 billion, and Marion County earnings for 135,000 jobs came to almost $4.3 billion. These jobs numbers include both residents and non-residents of the respective counties. (References 2.5-009, 2.5-010, 2.5-011, and 2.5-012)

Job statistics in heavy construction are available only at the state and national levels. According to the U.S. Census Bureau 2002 Economic Census, a total of 59,412 people in Florida were employed in the heavy construction industry (Reference 2.5-013). This is up 31.8 percent from 1997 (Reference 2.5-013). That same year, this industry employed 1,156,810 workers (Reference 2.5-014).

Unemployment rates for each of the counties within the 80-km (50-mi.) region are reported in Table 2.5-10. Between 1995 and 2005, unemployment rates in the region fell in all but one county, Alachua County, where it rose slightly from 2.8 percent to 3 percent. Unemployment fell from 4.7 percent to 3.9 percent in Levy County, from 6.8 percent to 4.3 percent in Citrus County, and from 5.3 percent to 3.9 percent in Marion County, which had the most employed workers (120,150) of all of the eight counties within the 80-km (50-mi.) region. (Reference 2.5-015)

Per capita incomes for the counties within the region are listed in Table 2.5-11. In 2005, per capita income ranged from a low of $18,945 in Dixie County to a high of $30,435 in Alachua County. Levy County personal income was $22,036 after growing 32.4 percent since 1995. In neighboring Citrus and Marion counties personal income was over $26,000, which was up over 33 percent since 1995. Between 1995 and 2005, personal income grew at least 3 percent on average each year in each of the counties in the region. Gilchrist County experienced the highest percentage change in income over this period (37.3 percent). (Reference 2.5-016)

The LNP will require approximately 773 workers for operations on site for the 40-year project duration. Under license renewal, operations could extend for an additional 20 years for a total anticipated operational period of 60 years. ER Section 5.9 discusses plans for decommissioning LNP at the end of its lifespan. In addition, every 18 months the scheduled refueling outages will require an additional 800 workers for about 25 to 30 days. Furthermore, ER Subsection 4.4.2 presents information on labor force requirements to construct the units, duration of construction, peak labor force periods, the expected number of workers who will migrate to the region, and the expected number of workers who will commute to the site from each of the counties within the region.

2.5.2.1.2 Tax Structure and Distribution

It is assumed that most of the effects on taxes and expenditures from the construction and operation of a nuclear power generating facility will be felt at the county level. In the case of the LNP, this means the effects will primarily be felt in Levy County. On the revenue side, property taxes, which are generally the category most affected by siting new facilities, are of special note. Impact fees and special assessments are generally of lesser importance. Due to the close proximity of parts of Marion and Citrus counties to the proposed location of the new facilities, the current revenues and expenditures for all three counties are reported. The most recent data for these three counties are summarized in Table 2.5-12. Estimates in the text are rounded to the nearest million unless noted otherwise.

In 2006, Levy County collected over $38 million in revenue. Almost half of the revenue, over $18 million, was from taxes, including property taxes. Intergovernmental revenue of over $9 million provided the second largest source of revenue. The millage rate in the part of the county where the plant will be constructed is 15.579. This rate is multiplied by the assessed value of the property to calculate the property tax. The largest expenditure category in Levy County is public safety, with spending exceeding $15 million. It is followed by the general government expenditure category, which totaled over $7 million. Third on the list is transportation, with over $5 million in expenditures. (Reference 2.5-169)

At over $180 million for the comparable 2006 fiscal year in Citrus County, revenue was higher than for Levy County. Ad Valorem taxes of over $67 million were the largest source of revenue; the second largest source, at over $28 million, was the miscellaneous revenue category. Total expenditures for Citrus County came to over $161 million in 2006, with the largest categories for personal services ($57 million) and operating expenses ($51 million). (Reference 2.5-017)

The revenue and expenditure data Marion County are for 2007. The total budgeted revenue for this county came to over $566 million, with balance forward ($191 million) and property taxes ($130 million) providing the first and second largest amounts, respectively. The county budget includes revenue collected county-wide as well as by special districts within the county. The millage rate for the county-wide property taxes fell from 6.04 to 3.49 between 2002 and 2007, while county-wide property tax revenues increased from about $50 million to $74 million over the same period. This suggests that as the value of property in a county increases, it is possible for a county to decrease the property tax rate and still maintain or even increase revenue. By law, expected revenues must equal planned expenditures in Marion County. This balanced budget was achieved in 2007. The three highest expenditure categories were public safety ($154 million), general government ($119 million), and transportation ($100 million). (Reference 2.5-018)

The State of Florida does not have a personal income tax and in 2007, the state's intangible personal property tax was eliminated (Reference 2.5-019). However, the state does collect sales and use tax (Reference 2.5-019). The general sales tax rate is 6 percent (Reference 2.5-019). Any purchases of taxable goods and services in Florida for the purpose of constructing or operating the plant will contribute sales tax revenue to the State of Florida. Table 2.5-13 shows that in fiscal year 2004-2005 the state collected approximately $20.48 billion in revenue from sales and use taxes. The eight counties within the 80-km (50-mi.) region contributed about $712 million toward this total (Reference 2.5-020). The state also collects a corporate income tax, which is computed by multiplying Florida net income by 5.5 percent (Reference 2.5-021). The state also has an alternative minimum tax, which must be computed if the corporation paid federal alternative minimum tax (Reference 2.5-021). The corporation must pay the alternative minimum tax in lieu of the corporate income tax if the former is greater (Reference 2.5-021). Florida does offer tax incentives for small businesses and corporations that locate themselves in one of their enterprise zones (Reference 2.5-022). Tax incentives can provide credit on sales taxes and/or corporate income taxes (Reference 2.5-022). Although the LNP is located within an enterprise zone, PEF does not qualify for such tax incentives.

2.5.2.2 Political Structure

2.5.2.2.1 Regional Political Jurisdictions

The political jurisdictions in the 80-km (50-mi.) region, including counties and cities, are shown in Figure 2.5-3 and are summarized in Table 2.5-14 and Table 2.5-15, respectively. The LNP is located in the southwestern corner of unincorporated Levy County, which geographically represents 20 percent of the total region, while Marion County, which is located directly to the east of the LNP site, represents almost a quarter, or 24 percent (Figure 2.5-3). Citrus and Alachua counties also occupy greater than 10 percent of the total region with 11 percent and 12 percent, respectively (Figure 2.5-3). The Town of Inglis is the only incorporated area in the 10-km (6-mi.) vicinity of the LNP site (Table 2.5-15), while there are 37 incorporated areas overall in the region. Regional tax districts that could be directly affected by plant construction or operation are discussed in ER Subsection 2.5.2.1.2. A number of small municipalities are found in Levy County, including Bronson, Cedar Key, Chiefland, Fanning Springs, Inglis, Otter Creek, Williston, and Yankeetown (Reference 2.5-023). All other small towns in the county are considered unincorporated. Bronson also serves as the county seat (Reference 2.5-024). Crystal River and Inverness are the only incorporated cities in Citrus County (Reference 2.5-023). The cities of Dunnellon, Belleview, and Ocala are the municipalities in Marion County that are located within the 80-km (50-mi.) region (Reference 2.5-023).

2.5.2.2.2 Local and Regional Planning Organizations

Levy County government is the local planning authority for the LNP site. As described in detail in ER Subsection 2.2.1, Levy County is in the process of changing its FLUM for the LNP site from Forestry/Rural Residential to Public Use land cover classification. The amendment for this change was submitted to FDCA July 27, 2007; the FDCA, in consultation with the FDEP, SWFWMD, the Withlacoochee Regional Planning Council (WRPC), and the FDAC Division of Forestry, returned comments on September 28, 2007.

Figure 2.5-3 illustrates that the 10-km (6-mi) vicinity is entirely in the WRPC while the 80-km (50-mi) region also includes portions of the following area RPCs:

- North Central Florida RPC
- Northeast Florida RPC
- East Central Florida RPC
- Tampa Bay RPC

Public (special and recreational) lands within the vicinity and region of the LNP site are discussed in detail in ER Subsection 2.2.1 and ER Subsection 2.2.3, respectively, while recreation and aesthetics are discussed in ER

Subsection 2.5.2.7. The primary planning organizations responsible for managing public lands in the region include the following:

- FDEP:
  - Division of Recreation and Parks
  - Division of State Lands
  - Division of Water Resource Management, Bureau of Mine Reclamation
  - Office of Coastal and Aquatic Managed Areas
  - Office of Greenway and Trails
- FDAC Division of Forestry
- FFWCC
- SRWMD, SJRWMD, NWFWMD, and SFWMD
- USDA Forest Service
- United States Air Force (USAF) and Unites States Navy (USN)

2.5.2.3 Local Land Use and Zoning

ER Subsection 2.2.1.5 discusses local land uses and zoning plans that are relevant to population growth, housing, and changes in land use patterns.

2.5.2.4 Social Structure

The LNP site is located in the middle of a nine-county area designated by the Governor of Florida as Florida's Nature Coast (Reference 2.5-025). Defined as the area between Ochlockonee Bay and Clearwater, the Nature Coast contains 19 endangered species and provides a unique conservation-based recreational experience (Reference 2.5-025). Due to the area's affordability, mild climate, and natural assets, it is experiencing growth associated with the nation's rapidly expanding retirement population. Some agricultural activities still occur in the less-developed areas of the region. No special groups have been identified. Several Native American tribes may have historically used the area around the LNP site, but there are currently no known land holdings by federally or state-recognized Native American tribes.

2.5.2.5 Housing Information

Because there are no provisions for housing at the LNP site, the in-migrating construction workers and plant staff require temporary and permanent housing. A large number of the LNP site employees will be expected to live in Marion and Citrus counties due to the lack of housing options in Levy County (References 2.5-026, 2.5-027, and 2.5-028). Within the 80-km (50-mi.) radius of the LNP site, residential areas are found in cities, towns, and smaller rural communities. Within the vicinity of the LNP site, the majority of the residents are clustered in residential neighborhoods within the Town of Inglis and the cities of Dunnellon and Crystal River. Outside of these town and city limits, residents generally live in scattered, single-family homes, or mobile homes.

Rental property is scarce in the rural areas, but is available in the surrounding communities. As presented in Table 2.5-16 and Table 2.5-17, January 2008 real estate data indicated there were a greater number of homes for sale in the region than there were apartments available for rent. Brooksville, Dunnellon, and Gainesville reported the highest number of homes for sale or rent in the region at 4506, 1027, and 2041 houses on the market, respectively (References 2.5-029, 2.5-030, and 2.5-031). The total number of homes available in the area is shown in Table 2.5-17, and the total number of apartments available in the area is shown in Table 2.5-18.

The 2000 United States Census and the 2006 U.S. Census Bureau American Community Survey indicated the following numbers of permanent housing units and their status (see Figure 2.2-1 for county and town locations in the region):

- Levy County had 16,570 total housing units according to the 2000 United States Census. Of this number, 13,867 (83.7 percent) were occupied and 2703 (16.3 percent) were vacant. Of the occupied housing units, 11,591 (83.6 percent) were occupied by owners, and 2276 (16.4 percent) were occupied by renters. Towns within 10 mi. of the LNP site include nearby Inglis, which had 803 total housing units according to the 2000 United States Census. Of the occupied housing units in Inglis, 527 (78.7 percent) were occupied by owners, and 143 (21.3 percent) were occupied by renters. Yankeetown had 472 total housing units. Of this number, 309 (65.5 percent) were occupied and 163 (34.5 percent) were vacant. Of the occupied housing units, 256 (82.8 percent) were occupied by owners, and 53 (17.2 percent) were occupied by renters. Total housing units for Inglis and Yankeetown are included in the total housing units reported for Levy County. Housing data for the Cities of Tidewater and Lebanon were not available in the 2000 United States Census. (References 2.5-026, 2.5-032, and 2.5-033)

- Marion County had 152,858 total housing units according to the 2006 American Community Survey. Of this number, 130,130 (85.1 percent) were occupied and 22,728 (14.9 percent) were vacant. Of the occupied housing units, 101,381 (77.9 percent) were occupied by owners and 28,749 (22.1 percent) were occupied by renters. The City of Dunnellon had 1128 total housing units according to the 2000 United States Census. Of the occupied housing units in Dunnellon, 674 (70.9 percent) were occupied by owners, and 276 (29.1 percent) were occupied by renters. Total housing units for Dunnellon are included in the total housing units reported for Marion County. (References 2.5-027 and 2.5-034)

- Citrus County had 73,609 total housing units according to the 2006 American Community Survey. Of this number, 61,256 (83.2 percent) were occupied and 12,353 (16.8 percent) were vacant. Of the occupied housing units, 51,176 (83.5 percent) were occupied by owners and 10,080 (16.5 percent) were occupied by renters. The City of Crystal River had 1956 total housing units according to the 2000 United States Census. Of the occupied housing units in Crystal River, 1053 (70.3 percent) were occupied by owners and 445 (29.7 percent) were occupied by renters. Total housing units for Crystal River are included in the total housing units reported for Citrus County. Housing data for Red Level were not available in the 2000 United States Census. (References 2.5-028 and 2.5-035)

Housing availability for the region is shown in Table 2.5-16. The highest vacancy rate reported in the region was 29.3 percent for Dixie County, and the lowest reported in the region was 10.2 percent for Alachua County (References 2.5-036 and 2.5-037). The largest percentage of renter-occupied housing occurred in Alachua County at 45.8 percent, and the lowest percentage of renter-occupied housing occurred in both Hernando and Sumter County at 13.5 percent (References 2.5-037, 2.5-038, and 2.5-039). The state vacancy rate was 16.7 percent, and the percentage of renter-occupied housing for the state was 29.7 percent (Reference 2.5-040). U.S. Census Bureau data for 2006 were available for all counties in the region except Levy, Dixie, Gilchrist, and Sumter counties, which only reported 2000 United States Census data (References 2.5-026, 2.5-036, 2.5-039, and 2.5-041).

Marion County housing stock is 62 percent single-family conventional homes and 28 percent, or almost one-third, mobile homes (Reference 2.5-042). The City of Ocala has a greater share of multi-family housing, at 34.2 percent, while unincorporated Marion County has a greater share of mobile homes, at 28.1 percent (Reference 2.5-042). Citrus County housing stock is approximately 64 percent single-family conventional homes and 30 percent mobile homes in the unincorporated area of the county (Reference 2.5-043).

In Levy County, few houses are deficient in plumbing; however, many are deteriorated physically. Levy County has relatively few houses which were built prior to 1940. The majority (83 percent) of Marion County's housing stock has been constructed after 1970 and is considered relatively new housing. Only 3.5 percent of the Marion County housing stock has been constructed prior to 1950. Approximately 4.4 percent of the residential units are in sub-standard condition and 15 percent of the mobile homes in Marion County are in sub-standard condition. The unincorporated areas of Citrus County had relatively few homes constructed before the 1970s. The percentage of home construction and mobile home placements in the unincorporated areas of Citrus County has increased since 1970. Almost 90 percent of all homes in the unincorporated areas were built after 1970 and approximately 64 percent of all homes in unincorporated Citrus County have been established since 1980. The more affordable homes, and mobile homes, in Citrus County are likely to be older and more deteriorated homes. (References 2.5-042, 2.5-043, and 2.5-044)

The median value in 2000 for owner-occupied housing units in Levy County was $75,800 and the median household income in 2004 for Levy County was $29,314 (Reference 2.5-026). The median value of owner-occupied housing units for Marion and Citrus counties in 2006 were $153,800 and $143,100, respectively (References 2.5-027 and 2.5-028). Table 2.5-19 presents the median home values and median household incomes (the 2006 U.S. Census Bureau median home value and median household income data were not available for Levy County).

The total population in Levy County grew approximately 13.4 percent between 2000 (34,450 persons) and 2006 (39,076 persons) (Reference 2.5-045). Total population in Marion County grew 22.1 percent between 2000 (258,916 persons) and 2006 (316,183 persons) (Reference 2.5-046). In Citrus County the total population increased 17.0 percent between 2000 (118,085 persons) and 2006 (138,143 persons) (Reference 2.5-047). Table 2.5-20 demonstrates that percentage growth in new residential permits in Levy, Marion, and Citrus counties far exceeded this population growth on a percentage basis. Residential building permits issued in Levy County doubled, showed an increase from 135 residential permits issued in 2000 to 276 residential permits issued in 2006 (Reference 2.5-048). Residential building permits issued in Marion County increased from 2339 permits in 2000 to 6820 permits in 2006 (Reference 2.5-049). Residential permits showed a gradual increase in Citrus County with 1183 residential permits issued in 2000 to 2072 residential permits issued in 2006 (Reference 2.5-050). The majority of new residential permits issued in Levy County was outside of the 9.7-km (6-mi.) radius surrounding the LNP site and were primarily for subdivisions in Chiefland and Williston. New residential permits issued in Marion County included several large-scale residential developments within 16 km (10 mi.) of the LNP site in the area surrounding Dunnellon. Information regarding the primary location of new residential building permits issued in Citrus County was not available.

Temporary housing options such as public lodgings and RV and mobile home parks are described and quantified below, while camping opportunities are described in ER Subsection 2.5.2.7. The total number of public lodgings for the region, including apartments, rooming houses, rental condominiums, and transient apartments, are shown in Table 2.5-21. Marion County reported the greatest number of apartment buildings (136) and units (7906) for the LNP site and vicinity, and Alachua County reported the greatest number of apartment buildings (394) and units (27,365) for the LNP region, as presented on Table 2.5-21. In the three counties surrounding the LNP site, Levy County has one hotel with 10 units and 22 motels with 376 total units (Reference 2.5-020). Marion County contains 12 hotels with 1266 units and 62 motels with 2645 units (Reference 2.5-020). Citrus County has two hotels with 119 units and 20 motels with 873 units (Reference 2.5-020). Hotels, motels, and bed and breakfast establishments located within the 16-km (10-mi.) radius are shown in Table 2.5-22. The number of RV and mobile home parks as well as capacity by county for the 80-km (50-mi.) radius are summarized in Table 2.5-23. Mobile homes and manufactured housing continue to increase as the prevalent type of housing in Levy County. According to Levy County planning staff, building permit records dating up to 2007 indicate that mobile homes account for approximately 70 percent of all dwelling units in the county, and single-family residential units account for approximately 30 percent of dwelling units in Levy County.

2.5.2.6 Educational System

Approximately 161 primary and secondary schools are located within the 80-km (50-mi.) region (Figure 2.5-4). Because it is expected that the majority of the population related to construction and operation of the LNP will reside within Levy, Citrus, and Marion counties, these areas have been the focus of this educational analysis. There are 73 primary and secondary schools within these three counties.[a] Table 2.5-24 shows the student enrollment for each of these public schools.

The Levy County School District's primary and secondary student enrollment for school year 2007-2008 is approximately 6200 students. Levy County's 11 schools are currently under, but near, capacity. Student growth projections are based on capital outlay full-time equivalent (COFTE) growth projections. Based on previous years' growth, the Levy County School District is not expected to experience a significant increase in student enrollment during the next five years. One replacement middle/high school was constructed two years ago, and there are no plans for any new schools in the near future. Additional wings will be added to existing facilities as needed due to student growth. Levy County currently has approximately 65 mobile classrooms in use. The current average class sizes are between 22 and 28 students per classroom. However, by 2008 Levy County plans to be in compliance with the regulations mandated in the State Constitution Amendment of Section 1, Article IX set forth in November 2002 (Reference 2.5-051). The amendment mandates that by the beginning of school year 2010-2011, class sizes should be at a maximum as follows: Pre-kindergarten through 3rd grade, 18 students per class; 4th through 8th grades, 22 students per class; and 9th through 12th grades, 25 students per class (Reference 2.5-052). As the average class size is reduced, additional wings will be added to existing facilities to accommodate the need for additional classrooms.

The Citrus County School District's primary and secondary student enrollment for school year 2007-2008 is approximately 17,474 students. With the exception of three schools slightly over capacity, all of Citrus County's 17 schools are currently under capacity. Based on COFTE growth projections, Citrus County will have approximately 16,366 total students for school year 2011-2012,

---

a. Non-traditional schools (for example, charter, magnet, alternative schools, etc.) were excluded from this analysis.

representing a 6.4 percent decrease from the current student enrollment. Based on these projections, five schools will be at capacity, and the remaining schools will be under capacity. The county is planning the construction of one additional elementary school to be open by September 2008. This new school will have a capacity of 810 students, and is estimated to be 88 percent full by school year 2011-2012. Of all the Citrus County primary and secondary schools, approximately 370 students are expected to be taught in mobile classrooms. The current average class sizes range between 16 and 21 students per classroom. By the school year 2011-2012, the average class sizes are expected to be between 8 and 22, or an average among all grades of 17 students per classroom. (Reference 2.5-053)

The Marion County School District's primary and secondary student enrollment for school year 2007-2008 is approximately 42,264 students (Reference 2.5-054). Of the 45 primary and secondary schools in Marion County, 23 are currently over capacity. Estimated growth projections for the next five years indicate an approximate 1.5 percent increase in student enrollment each year. Based on these estimates, by school year 2011-2012, Marion County schools will have a total of 45,619 students and will be, on average, over capacity by approximately 9 percent. Over the past five years, Marion County has constructed five new schools. Future plans include the addition of four new schools, including two elementary schools and two middle schools, within the next five years. The school district currently has 386 mobile classrooms. Marion County's average classroom sizes are mandated by the State Constitution Amendment of Section 1, Article IX, and the district is currently adhering to these rules (Reference 2.5-052).

Eleven community college campuses, which are part of four community college organizations, and two 4-year colleges and universities are located in the region, none of which are located within the 16-km (10-mi.) radius. Figure 2.5-4 presents the location of primary (kindergarten to 6th grade) and secondary (seventh 7th to 12th grade) schools, community colleges, and 4-year universities within the region. The community college organizations and universities are as follows:

- Central Florida Community College (Citrus, Hampton, Levy, and Ocala campuses).
- Lake-Sumter Community College (Sumter campus).
- Pasco-Hernando Community College (North and Spring Hill campuses).
- Santa Fe Community College (Northwest, Blount, Davis, Kilpatrick, and campuses).
- University of Florida (main campus).
- Beacon College (main campus).

Attendance, capacity, and projected growth information for these colleges and universities are provided in Table 2.5-25. Six of the 17 campuses listed in Table 2.5-25 are located outside of the region. These campuses include: Lake-Sumter Community College (Leesburg and South Lake campuses), Pasco-Hernando Community College (East and West campuses), and Santa Fe Community College (Andrews and Watson campuses).

2.5.2.7 Recreation and Aesthetics

Twenty-nine state parks and numerous forests, reserves, and other recreational areas are located within the 80-km (50-mi.) region of LNP, as shown on Figure 2.5-5. Attendance and utilization information for these areas is provided in Table 2.5-26. Based on attendance records, the most popular recreational areas include the following locations: Withlacoochee State Forest, Ocala National Forest, Crystal River Preserve State Park, Fanning Springs State Park, Silver River State Park, and the Homosassa Springs Wildlife State Park.

The Withlacoochee State Forest and the Ocala National Forest are heavily visited recreation areas in the State of Florida. With approximately 63,730 ha (157,479 ac.), the Withlacoochee State Forest has ample space for various recreational activities, such as fishing, camping, hiking, hunting, and canoeing. In addition to recreational uses, the Withlacoochee State Forest serves other purposes including timber management, wildlife management, and ecological restoration. (References 2.5-055 and 2.5-056) The Ocala National Forest, comprised of approximately 155,084 ha (383,220 ac.), is made up of vast ecosystems, scenic trails, campgrounds, and numerous water bodies. With more visitors than any other national forest in Florida, the Ocala National Forest provides resources for many recreational activities, ranging from hiking and camping to canoeing and hunting. (References 2.5-056 and 2.5-057)

The Goethe State Forest is located in southeastern Levy County and has approximately 21,609 ha (53,398 ac.) of a wide variety of natural communities. Home to several rare animal species and two hiking trails, this forest offers wildlife viewing and numerous outdoor activities. The Goethe State Forest also encompasses a wildlife management area in which various hunting sports are permitted. (Reference 2.5-058) Table 2.5-27 provides detailed hunting information.

Crystal River Preserve State Park offers approximately 11,046 ha (27,295 ac.) of recreational space along the Gulf Coast (Reference 2.5-059). Activities include bicycle and walking trails, fishing holes, and water bodies for kayaking and canoeing (Reference 2.5-060). Located on the Suwannee River, Fanning Springs State Park (approximately 83 ha [204 ac.]) is a popular recreation spot because it is home to one of Florida's 33 first-magnitude springs. Visitors can enjoy swimming, snorkeling, fishing, and boating activities in this vast water body (References 2.5-061 and 2.5-062). In addition to numerous outdoor activities, Silver River State Park, east of Ocala, offers attractions such as the Silver River Museum, a pioneer cracker village, and an environmental education center

(Reference 2.5-063). The Silver River State Park has approximately 1711 ha (4229 ac.) of upland and wetland areas (Reference 2.5-064).

The Homosassa Springs Wildlife State Park (approximately 80 ha [197 ac.]) received more visitors than any other state park within the 80-km (50-mi.) region of the LNP between 2006 and 2007 (Table 2.5-26) (Reference 2.5-065). One reason this park is so popular is its wide array of wildlife, including endangered species, such as West Indian manatees, Whooping Cranes, and Key Deer. The park has recently upgraded many of their habitats to include larger spaces for the animals and better public viewing capabilities. Continued improvements are planned for the future. Aside from multiple recreational outdoor activities, Homosassa Springs hosts numerous seasonal events and classes, as well as educational programs for children. The park also offers boat and tram tours through Pepper Creek and the Pepper Creek trail. (Reference 2.5-066)

The CFG, located in much of the area formerly known as the CFBC, extends from the St. John's River to the Gulf of Mexico across central Florida, encompassing a 177-km (110-mi.) corridor of recreational activities for its visitors. This greenway includes multiple trails that offer a variety of activities from hiking and horseback riding to boating and bicycling. (Reference 2.5-067)

Two of Florida's best prehistoric natural wonders are located in the City of Williston in Levy County. Devil's Den and the Blue Grotto feature natural warm-water springs located in underground caverns. Both attractions are open to certified divers, and Devil's Den also offers picnic, camping, and RV sites, and other recreational activities. (References 2.5-068, 2.5-069, and 2.5-070)

As presented in Table 2.5-28 and Figure 2.2-5, 35 marinas are located within the region surrounding the LNP site. Of the three counties directly surrounding the site (Levy, Citrus, and Marion), Levy County has the fewest number of marinas at three, and Citrus County has the largest number in the region at 12.

RV parks provide both recreational opportunities and temporary housing. RV park numbers and total capacities for the region are shown in Table 2.5-23. A total of 512 RV parks are located in the region with a total capacity of 47,862 (Figure 2.5-6). Marion and Citrus counties have the largest number of RV parks in the region with 167 and 86 parks, respectively (Table 2.5-23).

Multiple types of trails that afford ample recreational opportunities are located within the LNP region. Table 2.5-29 presents the total trail miles for land and water in the region. Hiking, mountain biking, horseback riding, and other outdoor recreational activities are practiced on land trails. Marion, Citrus, and Levy counties have the largest total mileage of land trails in the region with approximately 436.1 km (271.0 mi.), approximately 264.7 km (164.5 mi.), and approximately 189.1 km (117.5 mi.), respectively (Figure 2.5-7). The existing water trails presented in Table 2.5-29 primarily includes canoeing and kayaking trails along the rivers bordering the counties in the region. The coastal counties of the region (Dixie, Levy, Citrus, Hernando, and Pasco) also have marine canoeing and kayaking trails and areas (Figure 2.5-7). Gilchrist and Sumter counties have the largest total distance of water trails in the region with 73.5 km (45.7 mi.) and 64.4 km (40.0 mi.), respectively.

Several privately owned conservation easements in the region include the Kohn Conservation Easement, Gum Slough SWFWMD Conservation Easement, North American Trails Council Suwannee Swamp Conservation Easement, and the Fly'n R Ranch Conservation Easement. These and other conservation areas are shown on Figure 2.5-5. These areas are protected for agricultural or open-space uses. Easements are lands in which one or more qualities of the property, such as wildlife habitat, forest management, or open space, are protected by an agreement made between the landowner and a conservation organization (Reference 2.5-071).

The aesthetics of the LNP site consist of forested lands and wetlands. The surrounding uplands include areas of densely planted pine and areas that have been left barren by harvesting. Forested wetlands include cypress swamps that have been logged, and various types of trees have since grown there. There are no lakes, ponds, or rivers on the LNP site, but the Withlacoochee River is located approximately 5.4 km (3.4 mi.) south of the site and extends in an east-west direction. The CFG is also located approximately 5.2 km (3.2 mi.) south of the LNP site, and is currently used for various outdoor recreational activities. The Goethe State Forest is adjacent to the site, and it is used for recreational and hunting activities. The current land use of the LNP site is forestry/rural residential, and the proposed development contains no residences. The proposed land use reclassification will support and enhance the existing forestry and open spaces. Station aesthetics are discussed in ER Subsection 3.1.4.

2.5.2.7.1 Noise

The LNP site is an undeveloped area and the current existing noise sources are primarily traffic from local highways and roads. ER Subsection 2.5.2.9 presents a discussion regarding roads and traffic. A background noise survey was conducted to measure existing ambient noises in the LNP site vicinity. Ambient noise was measured from six locations on the site and along the pipeline for a 24-hour period. Measurements were taken from the west property line, the northeast property line near US-19, the north property line, the east property line, from the CFBC near CR-40, and from the south property line. The measured noise levels are characterized as very low, which is expected for a rural area. The noise sensitive receptors were identified within 0.5-mile of the property boundary. Figure 2.3-31 shows the nearest residents to the LNP site, and Figure 2.5-4 illustrates the nearest schools to the site. Both residents and schools are also considered sensitive noise receptors. Construction noise impacts are further discussed in ER Subsection 4.4.1.1. Operational noise impacts are presented in ER Subsections 5.3.4.2, 5.6.3.2, and 5.8.1.1.

2.5.2.8 Public Services and Facilities

Public services and facilities consist of schools, public utilities, police and fire departments, emergency management services, and hospitals, and are typically located within municipal boundaries and near population centers. Public utilities include facilities for distributing energy, such as electricity and natural gas, as well as water supplies and WWTPs. A detailed discussion of water resources in the region of the LNP site, including information regarding current water use, is included in ER Section 2.3.

2.5.2.8.1 Water and Wastewater Facilities

Permitting and compliance of sewage disposal facilities is coordinated in the state by the district offices of the FDEP. The LNP site and Levy County are located in the Northeast District of FDEP, while the balance of the region is split between the Central District to the east and the Southwest District to the south of the site, as presented in Figure 2.5-8. Permitting and compliance of water treatment facilities (WTFs) within the region are coordinated among the following state water management districts: SRWMD, SWFWMD, and SJRWMD (Figure 2.5-8). Due to the proximity limitations of water and wastewater infrastructure, the following discussion is limited to those systems and utilities located in the vicinity of the LNP site, as follows:

2.5.2.8.1.1 Water Infrastructure

- **Levy County:** Levy County does not currently have a county-wide potable water distribution system; as a result, residents are served by public and private wells. ER Subsection 2.3.2.3 identifies the public water supply wells within a 16-km (10-mi.) radius of the LNP site. However, certain infrastructure, such as Manatee Springs State Park, which is run by the FDEP Division of Recreation and Parks, are designed for low-intensity use (Table 2.5-30). At 10,000 gpd, Manatee Springs State Park is designed to serve 100 people per day. Current demand figures show that most of the use is within design capacity limits, with the exception of Jenkins One Stop, where design capacity appears to equal current demand. These facilities have a combined total permitted average daily pumpage of 34 mgd, with a maximum permitted daily pumpage of 182 mgd. Residential use represents approximately 11 percent of the permitted average, with agricultural use predominating throughout the county (Reference 2.5-044).

  As the projected demand for potable, agricultural, and industrial water use in Levy County is based on historical trends for average use, a large-scale development in any of the three uses could significantly alter water use projections. Water consumption is projected to increase by 17 percent between 1995 and 2020 (Table 2.5-31). By the end of the overall planning period (2020), rural residential use will approach 3 mgd. The projected water use for agricultural purposes is expected to increase; however, the Future Land Use Element of the Levy County Comprehensive Plan indicates that agricultural lands will decline to other uses. (Reference 2.5-044)

- **Marion County:** Marion County ensures the availability of water to residents through interlocal agreements with municipalities, and franchise agreements with publicly owned and privately owned public water systems. Franchise agreements with publicly owned and privately owned public water systems include provisions to coordinate with the Florida Public Service Commission (FPSC) for specific future service area boundaries, schedules for facility development, and mechanisms to ensure that adequate capacity will be available to serve development in the service areas. There are 41 county-owned water facilities in Marion County. The county's LOS standard of 150 gallons per person per day (average daily consumption) serves as the basis for future facility design, determination of available facility capacity, and determination of demand created by new development with regard to domestic flow requirements non-residential demand is 2750 gallons per acre (gal/ac.) per day. (Reference 2.5-072)

- **Citrus County:** The Citrus County Utilities Division is responsible for the operation of six county-owned WTFs: Charles A. Black I (CAB-1), Charles A. Black II (CAB-2), El Dorado Water Facility, Foxwood Water Facility, Quail Run Water Facility, and the Water Oaks Water Facility. The county utilities division supplies potable water directly to more than 5000 customers, with agreements in place to supply potable water to the City of Crystal River and Beverly Hills/Rolling Oaks Utilities during emergency situations. Many private wells serve private residences in Citrus County; these private wells are constructed in accordance with SWFWMD standards. Potable water quality monitoring and maintenance are the owners' responsibility; however the Citrus County Public Health Unit will investigate wells located near known pollution sources or on a compliant basis. (Reference 2.5-073)

  CAB-1 and CAB-2 are interconnected, with seven wells permitted by the SWFWMD to withdraw a combined annual average of 3.24 mgd with a peak monthly withdrawal of 6.48 mgd. The five wells at CAB-1 are permitted for 3.24 mgd average daily/6.48 mgd peak month withdrawals, and the two wells at CAB-2 are permitted for 1.458 mgd/2.16 mgd peak month. The wells at CAB-1 tap the highly productive Floridan aquifer at depths varying from about 300 to 420 feet (ft.) deep and the two wells at CAB-2 tap the Floridan aquifer at depths of 143 and 173 ft. These wells have the potential to provide up to 16 mgd, which is sufficient capacity to serve the projected future potable water needs of the population living within the Citrus County Utilities Division service area. (Reference 2.5-043)

  Future water use estimates show system-wide demand rising to about 11.64 mgd by 2020. This represents approximately 41,500 people or about 25 percent of the county's projected 2020 population of approximately 169,000. The estimates assume that all future population growth in the service area will be served by the county's water system and that all existing persons not currently connected to the system would remain disconnected from the system. Citrus County has agreed, through an interlocal agreement, to purchase water from the Withlacoochee Regional Water Supply Authority (WRWSA) to serve its current and future residents. The establishment of a regional wellfield and its subsequent connection to county facilities will enable Citrus County to meet the needs of all private and public utilities. New areas served would be created by special assessment districts. (Reference 2.5-043)

2.5.2.8.1.2 Wastewater Infrastructure

- **Levy County:** For approximately 77.6 percent of Levy County citizens, wastewater is treated in septic tanks. The ability of the soil to process wastewater such that there is no resulting pollution to surface or groundwater is described as the "wastewater treatment capacity" of the land. For septic tanks, the maximum flow of wastewater per day allowed by state law is 1500 gpd for lots platted prior to 1972, and 2 du/ac. for lots platted after that date and without central water. Approximately 4 percent of capacity is being used in terms of population. (Reference 2.5-044)

- **Marion County:** Table 2.5-32 lists the 11 wastewater treatment facilities (WWTFs) located in Marion County. None of these WWTFs are located within 16 km (10 mi.) of the LNP site, as presented in ER Section 2.3. The county's LOS of 110 gallons per person per day for residential demand and approximately 2000 gallons per acre per day for commercial and industrial demand serves as the basis for future facility design, determination of facility capacity, and documentation of demand created by new development. This LOS is applicable to central sewer facilities and to package treatment plants but doesn't apply to individual on-site sewage disposal systems. (Reference 2.5-072)

- **Citrus County:** The Citrus County Utilities Division provides wastewater treatment for over 2000 customers (Reference 2.5-073). Presently, there are three privately owned regional treatment plants and four county-owned facilities (Reference 2.5-073). Table 2.5-33 lists the county-owned WWTFs, their capacities, and any future plans for expansion. None of these WWTFs are located within 16 km (10 mi.) of the LNP site, as presented in ER Section 2.3.

2.5.2.8.2 Police, Fire, Emergency Management Services, and Medical Facilities Capabilities

Levy County has six county and eight municipal fire stations with a total of eight paid firefighters and 183 volunteer firefighters. The Inglis Fire Department is the closest fire station to the LNP site and is located 6.6 km (4.1 mi.) southwest from the site in Levy County, Florida (Figure 2.5-9). The Inglis Fire Department is a volunteer station and has 13 unpaid firefighters on staff.

The Levy County Sheriff's Office is comprised of 55 sworn full-time deputy officers. In addition, the Town of Inglis Police Department has five full-time officers, the City of Williston Police Department has 12 full-time and five part-time officers, the City of Chiefland Police Department has 11 full-time officers, and the City of Cedar Key Police Department five full-time and five part-time officers). Overall, Levy County has 88 full time and 10 part time sworn deputy officers. The Town of Inglis Police Department is the closest police station to the LNP site and is located 6.6 km (4.1 mi.) from the site (Figure 2.5-9).

Citrus County is comprised of one municipal and 23 county fire stations, with a total of 29 paid firefighters and 98 volunteer firefighters. Three out of the 24 fire stations have paid full-time firefighters on staff. The Citrus County Sheriff's Department has 218 sworn full-time police officers. The City of Crystal River Police Department has an additional 18 sworn full-time police officers. Overall, Citrus County has 236 full-time police officers.

Marion County Fire and Rescue is comprised of 27 stations with a total of 351 paid firefighters and approximately 100 volunteer firefighters. The City of Dunnellon Fire and Rescue is the closest fire station to the LNP site that has paid firefighters on staff, and is located 15.6 km (9.7 mi.) from the site in Marion County, Florida (Figure 2.5-9). The City of Dunnellon Fire Department is staffed by four full-time, four part-time operations staff, and 30 volunteer firefighters. The fire department always has two firefighters (one full-time and one volunteer) at a minimum at the station. The Rainbow Lake Estates Volunteer Fire Department, Station No.14, is the second closest fire station in Marion County and is located 15.8 km (9.8 mi.) from the LNP site (Figure 2.5-9). This fire station is comprised of 22 volunteer firefighters and is dispatched through Marion County Fire and Rescue.

The Marion County Sheriff's Department is comprised of 369 sworn full-time deputy officers. In addition, the City of Dunnellon Police Department has15 full-time officers), the City of Belleview Police Department has15 full time-officers), and City of Ocala Police Department has160 full-time officers). Overall, Marion County has 559 full-time sworn officers. The second closest police station to the site is in the City of Dunnellon, which is located 15.6 km (9.7 mi.) from the LNP site (Figure 2.5-9).

Levy County Emergency Management utilizes all 14 fire stations within Levy County. Police enforcement is provided by the Levy County Sheriff's Office. Levy County Emergency Management uses the Nature Coast Regional Hospital (formally known as Williston Memorial Hospital) for immediate emergency care; however, for major medical issues Shands Teaching Hospital and Clinic or Shands Alachua General Hospital (both in Gainesville, Florida) are utilized. Nature Coast Regional Hospital, Shands Teaching Hospital and Clinic, and Shands Alachua General Hospital are located 38.0 km (23.6 mi.), 68.4 km (42.5 mi.), and 69.7 km (43.3 mi.) from the LNP site, respectfully (Figure 2.5-10). Levy County Emergency Management does not conduct Medical Service One (MS-1) drills and has not identified any special populations.

Nature Coast Hospital is staffed with three physicians and houses 40 beds; currently, 15 beds are occupied. The Shands medical system encompasses four community hospitals, two teaching hospitals/clinics, two specialty hospitals, one children's hospital and three outpatient services located throughout northern Florida. Only two of the Shands Hospitals fall within the region discussed above. Overall, 1308 physicians support the multiple medical facilities affiliated with the Shands medical system. Shands Alachua General Hospital, one of the community hospitals affiliated with the Shands medical system, houses 262 beds; currently, 200 beds are occupied. Shands Teaching Hospital and Clinic, one of the teaching hospitals/clinics associated with Shands medical system, is non-profit and affiliated with the University of Florida in Gainesville. Shands Teaching Hospital and Clinic has 634 beds with an average use of 95 percent. On average, 850 physicians support both of the Shands Hospitals.

Currently, Nature Coast Regional Hospital and Shands Alachua General Hospital have no plans to expand. In the fall of 2008, Shands Teaching Hospital and Clinic plans to complete a new cancer center. In addition, a hospital with 60 beds has been proposed to be built in the City of Chiefland, Levy County; however, no formal approval has been determined for construction (Reference 2.5-074).

Marion County Emergency Management Services uses the City of Dunnellon and Ocala, and all of the Marion County fire, rescue, and police/sheriff departments. West Marion Community Hospital, Ocala Regional Medical Center, and Munroe Regional Hospital are the medical facilities utilized by Marion County Emergency Management Services. These hospitals range from 41.8 km to 48.4 km (26.0 mi. to 30.1 mi.) away from the LNP site (Figure 2.5-10). Marion County Emergency Management Services has not identified any additional special facilities or populations outside of what is presented in the LNP Evacuation Time Estimates (ETE) Plan.

West Marion Community Hospital has 70 beds and Ocala Regional Medical has 200 beds; both hospitals have an occupancy average of 90 percent. Both hospitals are under the Marion Community Hospital system, which employs 390 physicians. The Munroe Regional Hospital staffs 450 physicians and houses 421 beds; currently, 380 beds are occupied.

West Marion Community Hospital and Ocala Regional Medical have no immediate growth plans, but could be adding beds after a year. Munroe Regional Hospital plans to expand within the next five years with an additional 50 to 60 beds.

The Citrus County Emergency Management Agency utilizes the City of Crystal River Fire and Police Departments, City of Derosa Fire Station, Seven Rivers Regional Medial Center, and Citrus Memorial Medical Center. Approximately 40 citizens with special needs have been identified by Citrus County Emergency Management Agency as special populations.

The Seven Rivers Regional Medical Center is 21.7 km (13.5 mi.) from the LNP site and is the closest hospital to the site (Figure 2.5-10). Seven Rivers Regional Medical Center has 85 physicians and 128 beds; currently, 124 beds are occupied. Citrus Memorial Medical Center is 38.3 km (23.8 mi.) from the LNP site and is staffed with 247 physicians and houses 198 beds. Currently, all beds in the Citrus Memorial Medical Center are occupied. Both of the hospitals are used by Citrus County Emergency Management Agency to conduct MS-1 drills; a drill was conducted at the medical center in the fall of 2007.

In 2008, Seven Rivers Regional Medical Center plans to expand with an additional 16 beds. Citrus Memorial Medical Center has plans to expand their emergency room and add additional beds, but no date or timeframe has been established.

The Levy, Marion, and Citrus County Health Departments were contacted to obtain information regarding number of patients receiving medical care in 2007. Levy County had approximately 14,000 visitors and Marion County estimated 25,000 visitors. The Citrus County Health Department estimated over 120,000 visitors (Reference 2.5-075). None of these health departments house permanent beds for patients.

Overall, approximately 154 fire stations or departments, 35 sheriff's offices, and 44 police departments are located in the region as presented on Figure 2.5-9. Local fire and police protection and emergency preparedness are currently considered adequate in Citrus and Marion counties. Police and emergency management services are adequate in Levy County; however, fire protection is currently insufficient. Future expansion and facility upgrades may be needed to accommodate future population growth associated with the LNP site. Approximately 16 hospitals, 4414 physicians, and 3818 beds, with an overall 84 percent occupancy rate, are located within the region as presented in Table 2.5-34. Figure 2.5-10 presents the hospitals within the region. Of the 16 hospitals, eight hospitals plan to expand in order to support the immediate needs (Table 2.5-34). Seven Rivers Regional Medical Center is the closest hospital to the LNP site and currently has adequate capacity.

2.5.2.9 Highways and Transportation Systems

The major highway located near the LNP site is US-19/US-98 and travels north to south near Gulf of Mexico coastline. Figure 2.2-1 shows the transportation routes in the region of the LNP site. I-75 is the closest interstate and is 42.6 km (26.5 mi.) east of the LNP site (see Figure 2.2-1).

At its nearest point, US-19/US-98 is located approximately 1993 m (6538 ft.) from the center of the LNP site (see Figure 2.2-1). US-19/US-98 is the principal north/south arterial in Levy County and serves as the primary access point to the LNP site as presented on Figure 2.2-1. The average annual daily traffic (AADT) counts at the four closest monitoring points within the 8-km (5-mi.) radius of the LNP site range from 1600 (Site 340086–SR 121 0.2 mi. northeast of SR 55) to 8600 (Site 340069–R 55 at the southern limits of the Town of Inglis) cars per day (Reference 2.5-076).

Levy County transportation is primarily highway-oriented (Reference 2.5-044). Of the employed residents residing in Levy County, 45.5 percent commute out of the county to work (Reference 2.5-044). The mean travel time to work in 2000 for Levy County residents was 31.4 minutes and slightly less for Citrus and Marion counties' residents with a 23.3- and 23.1-minute commute to work, respectively (References 2.5-026, 2.5-027, and 2.5-028).

All major roads and highways in Levy County are two-lane with the exception of a portion of US-27 going through Williston, and all of US-19 in Levy County, which consists of four lanes. All roads in Levy County are operating at or below their designed capacity and there are no immediate plans for upgrades. In 1995 the projected LOS for all roads within Levy County were expected to remain at the designation of "C" based on projected traffic volumes. CR-121 and US-41 connect in the City of Dunnellon in Marion County east of the LNP site. CR-121 and US-41 are expected to either approach or possibly exceed their design capacity by 2010. These roads are heavily used by the residents in Dunnellon and Williston who work in Alachua County. (Reference 2.5-044)

By 2020, the following roads are expected to require widening to four lanes (Reference 2.5-044):

- CR-40, east of Inglis.
- SR-121, west of SR-45/US-41, southwest of Williston.
- US-27, east of Chiefland.
- US-27, northwest of SR-24, northwest of Bronson.
- SR-24, northeast of Bronson.
- US-27, west of Williston.
- US-27, east of Bronson.
- US-27, from Williston to Marion County.
- US-41, south of Williston.
- US-41 /SR-45, North of Williston.
- SR-320, northwest of Chiefland.

The road network in Levy County is made up of federal, state, and local highways (Reference 2.5-044). Major access roads to the site in Levy County include US-19, CR-336, and CR-40. US-19 links the communities of Inglis, Lebanon Station, Gulf Hammock, Otter Creek, Chiefland, and Fanning Springs in Levy County. CR-40 connects Citrus Springs to Inglis at US-19 south of the LNP site, and CR-336 connects Citrus Springs to Lebanon Station at US-19 north of the LNP site (see Figure 2.2-1).

US-19 is the major north-south route in the western portion of Citrus County, traveling through Crystal River, Inglis, and Chiefland, and connecting Levy County to the north and Hernando County to the south. Except for six lanes within the City of Crystal River and the two-lane segment bridging the CFBC, it is a four-lane divided arterial. US-41 to the east is a major north-south two-lane road which travels through the communities of Citrus Springs, Inverness, and Floral City from north to south. It allows traffic to travel in a north-south direction from Marion County to Hernando County. US-98, which approaches Citrus County from Hernando County, travels in a northwesterly direction and merges with US-19 in Chassahowitzka, then continues northward as US-19 into Levy County. The portion of US-98 within Citrus County is a four-lane facility. (Reference 2.5-043)

A widening project for the CFBC Bridge in Citrus County is currently in the planning stages. Design work was scheduled to commence in December 2007 and the project is tentatively scheduled to be complete within two years thereafter. The two-lane segment of US-19 that bridges the CFBC is located in the Town of Inglis and serves as a major thoroughfare from residential areas in Citrus County to the LNP site (Reference 2.5-043).

The Suncoast Parkway is part of the State of Florida's Turnpike system and serves as an alternative north-south route through Florida's west coast (Reference 2.5-077). A northward expansion of the Suncoast Parkway into Citrus County is currently in the design phase and construction is scheduled to begin sometime after 2012. Construction is expected to take 3 to 4 years.

Greyhound and Trailway Bus Lines provide bus service to Levy County. These services include nine northbound and eight southbound buses daily (Reference 2.5-044). Freight service is also provided on both lines (Reference 2.5-044). Greyhound Bus Lines services one depot in Fanning Springs (Reference 2.5-044). Flag stops are serviced by both Greyhound and Trailways Bus Lines at Chiefland, Bronson, Williston, Lebanon Station, Otter Creek, and Gulf Hammock (Reference 2.5-044). SunTran provides bus services for the City of Ocala in Marion County, and Marion County Transit Services provides public transportation services by appointment only for its disadvantaged citizens (Reference 2.5-078). The Citrus County Transit System provides bus service to Citrus County residents (Reference 2.5-079). Transit bus stations are located in Beverly Hills, Crystal River, Dunnellon, Floral City, Hernando, Homosassa, Inverness, Lecanto, and Ozello/ Red Level/Citronelle (Reference 2.5-079). The Ozello/Red Level/Citronelle transit station is currently the closest to the LNP site (Reference 2.5-079). Intercity bus service between Levy, Marion, and Citrus counties is provided by Greyhound Bus Lines (Reference 2.5-080).

Two railroad lines are located within the 16-km (10-mi.) vicinity of the LNP site. The lines include an abandoned track with only the rail bed remaining, which is located northeast of the site and north of SR-336, and an active railroad line operated by CSX, which is located southeast of the LNP site. The CSX line runs from the City of Crystal River northeast to the City of Dunnellon.

In accordance with Regulatory Guide 1.206, further analysis of the CSX rail segment was not conducted, as it lies outside of the 8-km (5-mi.) radius of the LNP site.

2.5.2.10 Distinctive Communities

The population in the region is fairly diverse, and while predominantly Caucasian, includes a variety of other ethnic groups. ER Subsections 2.5.1 and 2.5.4 discuss the population in the region in more detail. As stated in ER Subsection 2.5.3.5, PEF is not aware of any Native American tribes that have links to the site. Efforts have been made to contact tribes that potentially have links to the site. The primary tourist attractions (and visual resources) in the vicinity are the Goethe State Forest and the CFG, which are described in detail in ER Subsection 2.5.2.7. ER Subsection 2.5.3.4.1 describes two historic districts in Marion County that could be considered distinctive.

2.5.3 HISTORIC PROPERTIES

Historic properties include districts, sites, buildings, structures, and objects that represent past human activities. Significant cultural resources, or historic properties, include those resources that are listed, or considered eligible for listing, in the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are set forth in 36 CFR 60.4:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in historic properties that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
> (b) that are associated with the lives of persons significant in our past; or
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> (d) that have yielded, or may be likely to yield, information important in prehistory or history.

In addition, to qualify for listing in the NRHP, an historic resource usually must be at least 50 years old. Archaeological and historical investigations were carried out between May 2007 and February 2008 at the LNP site, along the proposed transmission line corridor immediately south of the LNP site, along access roads, and along the proposed route of the blowdown pipeline in Levy and Citrus counties.

2.5.3.1 Cultural Resource Investigations at the LNP Site

2.5.3.1.1 LNP Site Field Survey Methodology

Based on consultations with the Florida State Historic Preservation Officer (SHPO), which are further addressed in ER Section 2.5.3.3.1, two Areas of Potential Effect (APE) were agreed upon; one for archaeological resources and one for standing structures. The APE for archaeological resources encompassed areas of proposed construction and ground disturbance within the LNP site, including building locations and support facilities, proposed access roads, and transmission lines, as well as existing access roads on the site (see Figure 2.5-11). The APE for standing structures encompassed a 1.6-km (1-mi.) radius from the LNP site (see Figure 2.5-11). The surveys were conducted in two phases. The initial surveys covered 121.4 ha (300 ac. [1.2 km^2]) in the vicinity of the LNP site. The second phase of surveys completed the remaining areas within each respective APE.

Archaeology. Background research included a review of relevant environmental, archaeological, and historical literature, documents, and other pertinent data in order to provide a synthesis of known archaeological site types and cultural periods in the vicinity. A review of the Florida Master Site File (FMSF), which is the state inventory of previously documented archaeological sites, historic properties, and NRHP-listed or -eligible resources, indicated that there is one previously recorded site (LV499) within the LNP site. Site LV499 contained a single chert flake, which is more appropriately considered an isolated Archaeological Occurrence (AO), which is defined below (Reference 2.5-081).

An AO is defined by New South Associates, the cultural resources management firm conducting the archaeological investigations, as any locus where between one and three prehistoric or historic artifacts are found within an area covering 60 x 60 m (66 x 66 yards [yd.]). Such finds are meant to include both surface and subsurface material, and do not meet the definition of a site. Only cultural material 50 years or more in age is considered an artifact. Four or more artifacts from the same time period within a 60 x 60-m (66 x 66-yd.) area are considered a site, as defined by New South Associates.

In July and December 2007, New South Associates conducted a Phase 1 Cultural Resource Assessment Survey of the archaeology APE to assess the potential effects of the proposed undertaking on any archaeological resources within the LNP site, and specifically whether construction would have an adverse effect on significant resources eligible for inclusion in the NRHP. Work was conducted in compliance with the National Historic Preservation Act (NHPA) of 1966 (PL 89-665), as amended, and the Archaeological and Historic Preservation Act of 1974 (PL 93-291), as amended. Field methods included surface reconnaissance followed by systematic and judgmental shovel testing. Depressed lowlands that are frequently flooded were omitted from testing, in most cases, as these locations exhibit the lowest site probability within the APE. New South Associates staff meets the requirements of the Secretary of the

Interior's Professional Qualifications Standards for Archaeology (Reference 2.5-082).

Throughout the archaeology APE, subsurface deposits were examined using shovel test pits systematically dug at 100-m (109-yd.) intervals and/or judgmentally in areas suggesting a slight rise in elevation. In areas where cultural material was encountered, supplemental testing was conducted at a reduced interval. Shovel tests measured 40 to 50 cm (16 to 20 in.) in diameter and were dug to 1 m (39 in.) in depth unless the water table was encountered. The majority of shovel tests were dug to 1 m (39 in.), as the water table was below 1 m (39 in.) in all but a few shovel tests. All soil removed from each shovel test was screened through 0.635-cm (1/4-in.) mesh hardware cloth for artifact recovery. Soil stratigraphy was recorded following completion of each test. The location of each shovel test was plotted on an enlarged USGS Quadrangle map and a Global Positioning System (GPS) waypoint was recorded. Each test was photographed before being backfilled. All completed site forms will be submitted to the Florida SHPO.

Standing Structures. Field surveys for historic structures at the LNP site in May and December 2007 were intended to locate and record all structures over 50 years of age within the APE. As discussed further below, the APE for standing structures, and thus the survey area, was limited to a 1.6-km (1-mi.) radius of the LNP site. No structures built before 1957 were found, so none were recorded. The surveys were managed and conducted by Ms. Sara Orton and Ms. Nicole Hobson-Morris, who are both architectural historians qualified under the Secretary of Interior's Historic Preservation Professional Qualification Standards (Reference 2.5-082).

Local libraries and repositories were visited to determine if there were any resources, previously identified or surveyed, that could be affected by the LNP site. The visit to local archives allowed project staff to gather necessary background information. Local resources visited included: Levy County Courthouse, A. F. Knotts Public Library, Bronson Public Library, and Dunnellon Library. Online searches of the National Park Service database for historic properties listed in the NRHP were also conducted. Telephone conversations with the SHPO and database searches with the FMSF provided additional background information and in-depth data on historic properties. Parcel data, historic plat maps, title searches and real estate records also assisted in developing the standing structures APE, historic context, and survey methodology.

2.5.3.1.2 Previous Cultural Resource Surveys on the LNP site

Based on research conducted at FMSF, there have been two previous cultural resource surveys within the LNP site. The surveys and their findings are summarized below.

The first, which was a Phase I cultural resources survey (Survey 4386), was conducted from August 1991 to November 1993 in Citrus, Gilchrist, Hernando, Hillsborough, Levy, Pasco, and Suwannee counties. The survey covered 609.4 ha (1506 ac.) and recorded a total of 90 archaeological loci, including 75 new sites and 15 previously recorded sites. Of these 90 sites, 10 sites were considered potentially eligible for listing in the NRHP. Only two of these eligible sites, LV477 and LV478, are located in Levy County. The former is a prehistoric site; the latter is early 20th century. Neither of these sites is located within the LNP site. The Florida SHPO concurred with the determination of eligibility for these 10 sites on February 28, 1994. (Reference 2.5-083)

The State of Florida's Cultural Resource Management Program conducted an assessment of cultural resources in the Goethe State Forest from May to November 2002 (Survey 8921). The survey covered approximately 20304.7 ha (50,176 ac.) and recorded a total of 77 archaeological loci, with 51 having prehistoric components, 24 having historic components, and 12 having both prehistoric and historic components. Sites LV250, LV253, LV423, LV425, and LV564 are located in Levy County and were determined to be potentially eligible for listing in the NRHP. Of the five potentially eligible sites in Levy County, none are located within the LNP site. (Reference 2.5-084)

2.5.3.1.3 LNP Site Field Survey Results

Archaeology. During the archaeological survey of the APE, 222 shovel tests were excavated (72 in July 2007 and 150 in December 2007). Testing was conducted in upland areas at approximately 100-m (109-yd.) intervals or judgmentally. Testing was conducted at reduced intervals near previously recorded site LV499 and wherever artifacts were encountered. Only one shovel test within the APE was productive, while a small number of lithic flakes were recovered from the surface. Fragments of earthenware Herty cups, used during the 20th century to collect pine resin, were found scattered on the surface throughout the parcel; these are commonly found in areas of pine cultivation. The approximate depth of previous impacts is from 50 to 75 cm (20 to 30 in.) below surface, as noted in shovel tests. Pine trees have been planted at regular intervals and many areas have been harvested at least once and replanted, as evidenced by old stumps still in the ground with younger trees growing next to them. The property also served as a hunting preserve during the recent past, as evidenced by numerous shell casings littering the surface.

During the July 2007 archaeological survey 72 shovel tests were excavated; all of these were placed judgmentally and/or at approximately 100-m (109-yd.) intervals in upland areas out of the seasonal wetlands and swamps within the 121.4 ha (300-ac [1.2-km^2]) parcel. All tests in this parcel were negative. During the December 2007 investigation, 150 shovel tests were excavated. As a result, four AOs and one newly recorded site (Site 1) were encountered (see Figure 2.5-11). Due to revisions to the alignment of the transmission line, subsequent to the survey, Site 1 is no longer in the footprint of the planned construction area. However, since the site has been surveyed and recorded, it will be submitted to the SHPO with the other survey materials. The four AOs (AO 1-4) included three isolated artifacts from the surface (one lithic flake each) and a single positive shovel test (ST105/AO 2) that produced one lithic flake.

Site 1 consisted of a surface scatter of 12 lithic flakes and one bifacial tool fragment scattered along a 75-m (85-yd.) portion of an existing sand road that follows the 45-ft. contour. Ten additional shovel tests were dug at 10- to 25-m (11- to 27-yd.) intervals around Site 1, which was found to have surface expression only. Site 1 does not exhibit characteristics that would make it eligible for the NRHP, and no further work is recommended.

An additional five shovel tests were dug at 25-m (82-ft.) intervals in the vicinity of previously recorded site LV499. Six shovel tests were dug at 10- and 15-m (33- and 49-ft.) intervals around productive ST 105/AO 2. Two shovel tests were dug at 15 to 25 m (49 to 82 ft.) intervals in the vicinity of AO 3, which was on an elevated portion of a sand road. All shovel tests were negative (with the exception of previously discussed ST 105). None of the AOs exhibit characteristics that would make them eligible for the NRHP, and no further work in those locations is recommended. (Reference 2.5-085)

Standing Structures — Based on background research and due to the low probability of encountering structures within the APE, the structures surveys consisted of driving throughout the LNP site on existing roads and pathways. In the initial survey in May 2007, no aboveground architectural properties were identified within the 121.4 ha (300 ac. [1.2 km^2]) that could potentially be eligible for listing in the NRHP. The December 2007 survey found that there were no resources listed in the NRHP, nor were there any resources within the APE that were considered eligible for listing. The survey also indicated there were no areas that would be considered cultural landscapes within the APE. (Reference 2.5-085)

2.5.3.1.4 LNP Site Field Survey Summary

Results indicate that the LNP site lies within an area of low probability for containing significant archaeological resources. The presence of sparse lithic artifacts demonstrates that the landscape was utilized to some degree during prehistoric times, perhaps as a resource procurement area that today contains evidence of stone tool maintenance. Subsurface deposits have clearly been affected by plowing related to silviculture. Evidence also indicates the landscape played a role in the historic naval stores industry, as seen in the surface distribution of Herty cup fragments throughout the parcel. Neither Site 1 nor the four AOs exhibit characteristics that would make them eligible for the NRHP. No further work in those locations is recommended. Additionally, the survey found no structures in the LNP site APE that are listed or eligible for listing in the NRHP. The surveys did not identify any NRHP-eligible cultural resources within the respective APEs on the LNP site (Reference 2.5-085).

If human remains are discovered during survey or site development, all work in the near vicinity of the human remains will cease and reasonable efforts will be made to avoid and protect the remains from additional impact. When human remains are encountered, federal and state guidelines must be followed, including the Native American Graves Protection and Repatriation Act of 1990 (on federal land) and Chapter 872.05, F.S. (on state or privately owned land).

PEF has in place guidelines for employees and contractors designed to protect the historic sites, historic landmarks, and artifacts or archaeological sites during land-disturbing activities (under internal document EVC-SUBS-00105). Land-disturbing activities in areas of known cultural or archaeological resources will be avoided if possible and minimized at all times. If a project or work activity inadvertently uncovers an archaeological site or other historical artifacts, all activities in the site area will be halted, and the appropriate PEF Environmental Support Organization (ESO) will be contacted. For the LNP project, Environmental Health and Safety Services (EHSS) would be contacted. In the event of an inadvertent find, a cultural resource assessment will be performed, and EHSS will consult with the SHPO, as necessary, to determine appropriate steps to be taken prior to resuming site activities. PEF will coordinate with the Florida SHPO to determine appropriate mitigation or other measures, as needed, in accordance with federal and state regulations and PEF policy.

2.5.3.2 Cultural Resource Investigations for the Property South of the LNP Site and Blowdown Pipeline Corridor

Surveys on the PEF-owned property south of the LNP site were carried out in all areas of proposed construction, including the transmission line, makeup and blowdown pipeline, and heavy haul. Surveys were also conducted along the extension of the blowdown pipeline corridor on the north side of the CFG in Levy and Citrus counties. A review of the FMSF indicated there are no previously recorded sites within the property south of the LNP site or the blowdown pipeline corridor.

2.5.3.2.1 Field Survey Methodology for the Property South of the LNP Site and Blowdown Pipeline Corridor

The APE for archaeology was determined to be only the areas of proposed construction where there are planned ground disturbances, including the transmission line corridor, the heavy haul road, and the blowdown pipeline corridor (Figure 2.5-12). The standing structures survey was conducted within a 402-m (0.25-mi.) radius of the centerline of the transmission line on the property south of the LNP site. No standing structure survey was conducted for the blowdown pipeline, as the pipeline is proposed to be buried in the northern berm of the CFG. The survey methodologies for the property south of the LNP site are the same as those described in ER Subsection 2.5.3.1.1 for the LNP site.

2.5.3.2.2 Field Survey Results for the Property South of the LNP Site

2.5.3.2.2.1 Property South of the LNP Site

Archaeology. The archaeological survey of the PEF-owned property south of the LNP site focused on the north/south transmission line corridor, the adjacent makeup and blowdown pipeline, and the heavy haul road extending from the LNP site south/southwest to US-40. All existing access roads on the property south of the LNP site were driven and pedestrian inspections were conducted.

The transmission line corridor, heavy haul road, and markup and blowdown pipeline were systematically tested with three to five transects at 100 m (328 ft.) intervals and judgmentally. In areas slightly elevated where soils were better drained and on the fringe of wetlands in hardwood hammocks, testing was conducted at 25 to 50 m (82 to 164 ft.) intervals. (Reference 2.5-085)

During the investigation of the property south of the LNP site, a thorough pedestrian inspection was conducted and 331 shovel tests were excavated. Surface inspection of the proposed transmission corridor, makeup and blowdown pipeline and heavy haul road revealed numerous Herty cup fragments relating to the naval stores industry. A few whole pots were observed as well. While their occurrence is an indication of historic land use, these fragments are ubiquitous in silvicultural areas and do not meet the definition of a site unless whole pots are concentrated or are associated with a residential occupation. Several dead pine stumps were also observed that bore the classic “cat-faced” scar used to score the pine trees. Tin gutters used to funnel the pine pitch into the Herty cup were also observed on these scarred stumps. (Reference 2.5-085)

Two AOs and two archaeological sites were identified during the survey of the property south of the LNP site. The AOs (AO5 and AO6) include two locations where a single lithic flake was recovered from two spatially discrete shovel tests. These locations are not NRHP-eligible and no further work is recommended. The newly recorded sites consist of one prehistoric lithic scatter (Site 2) and a portion of one historic rail line (Site 3) (Figure 2.5-12). (Reference 2.5-085)

Site 2 (the Small Hammock Site), in Section 31, Shovel Test #184, produced one small lithic flake at 50 to 60 cm (1.6 to 2 ft.) in light tan sand from an apparently undisturbed context. The setting of the site is a small hammock adjacent to a cypress wetland to the north, east, and south, with planted pine to the west. An additional 19 shovel tests were dug adjacent to the find at 10 and 25 m (32.8 and 82 ft.) intervals. Three shovel tests produced additional single occurrences of cultural material. The four artifacts recovered included two lithic flakes and two small, sand tempered plain potsherds. The location likely represents a small short-term campsite located on slightly elevated terrain adjacent to a cypress wetland utilized to exploit local resources. The site will be recorded with the FMSF; however, because of the sparse and nondiagnostic nature of the artifact assemblage, it is not considered significant or eligible for listing in the NRHP. (Reference 2.5-085)

Site 3 (Historic Railroad Spur), also in Section 31, is an abandoned historic railroad grade. Examination of current aerial photography indicates that the grade traverses the width of the property south of the LNP site, entering from the northeast in Section 32 and continuing southwest through Section 31 and beyond to Inglis. The grade is approximately 1.5 m (4.9 ft.) in height and 2 to 3 m (6.6 to 9.8 ft.) in width and is composed of limestone and sandy fill. Metal rails and ties have been removed. Several decomposing wood posts were observed along a portion of the grade, suggesting that there may have been a paralleling fence (Reference 2.5-085). Alternatively, a green glass electrical insulator fragment found on the surface may be indicative of a communications line. Preliminary research indicates the line was a short spur that ran from Inglis to Dunnellon, where it connected with a north/south line (Reference 2.5-086). The rail line through the PEF-owned property south of the LNP site is evident on several historic maps as early as the late 1800s (Reference 2.5-087); a 1911 map labels the spur as the S&H Line (Reference 2.5-088). The rail line will be recorded as a historic site with the FMSF; in terms of significance, it does not exhibit characteristics that would make it eligible for listing in the NRHP. (Reference 2.5-085)

Results indicate that the property south of the LNP site lies within an area of low probability for containing significant cultural resources. However, the presence of sparse lithic or ceramic artifacts in three locations (AO5, AO6, and Site 2) demonstrates that the landscape was occupied to some degree during prehistoric times, perhaps as a result of pedestrian movement, short term camping, or resource procurement. None of the prehistoric resources exhibit characteristics that would make them significant or eligible for inclusion in the NRHP and no further work is recommended in either the AOs or the site locations. (Reference 2.5-085)

Standing Structures. Due to the low probability of historic resources on the property south of the LNP site, the standing structures survey consisted of driving throughout the site on existing roads and pathways. The December 2007 survey found no structures built before 1957 in a 402-m (0.25-mi.) radius of the proposed location of the transmission line corridor (Figure 2.5-12). There are no structural resources currently listed in the NRHP, nor were any resources found within the APE that were considered eligible for listing. (Reference 2.5-085)

Based on the results of the archaeology and standing structures surveys, construction in the surveyed APE on the property south of the LNP site will have no effect on significant cultural resources.

2.5.3.2.2.2 Blowdown Pipeline Corridor Survey

The APE for archaeology consisted of only the areas of proposed construction of the blowdown pipeline extending beyond the PEF-owned property south of the LNP site. The blowdown corridor paralleling the north side of the CFG was examined and tested. The four mile long corridor along the north side of the CFG was examined and found to be impacted by an earthen berm and access road along the entire length. Due to the previous ground disturbance from the construction of the CFBC, no shovel tests were conducted along the planned route of the pipeline in the berm of the existing canal. The corridor extending south from the CFG along an existing transmission line corridor to CREC was also examined. (Reference 2.5-085)

No standing structure field survey was conducted for the off-site blowdown pipeline; however, the team researched the history and potential significance of the CFBC. The concept of constructing a canal across the State of Florida goes back as far as the Spanish Territorial Period in the mid-eighteenth century (Reference 2.5-089). A canal that crossed through Florida from the Gulf of

Mexico to the Atlantic Ocean would provide a shorter trade route for agricultural and industrial shipping and could benefit homeland security. In May 1933, the USACE was authorized to construct a deep-water ship canal, but the project was halted in 1936 due to a lack of funding. The project was re-authorized in 1942 as the CFBC, however, construction did not begin on the project until 1964 (Reference 2.5-090). In early 1970, opposition by environmental groups exerted enough pressure for President Nixon to halt construction by Executive Order in January 1971 (Reference 2.5-091). The canal was officially de-authorized in 1986 and plans to restore the St. John's River and create public greenways began. Now known as the CFG, it includes 177 km (110 mi.) of greenway, conservation, and recreational space. The canal has not yet reached the threshold of 50 years of age for NRHP-eligibility consideration, since construction of the canal began in 1964. In order for a structure less than 50 years of age to be considered eligible for the NRHP, it must exhibit exceptional importance (Reference 2.5-092). Based on the survey and review of existing documentation, the CFBC has not achieved exceptional importance and is not eligible for the NRHP (Reference 2.5-085).

2.5.3.3 Consultation

2.5.3.3.1 State Historic Preservation Officer Consultation

Section 106 of the NHPA and 36 CFR 800 require federal agencies to consult with the SHPO to determine if there are cultural resources within a defined APE. A consultation was begun with the SHPO regarding the APE for archaeological resources in the summer of 2007. Based on the initial background research, the history of silviculture and the topography, the LNP site displayed a generally low probability of finding archaeological resources. During telephone conversations, supplemented with maps of the LNP site, a judgmental survey strategy in the proposed construction locations on the LNP site, the heavy haul road and transmission corridor going south, as well as the blowdown pipeline, was agreed upon by the Deputy SHPO. More intense surveys would be conducted in areas that were not of low probability. The APE for archaeological resources was defined as the areas of proposed construction where there will be ground-disturbing activities.

In separate consultations with the Deputy SHPO, the APE for standing structures was determined to include all lands within a 1.6-km (1-mi.) radius from the center of the LNP site (Figure 2.5-11). The APE would be the basis for the survey of architectural properties and the evaluation of impacts. The APE for the structures survey for the transmission line going south from the LNP site to the CFG was 402 m (0.25 mi.) from the center line of the transmission corridor (Figure 2.5-12). Since the plan for the blowdown pipeline calls for it to be buried beneath the ground, no standing structure survey was required for the blowdown pipeline corridor.

If a project or work activity inadvertently uncovers an archaeological site or other historical artifacts, all activities in the site area will be halted, and the appropriate PEF ESO will be contacted. For the LNP project, EHSS would be contacted. In the event of an inadvertent find, a cultural resource assessment will be performed, and EHSS will consult with the SHPO, as necessary, to determine appropriate steps to be taken prior to resuming site activities. PEF will coordinate with the Florida SHPO to determine appropriate mitigation or other measures, as needed, in accordance with federal and state regulations and PEF policy.

2.5.3.3.2 Native American Tribal Consultation

Consultation with Native American tribes will be carried out in accordance with all applicable federal laws, including:

- National Historic Preservation Act of 1966, as amended [16 United States Code (USC) 470 et seq.], Section 101(d)(6)(B).
- National Environmental Policy Act, 1969 [43 USC 4321 and 4331-35] 40 CFR 1501.7(a).
- American Indian Religious Freedom Act [42 USC 1996], 1978.
- Archaeological Resources Protection Act, [16 USC 470aa-mm], 1979, Section (4)(c).
- Native American Graves Protection and Repatriation Act, 1990 [25 USC 3001 et seq.], Section 8 (c)(6).
- Executive Order 13175, Consultation with Indian Tribal Governments, 2000.
- Executive Order 13084, Consultation and Coordination with Indian Tribal Governments, 1998.
- Executive Order 13007, Sacred Sites, 1996, Section (2)(a).
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994, Section 6-606.
- Executive Order 12875, Enhancing the Intergovernmental Partnership, 1993, Section (1)(b).
- Indian Self Determination and Education Assistance Act [25 USC 450a-e], 1975.

As prescribed, the NRC is to conduct the consultation once the application is submitted. The results of these consultations will be included in the NRC-produced EIS document.

2.5.3.3.3 Community Outreach

The research conducted at local repositories identified no unrecorded resources. Conversations with the librarians and staff of the locations visited did not produce any further information about significant properties in the area. In addition, prominent and knowledgeable community members in Levy County were contacted as part of the cultural resource identification process. These community members were asked to identify any previously unevaluated structures or sites in Levy County that were considered significant by local residents. Nine structures, sites, or complexes were identified as potentially historically or architecturally significant in these conversations. None of these falls within the APE and, therefore, no determination of their eligibility for listing in the NRHP was made, as part of the cultural resource identification process.

2.5.3.4 Previously Surveyed Properties

2.5.3.4.1 Properties within a 16-Km (10-Mi.) Radius of the LNP Site

A review of FMSF records in October 2007 showed 262 previously surveyed archaeological sites within a 16-km (10-mi.) radius of the LNP site; 112 in Levy County, 129 in Citrus County, and 21 in Marion County. Of the 262 previously surveyed sites, 38 have been determined ineligible for listing in the NRHP by the SHPO, 28 sites showed insufficient information to make a determination, 113 were recommended ineligible by the surveyor, but had not yet been evaluated by the SHPO, and 67 had not been evaluated by the surveyor nor the SHPO. Sixteen sites were recommended eligible for listing in the NRHP by the surveyor, but had not been evaluated by the SHPO. Of those 16, four are in Levy County. The Tidewater site (LV0253) is approximately 6.4 km (4 mi.) from the LNP site. The others, more than 8 km (5 mi.) from the LNP site, are the Spring Run Burial Ground (LV0469), located along the western coast, the Sand Slough Burial Mound (LV00250), and the Goethe site (LV00259). None of these sites are located within the APE and none have been determined eligible for listing in the NRHP. It is customary not to publish the locations of potentially sensitive archaeological sites. (Reference 2.5-093)

The review of FMSF records also showed 213 structures had been previously surveyed within a 16-km (10-mi.) radius of the LNP site, including one bridge (over Ten Mile Creek). Additionally, 12 cemeteries (eight in Levy County, one in Marion County, and three in Citrus County) had been surveyed. There have been 36 surveys conducted that are wholly or partially located within the 16-km (10-mi.) radius. Figure 2.5-13 presents the locations of the previously recorded properties and surveys. Historic properties, as defined in 36 CFR 800.16 (l)(1), are properties listed or eligible for listing in the NRHP. The FMSF records revealed that there are two buildings that have been determined to be eligible for listing in the NRHP, as well as one NRHP-listed historic district within the 16-km (10-mi.) radius of the LNP site (Table 2.5-35). There are also four properties with local significance that have been determined not eligible for the NRHP. The NRHP and locally significant properties are described in greater detail below. (Reference 2.5-093)

Dunnellon "Boomtown" Historic District (MR01900), located in Dunnellon, was listed in the NRHP in December 1988. It is significant as the location of the first hard rock phosphate discovery in Florida, as Florida's first and oldest mining boomtown, and as the best preserved example of a mining town in Florida. It is a small, mostly residential area in southwest Marion County north of the Withlacoochee River, encompassing approximately 14 blocks. The approximate boundaries of the district are McKinney Avenue, Illinois Street, Pennsylvania Avenue, and Cedar Street (see the inset in Figure 2.5-13). The period of significance for the district is from 1887 to 1920, and it contains 70 contributing and 35 non-contributing buildings with no known archaeological sites. (Reference 2.5-094)

The Knotts Supply Company Store (LV00707) at 6302 Riverside Drive in Yankeetown, Levy County, was constructed in 1920, with a later addition to the north side of the building from 1940. The Yankeetown Post Office (LV00708) at 6304 Riverside Drive was constructed in 1926 in the same style as the Knotts Supply Company Store next door. No significant archaeological sites were identified when the buildings were surveyed in February 2007. At that time, both structures were recommended as eligible for the NRHP for architectural significance and for significance related to the history of the commerce of the area at the local level. SHPO agreed they were potentially eligible on May 1, 2007. (Reference 2.5-095)

The residence at 1234 Florida Avenue (CI00849) is a small, one-story, frame house located in Dunnellon, Citrus County. It was surveyed by Historic Property Associates, Inc., in June 1994 and recommended as locally significant for its architectural significance. The Florida SHPO determined that it was not eligible for the NRHP in August 1995. Three other properties in Dunnellon were recorded as a part of the above survey and recommended as locally eligible. The residence at 1860 Test Court (CI00850) is a small, one-story, frame house; 1866 Test Court (CI00851) is also a small, one-story, frame house; and 1870 Test Court (CI00852) like the others on the block is a small, one-story, frame house. The SHPO determined that these residences were not eligible for the NRHP in August 1995. No significant archeological remains or artifacts were identified at these three locations. (Reference 2.5-096)

Portions of the Crystal River Preserve State Park are located within the 16-km (10-mi.) radius of the LNP site. The Crystal River Archaeological State Park (CI0001) is located within the Crystal River Preserve, but lies just outside the 16-km (10-mi.) radius. The Crystal River Archaeological State Park is a National Historic Landmark (NHL), located on Museum Pointe near the Town of Crystal River in Citrus County. This 61-ac., pre-Columbian, Native American site has burial mounds, temple/platform mounds, a plaza area, and a substantial midden. The six-mound complex is one of the longest continuously occupied sites in Florida. The site has been open to the public under the protection of the Florida State Park Service since 1965, after it was acquired by the State of Florida in 1962. The mound complex was listed in the NRHP in 1965, and recognized as a NHL in 1990. The visitor center/museum houses a collection of artifacts from the site, including arrowheads, pottery, jewelry, and tools. Interpretive exhibits also relate the chronology of archaeological excavations done at the site beginning in 1903. (Reference 2.5-097)

2.5.3.4.2 Properties within 2 Km (1.2 Mi.) of Transmission Corridors

Transmission Line Corridor. According to FMSF records, there are no archaeological sites in the Citrus County portion of the 2-km (1.2-mi.) radius of the transmission corridor located on the PEF-owned property south of the LNP site. In Levy County, seven sites have been recorded; three were determined not eligible for listing in the NRHP by the SHPO and four were recommended ineligible by the surveyors, but had not been evaluated by the SHPO. Additionally, no structures, bridges, or cemeteries have been previously surveyed in either county. There has been one cultural resource survey that is partially located within the 2-km (1.2-mi.) radius in each of the two counties (Reference 2.5-093).

Off-Site Transmission Line Corridors. A teleconference was conducted with the Florida SHPO to identify previously-recorded archaeological sites and historic resources to determine the potential for unrecorded resources as part of the corridor selection process for the proposed LPC, LCR, and LCFS corridors (see ER Subsection 2.2.2) (Reference 2.5-098). In addition, a detailed search of the FMSF was conducted which included an analysis of the most current GIS data, including both a spatial and tabular representation of previously-recorded cultural resources within the state.

The FMSF notes 29 previously conducted cultural resource assessment surveys within the proposed corridors. Of these previous surveys, five were conducted within the common area of the LPC, LCR, and LCFS corridors, two were conducted in the remainder of the LCR corridor, and an additional 22 were conducted within the remainder of the proposed LCFS corridor. The FMSF survey number, survey title, author, and publication date for each of the 29 surveys is included in Table 2.5-36.

The FMSF listed one potentially NRHP-eligible archaeological site (8SM128) within the LCFS corridor (Reference 2.5-099). Site 8SM128, West Pasture, is a multi-component site consisting of a Seminole (1716 - present) homestead and a pre-Columbian habitation. Additionally, one previously recorded archaeological site (8SM10) and one historic cemetery (8SM84) in the LCFS Corridor were identified within the FMSF as having confirmed or potential human remains (Reference 2.5-100). Site 8SM10, Bowman Mound, is a pre-Columbian burial mound site that has not been evaluated for NRHP eligibility by the SHPO. The Royal Cemetery (8SM84) is located within the Town of Royal. According to the FMSF, the Royal Cemetery was still in use for “modern” burials during the 1980s; however, no information regarding the historic component of the cemetery is provided in the survey report or corresponding site files. There is the potential for unmarked and unrecorded graves to be located outside of current cemetery boundaries. These sites will be avoided to the maximum extent practicable during ROW selection and structure placement as described in ER

Subsection 9.4.3. If avoidance of these three resources is not feasible, then appropriate minimization or mitigation measures will be developed in coordination with the SHPO. (Reference 2.5-099)

Although portions of the LPC, LCR, and LCFS corridors have been subjected to previous surveys, comprehensive surveys have not been conducted. A teleconference with the SHPO confirmed the need to conduct a cultural resource assessment survey once the transmission line ROWs within the corridors have been finalized. This survey will be conducted prior to construction and will meet the requirements of Chapter 1A-46 (Archaeological and Historical Report Standards and Guidelines), F.A.C.

Since the ROWs for the remaining proposed off-site transmission corridors have not been finalized, historic properties within 1.9 km (1.2 mi.) of the proposed transmission ROWs could not be definitively determined. Instead, a desktop survey was conducted on resources within or adjacent to the LPC, LCR, and LCFS corridors. Based on this detailed desktop survey of FMSF data, the resources within or adjacent to the corridors include 54 previously recorded archaeological sites, three previously recorded historic structures, one previously recorded historic cemetery, and one previously recorded resource group. These resources along the proposed off-site transmission corridors are described in Table 2.5-36 (Reference 2.5-093). Although the majority of these resources are not designated as NRHP-eligible in the FMSF, the presence of these resources indicates the potential for additional unrecorded cultural resources to be present.

2.5.3.4.3 Properties within 2 Km (1.2 Mi.) of Off-Site Areas

Blowdown Pipeline. A review of FMSF data showed 59 previously recorded archaeological sites within a 2-km (1.2-mi.) radius of the proposed off-site blowdown pipeline. The Levy County sites included three determined ineligible for listing in the NRHP and one with insufficient information to make an eligibility determination. The 55 previously surveyed sites in Citrus County included one determined ineligible for listing in the NRHP by the SHPO, two sites with insufficient information to make a determination, 39 recommended ineligible by the surveyor, but not yet evaluated by the SHPO, seven not evaluated by the surveyor nor the SHPO, and six sites recommended eligible for listing in the NRHP by the surveyor, but not evaluated by the SHPO. None of these six sites are located within the APE for archaeological resources. It is customary not to publish the locations of archaeological sites due to the potentially sensitive nature of the artifacts. (Reference 2.5-093)

Further review of FMSF records showed no previously surveyed structures, bridges or cemeteries within a 2-km (1.2-mi.) radius of the proposed blowdown pipeline. There are 11 previous surveys that are partially within the 2-km (1.2-mi.) radius. Of those, four are in Levy County and seven are in Citrus County. (Reference 2.5-093)

2.5.3.5 Traditional Cultural Properties

PEF is not aware of any traditional cultural properties of any Native American tribes that have links to the site. Efforts have been made to contact tribes that potentially have links to the site.

2.5.4 ENVIRONMENTAL JUSTICE

Environmental justice refers to a federal executive order in which federal actions should not result in disproportionately high and adverse impacts to low income or minority populations. Executive Order 12898 directs federal agencies to consider environmental justice by identifying and mitigating disproportionately high and adverse human health and environmental effects. This includes the interrelated social and economic benefits of their programs, policies, and activities on low income and minority populations.

This subsection follows the methodology of NUREG-1555, Revision 0, described in ER Subsection 2.5.4.1 below to identify and locate "minority" and "low-income" communities within 80 km (50 mi.) of the LNP site. This section, along with ER Subsections 4.4.3 and 5.8.3, details the studies that are used to define these populations of interest. Furthermore, the environmental justice review has three goals:

- Define racial, ethnic, and special characteristics of the group that could be affected by any adverse environmental impacts from the facility.
- Define the income characteristics of the populations that could be affected by any adverse environmental impacts from the facility.
- Describe resources, customs and practices, circumstances of living (e.g., migrant labor), or preconditions (e.g., pre-existing health conditions or access to particular facilities or locations) of particular minority or low income populations that may make them likely to experience disproportionate environmental impacts from the proposed project.

A discussion of Native American populations is provided in ER Subsection 2.5.3.

2.5.4.1 Methodology

The 2004 NRC's "Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues" defines a "minority" population as: American Indian or Alaskan Native; Asian; Native Hawaiian or other Pacific Islander; Black or African-American; other single races; multi-racial; and Hispanic ethnicity.

The guidance indicates that a minority population exists if either of the following two conditions exists:

- The minority population in the census block group or environmental impact site exceeds 50 percent.

- The minority population percentage of the environmental impact area is significantly greater (typically at least 20 percentage points) than the minority population percentage in the geographic area chosen for comparative analysis. The geographic area for comparative analysis for the LNP site is defined as the State of Florida.

An evaluation of census block group data for household income was performed to identify low income populations, as defined by the U.S. Department of Health and Human Services.[b] The 2004 NRC guidance defines low income based on statistical poverty thresholds. The low income households in each census block group were divided by the total households for that block group to obtain the percentage of low income households per block group. A low income population is considered to be present if:

- The low income population in the census block group or environmental impact site exceeds 50 percent.

- The percentage of households below the poverty level in an environmental impact area is significantly greater (typically at least 20 percentage points) than the low income population percentage in the geographic area chosen for comparative analysis. The geographic area for comparative analysis for the LNP site is defined as the State of Florida. The state average for low income population is 12.5 percent (Reference 2.5-101).

Based on these guidelines and using U.S. Census Bureau Summary File 1 (SF1) data and TIGER census block group boundaries from 2000, the following steps were taken to identify low income or minority populations in the region and information on racial, ethnic, and income population characteristics:

1. Each census block within the region (community of comparison) was examined for racial composition and median household income in comparison to the potential impact area as a whole.
2. Environmental Systems Research Institute (ESRI) ArcMap GIS was used to determine the minority characteristics by census block group. Census block groups were included if any part of their area lay within the 80-km (50-mi.) radius. The 80-km (50-mi.) radius is centered on the centerpoint of the LNP site. This centerpoint is located at latitude 29.073598 and longitude -82.62078. The total number of census block groups located within in the 80-km (50-mi.) radius based on the midpoint between LNP 1 and LNP 2 includes 536 block groups.
3. The percent of minority population and low income population within the census block were then tallied based on the total block groups that exceed the criteria described above for census block groups within the 80-km (50-mi.) radius.

4. Subsistence populations were identified by contacting government organizations in Levy, Citrus, and Marion counties.

5. Migrant labor populations for Levy, Citrus, and Marion counties were supplied by the USDA 2002 Agricultural Census.

2.5.4.2 Environmental Justice Populations

The historic area of Rosewood falls within the region of the LNP site. In the past, Rosewood bore significance from an environmental justice perspective. The area of Rosewood no longer has an environmental justice population as defined by the 2004 NRC guidance; however, the community and its history still bear significant importance for the area. While not identified via the above methodology, it should be noted that Rosewood is located 35.2 km (21.9 mi.) northwest of the LNP site in Levy County, as presented on Figure 2.5-14. The Rosewood Massacre occurred early in 1923 during a time when Rosewood was predominantly an African-American community. An African-American man was accused of assaulting a white woman resulting in an attack by a group of white vigilantes on the residents of Rosewood. (Reference 2.5-102) Five African-Americans and two Caucasian persons died in the incident (Reference 2.5-103). The Rosewood Heritage Foundation was established in 1995 to provide information and services that will promote an understanding of the importance of diversity and moral values (Reference 2.5-104). In 1994, after the Florida Legislature passed the Rosewood Claims Bill, each of the nine Rosewood survivors received $150,000 as part of a total of $2.1 million in compensation paid by the State of Florida to survivors and descendants (References 2.5-105 and 2.5-106).

Currently, the only standing building from the massacre is now a historical marker that was dedicated on May 4, 2004 (Reference 2.5-103). The Gainesville Visitors and Tourists Center provides bus tours to Rosewood (Reference 2.5-107). Rosewood falls within census tract 970400, block group 1. Based on the 2000 census data the census tract/block group that Rosewood is located within is comprised of 98 percent white.

The following four subsections on minority, low income, subsistence, and migrant populations were developed based on the methodology described in ER Subsection 2.5.4.1. The description of subsistence fishing and hunting as well as migrant populations identifies local resources, customs and practices, circumstances of living of particular minority or low income populations that could make them likely to experience disproportionate environmental impacts from the proposed project.

2.5.4.2.1 Minority Populations within an 80-Km (50-Mi.) Radius of the LNP Site

Data from the 2000 United States Census were used to determine the percentage of the total population in Florida of each minority category and to identify minority populations within 80 km (50 mi.) of the LNP site. In order to obtain the percentage of the block group's population represented by each minority category, population numbers for each minority population within each block group were divided by the total population of that block group. For each of the 536 block groups within 80 km (50 mi.) of the LNP site, the percent of the population in each minority category was calculated and compared with the result of the corresponding geographic area's minority threshold percentages to determine whether minority populations exist.

The 2000 United States Census reported the population of Florida as 0.3 percent American Indian or Alaskan Native; 1.7 percent Asian; 0.05 percent Native Hawaiian or other Pacific Islander; 14.6 percent Black or African-American; 3.0 percent other single race; 2.4 percent multi-racial; 22.1 percent aggregate of minority races; and 16.8 percent Hispanic ethnicity (Reference 2.5-104). Based on the second criteria of the 2004 NRC Procedural Guidance cited in ER Subsection 2.5.4.1, minority populations are considered significant if the block group's minority population is at least 20 percentage points higher than the minority population of the geographic area chosen for comparison. The State of Florida has been chosen as the geographic comparison area for this study. Therefore, the criteria for identifying significant minority populations will be any block groups in which the minority populations exceed the following numbers: 20.3 percent of the population as American Indian or Alaskan Native; 21.7 percent Asian; 20.05 percent Native Hawaiian or other Pacific Islander; 34.6 percent Black or African-American; 23.0 percent all other single minorities; 22.4 percent multi-racial; 42.1 percent aggregrate of minority races; and 36.8 percent Hispanic ethnicity.

Figure 2.5-14 presents the census block groups for each county from within the 80-km (50-mi.) radius that exceed the threshold for the aggregate minority population. The total of each of the minority population as described above is the aggregate minority population. The block groups shaded peach or green represent the aggregate minority population greater than 20 percent above the state average (or greater than 42.1 percent) or greater than 50 percent of the total population, respectively. Figure 2.5-14 only presents the aggregate minority population by census block group; however, a discussion of each minority population that exceeds the thresholds is presented below by census block group.

The green-shaded area northeast of the LNP site within the City of Williston is census tract 970600, block groups 2 and 3. Block groups 2 and 3 have a 68.7 percent and 71.7 percent aggregate minority population, respectively. The small peach-shaded area southeast of the LNP site within the Town of Dunellon is census tract 980100, block group 1 and has a 46.2 percent aggregate minority population. The large peach-shaded area north of the LNP site within the City of Chiefland and the Town of Usher is census tract 970200, block group 2 and has a 46.3 percent aggregate minority population. Census tracts 970600, 980100, and 970200 are 32.7 km (20.3 mi.), 15.3 km (9.5 mi.), and 31.5 km (19.6 mi.), respectively from the LNP site (Figure 2.5-14).

No census block groups with minority populations of American Indian or Alaska Native, Asian, Hawaiian or other Pacific Islander, other single race, or multi-racial exceeded 20 percent greater than the state averages or the 50 percent criteria.

Sixty block groups within the 80-km (50-mi.) radius have Black or African-American populations that are 20 percent greater than the state average (or greater than 34.6 percent). Of those 60 block groups, 41 have African-American populations of 50 percent or more.

Fifty-six census block groups within the 80-km (50-mi.) radius have aggregate minority populations that are 20 percent greater than the state average (or greater than 42.1 percent). Of those 56 block groups, 44 have aggregate minority populations of 50 percent or more.

One census block group within the 80-km (50-mi.) radius has Hispanic ethnicity populations that are 20 percent greater than the state average (or greater than 36.8 percent) and exceed the 50 percent criteria.

2.5.4.2.2 Low Income Populations

The populations below the poverty level within the region for each census block groups are shown on Figure 2.5-15. The state average for low income population is 12.5 percent (Reference 2.5-101).The block group shaded peach or green represent the low income populations greater than 20 percent above the state average (or greater than 32.5 percent) or greater than 50 percent above the state average, respectively, and are presented on Figure 2.5-15. The large peach-shaded area north of the LNP site within the City of Chiefland and Town of Usher is census tract 970200, block group 2 and has a 37.7 percent low income population.

Forty-four census block groups within the 80-km (50-mi.) radius have low income households that are 20 percent greater than the state average (or greater than 32.5 percent). Of these 44 block groups, 14 have 50 percent or more low income households.

2.5.4.2.3 Subsistence Populations

Levy and Citrus counties' health departments and other governmental organizations were contacted to determine the percentage of populations dependent on subsistence fishing or hunting within the vicinity of the LNP. Based on telephone conversations with the Levy County Health Department, populations in Levy County rely on subsistence fishing and hunting; however, population utilization data are not tracked. The Citrus County Health Department confirmed that subsistence fishing occurs within Citrus County, but the department was not aware of subsistence hunting within the county. Staff at the Citrus County Director of Nutrition and Women, Infants, and Children (WIC) estimate 3000 women and children utilize WIC within the county. It was further estimated that 10 percent of the 3000 WIC participants rely on subsistence fishing. No specific information was available that applies to the vicinity of the LNP site.

In addition to the county health departments, the following organizations were contacted and no additional information was provided to identify subsistence populations within the vicinity of the site: University of Florida Cedar Key Shellfish Industries, Levy County Economic Development, Levy County Parks and Recreation, Levy County Forests, and Levy County Agricultural Department. An internet search and telephone conversations with several organizations were conducted and only Citrus and Levy counties could confirm a subsistence fishing population.

2.5.4.2.4 Migrant Labor Populations

The USDA 2002 Agricultural Census data provide total farms and workers within each county and separately identifies the farms that utilize migrant labor workers. The data, however, do not provide a total number of migrant labor workers for each of the farms reported or a total of migrant labor workers for the county. Levy County reported 322 farms and 1013 workers; eight of these farms use migrant labor workers. Citrus County reported 55 farms and 245 workers, with only one farm using migrant labor workers. Marion County reported 771 farms and 3824 workers; two of these farms use migrant labor workers. (Reference 2.5-008)

No prime farmland is located within the site or vicinity of LNP. Therefore, no potential for migrant farm workers would occur at the site or vicinity. Additionally, no other migrant labor populations were identified in the vicinity of the site through internet searches and telephone conversations with government organizations.

2.5.5 REFERENCES

2.5-001 U.S. Census Bureau, American Factfinder, 2001, Website, factfinder.census.gov/servlet/DTGeoSearchByListServlet?ds_name=DEC_2000_SF3_U&_lang=en&_ts=236861782207, accessed February 11, 2008.

2.5-002 Bureau of Economic and Business Research, Warrington College of Business, University of Florida, “Detailed Population Projections by Age, Sex, Race, and Hispanic Origin for Florida and Its Counties, 2005-2030,” 2006.

2.5-003 U.S. Census Bureau, American Factfinder, “Average Household Size: 2006,” Website, www.factfinder.census.gov/servlet/GRTTable?_bm=y&-_box_head_nbr=R1105&-ds_name=ACS_2006_EST_G00_&-_lang=en&-format=US-30, accessed February 6, 2008.

2.5-004 Florida Enterprise, “Levy County Profile,” Website, www.eflorida.com/profiles/CountyReport.asp?CountyID=62&Display=all, accessed March 10, 2008.

2.5-005 Florida Enterprise, “Citrus County Profile,” Website, www.eflorida.com/profiles/CountyReport.asp?CountyID=9&Display=all, accessed March 9, 2007.

2.5-006 Florida Enterprise, “Marion County Profile,” Website, www.eflorida.com/profiles/CountyReport.asp?CountyID=66&Display=all, accessed March 9, 2007.

2.5-007 Filzen, Lydia, “Crystal River Civil War Reenactment,” *American Roads Travel Magazine*, Website, www.americanroads.net/crystal-River-Civil-War-Reenactment.htm, accessed August 18, 2008.

2.5-008 U.S. Department of Agriculture, “2002 Agricultural Census,” Website, www.nass.usda.gov, accessed August 16, 2008.

2.5-009 Bureau of Economic Analysis, U.S. Department of Commerce, “Local Area Annual Personal Income,” Website, www.bea.gov/regional/reis/print.cfm?geography=CA&account=REMD&mytable=CA25&lc=&years=2000,1990&rformat=display&page=action&mystate=12001,12017,12029,12041,12053,12075,12083,12119&end_year=2000&start_year=1969&draw=false&printable=true&areahold=12000&area=12001,12017,12029,12041,12053,12075,12083,12119&fips=12001,12017,12029,12041,12053,12075,12083,12119, accessed January 21, 2008.

2.5-010 Bureau of Economic Analysis, U.S. Department of Commerce, “Local Area Annual Personal Income,” Website, www.bea.gov/regional/reis/print.cfm?geography=CA&account=REMD&mytable=CA25N&lc=&years=2005&rformat=display&page=action&mystate=12001,12017,12029,12041,12053,12075,12083,12119&end_year=2006&start_year=2001&draw=false&printable=true&areahold=12000&area=12001,12017,12029,12041,12053,12075,12083,12119&fips=12001,12017,12029,12041,12053,12075,12083,12119, accessed January 21, 2008.

2.5-011 Bureau of Economic Analysis, U.S. Department of Commerce, “Local Area Annual Personal Income,” Website, www.bea.gov/regional/reis/print.cfm?geography=CA&account=REMD&mytable=CA05&lc=&years=2000,1990&rformat=display&page=action&mystate=12001,12017,12029,12041,12053,12075,12083,12119&end_year=2000&start_year=1969&draw=false&printable=true&areahold=12000&area=12001,12017,12029,12041,12053,12075,12083,12119&fips=12001,12017,12029,12041,12053,12075,12083,12119, accessed January 21, 2008.

2.5-012 Bureau of Economic Analysis, U.S. Department of Commerce, "Local Area Annual Personal Income," Website, www.bea.gov/regional/reis/print.cfm?geography=CA&account=REMD&mytable=CA05N&lc=&years=2005&rformat=display&page=action&mystate=12001,12017,12029,12041,12053,12075,12083,12119&end_year=2006&start_year=2001&draw=false&printable=true&areahold=12000&area=12001,12017,12029,12041,12053,12075,12083,12119&fips=12001,12017,12029,12041,12053,12075,12083,12119, accessed January 21, 2008.

2.5-013 U.S. Census Bureau, "2002 Economic Census, Comparative Statistics for Florida Construction," Website, www.census.gov/econ/census02/data/comparative/FLCS_23.HTM, accessed January 21, 2008.

2.5-014 U.S. Census Bureau, "2002 Economic Census, Comparative Statistics for United States Construction," Website, www.census.gov/econ/census02/data/comparative/USCS_23.HTM, accessed January 21, 2008.

2.5-015 U.S. Department of Labor, Bureau of Labor Statistics, "Local Area Unemployment Statistics," Website, www.data.bls.gov/PDQ/servlet/SurveyOutputServlet, accessed January 21, 2008.

2.5-016 Bureau of Economic Analysis, U.S. Department of Commerce, "Florida Per Capita Income," Website, www.bea.gov/bea/regional/reis/drill.cfm, accessed January 21, 2008.

2.5-017 Citrus County Board of Commissioners, "Annual Budget, Citrus County, FL, Board of Commissioners, Fiscal Year 2007/2008," 2007.

2.5-018 Marion County Budget Department, Ellspermann, David R., Clerk of the Circuit Court, "Marion County Board of Commissioners, Adopted Budget Summary, Fiscal Year 2007-2008," 2007.

2.5-019 Bankrate.com, Florida State Taxes, Website, www.bankrate.com/brm/itax/edit/state/profiles/state_tax_Fla.asp, accessed January 21, 2008.

2.5-020 Bureau of Economic and Business Research, Warrington College of Business, University of Florida, "Florida Statistical Abstract 2006, Fortieth Edition," 2006.

2.5-021 Florida Department of Revenue, "Florida's Corporate Income Tax," Website, dor.myflorida.com/dor/taxes/corporate.html, accessed

January 21, 2008.

2.5-022 Florida Department of Revenue, “Enterprise Zone Program-Corporate Income Tax Incentives,” Website, dor.myflorida.com/dor/taxes/corp_tax_incent.html, accessed January 21, 2008.

2.5-023 City of Wonders – City/County Information, “Florida's 405 Municipalities (Incorporated Cities, Towns and Villages)”, Website, www.cityofwonders.com/cities.asp, accessed March 5, 2008.

2.5-024 Levy County, “Welcome to Our Web Site,” Website, www.levycounty.org/body_default.html, accessed March 5, 2008.

2.5-025 Nature Coast, Website, www.naturecoastcoalition.com/, accessed January 13, 2008.

2.5-026 U.S. Census Bureau, “American Factfinder Levy County, Florida,” Website, www.factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=Levy+County&_cityTown=Levy+County&_state=04000US12&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010&show_2003_tab=&redirect=Y, accessed January 25, 2008.

2.5-027 U.S. Census Bureau, “American Factfinder Marion County, Florida,” Website, www.factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=05000US12075&_geoContext=01000US%7C04000US12%7C05000US12075&_street=&_county=Marion+County&_cityTown=Marion+County&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=050&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-028 U.S Census Bureau, “American Factfinder Citrus County, Florida,” Website, www.factfinder.census.gov/servlet/SAFFFacts?_event=ChangeGeoContext&geo_id=05000US12017&_geoContext=01000US%7C04000US12%7C05000US12083&_street=&_county=Citrus+County&_cityTown=Citrus+County&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-029 Realtor.com, Brooksville, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=5456&typ=7, accessed January 9, 2008.

2.5-030 Realtor.com, Dunnellon, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=2162&typ=7, accessed January 9, 2008.

2.5-031 Realtor.com, Gainesville, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=1157&typ=7, accessed January 9, 2008.

2.5-032 U.S. Census Bureau, "American Factfinder Inglis Town, Florida," Website, www.factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=05000US12017&_geoContext=01000US%7C04000US12%7C05000US12017&_street=&_county=Inglis&_cityTown=Inglis&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=050&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-033 U.S. Census Bureau, "American Factfinder Yankeetown Town, Florida," Website, factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=01000US&_geoContext=01000US&_street=&_county=Yankeetown&_cityTown=Yankeetown&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 29, 2008.

2.5-034 U.S. Census Bureau, "American Factfinder Dunnellon City, Florida," Website, factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=16000US1233800&_geoContext=01000US%7C04000US12%7C16000US1233800&_street=&_county=Dunnellon&_cityTown=Dunnellon&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-035 U.S. Census Bureau, "American Factfinder Crystal River City, Florida," Website, factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=16000US1218675&_geoContext=01000US%7C04000US12%7C16000US1218675&_street=&_county=Crystal+River&_cityTown=Crystal+River&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-036 U.S. Census Bureau, "American Factfinder Dixie County, Florida," Website, factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=16000US1215775&_geoContext=01000US%7C04000US12%7C16000US1215775&_street=&_county=Dixie&_cityTown=Dixie&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-037 U.S. Census Bureau, "American Factfinder Alachua County, Florida," Website, factfinder.census.gov/servlet/SAFFFacts?_event=ChangeGeoContext&geo_id=05000US12001&_geoContext=01000US%7C04000US12%7C05000US12029&_street=&_county=Alachua&_cityTown=Alachua&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-038 U.S. Census Bureau, "American Factfinder Hernando County, Florida," Website, factfinder.census.gov/servlet/SAFFFacts?_event=ChangeGeoContext&geo_id=05000US12053&_geoContext=01000US%7C04000US12%7C05000US12001&_street=&_county=Hernando&_cityTown=Hernando&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-039 U.S. Census Bureau, “American Factfinder Sumter County, Florida,” Website, factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=05000US12053&_geoContext=01000US%7C04000US12%7C05000US12053&_street=&_county=Sumter&_cityTown=Sumter&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=050&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-040 U.S. Census Bureau, “American Factfinder Florida,” Website, factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=05000US12119&_geoContext=01000US%7C04000US12%7C05000US12119&_street=&_county=&_cityTown=&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=050&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-041 U.S. Census Bureau, “American Factfinder Gilchrist County, Florida,” Website, factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=04000US12&_geoContext=01000US%7C04000US12&_street=&_county=Gilchrist&_cityTown=Gilchrist&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=040&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-042 Marion County Consortium, Marion County, FL, City of Ocala, FL, “Joint Submission of Consolidated Plan 2004-2009, Action Plans 2004/05”.

2.5-043 Citrus County Community Development, “Citrus County Comprehensive Plan,” Website, www.bocc.citrus.fl.us/devservices/commdev/comp_plan/comp_plan.htm, accessed January 25, 2008.

2.5-044 Levy County Planning Department, “Levy County Comprehensive Plan,” Website, www.levycounty.org/html/body_comprehensive_plan.html, accessed January 25, 2008.

2.5-045 U.S. Census Bureau, “State and County Quickfacts, Levy County, Florida,” Website, quickfacts.census.gov/qfd/states/12/12075.html, accessed January 25, 2008.

2.5-046 U.S. Census Bureau, "State and County Quickfacts, Marion County, Florida," Website, quickfacts.census.gov/qfd/states/12/12083.html, accessed January 25, 2008.

2.5-047 U.S. Census Bureau, "State and County Quickfacts, Citrus County, Florida," Website, quickfacts.census.gov/qfd/states/12/12017.html, accessed January 25, 2008.

2.5-048 U.S. Census Bureau, "CenStats Databases, Building Permits, Levy County, Florida 2000-2006," Website, censtats.census.gov/bldg/bldgprmt.shtml, accessed January 25, 2008.

2.5-049 U.S. Census Bureau, "CenStats Databases, Building Permits, Marion County, Florida 2000-2006," Website, censtats.census.gov/bldg/bldgprmt.shtml, accessed January 25, 2008.

2.5-050 U.S. Census Bureau, "CenStats Databases, Building Permits, Citrus County, Florida 2000-2006," Website, censtats.census.gov/bldg/bldgprmt.shtml, accessed January 25, 2008.

2.5-051 School Board of Levy County, Site Map, Website, www.levy.k12.fl.us/sitemap.asp, accessed September 15, 2007.

2.5-052 Florida Department of Education, "Class Size Reduction Amendment," Website, www.fldoe.org/arm/class-size.asp, accessed January 22, 2008.

2.5-053 Citrus County School Board, "Citrus County School District 2007 - 2008 Work Plan," September 13, 2007.

2.5-054 Marion County Public Schools, Schools Home, Website, www.marion.k12.fl.us, accessed September 15, 2007.

2.5-055 Florida Department of Agriculture and Consumer Services, Division of Forestry, "Withlacoochee State Forest," Website, www.fl-dof.com/state_forests/withlacoochee.html, accessed September 17, 2007.

2.5-056 U.S. Department of Agriculture Forest Service, "Recreational Activities: Ocala," Website, www.fs.fed.us/r8/florida/recreation/index_oca.shtml, accessed January 22, 2008.

2.5-057 Tampa Attractions, “Ocala National Forest,” Website, tampaattractions.com/parks_ocalaforest.html, accessed January 22, 2008.

2.5-058 Florida Department of Agriculture and Consumer Services, Division of Forestry, “Goethe State Forest,” Website, www.fl-dof.com/state_forests/goethe.html, accessed January 22, 2008.

2.5-059 Florida Department of Environmental Protection, Division of Recreation and Parks, “Crystal River Preserve State Park Unit Management Plan,” October 15, 2004.

2.5-060 Florida Department of Environmental Protection, Division of Recreation and Parks, “Crystal River Preserve State Park,” Website, www.floridastateparks.org/default.cfm and www.floridastateparks.org/crystalriverpreserve/default.cfm, accessed September 10, 2007.

2.5-061 Florida Department of Environmental Protection, Division of Recreation and Parks, “Fanning Springs State Park Unit Management Plan,” April 18, 2003.

2.5-062 Florida Department of Environmental Protection, Division of Recreation and Parks, “Fanning Springs State Park,” Website, www.floridastateparks.org/fanningsprings/default.cfm, accessed January 22, 2008.

2.5-063 Florida Department of Environmental Protection, Division of Recreation and Parks, “Silver River State Park,” Website, www.floridastateparks.org/silverriver/default.cfm, accessed January 22, 2008.

2.5-064 Florida Department of Environmental Protection, Division of Recreation and Parks, “Silver River State Park Unit Management Plan,” April 25, 2002.

2.5-065 Florida Department of Environmental Protection, Division of Recreation and Parks, “Homosassa Springs Wildlife State Park Unit Management Plan,” June 3, 2005.

2.5-066 Florida Department of Environmental Protection, Division of Recreation and Parks, “Homosassa Springs Wildlife State Park,” Website, www.floridastateparks.org/homosassasprings/default.cfm, accessed January 22, 2008.

2.5-067 Florida Department of Environmental Protection, Office of Greenways and Trails, “Marjorie Harris Carr Cross Florida Greenway,” Website, www.dep.state.fl.us/gwt/cfg/default.htm, accessed January 22, 2008.

2.5-068 Devil’s Den, About Devil’s Den, Website, www.devilsden.com/about_us.htm, accessed December 10, 2007.

2.5-069 Devil’s Den, Amenities, Website, www.devilsden.com/amenities.htm, accessed December 10, 2007.

2.5-070 Blue Grotto, “Blue Grotto,” Website, www.divebluegrotto.com/indexflash.html, accessed December 10, 2007.

2.5-071 University of Florida, Institute of Food and Agricultural Sciences Extension, “Florida Forestry Stewardship: Conservation Easements,” Website, www.sfrc.ufl.edu/extension/florida%5Fforestry%5Finformation/planning%5Fand%5Fassistance/conservation_easements.html, accessed January 22, 2008.

2.5-072 Marion County Planning Department, “Marion County Comprehensive Plan”, Website, www.marioncountyfl.org/PL271/PL_Comp_Plan.htm, accessed February 13, 2008.

2.5-073 Citrus County, “County News…”, Website, www.bocc.citrus.fl.us/index.jsp, accessed March 12, 2008.

2.5-074 Voyles, Karen, “Chiefland Likely to Get Hospital,” *The Gainesville Sun*, Website, www.gainesville.com/apps/pbcs.dll/article, accessed January 3, 2008.

2.5-075 Citrus County Health Department, “Health,” www.doh.state.fl.us/chdCitrus/index.htm, accessed January 23, 2008.

2.5-076 Florida Department of Transportation, “2005 Annual Average Daily Traffic Report,” Citrus and Levy Counties, Website, www.dot.state.fl.us/planning/statistics/trafficdata/AADT/aadt.htm, accessed March 23, 2007.

2.5-077 Florida Turnpike, “Suncoast Parkway Information” Website, www.floridasturnpike.com/Suncoast/OldStuff/suncoast_parkway_facts.htm, accessed January 30, 2008.

2.5-078 Transportation Planning Organization – Marion County, Belleview, Dunnellon and Ocala, "Public Transportation, Ocala/Marion County Public Transportation System SunTran," Website, www.ocalafl.org/TPO2.aspx?id=3020, accessed January 30, 2008.

2.5-079 Citrus County Transportation, "Citrus County Transit," Website, citrus.fl.us/commserv/suppserv/trans/transportation.htm, accessed January 30, 2008.

2.5-080 Withlacoochee Regional Planning Council, "Strategic Regional Policy Plan: Chapter 5 Transportation," adopted August 5, 1997.

2.5-081 Janus Research, A Cultural Resource Assessment Survey of the Southern Preferred Alignment of the Reevaluation of the Northern Extension of Florida's Turnpike from US 19 to US 41, Marion and Levy Counties, Florida, April 1994, Prepared for Office of Florida's Turnpike.

2.5-082 Secretary of the Interior, Standards and Guidelines, Professional Qualifications Standards for Archeology and Historic Preservation, Website, www.nps.gov/history/local-law/arch_stnds_9.htm, January 24, 2008.

2.5-083 Athens, William, Jon Berkin, Charlotte Donald, Ralph Draughon, and Paul V. Heinrich, "Phase I Cultural Resources Investigation of the West Leg Mainline Portion of the Proposed Florida Gas Transmission Company Phase III Expansion Project," January 1994, submitted to Florida Gas and Transmission Company.

2.5-084 Dunbar, James S. and Christine L. Newman. "Assessment and Documentation of Cultural Resources in Goethe State Forest, Levy County, Florida, Volume I," 2003, Bureau of Archaeological Research, Division of Historical Resources, Florida Department of State.

2.5-085 CH2M HILL, Technical Memorandum: Cultural Resource Investigations of the LNP Site and Associated Facilities, Levy and Citrus Counties, Florida, (Proprietary) May 2008.

2.5-086 National Map Company, 1916, Levy County, Website, fcit.usf.edu/florida/maps/pages/2200/f2292/f2292.htm, accessed December 13, 2007.

2.5-087 General Topographical Map, Levy County, Sheet XI, 1865, Atlas to Accompany the Official Records of the Union and Confederate Armies, Website, fcit.usf.edu/florida/maps/countgal/army65/38army65.htm, accessed December 13, 2007

2.5-088 Rand, McNally & Company map, Levy County, Florida, 1911, Website, fcit.usf.edu/florida/maps/pages/2300/f2344/f2344.htm, accessed December 13, 2007.

2.5-089 Pepper, Claude, The Claude Pepper Library, Website, www.claudepeppercenter.net/collection/guides/flyer-canal.html, accessed March 20, 2008.

2.5-090 Florida Department of Environmental Protection, Website, “Majorie Harris Carr Greenway – History”, Website www.dep.state.fl.us/gwt/cfg/history, accessed September 21, 2007.

2.5-091 Woolley, John and Gerhard Peters, The American Presidency Project, Richard Nixon, “Statement About Halting Construction of the Cross Florida Barge Canal,” January 19, 1971, Website, www.presidency.ucsb.edu/ws/index.php?pid=3044&st=florida+barge+canal&st1, accessed August 15, 2008.

2.5-092 National Park Service, Department of the Interior, “National Register Bulletin: How to Apply the National Register Criteria for Evaluation,” 1997.

2.5-093 Florida Division of Historical Resources, Florida Master Site File, October 2007.

2.5-094 National Park Service, Joyce Cusick, and Barbarba E.Mattick, “National Register of Historic Places Registration Form Dunnellon Boomtown Historic District,” November 1988.

2.5-095 Southarc Inc., Wayne, Lucy B., “Yankeetown Seig Parcels – Phase I,” March 2007.

2.5-096 Historic Properties Associates, Inc., Adams, William R., “U.S. 41 (Citrus Co.) Building Survey,” June 28, 1994.

2.5-097 Florida State Parks, “Crystal River Archaeological State Park History,” Website, www.floridastateparks.org/crystalriver/History.cfm, accessed January 3, 2008.

2.5-098 Golder Associates, Inc., Moultrie, Manitia, “Draft Preliminary Corridor Analysis Report for the Proposed LCP, LCFS, and LCR Corridors of the Progress Energy Florida Corridor Study, Citrus, Lake, Levy, Marion and Sumter Counties,” March 2008.

2.5-099 Florida Division of Historical Resources, Florida Master Site File, February 2008.

2.5-100 Golder Associates, Inc., "Attachment A – Draft Preliminary Corridor Analysis Report for Resource Location Illustrated on USGS Quadrangle Maps," March 2008.

2.5-101 U.S. Census Bureau, "American Factfinder Poverty Data" Website, factfinder.census.gov/servlet/DTTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF3_U&-mt_name=DEC_2000_SF3_U_P087&-CONTEXT=dt&-tree_id=4001&-redoLog=true&-all_geo_types=N&-geo_id=01000US&-search_results=01000US&-format=&-_lang=en, accessed November 27, 2007.

2.5-102 Displays for School, "Remembering Rosewood, A Chronology of Events," Website, www.displaysforschools.com/history.html, accessed January 8, 2008.

2.5-103 Finger, Doug, "Marking Rosewood History," *The Gainesville Sun*, Website, www.rosewoodflorida.com/, accessed January 8, 2008.

2.5-104 Displays for School, "Remembering Rosewood, Organizations," Website, www.displaysforschools.com/organiz.html, accessed March 3, 2008.

2.5-105 Halton, Beau, "No Resentment, Rosewood Survivors Say," *The Florida Times Union*, Website, www.jacksonville.com/tu-online/stories/102197/2b3rosew.html, accessed March 3, 2008.

2.5-106 Florida Student Scholarship and Grant Program, "2007-08 Rosewood Scholarship Program Factsheet," Website, www.floridastudentfinancialaid.org/SSFAD/factsheets/Rosewood.htm, accessed March 5, 2008.

2.5-107 Displays for School, "Remembering Rosewood, Bus Tours to Rosewood," Website, www.displaysforschools.com/tours.html, accessed January 8, 2008.

2.5-108 U.S. Census Bureau, "American Factfinder Population Data" factfinder.census.gov/servlet/DTTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF1_U&-CONTEXT=dt&-mt_name=DEC_2000_SF1_U_P001&-mt_name=DEC_2000_SF1_U_P007&-mt_name=DEC_2000_SF1_U_P011&-tree_id=4001&-redoLog=true&-all_geo_types=N&-_caller=geoselect&-geo_id=04000US12&-geo_id=NBSP&-search_results=04000US12&-format=&-_lang=en, accessed November 27, 2007.

2.5-109 U.S. Census Bureau, "American Factfinder Lake County, Florida," Website, factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=01000US&_geoContext=01000US&_street=&_county=Lake&_cityTown=Lake&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=ACS_2006_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-110 U.S. Census Bureau, "American Factfinder Pasco County, Florida," Website, factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=05000US12069&_geoContext=01000US%7C04000US12%7C05000US12069&_street=&_county=Pasco&_cityTown=Pasco&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=050&_submenuId=factsheet_1&ds_name=ACS_2006_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-111 U.S. Census Bureau, "American Factfinder Putnam County, Florida," Website, factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&geo_id=05000US12101&_geoContext=01000US%7C04000US12%7C05000US12101&_street=&_county=Putnam&_cityTown=Putnam&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=050&_submenuId=factsheet_1&ds_name=ACS_2006_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed January 25, 2008.

2.5-112 Realtor.com, Beverly Hills, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=2777&typ=7, accessed January 9, 2008.

2.5-113 Realtor.com, Bronson, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=76596&typ=7, accessed January 9, 2008.

2.5-114 Realtor.com, Chiefland, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=10704&typ=7, accessed January 9, 2008.

2.5-115 Realtor.com, Crystal River, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=17280&typ=7, accessed January 9, 2008.

2.5-116 Realtor.com, Fanning Springs, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=11677&typ=7, accessed January 9, 2008.

2.5-117 Realtor.com, Homosassa Springs, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=38992&typ=7, accessed January 9, 2008.

2.5-118 Realtor.com, Inglis, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=5919&typ=7, accessed January 9, 2008.

2.5-119 Realtor.com, Inverness, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=83666&typ=7, accessed January 9, 2008.

2.5-120 Realtor.com, Lebanon, FL Real Estate & Homes for Sale, Website, www.realtor.com/?lnksrc=ts1, accessed January 9, 2008.

2.5-121 Realtor.com, Otter Creek, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=83104&typ=7, accessed January 9, 2008.

2.5-122 Realtor.com, Red Level, FL Real Estate & Homes for Sale, Website, www.realtor.com/?lnksrc=ts1, accessed January 9, 2008.

2.5-123 Realtor.com, Tidewater, FL Real Estate & Homes for Sale, Website, www.realtor.com/?lnksrc=ts1, accessed January 9, 2008.

2.5-124 Realtor.com, Williston, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=82799&typ=7, accessed January 9, 2008.

2.5-125 Realtor.com, Yankeetown, FL Real Estate & Homes for Sale, Website, www.realtor.com/options/interimsearch.aspx?ctid=14169&typ=7, accessed January 9, 2008.

2.5-126 Google Maps, Google Map Directions Images, Website, maps.google.com/maps?hl=en&tab=wl, accessed March 6, 2008.

2.5-127 The Pine Lodge Bed and Breakfast, Rooms and Rates, Website, www.pinelodgefla.com/rates.html, accessed February 1, 2008.

2.5-128 Withlacoochee Motel, Rooms and Amenities, Website, www.withlacoocheemotel.com/rooms.html, accessed February 1, 2008.

2.5-129 Trip Advisor, Comfort Inn Crystal River, Website, www.tripadvisor.com/Hotel_Review-g34162-d84304-Reviews-Comfort_Inn_Crystal_River-Crystal_River_Florida.html, accessed February 1, 2008.

2.5-130 Trip Advisor, Econo Lodge, Website, www.tripadvisor.com/Hotel_Review-g34162-d86864-Reviews-Econo_Lodge-Crystal_River_Florida.html, accessed February 1, 2008.

2.5-131 Trip Advisor, Crystal River-Days Inn, Website, www.tripadvisor.com/Hotel_Review-g34162-d84305-Reviews-Crystal_River_Days_Inn-Crystal_River_Florida.html, accessed February 1, 2008.

2.5-132 Two Rivers Inn, Accomodations, Website, www.tworiversinn.com/accommodations.html, accessed February 1, 2008.

2.5-133 National Center for Education Statistics, “Bronson Elementary School,” Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Bronson+Elementary&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114000799, accessed January 23, 2008.

2.5-134 National Center for Education Statistics, “Bronson Middle/High School,” Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Bronson+&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114001197, accessed January 23, 2008.

2.5-135 National Center for Education Statistics, “Cedar Key High School,” Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=cedar+key&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114001198, accessed January 23, 2008.

2.5-136 National Center for Education Statistics, "Chiefland Elementary School," Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=chiefland&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114000798, accessed January 23, 2008.

2.5-137 National Center for Education Statistics, "Chiefland Middle School," Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=chiefland&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114002835, accessed January 23, 2008.

2.5-138 National Center for Education Statistics, "Chiefland High School," Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=chiefland&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114001199, accessed January 23, 2008.

2.5-139 National Center for Education Statistics, "Joyce M. Bullock Elementary School," Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Joyce+M+Bullock&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114001202, accessed January 23, 2008.

2.5-140 National Center for Education Statistics, "Williston Elementary School," Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Williston&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114000791, accessed January 23, 2008.

2.5-141 National Center for Education Statistics, "Williston Middle School," Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Williston&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114001203, accessed January 23, 2008.

2.5-142 National Center for Education Statistics, “Williston High School,” Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Williston&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114001201, accessed January 23, 2008.

2.5-143 National Center for Education Statistics, “Yankeetown School,” Website, nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Yankeetown&State=12&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=120114001204, accessed January 23, 2008.

2.5-144 Central Florida Community College, “2006 - 2007 Annual Report Statistics,” Website, www.cfcc.cc.fl.us/about/annual_statistics.htm, accessed January 23, 2008.

2.5-145 University of Florida, “Fall 2007 Total Headcount as of 10/31/2007,” Website, www.ir.ufl.edu/OIRApps/emr/headcount.asp, accessed November 1, 2007.

2.5-146 University of Florida, “Table IV-5, General Classroom Utilization by Building (1995-2006),” Website, www.ir.ufl.edu/factbook/iv-05_hist.pdf, accessed November 1, 2007.

2.5-147 University of Florida, “Table VII-1, Applied/Admitted Headcounts by Type of Student (1989-2007),” Website, www.ir.ufl.edu/factbook/admiss.htm and www.ir.ufl.edu/factbook/vii-01_hist.xls, accessed January 14, 2008.

2.5-148 Florida Department of Environmental Protection, Division of Recreation and Parks, “FY2006/2007 Florida State Park System Economic Impact Assessment,” 2007.

2.5-149 Florida Department of Environmental Protection, Division of Recreation and Parks, “Cedar Key Museum State Park Unit Management Plan,” approved August 6, 2003.

2.5-150 Florida Department of Environmental Protection, Division of Recreation and Parks, “Cedar Key Scrub State Reserve Unit Management Plan,” approved February 11, 2005.

2.5-151 Florida Department of Environmental Protection, Division of Recreation and Parks, “Crystal River State Archaeological Site Unit Management Plan,” approved May 12, 2000.

2.5-152 Florida Department of Environmental Protection, Division of Recreation and Parks, "Dade Battlefield Historic State Park Unit Management Plan," approved January 14, 2004.

2.5-153 Florida Department of Environmental Protection, Division of Recreation and Parks, "Devil's Millhopper Geological State Park Unit Management Plan," approved September 5, 2003.

2.5-154 Florida Department of Environmental Protection, Division of Recreation and Parks, "Fort Cooper State Park Unit Management Plan," approved February 7, 2003.

2.5-155 Florida Department of Environmental Protection, Division of Recreation and Parks, "Lake Griffin State Park Unit Management Plan," approved April 16, 2004.

2.5-156 Florida Department of Environmental Protection, Division of Recreation and Parks, "Manatee Springs State Park Unit Management Plan," approved September 1, 2004.

2.5-157 Florida Department of Environmental Protection, Division of Recreation and Parks, "Marjorie Kinnan Rawlings Historic State Park Unit Management Plan," approved August 23, 2001.

2.5-158 Florida Department of Environmental Protection, Division of Recreation and Parks, "Paynes Prairie Preserve State Park Unit Management Plan," approved February 7, 2002.

2.5-159 Florida Department of Environmental Protection, Division of Recreation and Parks, "Rainbow Springs State Park Unit Management Plan," approved December 5, 2002.

2.5-160 Florida Department of Environmental Protection, Division of Recreation and Parks, "San Felasco Hammock Preserve State Park Unit Management Plan," approved February 11, 2005.

2.5-161 Florida Department of Environmental Protection, Division of Recreation and Parks, "Waccasassa Bay Preserve State Park Unit Management Plan," approved June 3, 2005.

2.5-162 Florida Department of Environmental Protection, Division of Recreation and Parks, "Yulee Sugar Mill Ruins State Historic Site Unit Management Plan," approved May 12, 2000.

2.5-163 Florida Fish and Wildlife Conservation Commission, "About the Florida Wildlife Management Area Quota Hunt Program," Website, myfwc.com/hunting/quota_hunt/default.html, accessed January 22, 2008.

2.5-164 Florida Fish and Wildlife Conservation Commission, "Goethe State Forest and Wildlife Management Area 2007-08 Regulations Summary and Area Map," Website, myfwc.com/hunting/wma/2007-08/North-Central/Goethe.pdf, accessed January 22, 2008.

2.5-165 Citrus County, Florida Utilities Division "Brentwood Waste Water Treatment Facility Lecanto, FL," Website, www.bocc.citrus.fl.us/waterres/utilities/wwtf/bwww.htm, accessed February 18, 2008.

2.5-166 Citrus County, Florida Utilities Division, "Canterbury Waste Water Treatment Facility Hernando, FL," Website, www.bocc.citrus.fl.us/waterres/utilities/wwtf/canterbury_wwtp.htm, accessed February 18, 2008.

2.5-167 Citrus County, Florida Utilities Division, "Meadowcrest Waste Water Treatment Facility Beverly Hills, FL," Website, www.bocc.citrus.fl.us/waterres/utilities/wwtf/meadowcrest_wwtp.htm, accessed February 18, 2008.

2.5-168 Citrus County, Florida Utilities Division, "South Dunnellon Waste Water Treatment Facility Dunnellon, FL," Website, www.bocc.citrus.fl.us/waterres/utilities/wwtf/sdunnellon_wwtp.htm, accessed February 18, 2008.

2.5-169 Levy County Clerk of Court, Statement of Revenues, Expenditures and Changes in Fund Balances. Government Funds. For the Year ending September 30, 2006. Facsimile provided on January 3, 2008.

Table 2.5-1 (Sheet 1 of 2)
2000 Resident and Transient Population within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
North-Residential	0	5	35	67	18	11	**136**
North-Transient	3	12	11	16	20	168	**230**
North-Northeast-Residential	0	4	14	14	8	270	**310**
North-Northeast-Transient	3	7	11	16	20	168	**225**
Northeast-Residential	1	1	6	10	5	806	**829**
Northeast-Transient	3	7	11	16	20	137	**194**
East-Northeast-Residential	1	0	0	0	4	1066	**1071**
East-Northeast-Transient	3	7	11	16	20	126	**183**
East-Residential	1	2	2	0	11	2300	**2316**
East-Transient	3	7	11	16	20	1234	**1291**
East-Southeast-Residential	2	7	11	45	90	2725	**2880**
East-Southeast-Transient	3	7	11	16	22	281	**340**
Southeast-Residential	2	7	31	322	294	1582	**2238**
Southeast-Transient	3	7	11	16	40	1187	**1264**
South-Southeast-Residential	2	7	27	48	277	2474	**2835**
South-Southeast-Transient	3	7	11	22	36	309	**388**
South-Residential	2	7	13	16	44	1455	**1537**
South-Transient	3	7	11	16	34	1004	**1075**
South-Southwest-Residential	2	5	49	419	33	102	**610**
South-Southwest-Transient	3	7	11	18	37	305	**381**
Southwest-Residential	2	8	55	499	599	210	**1373**
Southwest-Transient	3	7	11	16	30	1009	**1076**
West-Southwest-Residential	2	11	26	142	239	736	**1156**
West-Southwest-Transient	3	7	11	16	20	479	**536**
West-Residential	1	5	3	7	22	8	**46**
West-Transient	3	7	11	16	20	421	**478**

Table 2.5-1 (Sheet 2 of 2)
2000 Resident and Transient Population within 16 Km (10 Mi.)

Km / Mi.	0-1.6 / 0-1	1.6-3.2 / 1-2	3.2-4.8 / 2-3	4.8-6.4 / 3-4	6.4-8.1 / 4-5	8.1-16.1 / 5-10	Total for Sector
West-Northwest-Residential	0	2	4	4	1	6	**17**
West-Northwest-Transient	3	7	11	16	20	168	**225**
Northwest-Residential	0	2	4	5	5	3	**19**
Northwest-Transient	3	7	11	16	20	168	**225**
North-Northwest-Residential	0	2	22	18	35	7	**84**
North-Northwest-Transient	3	7	11	16	20	168	**225**
Residential Total	**18**	**75**	**302**	**1616**	**1685**	**13,761**	**17,457**
Cumulative Total (Residential plus Transient)	**66**	**192**	**478**	**1880**	**2084**	**21,093**	**25,793**

Notes:

To account for the difference in distance between each LNP unit and the LNP centerpoint, 0.16 km (0.1 mi.) was added to each radial distance to conservatively adjust the population data. The totals are subject to rounding differences.

Table 2.5-2 (Sheet 1 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
North-Residential							
2005 Population	0	5	39	73	20	11	**148**
2010 Population	0	6	43	82	22	14	**167**
2015 Population	0	6	47	90	24	14	**181**
2020 Population	0	7	51	97	26	17	**198**
2030 Population	0	8	58	111	29	20	**226**
2040 Population	0	9	69	130	34	23	**265**
2050 Population	0	10	82	153	40	26	**311**
2060 Population	0	12	97	181	47	30	**367**
2070 Population	0	14	115	214	56	36	**435**
2080 Population	0	16	136	252	66	42	**512**
North-Transient							
2005 Population	3	13	12	18	22	185	**253**
2010 Population	4	15	14	20	25	207	**285**
2015 Population	4	16	15	22	27	226	**310**
2020 Population	5	18	17	24	30	245	**339**
2030 Population	6	20	19	27	34	277	**383**
2040 Population	7	24	22	32	40	328	**453**
2050 Population	8	28	26	38	47	388	**535**
2060 Population	9	33	31	45	56	459	**633**
2070 Population	11	39	37	53	66	543	**749**
2080 Population	13	46	44	63	78	642	**886**
North-Northeast-Residential							
2005 Population	0	4	15	15	9	297	**340**
2010 Population	0	5	17	17	9	327	**375**
2015 Population	0	5	18	18	10	356	**407**
2020 Population	0	6	20	20	10	384	**440**
2030 Population	0	7	22	22	11	434	**496**
2040 Population	0	8	26	26	13	511	**584**
2050 Population	0	9	30	31	15	600	**685**
2060 Population	0	11	35	36	17	706	**805**
2070 Population	0	13	41	42	20	832	**948**
2080 Population	0	15	48	49	23	979	**1114**

Table 2.5-2 (Sheet 2 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
North-Northeast-Transient							
2005 Population	3	8	12	18	22	192	**255**
2010 Population	4	9	14	20	25	217	**289**
2015 Population	4	10	15	22	27	240	**318**
2020 Population	5	11	17	24	30	263	**350**
2030 Population	6	12	19	27	34	301	**399**
2040 Population	7	14	22	32	40	366	**481**
2050 Population	8	17	26	38	47	445	**581**
2060 Population	9	20	31	45	56	541	**702**
2070 Population	11	24	37	53	66	658	**849**
2080 Population	13	28	44	63	78	800	**1026**
Northeast-Residential							
2005 Population	1	1	7	11	6	939	**965**
2010 Population	1	1	7	12	6	1060	**1087**
2015 Population	1	1	8	13	7	1168	**1198**
2020 Population	1	1	8	14	7	1304	**1335**
2030 Population	1	1	9	16	8	1515	**1550**
2040 Population	1	1	11	19	9	1859	**1900**
2050 Population	1	1	13	22	11	2292	**2340**
2060 Population	1	1	15	26	13	2842	**2898**
2070 Population	1	1	18	31	15	3513	**3579**
2080 Population	1	1	21	37	18	4345	**4423**
Northeast-Transient							
2005 Population	3	8	12	18	22	156	**219**
2010 Population	4	9	14	20	25	177	**249**
2015 Population	4	10	15	22	27	196	**274**
2020 Population	5	11	17	24	30	214	**301**
2030 Population	6	12	19	27	34	245	**343**
2040 Population	7	14	22	32	40	298	**413**
2050 Population	8	17	26	38	47	362	**498**
2060 Population	9	20	31	45	56	440	**601**
2070 Population	11	24	37	53	66	535	**726**
2080 Population	13	28	44	63	78	650	**876**

Table 2.5-2 (Sheet 3 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
East-Northeast-Residential							
2005 Population	1	0	0	0	4	1255	**1260**
2010 Population	1	0	0	0	5	1443	**1449**
2015 Population	1	0	0	0	5	1609	**1615**
2020 Population	1	0	0	0	6	1786	**1793**
2030 Population	1	0	0	0	7	2071	**2079**
2040 Population	1	0	0	0	8	2576	**2585**
2050 Population	1	0	0	0	9	3207	**3217**
2060 Population	1	0	0	0	11	4006	**4018**
2070 Population	1	0	0	0	13	4999	**5013**
2080 Population	1	0	0	0	15	6235	**6251**
East-Northeast-Transient							
2005 Population	3	8	12	18	22	144	**207**
2010 Population	4	9	14	20	25	163	**235**
2015 Population	4	10	15	22	27	180	**258**
2020 Population	5	11	17	24	30	197	**284**
2030 Population	6	12	19	27	34	225	**323**
2040 Population	7	14	22	32	40	274	**389**
2050 Population	8	17	26	38	47	333	**469**
2060 Population	9	20	31	45	56	405	**566**
2070 Population	11	24	37	53	66	492	**683**
2080 Population	13	28	44	63	78	598	**824**
East-Residential							
2005 Population	1	2	2	0	12	2706	**2723**
2010 Population	1	2	2	0	13	3111	**3129**
2015 Population	1	2	2	0	14	3472	**3491**
2020 Population	1	2	2	0	15	3845	**3865**
2030 Population	1	2	2	0	17	4446	**4468**
2040 Population	1	2	2	0	20	5537	**5562**
2050 Population	1	2	2	0	23	6909	**6937**
2060 Population	1	2	2	0	27	8617	**8649**
2070 Population	1	2	2	0	32	10,749	**10,786**
2080 Population	1	2	2	0	38	13,411	**13,454**

Table 2.5-2 (Sheet 4 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km / Mi.	0-1.6 / 0-1	1.6-3.2 / 1-2	3.2-4.8 / 2-3	4.8-6.4 / 3-4	6.4-8.1 / 4-5	8.1-16.1 / 5-10	Total for Sector
East-Transient							
2005 Population	3	8	12	18	22	1400	**1463**
2010 Population	4	9	14	20	25	1577	**1649**
2015 Population	4	10	15	22	27	1734	**1812**
2020 Population	5	11	17	24	30	1891	**1978**
2030 Population	6	12	19	27	34	2151	**2249**
2040 Population	7	14	22	32	40	2592	**2707**
2050 Population	8	17	26	38	47	3123	**3259**
2060 Population	9	20	31	45	56	3763	**3924**
2070 Population	11	24	37	53	66	4534	**4725**
2080 Population	13	28	44	63	78	5463	**5689**
East-Southeast-Residential							
2005 Population	2	8	12	50	99	3045	**3216**
2010 Population	2	9	14	55	111	3396	**3587**
2015 Population	2	10	15	60	121	3692	**3900**
2020 Population	2	11	17	65	132	4005	**4232**
2030 Population	2	12	19	73	150	4505	**4761**
2040 Population	2	14	22	86	177	5324	**5625**
2050 Population	2	17	26	102	209	6302	**6658**
2060 Population	2	20	31	120	246	7466	**7885**
2070 Population	2	24	37	143	291	8870	**9367**
2080 Population	2	28	44	168	344	10,514	**11,100**
East-Southeast-Transient							
2005 Population	3	8	12	18	24	319	**384**
2010 Population	4	9	14	20	27	359	**433**
2015 Population	4	10	15	22	29	395	**475**
2020 Population	5	11	17	24	32	430	**519**
2030 Population	6	12	19	27	36	489	**589**
2040 Population	7	14	22	32	43	589	**707**
2050 Population	8	17	26	38	51	710	**850**
2060 Population	9	20	31	45	60	855	**1020**
2070 Population	11	24	37	53	71	1030	**1226**
2080 Population	13	28	44	63	84	1241	**1473**

Table 2.5-2 (Sheet 5 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
Southeast-Residential							
2005 Population	2	8	34	356	331	1759	**2490**
2010 Population	2	9	38	395	367	1964	**2775**
2015 Population	2	10	41	432	399	2126	**3010**
2020 Population	2	11	45	468	431	2315	**3272**
2030 Population	2	12	52	529	484	2604	**3683**
2040 Population	2	14	61	622	573	3062	**4334**
2050 Population	2	17	71	734	678	3609	**5111**
2060 Population	2	20	84	867	802	4260	**6035**
2070 Population	2	24	99	1023	949	5039	**7136**
2080 Population	2	28	117	1208	1123	5944	**8422**
Southeast-Transient							
2005 Population	3	8	12	18	45	1333	**1419**
2010 Population	4	9	14	20	50	1482	**1579**
2015 Population	4	10	15	22	55	1613	**1719**
2020 Population	5	11	17	24	59	1745	**1861**
2030 Population	6	12	19	27	67	1961	**2092**
2040 Population	7	14	22	32	79	2320	**2474**
2050 Population	8	17	26	38	93	2745	**2927**
2060 Population	9	20	31	45	110	3248	**3463**
2070 Population	11	24	37	53	130	3843	**4098**
2080 Population	13	28	44	63	154	4547	**4849**
South-Southeast-Residential							
2005 Population	2	8	30	53	311	2766	**3170**
2010 Population	2	9	32	59	345	3082	**3529**
2015 Population	2	10	35	64	376	3352	**3839**
2020 Population	2	11	37	69	406	3628	**4153**
2030 Population	2	12	42	77	455	4078	**4666**
2040 Population	2	14	50	90	538	4815	**5509**
2050 Population	2	17	58	106	638	5691	**6512**
2060 Population	2	20	68	125	755	6728	**7698**
2070 Population	2	24	81	147	893	7964	**9111**
2080 Population	2	28	95	173	1056	9411	**10,765**

Table 2.5-2 (Sheet 6 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
South-Southeast-Transient							
2005 Population	3	8	12	24	40	347	**434**
2010 Population	4	9	14	27	45	386	**485**
2015 Population	4	10	15	29	49	420	**527**
2020 Population	5	11	17	32	53	454	**572**
2030 Population	6	12	19	36	60	510	**643**
2040 Population	7	14	22	43	71	603	**760**
2050 Population	8	17	26	51	84	713	**899**
2060 Population	9	20	31	60	99	844	**1063**
2070 Population	11	24	37	71	117	999	**1259**
2080 Population	13	28	44	84	138	1182	**1489**
South-Residential							
2005 Population	2	8	14	17	49	1627	**1717**
2010 Population	2	9	16	19	53	1807	**1906**
2015 Population	2	10	17	20	57	1966	**2072**
2020 Population	2	11	19	22	62	2126	**2242**
2030 Population	2	12	22	25	69	2388	**2518**
2040 Population	2	14	26	29	81	2817	**2969**
2050 Population	2	17	30	33	95	3327	**3504**
2060 Population	2	20	35	39	110	3928	**4134**
2070 Population	2	24	42	46	129	4648	**4891**
2080 Population	2	28	50	53	152	5492	**5777**
South-Transient							
2005 Population	3	8	12	18	38	1128	**1207**
2010 Population	4	9	14	20	42	1254	**1343**
2015 Population	4	10	15	22	46	1365	**1462**
2020 Population	5	11	17	24	50	1476	**1583**
2030 Population	6	12	19	27	56	1658	**1778**
2040 Population	7	14	22	32	66	1962	**2103**
2050 Population	8	17	26	38	78	2321	**2488**
2060 Population	9	20	31	45	92	2746	**2943**
2070 Population	11	24	37	53	109	3249	**3483**
2080 Population	13	28	44	63	129	3844	**4121**

Table 2.5-2 (Sheet 7 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
South-Southwest-Residential							
2005 Population	2	6	53	460	36	112	**669**
2010 Population	2	6	61	515	39	124	**747**
2015 Population	2	7	66	561	42	134	**812**
2020 Population	2	7	73	610	45	145	**882**
2030 Population	2	8	83	690	50	164	**997**
2040 Population	2	9	98	816	57	192	**1174**
2050 Population	2	11	115	965	66	224	**1383**
2060 Population	2	13	135	1138	77	261	**1626**
2070 Population	2	15	160	1345	90	310	**1922**
2080 Population	2	18	189	1587	105	362	**2263**
South-Southwest-Transient							
2005 Population	3	8	12	20	41	343	**427**
2010 Population	4	9	14	22	46	381	**476**
2015 Population	4	10	15	24	50	415	**518**
2020 Population	5	11	17	26	54	449	**562**
2030 Population	6	12	19	29	61	505	**632**
2040 Population	7	14	22	34	72	597	**746**
2050 Population	8	17	26	40	85	706	**882**
2060 Population	9	20	31	47	101	835	**1043**
2070 Population	11	24	37	56	119	988	**1235**
2080 Population	13	28	44	66	141	1169	**1461**
Southwest-Residential							
2005 Population	2	9	60	551	661	236	**1519**
2010 Population	2	10	67	615	737	263	**1694**
2015 Population	2	11	72	670	803	287	**1845**
2020 Population	2	12	79	731	869	309	**2002**
2030 Population	2	14	89	826	983	347	**2261**
2040 Population	2	17	105	973	1160	410	**2667**
2050 Population	2	20	123	1148	1368	484	**3145**
2060 Population	2	24	145	1359	1614	573	**3717**
2070 Population	2	28	170	1605	1906	679	**4390**
2080 Population	2	33	199	1895	2251	803	**5183**

Table 2.5-2 (Sheet 8 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
Southwest-Transient							
2005 Population	3	8	12	18	33	1133	**1207**
2010 Population	4	9	14	20	37	1260	**1344**
2015 Population	4	10	15	22	40	1372	**1463**
2020 Population	5	11	17	24	44	1483	**1584**
2030 Population	6	12	19	27	50	1666	**1780**
2040 Population	7	14	22	32	59	1971	**2105**
2050 Population	8	17	26	38	70	2332	**2491**
2060 Population	9	20	31	45	83	2759	**2947**
2070 Population	11	24	37	53	98	3264	**3487**
2080 Population	13	28	44	63	116	3862	**4126**
West-Southwest-Residential							
2005 Population	2	13	29	155	264	811	**1274**
2010 Population	2	13	32	174	296	907	**1424**
2015 Population	2	15	35	189	323	986	**1550**
2020 Population	2	15	38	206	353	1074	**1688**
2030 Population	2	17	43	233	401	1211	**1907**
2040 Population	2	20	51	275	473	1428	**2249**
2050 Population	2	24	60	325	557	1686	**2654**
2060 Population	2	28	71	382	660	1991	**3134**
2070 Population	2	33	84	451	780	2355	**3705**
2080 Population	2	39	99	532	918	2780	**4370**
West-Southwest-Transient							
2005 Population	3	8	12	18	22	533	**596**
2010 Population	4	9	14	20	25	594	**666**
2015 Population	4	10	15	22	27	648	**726**
2020 Population	5	11	17	24	30	702	**789**
2030 Population	6	12	19	27	34	791	**889**
2040 Population	7	14	22	32	40	936	**1051**
2050 Population	8	17	26	38	47	1107	**1243**
2060 Population	9	20	31	45	56	1309	**1470**
2070 Population	11	24	37	53	66	1548	**1739**
2080 Population	13	28	44	63	78	1831	**2057**

Table 2.5-2 (Sheet 9 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
West-Residential							
2005 Population	1	5	3	7	25	9	**50**
2010 Population	1	6	3	8	27	9	**54**
2015 Population	1	6	3	8	30	10	**58**
2020 Population	1	7	3	9	32	10	**62**
2030 Population	1	8	3	10	36	11	**69**
2040 Population	1	9	3	11	41	12	**77**
2050 Population	1	10	3	12	49	14	**89**
2060 Population	1	12	3	13	57	16	**102**
2070 Population	1	14	3	15	67	18	**118**
2080 Population	1	16	3	17	79	21	**137**
West-Transient							
2005 Population	3	8	12	18	22	464	**527**
2010 Population	4	9	14	20	25	518	**590**
2015 Population	4	10	15	22	27	566	**644**
2020 Population	5	11	17	24	30	614	**701**
2030 Population	6	12	19	27	34	694	**792**
2040 Population	7	14	22	32	40	821	**936**
2050 Population	8	17	26	38	47	971	**1107**
2060 Population	9	20	31	45	56	1148	**1309**
2070 Population	11	24	37	53	66	1358	**1549**
2080 Population	13	28	44	63	78	1606	**1832**
West-Northwest-Residential							
2005 Population	0	2	4	4	1	7	**18**
2010 Population	0	2	5	4	1	7	**19**
2015 Population	0	2	5	4	1	8	**20**
2020 Population	0	2	6	4	1	8	**21**
2030 Population	0	2	7	4	1	9	**23**
2040 Population	0	2	8	4	1	11	**26**
2050 Population	0	2	9	4	1	13	**29**
2060 Population	0	2	11	4	1	15	**33**
2070 Population	0	2	13	4	1	18	**38**
2080 Population	0	2	15	4	1	21	**43**

Table 2.5-2 (Sheet 10 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
West-Northwest-Transient							
2005 Population	3	8	12	18	22	185	**248**
2010 Population	4	9	14	20	25	207	**279**
2015 Population	4	10	15	22	27	226	**304**
2020 Population	5	11	17	24	30	245	**332**
2030 Population	6	12	19	27	34	277	**375**
2040 Population	7	14	22	32	40	328	**443**
2050 Population	8	17	26	38	47	388	**524**
2060 Population	9	20	31	45	56	459	**620**
2070 Population	11	24	37	53	66	543	**734**
2080 Population	13	28	44	63	78	642	**868**
Northwest-Residential							
2005 Population	0	2	4	6	6	3	**21**
2010 Population	0	2	5	6	6	3	**22**
2015 Population	0	2	5	7	7	3	**24**
2020 Population	0	2	6	7	7	3	**25**
2030 Population	0	2	7	8	8	3	**28**
2040 Population	0	2	8	9	9	3	**31**
2050 Population	0	2	9	11	11	3	**36**
2060 Population	0	2	10	13	13	3	**41**
2070 Population	0	2	12	15	15	3	**47**
2080 Population	0	2	14	18	18	3	**55**
Northwest-Transient							
2005 Population	3	8	12	18	22	185	**248**
2010 Population	4	9	14	20	25	207	**279**
2015 Population	4	10	15	22	27	226	**304**
2020 Population	5	11	17	24	30	245	**332**
2030 Population	6	12	19	27	34	277	**375**
2040 Population	7	14	22	32	40	328	**443**
2050 Population	8	17	26	38	47	388	**524**
2060 Population	9	20	31	45	56	459	**620**
2070 Population	11	24	37	53	66	543	**734**
2080 Population	13	28	44	63	78	642	**868**

Table 2.5-2 (Sheet 11 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km Mi.	0-1.6 0-1	1.6-3.2 1-2	3.2-4.8 2-3	4.8-6.4 3-4	6.4-8.1 4-5	8.1-16.1 5-10	Total for Sector
North-Northwest-Residential							
2005 Population	0	2	24	20	39	8	**93**
2010 Population	0	2	27	22	43	8	**102**
2015 Population	0	2	29	24	47	9	**111**
2020 Population	0	2	32	26	51	9	**120**
2030 Population	0	2	36	30	58	10	**136**
2040 Population	0	2	42	35	69	11	**159**
2050 Population	0	2	49	41	81	13	**186**
2060 Population	0	2	58	49	96	15	**220**
2070 Population	0	2	68	58	113	17	**258**
2080 Population	0	2	80	68	133	20	**303**
North-Northwest-Transient							
2005 Population	3	8	12	18	22	185	**248**
2010 Population	4	9	14	20	25	207	**279**
2015 Population	4	10	15	22	27	226	**304**
2020 Population	5	11	17	24	30	245	**332**
2030 Population	6	12	19	27	34	277	**375**
2040 Population	7	14	22	32	40	328	**443**
2050 Population	8	17	26	38	47	388	**524**
2060 Population	9	20	31	45	56	459	**620**
2070 Population	11	24	37	53	66	543	**734**
2080 Population	13	28	44	63	78	642	**868**
2005 Population							
Residential Total	18	83	330	1778	1873	15,591	**19,673**
Cumulative Total (Residential plus Transient)	66	216	522	2074	2314	23,823	29,015
2010 Population							
Residential Total	18	91	369	1983	2080	17,525	**22,066**
Cumulative Total (Residential plus Transient)	82	241	593	2312	2577	26,721	**32,526**
2015 Population							
Residential Total	18	99	398	2,160	2,266	19,192	**24,133**
Cumulative Total (Residential plus Transient)	82	273	676	2702	2993	30,756	**35,551**

Table 2.5-2 (Sheet 12 of 12)
Resident and Transient Population Projections within 16 Km (10 Mi.)

Km	0-1.6	1.6-3.2	3.2-4.8	4.8-6.4	6.4-8.1	8.1-16.1	Total for Sector
Mi.	0-1	1-2	2-3	3-4	4-5	5-10	
2020 Population							
Residential Total	18	107	436	2348	2453	20,968	**26,330**
Cumulative Total (Residential plus Transient)	98	290	708	2742	3045	31,866	**38,749**
2030 Population							
Residential Total	18	119	494	2654	2767	23,816	**29,868**
Cumulative Total (Residential plus Transient)	114	319	798	3097	3437	36,120	**43,885**
2040 Population							
Residential Total	18	137	582	3125	3263	28,591	**35,716**
Cumulative Total (Residential plus Transient)	130	371	934	3650	4053	43,232	**52,370**
2050 Population							
Residential Total	18	161	680	3687	3851	34,400	**42,797**
Cumulative Total (Residential plus Transient)	146	444	1096	4310	4782	51,820	**62,598**
2060 Population							
Residential Total	18	189	800	4352	4546	41,457	**51,362**
Cumulative Total (Residential plus Transient)	162	522	1296	5089	5651	62,186	**74,906**
2070 Population							
Residential Total	18	222	945	5139	5370	50,050	**61,744**
Cumulative Total (Residential plus Transient)	194	621	1537	6008	6674	74,720	**89,754**
2080 Population							
Residential Total	18	258	1112	6061	6340	60,383	**74,172**
Cumulative Total (Residential plus Transient)	226	724	1816	7093	7882	89,744	**107,485**

Notes:

To account for the difference in distance between each LNP unit and the LNP centerpoint, 0.16 km (0.1 mi.) was added to each radial distance to conservatively adjust the population data. The totals are subject to rounding differences.

Table 2.5-3 (Sheet 1 of 2)
2000 Resident and Transient Population between 16 and 80 Km (10 and 50 Mi.)

Km	16-32	32-48	48-64	64-80	Total for Sector
Mi.	10-20	20-30	30-40	40-50	
North-Residential	637	5551	8364	11,512	**26,064**
North-Transient	141	267	303	845	**1556**
North-Northeast-Residential	2646	7754	21,826	156,599	**188,825**
North-Northeast-Transient	146	323	3560	3251	**7280**
Northeast-Residential	2242	3503	11,136	6797	**23,678**
Northeast-Transient	306	748	986	706	**2746**
East-Northeast-Residential	7762	32,043	58,111	6919	**104,835**
East-Northeast-Transient	473	1716	3219	1384	**6792**
East-Residential	5920	34,574	65,253	17,122	**122,869**
East-Transient	2383	771	1242	1451	**5847**
East-Southeast-Residential	6607	5148	22,170	60,649	**94,574**
East-Southeast-Transient	975	1239	1701	4065	**7980**
Southeast-Residential	24,287	28,151	11,061	17,376	**80,875**
Southeast-Transient	1333	3370	2159	3959	**10,821**
South-Southeast-Residential	17,636	11,629	25,828	18,790	**73,883**
South-Southeast-Transient	3082	1978	2650	5179	**12,889**
South-Residential	10,602	4087	31,161	90,824	**136,674**
South-Transient	8684	1567	1708	1174	**13,133**
South-Southwest-Residential	199	0	0	0	**199**
South-Southwest-Transient	330	27	0	0	**357**
Southwest-Residential	0	0	0	0	**0**
Southwest-Transient	3	0	0	0	**3**
West-Southwest-Residential	0	0	0	0	**0**
West-Southwest-Transient	0	0	0	0	**0**
West-Residential	0	510	0	0	**510**
West-Transient	7	233	0	0	**240**

Table 2.5-3 (Sheet 2 of 2)
2000 Resident and Transient Population between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
West-Northwest-Residential	2	1093	476	238	**1809**
West-Northwest-Transient	74	1453	380	101	**2008**
Northwest-Residential	62	726	1202	5258	**7248**
Northwest-Transient	141	234	4152	3168	**7695**
North-Northwest-Residential	453	907	11,875	8811	**22,046**
North-Northwest-Transient	141	234	1841	1394	**3610**
Residential Total	**79,055**	**135,676**	**268,463**	**400,895**	**884,089**
Cumulative Total (Residential plus Transient)	**97,274**	**149,836**	**292,364**	**427,572**	**967,046**

Notes:

To account for the difference in distance between each LNP unit and the LNP centerpoint, 0.16 km (0.1 mi.) was added to each radial distance to conservatively adjust the population data. The totals are subject to rounding differences.

Table 2.5-4 (Sheet 1 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
North-Residential					
2005 Population	696	6109	9260	12,757	**28,822**
2010 Population	778	6805	10,173	13,966	**31,722**
2015 Population	844	7414	10,945	15,017	**34,220**
2020 Population	918	8049	11,758	16,050	**36,775**
2030 Population	1038	9096	13,018	17,691	**40,843**
2040 Population	1219	10,713	15,105	20,465	**47,502**
2050 Population	1430	12,620	17,534	23,699	**55,283**
2060 Population	1685	14,873	20,402	27,469	**64,429**
2070 Population	1989	17,558	23,755	31,863	**75,165**
2080 Population	2343	20,697	27,702	37,001	**87,743**
North-Transient					
2005 Population	155	295	336	941	**1727**
2010 Population	174	324	375	1049	**1922**
2015 Population	190	350	409	1142	**2091**
2020 Population	206	375	443	1235	**2259**
2030 Population	233	416	498	1386	**2533**
2040 Population	276	483	588	1636	**2983**
2050 Population	326	561	695	1931	**3513**
2060 Population	385	651	821	2280	**4137**
2070 Population	455	756	970	2691	**4872**
2080 Population	538	877	1146	3177	**5738**
North-Northeast-Residential					
2005 Population	2907	8580	24,118	172,975	**208,580**
2010 Population	3251	9586	26,129	187,350	**226,316**
2015 Population	3530	10,474	27,859	199,699	**241,562**
2020 Population	3850	11,387	29,588	212,061	**256,886**
2030 Population	4355	12,883	32,213	230,725	**280,176**
2040 Population	5133	15,253	36,690	262,668	**319,744**
2050 Population	6042	18,080	41,795	299,001	**364,918**
2060 Population	7123	21,425	47,622	340,460	**416,630**
2070 Population	8425	25,413	54,270	387,657	**475,765**
2080 Population	9936	30,128	61,850	441,450	**543,364**

Table 2.5-4 (Sheet 2 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16 - 32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
North-Northeast-Transient					
2005 Population	166	364	4017	3591	**8138**
2010 Population	189	407	4489	3889	**8974**
2015 Population	209	444	4901	4145	**9699**
2020 Population	229	482	5314	4402	**10,427**
2030 Population	262	542	5981	4789	**11,574**
2040 Population	319	645	7118	5453	**13,535**
2050 Population	388	768	8471	6209	**15,836**
2060 Population	472	914	10,081	7070	**18,537**
2070 Population	574	1088	11,997	8051	**21,710**
2080 Population	698	1295	14,277	9168	**25,438**
Northeast-Residential					
2005 Population	2532	4119	13,003	7531	**27,185**
2010 Population	2859	4740	14,828	8225	**30,652**
2015 Population	3144	5291	16,445	8821	**33,701**
2020 Population	3444	5847	18,120	9438	**36,849**
2030 Population	3937	6766	20,829	10,392	**41,924**
2040 Population	4756	8443	25,723	12,019	**50,941**
2050 Population	5745	10,535	31,812	13,945	**62,037**
2060 Population	6962	13,147	39,387	16,226	**75,722**
2070 Population	8437	16,408	48,790	18,919	**92,554**
2080 Population	10,225	20,483	60,488	22,127	**113,323**
Northeast-Transient					
2005 Population	349	853	1125	784	**3111**
2010 Population	396	967	1258	858	**3479**
2015 Population	438	1068	1373	921	**3800**
2020 Population	479	1170	1488	984	**4121**
2030 Population	548	1339	1671	1084	**4642**
2040 Population	666	1628	1995	1251	**5540**
2050 Population	810	1979	2382	1444	**6615**
2060 Population	985	2406	2844	1667	**7902**
2070 Population	1197	2925	3395	1925	**9442**
2080 Population	1455	3556	4053	2222	**11,286**

Table 2.5-4 (Sheet 3 of 12) Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km	16-32	32-48	48-64	64-80	Total for
Mi.	10-20	20-30	30-40	40-50	Sector
East-Northeast-Residential					
2005 Population	9139	37,729	68,427	8144	**123,439**
2010 Population	10,515	43,428	78,736	9372	**142,051**
2015 Population	11,732	48,506	87,958	10,461	**158,657**
2020 Population	12,998	53,635	97,213	11,572	**175,418**
2030 Population	15,045	62,086	112,532	13,397	**203,060**
2040 Population	18,741	77,482	140,456	16,713	**253,392**
2050 Population	23,383	96,733	175,374	20,865	**316,355**
2060 Population	29,195	120,782	219,002	26,060	**395,039**
2070 Population	36,436	150,808	273,471	32,537	**493,252**
2080 Population	45,490	188,343	341,558	40,628	**616,019**
East-Northeast-Transient					
2005 Population	557	2021	3791	1630	**7999**
2010 Population	641	2326	4363	1876	**9206**
2015 Population	716	2598	4874	2096	**10,284**
2020 Population	791	2871	5384	2315	**11,361**
2030 Population	915	3323	6231	2679	**13,148**
2040 Population	1143	4150	7782	3346	**16,421**
2050 Population	1428	5183	9719	4179	**20,509**
2060 Population	1783	6473	12,138	5219	**25,613**
2070 Population	2227	8084	15,160	6518	**31,989**
2080 Population	2781	10,096	18,934	8141	**39,952**
East-Residential					
2005 Population	6969	40,704	76,846	20,245	**144,764**
2010 Population	8016	46,848	88,407	23,363	**166,634**
2015 Population	8930	52,316	98,764	26,154	**186,164**
2020 Population	9920	57,861	109,196	28,954	**205,931**
2030 Population	11,502	66,987	126,408	33,592	**238,489**
2040 Population	14,318	83,611	157,718	42,125	**297,772**
2050 Population	17,856	104,384	196,898	52,874	**372,012**
2060 Population	22,303	130,355	245,866	66,396	**464,920**
2070 Population	27,834	162,766	306,976	83,374	**580,950**
2080 Population	34,755	203,267	383,384	104,772	**726,178**

Table 2.5-4 (Sheet 4 of 12)
Resident and Transient Population Projections
between 16 and 80 Km (10 and 50 Mi.)

Km	16-32	32-48	48-64	64-80	Total for Sector
Mi.	10-20	20-30	30-40	40-50	
East-Transient					
2005 Population	2806	908	1463	1845	**7022**
2010 Population	3230	1045	1683	2211	**8169**
2015 Population	3608	1167	1880	2537	**9192**
2020 Population	3986	1290	2077	2863	**10,216**
2030 Population	4613	1493	2404	3411	**11,921**
2040 Population	5761	1865	3002	4559	**15,187**
2050 Population	7195	2329	3749	6094	**19,367**
2060 Population	8986	2909	4682	8146	**24,723**
2070 Population	11,223	3633	5848	10,889	**31,593**
2080 Population	14,017	4537	7304	14,555	**40,413**
East-Southeast-Residential					
2005 Population	7417	6044	30,162	77,446	**121,069**
2010 Population	8240	6907	37,235	93,326	**145,708**
2015 Population	8985	7692	43,698	107,638	**168,013**
2020 Population	9725	8503	50,197	121,952	**190,377**
2030 Population	10,948	9832	61,330	146,236	**228,346**
2040 Population	12,968	12,226	87,177	197,776	**310,147**
2050 Population	15,370	15,272	124,127	267,851	**422,620**
2060 Population	18,228	19,165	176,938	363,253	**577,584**
2070 Population	21,672	24,087	252,557	493,502	**791,818**
2080 Population	25,729	30,373	360,879	671,463	**1,088,444**
East-Southeast-Transient					
2005 Population	1122	1524	2092	5170	**9908**
2010 Population	1269	1789	2457	6194	**11,709**
2015 Population	1400	2019	2773	7107	**13,299**
2020 Population	1530	2250	3090	8020	**14,890**
2030 Population	1745	2632	3614	9556	**17,547**
2040 Population	2122	3396	4664	12,774	**22,956**
2050 Population	2580	4382	6019	17,075	**30,056**
2060 Population	3137	5655	7767	22,824	**39,383**
2070 Population	3815	7297	10,023	30,509	**51,644**
2080 Population	4639	9416	12,934	40,781	**67,770**

Table 2.5-4 (Sheet 5 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
Southeast-Residential					
2005 Population	27,227	31,575	14,057	23,351	**96,210**
2010 Population	30,230	35,046	16,755	28,631	**110,662**
2015 Population	32,895	38,145	19,220	33,461	**123,721**
2020 Population	35,570	41,256	21,687	38,329	**136,842**
2030 Population	39,943	46,325	25,894	46,649	**158,811**
2040 Population	47,205	54,781	35,184	65,801	**202,971**
2050 Population	55,815	64,795	48,181	93,089	**261,880**
2060 Population	65,976	76,599	66,413	132,007	**340,995**
2070 Population	78,078	90,668	92,129	187,654	**448,529**
2080 Population	92,322	107,229	128,494	267,238	**595,283**
Southeast-Transient					
2005 Population	1497	3785	2637	4920	**12,839**
2010 Population	1664	4208	3078	5800	**14,750**
2015 Population	1812	4581	3458	6580	**16,431**
2020 Population	1959	4954	3838	7359	**18,110**
2030 Population	2201	5567	4465	8655	**20,888**
2040 Population	2604	6587	5709	11,280	**26,180**
2050 Population	3081	7794	7300	14,701	**32,876**
2060 Population	3645	9222	9334	19,160	**41,361**
2070 Population	4313	10,911	11,935	24,972	**52,131**
2080 Population	5103	12,910	15,260	32,546	**65,819**
South-Southeast-Residential					
2005 Population	19,789	13,060	29,743	21,737	**84,329**
2010 Population	21,986	14,517	33,501	24,551	**94,555**
2015 Population	23,922	15,806	36,884	27,085	**103,697**
2020 Population	25,890	17,101	40,267	29,613	**112,871**
2030 Population	29,091	19,220	45,838	33,764	**127,913**
2040 Population	34,403	22,743	55,568	41,102	**153,816**
2050 Population	40,687	26,917	67,368	50,040	**185,012**
2060 Population	48,121	31,856	81,674	60,924	**222,575**
2070 Population	56,946	37,724	99,063	74,205	**267,938**
2080 Population	67,351	44,652	120,152	90,388	**322,543**

Table 2.5-4 (Sheet 6 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
South-Southeast-Transient					
2005 Population	3462	2251	3016	6041	**14,770**
2010 Population	3848	2520	3376	6847	**16,591**
2015 Population	4189	2759	3697	7574	**18,219**
2020 Population	4530	2999	4017	8301	**19,847**
2030 Population	5090	3392	4543	9493	**22,518**
2040 Population	6022	4065	5444	11,639	**27,170**
2050 Population	7125	4871	6524	14,270	**32,790**
2060 Population	8430	5837	7818	17,496	**39,581**
2070 Population	9974	6995	9368	21,451	**47,788**
2080 Population	11,801	8382	11,226	26,300	**57,709**
South-Residential					
2005 Population	11,888	4582	35,916	105,711	**158,097**
2010 Population	13,188	5095	40,462	119,626	**178,371**
2015 Population	14,369	5545	44,592	132,217	**196,723**
2020 Population	15,521	6006	48,655	144,817	**214,999**
2030 Population	17,430	6754	55,404	165,460	**245,048**
2040 Population	20,597	7985	67,206	202,504	**298,292**
2050 Population	24,352	9441	81,528	247,823	**363,144**
2060 Population	28,775	11,175	98,894	303,355	**442,199**
2070 Population	34,057	13,242	120,027	371,408	**538,734**
2080 Population	40,260	15,679	145,678	454,841	**656,458**
South-Transient					
2005 Population	9754	1783	1969	1369	**14,875**
2010 Population	10,843	1996	2220	1552	**16,611**
2015 Population	11,804	2186	2445	1717	**18,152**
2020 Population	12,765	2375	2670	1882	**19,692**
2030 Population	14,343	2686	3039	2152	**22,220**
2040 Population	16,970	3219	3688	2638	**26,515**
2050 Population	20,078	3857	4475	3234	**31,644**
2060 Population	23,756	4622	5430	3965	**37,773**
2070 Population	28,107	5539	6589	4861	**45,096**
2080 Population	33,255	6638	7996	5960	**53,849**

Table 2.5-4 (Sheet 7 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
South-Southwest-Residential					
2005 Population	222	0	0	0	**222**
2010 Population	246	0	0	0	**246**
2015 Population	267	0	0	0	**267**
2020 Population	288	0	0	0	**288**
2030 Population	323	0	0	0	**323**
2040 Population	380	0	0	0	**380**
2050 Population	447	0	0	0	**447**
2060 Population	527	0	0	0	**527**
2070 Population	622	0	0	0	**622**
2080 Population	734	0	0	0	**734**
South-Southwest-Transient					
2005 Population	371	30	0	0	**401**
2010 Population	412	34	0	0	**446**
2015 Population	449	37	0	0	**486**
2020 Population	485	40	0	0	**525**
2030 Population	545	45	0	0	**590**
2040 Population	645	53	0	0	**698**
2050 Population	763	63	0	0	**826**
2060 Population	903	75	0	0	**978**
2070 Population	1068	89	0	0	**1157**
2080 Population	1264	105	0	0	**1369**
Southwest-Residential					
2005 Population	0	0	0	0	**0**
2010 Population	0	0	0	0	**0**
2015 Population	0	0	0	0	**0**
2020 Population	0	0	0	0	**0**
2030 Population	0	0	0	0	**0**
2040 Population	0	0	0	0	**0**
2050 Population	0	0	0	0	**0**
2060 Population	0	0	0	0	**0**
2070 Population	0	0	0	0	**0**
2080 Population	0	0	0	0	**0**

Table 2.5-4 (Sheet 8 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
Southwest-Transient					
2005 Population	3	0	0	0	**3**
2010 Population	4	0	0	0	**4**
2015 Population	4	0	0	0	**4**
2020 Population	5	0	0	0	**5**
2030 Population	6	0	0	0	**6**
2040 Population	7	0	0	0	**7**
2050 Population	8	0	0	0	**8**
2060 Population	9	0	0	0	**9**
2070 Population	11	0	0	0	**11**
2080 Population	13	0	0	0	**13**
West-Southwest-Residential					
2005 Population	0	0	0	0	**0**
2010 Population	0	0	0	0	**0**
2015 Population	0	0	0	0	**0**
2020 Population	0	0	0	0	**0**
2030 Population	0	0	0	0	**0**
2040 Population	0	0	0	0	**0**
2050 Population	0	0	0	0	**0**
2060 Population	0	0	0	0	**0**
2070 Population	0	0	0	0	**0**
2080 Population	0	0	0	0	**0**
West-Southwest-Transient					
2005 Population	0	0	0	0	**0**
2010 Population	0	0	0	0	**0**
2015 Population	0	0	0	0	**0**
2020 Population	0	0	0	0	**0**
2030 Population	0	0	0	0	**0**
2040 Population	0	0	0	0	**0**
2050 Population	0	0	0	0	**0**
2060 Population	0	0	0	0	**0**
2070 Population	0	0	0	0	**0**
2080 Population	0	0	0	0	**0**

Table 2.5-4 (Sheet 9 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km / Mi.	16-32 / 10-20	32-48 / 20-30	48-64 / 30-40	64-80 / 40-50	Total for Sector
West-Residential					
2005 Population	0	561	0	0	**561**
2010 Population	0	625	0	0	**625**
2015 Population	0	681	0	0	**681**
2020 Population	0	740	0	0	**740**
2030 Population	0	836	0	0	**836**
2040 Population	0	982	0	0	**982**
2050 Population	0	1158	0	0	**1158**
2060 Population	0	1365	0	0	**1365**
2070 Population	0	1608	0	0	**1608**
2080 Population	0	1893	0	0	**1893**
West-Transient					
2005 Population	8	257	0	0	**265**
2010 Population	9	287	0	0	**296**
2015 Population	10	314	0	0	**324**
2020 Population	11	340	0	0	**351**
2030 Population	12	385	0	0	**397**
2040 Population	14	455	0	0	**469**
2050 Population	17	538	0	0	**555**
2060 Population	20	636	0	0	**656**
2070 Population	24	752	0	0	**776**
2080 Population	28	889	0	0	**917**
West-Northwest-Residential					
2005 Population	2	1206	528	261	**1997**
2010 Population	2	1340	582	291	**2215**
2015 Population	2	1461	630	313	**2406**
2020 Population	2	1584	684	344	**2614**
2030 Population	2	1793	763	384	**2942**
2040 Population	2	2116	892	446	**3456**
2050 Population	2	2493	1039	517	**4051**
2060 Population	2	2943	1219	608	**4772**
2070 Population	2	3474	1423	709	**5608**
2080 Population	2	4096	1664	826	**6588**

Table 2.5-4 (Sheet 10 of 12) Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km / Mi.	16-32 / 10-20	32-48 / 20-30	48-64 / 30-40	64-80 / 40-50	Total for Sector
West-Northwest-Transient					
2005 Population	82	1602	421	112	**2217**
2010 Population	91	1789	467	124	**2471**
2015 Population	99	1955	508	134	**2696**
2020 Population	108	2121	549	145	**2923**
2030 Population	122	2399	618	162	**3301**
2040 Population	144	2837	727	190	**3898**
2050 Population	170	3355	856	223	**4604**
2060 Population	201	3967	1007	261	**5436**
2070 Population	238	4691	1185	306	**6420**
2080 Population	281	5547	1395	358	**7581**
Northwest-Residential					
2005 Population	67	801	1321	5843	**8032**
2010 Population	75	892	1476	6451	**8894**
2015 Population	82	973	1608	6994	**9657**
2020 Population	88	1058	1746	7540	**10,432**
2030 Population	101	1197	1970	8435	**11,703**
2040 Population	117	1414	2323	9871	**13,725**
2050 Population	137	1668	2735	11,551	**16,091**
2060 Population	162	1970	3222	13,531	**18,885**
2070 Population	191	2329	3802	15,839	**22,161**
2080 Population	224	2752	4479	18,542	**25,997**
Northwest-Transient					
2005 Population	155	258	4598	3523	**8534**
2010 Population	174	288	5104	3889	**9455**
2015 Population	190	315	5555	4215	**10,275**
2020 Population	206	341	6005	4541	**11,093**
2030 Population	233	386	6755	5080	**12,454**
2040 Population	276	456	7950	5950	**14,632**
2050 Population	326	539	9357	6969	**17,191**
2060 Population	385	637	11,012	8163	**20,197**
2070 Population	455	753	12,960	9562	**23,730**
2080 Population	538	890	15,253	11,200	**27,881**

Table 2.5-4 (Sheet 11 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
North-Northwest-Residential					
2005 Population	501	998	13,160	9828	**24,487**
2010 Population	556	1115	14,811	11,031	**27,513**
2015 Population	606	1217	16,248	12,078	**30,149**
2020 Population	659	1323	17,729	13,144	**32,855**
2030 Population	745	1496	20,175	14,914	**37,330**
2040 Population	877	1767	24,076	17,804	**44,524**
2050 Population	1034	2084	28,734	21,248	**53,100**
2060 Population	1217	2463	34,322	25,379	**63,381**
2070 Population	1441	2911	41,008	30,318	**75,678**
2080 Population	1695	3438	48,992	36,241	**90,366**
North-Northwest-Transient					
2005 Population	155	258	2049	1551	**4013**
2010 Population	174	288	2299	1741	**4502**
2015 Population	190	315	2520	1908	**4933**
2020 Population	206	341	2741	2076	**5364**
2030 Population	233	386	3112	2357	**6088**
2040 Population	276	456	3710	2810	**7252**
2050 Population	326	539	4422	3350	**8637**
2060 Population	385	637	5271	3993	**10,286**
2070 Population	455	753	6283	4760	**12,251**
2080 Population	538	890	7490	5674	**14,592**
2005 Population					
Residential Total	89,356	156,068	316,541	465,829	1,027,794
Cumulative Total (Residential plus Transient)	109,998	172,257	344,055	497,306	1,123,616
2010 Population					
Residential Total	99,942	176,944	363,095	526,183	1,166,164
Cumulative Total (Residential plus Transient)	123,060	195,212	394,264	562,213	1,274,749
2015 Population					
Residential Total	109,308	195,521	404,851	579,938	1,289,618
Cumulative Total (Residential plus Transient)	134,616	215,629	439,244	620,014	1,409,503

Table 2.5-4 (Sheet 12 of 12)
Resident and Transient Population Projections between 16 and 80 Km (10 and 50 Mi.)

	Km Mi.	16-32 10-20	32-48 20-30	48-64 30-40	64-80 40-50	Total for Sector
2020 Population						
Residential Total		118,873	214,350	446,840	633,814	1,413,877
Cumulative Total (Residential plus Transient)		146,369	236,299	484,456	677,937	1,545,061
2030 Population						
Residential Total		134,460	245,271	516,374	721,639	1,617,744
Cumulative Total (Residential plus Transient)		165,561	270,262	559,305	772,443	1,767,571
2040 Population						
Residential Total		160,716	299,516	648,118	889,294	1,997,644
Cumulative Total (Residential plus Transient)		197,961	329,811	700,495	952,820	2,181,087
2050 Population						
Residential Total		192,300	366,180	817,125	1,102,503	2,478,108
Cumulative Total (Residential plus Transient)		236,921	402,938	881,094	1,182,182	2,703,135
2060 Population						
Residential Total		230,276	448,118	1,034,961	1,375,668	3,089,023
Cumulative Total (Residential plus Transient)		283,758	492,759	1,113,166	1,475,912	3,365,595
2070 Population						
Residential Total		276,130	548,996	1,317,271	1,727,985	3,870,382
Cumulative Total (Residential plus Transient)		340,266	603,262	1,412,984	1,854,480	4,210,992
2080 Population						
Residential Total		331,066	673,030	1,685,320	2,185,517	4,874,933
Cumulative Total (Residential plus Transient)		408,015	739,058	1,802,588	2,345,599	5,295,260

Notes:

To account for the difference in distance between each LNP unit and the LNP centerpoint, 0.16 km (0.1 mi.) was added to each radial distance to conservatively adjust the population data. The totals are subject to rounding differences.

Table 2.5-5
Age and Gender Distribution within the Region

	Low Population Zone (5 Km [3-Mi.] radius)	Emergency Planning Zone (16 Km [10-Mi.] radius)	Region (80 Km [50-Mi.] radius)
Male	199	8543	429,978
Female	187	8900	454,089
Under 5 yrs	14	735	42,485
5 yrs to 17 yrs	67	2744	131,631
18 yrs to 21 yrs	5	540	57,507
22 yrs to 29 yrs	20	897	79,480
30 yrs to 39 yrs	40	1890	102,665
40 yrs to 49 yrs	67	2399	111,079
50 yrs to 64 yrs	80	3747	153,724
65 yrs and Older	66	4487	205,491

Notes:

yrs = years

Source: Reference 2.5-001

Table 2.5-6
Racial and Ethnic Distribution within the Region

	African-American	Asian	Native Hawaiian or other Pacific Islander	Hispanic	Native American	Caucasian	Other	Two or More Races
Low Population Zone (5 km [3-mi.] radius)	0.0%	0.0%	0.0%	0.25%	0.0%	100%	0.0%	0.0%
Emergency Planning Zone (16 km [10-mi.] radius)	3.5%	0.6%	0.0%	2.5%	0.3%	94.0%	0.5%	1.1%
Region (80 km [50-mi.] radius)	10.8%	1.4%	0.0%	5.0%	0.4%	84.8%	1.2%	1.4%

Source: Reference 2.5-001

Table 2.5-7
Income Distribution within the Region – Percent of Households

	Percentage of LPZ	Percentage of EPZ	Percentage of Region
Less Than $10,000	16.1	10.5	12.0
$10,000 to $14,999	12.0	10.5	8.5
$15,000 to $19,999	13.1	10.4	8.7
$20,000 to $24,999	6.2	9.7	9.3
$25,000 to $29,999	9.0	9.8	8.6
$30,000 to $34,999	6.6	7.9	7.8
$35,000 to $39,999	5.8	6.5	6.6
$40,000 to $44,999	5.8	4.1	5.9
$45,000 to $49,999	4.3	4.8	5.1
$50,000 to $59,999	9.4	7.8	8.2
$60,000 to $74,999	5.8	8.1	7.5
$75,000 to $99,999	4.1	4.6	5.9
$100,000 to $124,999	1.1	2.3	2.7
$125,000 to $149,999	0.2	0.9	1.2
$150,000 to $199,999	0.2	1.1	0.9
$200,000 or More	0.4	0.9	1.2

Notes:

EPZ = Emergency Planning Zone
LPZ = Low Population Zone

Table 2.5-8
Largest Employers in Citrus, Levy, and Marion Counties

Company	Specialization	Employment
Citrus County		
1. Progress Energy	Utility	1100
2. Citrus County School Board	Education	1000
3. Citrus Memorial Hospital	Healthcare	1000
4. Seven Rivers Community Hospital	Healthcare	500
5. Pro-Line Boats	Boat Manufacturer	250
6. Citrus County Sheriff's Department	Law Enforcement	250
7. Spring Lodge 378	Business Services	100
8. Service Zone, Inc.	Business Consulting	100
9. Citrus County Detention Facility	Correctional Institution	100
10. Cypress Creek Correctional Facility	Correctional Institution	100
Levy County		
1. Levy County School Board	Education	876
2. Monterey Boats	Boat Manufacturer	495
3. Wal-Mart	Supermarket	467
4. White Industries	Construction	200
5. Williston Health Care Center, Inc.	Healthcare	197
6. D&B Construction	Construction	150
7. A&N Corporation	Vacuum Fitting	120
8. Williston Holding Company	Financial Holding Company	111
9. Central Florida Electric Co-Op, Inc.	Utility	93
10. V.E. Whitehurst	Construction	83
Marion County		
1. Munroe Regional Medical Center	Healthcare	2100
2. Emergency One, Inc.	Fire Apparatus Manufacturing	1309
3. Ocala Regional Medical Center	Healthcare	983
4. ClosetMaid	Wire Shelving Manufacturing	915
5. K-Mart Corporation	Distribution	650
6. Cingular Wireless	Customer Support Center	500
7. Lockheed Martin	Defense Contractor	500
8. Mark IV Automotive-Dayco Ocala	Automotive Parts Manufacturing	476
9. Swift Transportation Company, Inc.	Trucking	440
10. Class 1	Wire Harness Manufacturing	390

Sources: References 2.5-004, 2.5-005, and 2.5-006

Table 2.5-9 (Sheet 1 of 3)
Regional Employment and Earnings by Industry

Industry	1990 [b] Number of Jobs	1990 [b] Percent of Total	1990 [b] Total Earnings[d]	2000 [b] Number of Jobs	2000 [b] Percent of Total	2000 [b] Total Earnings[d]	2005 [c] Number of Jobs	2005 [c] Percent of Total	2005 [c] Total Earnings[d]
REGION [a]									
Farming	7728	2.8%	$86,101	8842	2.3%	$113,952	8304	1.9%	$105,201
Agricultural Services, Forestry, Fishing	4967	1.8%	$67,699	5635	1.5%	$130,179	3637	0.8%	$110,094
Mining	947	0.3%	$19,680	663	0.2%	$23,355	873	0.2%	$37,083
Construction	18,589	6.6%	$410,574	24,185	6.4%	$622,438	39,022	8.9%	$1,255,192
Manufacturing	19,140	6.8%	$484,215	23,419	6.2%	$859,613	19,150	4.4%	$892,384
Transportation and Public Utilities	9153	3.3%	$289,191	13,053	3.5%	$557,050	6947	1.6%	$372,452
Wholesale Trade	9008	3.2%	$220,159	9930	2.6%	$344,654	10,634	2.4%	$463,248
Retail Trade	54,459	19.5%	$675,486	72,599	19.2%	$1,210,890	56,352	12.8%	$1,340,936
Finance, Insurance, and Real Estate	19,294	6.9%	$239,869	26,870	7.1%	$766,545	35,878	8.2%	$871,835
Services	73,755	26.3%	$1,427,258	114,319	30.3%	$2,871,800	170,304	38.8%	$4,794,559
Government and Government Enterprises	61,725	22.1%	$1,687,955	75,286	19.9%	$2,782,314	77,017	17.5%	$3,788,924
Regional Total	**279,701**		**$5,618,630**	**377,752**		**$10,309,374**	**439,252**		**$14,295,215**
LEVY COUNTY									
Farming	741	8.9%	$12,945	1003	8.5%	$24,204	855	6.0%	$24,294
Agricultural Services, Forestry, Fishing	N/A	N/A	$6384	585	5.0%	$12,488	N/A	N/A	$20,985
Mining	N/A	N/A	$77	N/A	N/A	$139	N/A	N/A	N/A
Construction	672	8.0%	$12,319	1168	9.9%	$28,437	1393	9.8%	$36,329
Manufacturing	444	5.3%	$7965	432	3.7%	$11,430	839	5.9%	$29,938
Transportation and Public Utilities	282	3.4%	$7326	519	4.4%	$17,436	N/A	N/A	$10,549
Wholesale Trade	186	2.2%	$3980	N/A	N/A	N/A	364	2.6%	$10,292
Retail Trade	1701	20.3%	$19,814	2368	20.1%	$33,813	1766	12.4%	$38,880
Finance, Insurance, and Real Estate	623	7.4%	$5198	744	6.3%	$12,440	1087	7.7%	$17,617
Services	1583	18.9%	$19,075	2488	21.1%	$41,560	3857	27.2%	$82,105

Table 2.5-9 (Sheet 2 of 3)
Regional Employment and Earnings by Industry

	REGION [a]								
	1990 [b]			2000 [b]			2005 [c]		
Industry	Number of Jobs	Percent of Total	Total Earnings[d]	Number of Jobs	Percent of Total	Total Earnings[d]	Number of Jobs	Percent of Total	Total Earnings[d]
LEVY COUNTY (CONTINUED)									
Government and Government Enterprises	1555	18.6%	$38,061	2032	17.2%	$67,412	2172	15.3%	$87,421
Levy County Total	**8368**		**$137,911**	**11802**		**$261,921**	**14185**		**$370,863**
CITRUS COUNTY									
Farming	358	1.2%	$90	404	1.0%	$2189	403	0.8%	$2303
Agricultural Services, Forestry, Fishing	585	1.9%	$5941	668	1.6%	$10,721	365	0.7%	$4338
Mining	86	0.3%	$1576	77	0.2%	$1889	88	0.2%	$2296
Construction	3045	10.1%	$64,428	3718	8.9%	$95,653	5872	11.9%	$170,098
Manufacturing	985	3.3%	$18,696	1685	4.0%	$49,598	910	1.8%	$25,312
Transportation and Public Utilities	2477	8.2%	$106,516	2603	6.2%	$164,728	N/A	N/A	$14,225
Wholesale Trade	492	1.6%	$8568	771	1.8%	$20,392	910	1.8%	$30,648
Retail Trade	6872	22.8%	$81,982	8449	20.3%	$126,601	7217	14.6%	$166,682
Finance, Insurance, and Real Estate	2491	8.2%	$18,483	3773	9.1%	$77,103	5061	10.2%	$82,545
Services	8966	29.7%	$160,981	15,160	36.4%	$331,517	21,803	44.1%	$569,403
Government and Government Enterprises	3846	12.7%	$93,350	4382	10.5%	$151,349	4807	9.7%	$205,174
Citrus County Total	**30,203**		**$560,611**	**41,690**		**$1,031,740**	**49,471**		**$1,408,781**
MARION COUNTY									
Farming	2966	3.6%	$32,675	3183	2.8%	$40,187	2880	2.1%	$33,743
Agricultural Services, Forestry, Fishing	2116	2.6%	$27,810	3210	2.8%	$60,396	2541	1.9%	$58,580
Mining	197	0.2%	$4953	206	0.2%	$6193	288	0.2%	$11,226
Construction	6131	7.4%	$144,175	8151	7.2%	$215,114	12,987	9.6%	$439,855
Manufacturing	10,289	12.5%	$250,068	12,054	10.6%	$441,145	10,080	7.5%	$486,880
Transportation and Public Utilities	2368	2.9%	$61,550	4303	3.8%	$152,508	3646	2.7%	$143,895

Table 2.5-9 (Sheet 3 of 3)
Regional Employment and Earnings by Industry

REGION [a]

Industry	1990 [b]			2000 [b]			2005 [c]		
	Number of Jobs	Percent of Total	Total Earnings[d]	Number of Jobs	Percent of Total	Total Earnings[d]	Number of Jobs	Percent of Total	Total Earnings[d]
MARION COUNTY (CONTINUED)									
Wholesale Trade	4587	5.6%	$119,555	4205	3.7%	$147,606	4512	3.3%	$196,915
Retail Trade	16,881	20.5%	$221,878	23,082	20.4%	$416,595	19,619	14.5%	$498,141
Finance, Insurance, and Real Estate	5807	7.0%	$75,601	8603	7.6%	$243,745	12,212	9.0%	$312,175
Services	19,190	23.3%	$358,774	30,581	27.0%	$770,045	49,614	36.7%	$1,388,613
Government and Government Enterprises	11,958	14.5%	$299,781	15,697	13.9%	$562,047	16,675	12.3%	$707,111
Marion County Total	**82,490**		**$1,596,820**	**113,275**		**$3,055,581**	**135,054**		**$4,277,134**

Notes:

a) Although the 80-km (50-mi.) region includes Pasco, Lake, and Putnam counties, these counties were not included in these data because only very small portions of these counties fall within the region.

b) Employment estimates and earnings are based on the 1987 Standard Industrial Classification (SIC).

c) Employment estimates and earnings are based on the 2002 North American Industry Classification System (NAICS). These industry classifications vary slightly from the SIC system, and therefore have been regrouped into the SIC system. Effected classifications for the 2005 employment and earnings estimates include the following: the Transportation and Public Utilities classification includes the NAICS Warehousing classification; the Services classification includes the NAICS Information, Professional and technical services, Management of companies and enterprises, Administrative and waste services, Educational services, Health care and social assistance, Arts, entertainment, and recreation, Accommodation and food services, and Other services, except public administration, classifications.

d) Estimated earnings are in thousands of dollars.

Some employment and earnings estimates for individual industry classifications may not represent accurate totals because some industry estimates include confidential (unreported) numbers, and industries with less than 10 jobs or $50,000 in earnings were not reported in individual industry estimates; however, the all-industry total number of jobs and all-industry total earnings include these estimates.

N/A = Data not available

Sources: References 2.5-009, 2.5-010, 2.5-011, and 2.5-012

Table 2.5-10
Regional Employment Trends

County	Workers Employed 1995	Workers Employed 2005	Percent Change in Workers Employed 1995-2005[a]	Unemployment Rate 1995	Unemployment Rate 2005
Alachua	100,573	116,863	16.2%	2.8%	3.0%
Citrus	32,920	48,458	47.2%	6.8%	4.3%
Dixie	3795	5245	38.2%	8.3%	3.8%
Gilchrist	4213	7066	67.7%	3.6%	3.2%
Hernando	41,221	55,949	35.7%	5.3%	4.7%
Levy	12,155	15,644	28.7%	4.7%	3.9%
Marion	87,106	120,150	37.9%	5.3%	3.9%
Sumter	12,389	24,404	97.0%	5.3%	3.4%

Notes:

a) Percent Change = 100 (x2-x1)/x1, where x2 > x1 (x=variable)

Although the 80-km (50-mi.) region includes Pasco, Lake, and Putnam counties, these counties were not included in these data because only very small portions of these counties fall within the region.

Source: Reference 2.5-015

Table 2.5-11
Regional Per Capita Personal Income

County	1995	2005	Percent Change 1995-2005[a]
Alacucha	$19,496	$30,435	56.1%
Citrus	$17,229	$26,072	51.3%
Dixie	$12,866	$18,945	47.2%
Gilchrist	$14,641	$23,369	59.6%
Hernando	$18,121	$25,975	43.3%
Levy	$14,900	$22,036	47.9%
Marion	$17,895	$26,893	50.3%
Sumter	$13,865	$21,878	57.8%

Notes:

a) Percent Change = 100 (x2-x1)/x1, where x2 > x1 (x=variable)

Although the 80-km (50-mi.) region includes Pasco, Lake, and Putnam counties, these counties were not included in these data because only very small portions of these counties fall within the region.

Source: Reference 2.5-016

Table 2.5-12 (Sheet 1 of 3)
Citrus, Levy, and Marion County Expenditures and Revenues by Category

Citrus County	2006[a]	2007[b]	2008[b]
County Revenues by Category			
Ad Valorem Taxes	$67,624,568	$82,903,323	$82,249,144
Other Taxes	$7,964,164	$9,435,671	$8,424,261
Licenses and Permits	$4,235,986	$3,988,937	$2,862,016
Intergovernmental Revenue	$22,968,183	$14,862,007	$13,872,288
Charges for Services	$27,968,379	$22,964,235	$30,619,269
Fines and Forfeitures	$127,468	$72,400	$169,124
Miscellaneous Revenues	$28,252,575	$20,036,354	$20,122,903
Other Non Operating Revenue	$5,149,840	$2,040,000	$1,660,000
Statutory Reserves	-	($7,716,222)	($7,971,867)
Sub-total	$164,291,163	$148,586,705	$152,007,138
Cash Carry Forward	-	$60,919,219	$107,254,576
Interfund Transfers	$16,543,309	$15,390,656	$18,884,533
TOTAL	$180,834,472	$224,896,580	$278,146,247
County Expenditures by Category			
Personal Services	$57,364,498	$63,283,860	$66,877,252
Operating Expenses	$51,430,335	$49,681,825	$56,406,659
Capital Outlay	$29,317,996	$37,606,541	$64,683,646
Grants in Aid	$2,113,818	$2,089,167	$2,263,589
Debt Service	$4,850,730	$7,740,652	$15,018,529
Sub-total	$145,077,377	$160,402,045	$205,249,675
Budgeted Reserves	-	$45,453,302	$49,752,180
Interfund Transfers	$16,637,778	$19,041,233	$23,144,392
TOTAL	$161,715,155	$224,896,580	$278,146,247

Table 2.5-12 (Sheet 2 of 3)
Citrus, Levy, and Marion County Expenditures and Revenues by Category

Levy County	2006
Total County Revenues by Category	
Taxes	$18,227,533
Licenses and Permits	$383,737
Intergovernmental Revenues	$9,778,043
Charges for Services	$5,534,382
Fines and Forfeitures	$331,477
Miscellaneous Revenues	$4,627,448
Total Revenues	**$38,882,620**
Total County Expenditures by Category	
General Government	$7,364,869
Public Safety	$15,825,754
Physical Education	$484,352
Transportation	$5,745,654
Economic Environment	$643,891
Human Services	$1,384,155
Culture/Recreation	$1,167,066
Court Related	$1,333,507
Capital Outlay	$506,306
Debt Service	
Principal	$484,155
Interest	$317,063
Total Expenditures	**$35,056,772**

Table 2.5-12 (Sheet 3 of 3)
Citrus, Levy, and Marion County Expenditures and Revenues by Category

Marion County	2007-2008
Total County Revenues by Type	
Property Taxes	$130,386,669
Other Taxes	$17,309,507
Licenses and Permits	$5,531,850
Inter-governmental Revenues	$48,208,397
Charges for Services	$61,062,195
Fines & Forfeitures	$1,274,235
Miscellaneous Revenues	$18,326,534
Impact Fees	$31,885,770
Special Assessments	$39,454,674
Administrative Transfers	$898,416
Debt Proceeds	$15,899,867
Balances Forward	$196,347,010
Total Budgeted Revenues	**$566,585,124**
Total County Expenditures by Function	
General Government	$118,803,705
Debt Service	$7,546,745
Public Safety	$154,023,361
Physical Environment	$66,469,111
Human Services	$22,878,263
Transportation	$100,196,518
Culture / Recreation	$21,888,857
Court Related Expenditures	$24,142,293
Reserves	$50,636,271
Total Budgeted Expenditures	**$566,585,124**

Notes:

a) Actual budget for FY 2006.

b) Adopted budget for FY 2007 and FY 2008.

FY = fiscal year

Sources: References 2.5-017, 2.5-018 and 2.5-169

Table 2.5-13
Total Sales Taxes Collected in the Regional Counties for Fiscal Year 2004-2005

County	Total Sales Tax Collected
Alachua	$211,972,872
Citrus	$86,021,682
Dixie	$4,881,881
Gilchrist	$3,717,928
Hernando	$89,629,394
Levy	$19,929,802
Marion	$259,007,200
Sumter	$36,909,950
Total Region	$712,070,709
Florida	$19,847,945,740

Source: Reference 2.5-020

Table 2.5-14
Counties in the Vicinity and Region of the LNP Site

County	Percent of Total County			Percent of Radius Area		Percent of Region
	50-Mi. Radius	6-Mi. Radius	Outside (blank)	50-Mi. Radius	6-Mi. Radius	
Levy	92%	8%	0%	19%	82%	20%
Citrus	97%	3%	0%	11%	15%	11%
Marion	79%	0%	21%	24%	3%	24%
Alachua	68%	0%	32%	12%	0%	12%
Dixie	48%	0%	52%	6%	0%	6%
Gilchrist	69%	0%	31%	5%	0%	4%
Hernando	97%	0%	3%	9%	0%	9%
Lake [(a)]	10%	0%	90%	2%	0%	2%
Pasco [(a)]	17%	0%	83%	2%	0%	2%
Putnam [(a)]	5%	0%	95%	0%	0%	0%
Sumter	80%	0%	20%	9%	0%	8%
Grand Total	61%	1%	38%	100%	100%	100%

Notes:

a) These counties are not included in the region of influence for economic analysis since less than 2 percent of their total land area fell within the region.

All data were derived from Figure 2.2-1.

Table 2.5-15 (Sheet 1 of 4)
Incorporated Areas in the Vicinity and Region of the LNP Site

County Name	Incorporated Area	Percentage of Area			Percent of Total County
		50-Mi. Radius	6-Mi. Radius	Outside Region	
Levy	Bronson	100%			Less than 1%
	Cedar Key	100%			Less than 1%
	Chiefland	100%			Less than 1%
	Fanning Springs	100%			Less than 1%
	Inglis		100%		Less than 1%
	Newberry	100%			Less than 1%
	Otter Creek	100%			Less than 1%
	Williston	100%			1%
	Yankeetown	77%	23%		1%
	Unincorporated Levy County	92%	8%		97%
Levy County Total		**92%**	**8%**		**100%**
Citrus	Crystal River	100%			1%
	Dunnellon	100%			Less than 1%
	Inverness	100%			1%
	Yankeetown	100%			Less than 1%
	Unincorporated Citrus County	97%	3%		98%
Citrus County Total		**97%**	**3%**		**100%**

Table 2.5-15 (Sheet 2 of 4)
Incorporated Areas in the Vicinity and Region of the LNP Site

County Name	Incorporated Area	Percentage of Area: 50-Mi. Radius	Percentage of Area: 6-Mi. Radius	Percentage of Area: Outside Region	Percent of Total County
Marion	Belleview	100%			Less than 1%
	Dunnellon	100%			Less than 1%
	Lady Lake	100%			Less than 1%
	McIntosh	100%			Less than 1%
	Ocala	100%			2%
	Reddick	100%			Less than 1%
	Unincorporated Marion County	78%	Less than 1%	22%	97%
Marion County Total		**79%**	**Less than 1%**	**21%**	**100%**
Dixie	Cross City	93%		7%	Less than 1%
	Horseshoe Beach	100%			Less than 1%
	Unincorporated Dixie County	48%		52%	100%
Dixie County Total		48%		52%	100%
Alachua	Alachua	68%		32%	4%
	Archer	100%			Less than 1%
	Gainesville	100%			6%
	Hawthorne	100%			Less than 1%
	High Springs	31%		69%	2%
	McIntosh	100%			Less than 1%
	Micanopy	100%			Less than 1%
	Newberry	100%			5%
	Unincorporated Alachua County	65%		35%	82%
Alachua County Total		**68%**		**32%**	**100%**

Table 2.5-15 (Sheet 3 of 4)
Incorporated Areas in the Vicinity and Region of the LNP Site

County Name	Incorporated Area	Percentage of Area: 50-Mi. Radius	Percentage of Area: 6-Mi. Radius	Percentage of Area: Outside Region	Percent of Total County
Gilchrist	Bell	98%		2%	Less than 1%
	Fanning Springs	100%			Less than 1%
	Newberry	100%			Less than 1%
	Trenton	100%			1%
	Unincorporated Gilchrist County	69%		31%	98%
Gilchrist County Total		69%		31%	100%
Hernando	Brooksville	100%			2%
	Weeki Wachee	100%			Less than 1%
	Unincorporated Hernando County	97%		3%	98%
Hernando County Total		**97%**		**3%**	**100%**
Lake County	Fruitland Park	100%			Less than 1%
	Lady Lake	100%			1%
	Leesburg	100%			1%
	Unincorporated Lake County	9%		91%	94%
Lake County Total[(a)]		**10%**		**90%**	**100%**
	Unincorporated Pasco County	17%		83%	97%
Pasco County Total[(a)]		**17%**		**83%**	**100%**
	Hawthorne	100%			Less than 1%
	Unincorporated Putnam County	5%		95%	97%
Putnam County Total[(a)]		**5%**		**95%**	**100%**

Table 2.5-15 (Sheet 4 of 4)
Incorporated Areas in the Vicinity and Region of LNP

		Percentage of Area			
County Name	**Incorporated Area**	**50-Mi. Radius**	**6-Mi. Radius**	**Outside Region**	**Percent of Total County**
Sumter	Bushnell	100%			Less than 1%
	Center Hill	100%			Less than 1%
	Coleman	100%			Less than 1%
	Lady Lake	100%			Less than 1%
	Webster	100%			Less than 1%
	Wildwood	100%			1%
	Unincorporated Sumter County	79%		21%	98%
Sumter County Total		**80%**		**20%**	**100%**

Notes:

a) These counties are not included in the region of influence for economic analysis since less than 2 percent of their total land area fell within the region.

All data were derived from Figure 2.2-1.

Table 2.5-16
Regional Housing Availability

County	Total Housing Units	Number Vacant	Percent Vacant	Number Owner-Occupied	Number Renter-Occupied	Percent Renter Occupied
Levy	16,570	2703	16.3	11,591	2276	13.7
Marion	152,858	22,728	14.9	101,381	28,749	18.8
Citrus	73,609	12,353	16.8	51,176	10,080	13.7
Alachua	106,746	10,849	10.2	51,942	43,955	41.2
Dixie	7363	2157	29.3	4498	707	9.6
Gilchrist	5906	885	15.0	4331	690	11.7
Hernando	77,423	11,891	15.4	56,709	8823	11.4
Lake	131,140	21,400	16.3	90,246	22,494	17.2
Pasco	212,960	28,296	13.3	142,695	41,969	19.7
Putnam	35,276	7664	21.7	20,903	6709	19.0
Sumter	25,195	4416	17.5	17,972	2807	11.1

Sources: References 2.5-026, 2.5-027, 2.5-028, 2.5-036, 2.5-037, 2.5-038, 2.5-039, 2.5-041, 2.5-108, 2.5-109, 2.5-110, and 2.5-111

Table 2.5-17
Homes for Rent and for Sale near the LNP Site

City	# of Available Homes (includes rental properties)	Driving Distance (Mi.)	Driving Distance (time)[(a)]
Beverly Hills	421	28.9	37
Bronson	130	25.9	31
Brooksville	4506	50	66
Chiefland	139	25.9	29
Crystal River	505	20.2	23
Dunnellon	1027	14.7	22
Fanning Springs	220	34.9	42
Gainesville	2041	44.2	62
Homosassa Springs	7	27.1	34
Inglis	74	9.9	11
Inverness	662	32.2	48
Lebanon	N/A	4.8	4
Otter Creek	2	14.2	16
Red Level	N/A	14.7	16
Tidewater	N/A	4.7	6
Williston	223	21.6	28
Yankeetown	33	11.4	15

Notes:

a) Time measured in minutes.

N/A = Data not available

Sources: References 2.5-029, 2.5-030, 2.5-031, 2.5-112, 2.5-113, 2.5-114, 2.5-115, 2.5-116, 2.5-117, 2.5-118, 2.5-119, 2.5-120, 2.5-121, 2.5-122, 2.5-123, 2.5-124, and 2.5-125

Table 2.5-18
Apartments for Rent near the LNP Site

City	# of Available Apartments	Driving Distance (Mi.)	Driving Distance (time) [a]
Beverly Hills	0	28.9	37
Bronson	0	25.9	31
Brooksville	109	50	66
Chiefland	0	25.9	29
Crystal River	3	20.2	23
Dunnellon	55	14.7	22
Fanning Springs	1	34.9	42
Gainesville	120	44.2	62
Homosassa Springs	0	27.1	34
Inglis	0	9.9	11
Inverness	2	32.2	48
Lebanon	N/A	4.8	4
Otter Creek	0	14.2	16
Red Level	N/A	14.7	16
Tidewater	N/A	4.7	6
Williston	5	21.6	28
Yankeetown	0	11.4	15

Notes:

a) Time measured in minutes.

N/A = Data not available

Sources: References 2.5-029, 2.5-030, 2.5-031, 2.5-112, 2.5-113, 2.5-114, 2.5-115, 2.5-116, 2.5-117, 2.5-118, 2.5-119, 2.5-120, 2.5-121, 2.5-122, 2.5-123, 2.5-124, and 2.5-125

Table 2.5-19
Median Home Value and Median Income by County

County	Median Home Value	Median Household Income
Levy [(a)]	$75,800	$29,314
Marion	$153,800	$40,062
Citrus	$143,100	$34,973

Notes:

a) 2006 U.S Census Bureau data were not available for Levy County; however, 2000 and 2004 data were available for home value and median income respectively.

Sources: References 2.5-027, 2.5-028, and 2.5-045

Table 2.5-20
Residential Building Permits

County	2000	2001	2002	2003	2004	2005	Percent change 2000-2005[a]	2006	Percent change 2005-2006
Levy	135	160	137	156	225	320	137%	276	(14)
Marion	2339	3123	5466	5939	5332	6683	186%	6820	2
Citrus	1183	1212	1250	1850	2519	3544	199%	2072	(41)

Notes:

a) Percent Change = 100 (x2-x1)/x1, where x2 > x1 (x=variable).

Sources: References 2.5-048, 2.5-049, and 2.5-050

Table 2.5-21
Regional Public Lodgings: Apartments, Rooming Houses, Rental Condominiums, and Transient Apartments

	Apartment Building		Rooming Houses		Rental Condominiums[a]		Transient Apartment Buildings	
County	Number	Units	Number	Unit	Number	Unit	Number	Unit
Levy	15	312	1	3	9	118	8	40
Marion	136	7906	0	0	6	100	10	50
Citrus	31	1001	2	9	5	140	11	117
Alachua	394	27,365	3	71	0	0	6	134
Dixie	1	32	1	16	0	0	2	16
Gilchrist	2	60	0	0	1	1	0	0
Hernando	55	2270	0	0	0	0	4	25
Lake	173	8387	5	45	664	1391	9	121
Pasco	149	10,717	2	35	79	910	7	87
Putnam	33	1304	2	22	1	23	1	11
Sumter	16	467	0	0	13	803	4	24

Notes:

a) Rental condominiums include resort condominiums and resort dwellings, and transient apartment buildings are those which rent for 6 months or less (excludes 270 bed and breakfast facilities with 1812 units).

Source: Reference 2.5-020

Table 2.5-22
Hotels within 16 Km (10 Mi.) of the LNP Site

County	Total Hotels	Total Rooms Available
Levy	4	41
Citrus	3	208
Marion	3	55

Sources: References 2.5-126, 2.5-127, 2.5-128, 2.5-129, 2.5-130, 2.5-131, and 2.5-132

Table 2.5-23
Mobile Home and RV Parks in the Region

County	Total Number [a]	Total Capacity [a]
Levy	35	1752
Citrus	86	6008
Marion	167	14095
Alachua	29	3244
Dixie	9	276
Gilchrist	4	244
Hernando	43	5310
Lake [b]	33	7105
Pasco [b]	46	4292
Putnam [b]	1	91
Sumter	59	5445
Total	512	47862

Notes:

a) Data were obtained from Figure 2.5-6.

b) These counties are not included in the region of influence for economic analysis since less than 2 percent of their total land area fell within the region.

Table 2.5-24 (Sheet 1 of 3)
Public Schools in the Vicinity Counties[a]

School Name	Enrollment
LEVY COUNTY [b]	
Bronson Elementary School	617
Bronson Middle/High School	689
Cedar Key School	245
Chiefland Elementary School	788
Chiefland Middle School	448
Chiefland High School	509
Joyce Bullock Elementary School	560
Williston Elementary School	538
Williston Middle School	573
Williston High School	646
Yankeetown School	344
CITRUS COUNTY [c]	
Forest Ridge Elementary School	795
Pleasant Grove Elementary School	721
Citrus Senior High School	1952
Iverness Primary School	766
Iverness Middle School	1490
Floral City Elementary School	479
Homosassa Elementary School	412
Crystal River Middle School	1309
Crystal River Primary School	767
Crystal River Senior High School	1720
Lecanto Primary School	862
Lecanto Middle School	956
Lecanto Senior High School	1928
Hernando Elementary School	754
Citrus Springs Elementary School	882
Rock Crusher Elementary School	717

Table 2.5-24 (Sheet 2 of 3)
Public Schools in the Vicinity Counties [a]

School Name	Enrollment
MARION COUNTY [d]	
Citrus Springs Middle School	964
Anthony Elementary School	326
Belleview Elementary School	691
Belleview-Santos Elementary School	862
College Park Elementary School	647
Dr. N. H. Jones Elementary School	751
Dunnellon Elementary School	694
East Marion Elementary School	774
Eighth Street Elementary School	372
Emerald Shores Elementary School	667
Evergreen Elementary School	756
Fessenden Elementary School	498
Fort McCoy School (K-5)	582
Greenway Elementary School	1044
Hammett Bowen Elementary School	792
Harbour View Elementary School	691
Maplewood Elementary School	863
Oakcrest Elementary School	500
Ocala Springs Elementary School	622
Reddick-Collier Elementary School	425
Romeo Elementary School	785
Saddlewood Elementary School	555
Shady Hill Elementary School	612
South Ocala Elementary School	549
Sparr Elementary School	404
Stanton-Weirsdale Elementary School	545
Sunrise Elementary School	1196
Ward-Highlands Elementary School	859
Wyomina Park Elementary School	585

Table 2.5-24 (Sheet 3 of 3)
Public Schools in the Vicinity Counties [(a)]

School Name	Enrollment
Belleview Middle School	1210
Dunnellon Middle School	1083
Ft. King Middle School	970
Fort McCoy School (6-8)	544
Howard Middle School	1080
Lake Weir Middle School	1349
North Marion Middle School	848
Osceola Middle School	1181
West Port/Liberty Middle School	1248
Marion Oaks School (4-8)	N/A
Belleview High School	1618
Dunnellon High School	1339
Forest High School	2129
Lake Weir High School	1638
North Marion High School	1523
Vanguard High School	1674
West Port High School	1691

Notes:

a) Non-traditional schools (for example, charter, magnet, alternative schools, etc.) were excluded from this analysis.

b) Enrollment totals reported for school year 2005-2006.

c) Enrollment totals reported for school year 2007-2008.

d) Enrollment totals represent average enrollment.

N/A = Data not available

Sources: References 2.5-053, 2.5-133, 2.5-134, 2.5-135, 2.5-136, 2.5-137, 2.5-138, 2.5-139, 2.5-140, 2.5-141, 2.5-142, and 2.5-143

Table 2.5-25
Regional Colleges and Universities [a]

School	Total Student Enrollment	Total Student Stations[b]	Average Station Utilization	Projected Growth 2008 to 2012
Central Florida Community College (Four Campuses)	8766	3300	70.0%	Approximate 2% increase per year
Lake Sumter Community College (Three Campuses)	5320	1046	74.8%	Approximate 4 to 5% increase per year
Pasco-Hernando Community College (Four Campuses)	8910	N/A	N/A	Approximate 3.7% increase per year
Santa Fe Community College (Six Campuses)	14,824	7927	53.0%	Approximate 1% increase per year
University of Florida (Main Campus)	51,980	18,221	66.8%	Approximate 2.5% increase per year
Beacon College (Main Campus)	126	N/A	N/A	Approximate 7% increase per year

Notes:

a) Reported information is based on 2006 – 2007 data.

b) Student stations total does not include laboratory classrooms.

N/A = Data not available

Sources: References 2.5-144, 2.5-145, 2.5-146, and 2.5-147

Table 2.5-26 (Sheet 1 of 2)
Recreational Areas within 80 Km (50 Mi.) of the LNP Site

Area	Average Daily Attendance	Daily Capacity	Average Percent Utilization	Projected Capacity	Approximate Distance and Direction to LNP
Cedar Key Museum State Park	56	884	6.3%	908	42.3 km (26.3 mi.) E
Cedar Key Scrub State Park	46	216	21.3%	352	37.5 km (23.3 mi.) SE
Crystal River Archaeological State Park	52	488	10.7%	588	18.2 km (11.3 mi.) N
Crystal River Preserve State Park	748	N/A	N/A	N/A	9.0 km (5.6 mi.) NE
Dade Battlefield Historic State Park	51	980	5.2%	980	66.5 km (41.3 mi.) NW
Devil’s Millhopper State Park	122	480	25.4%	480	73.2 km (45.5 mi.) S
Dudley Farm Historic State Park	44	260	16.9%	260	64.8 km (40.3 mi.) S
Fanning Springs State Park	770	1010	76.2%	1318	63.9 km (39.7 mi.) SE
Fort Cooper State Park	68	1018	6.7%	1302	41.3 km (25.7 mi.) NW
Goethe State Forest	5 [(a)]	N/A	N/A	N/A	2.6 km (1.6 mi.) S
Homosassa Springs Wildlife State Park	895	6464	13.8%	6464	30.1 km (18.7 mi.) N
Lake Griffin State Park	97	622	15.6%	904	73.7 km (45.8 mi.) W
Manatee Springs State Park	367	2536	14.5%	2544	55.8 km (34.7 mi.) SE
Marjorie Harris Cross Carr Florida Greenway	82 [(b)]	N/A	N/A	N/A	N/A
Marjorie Kinnan Rawlings Historic State Park	55	120	45.8%	120	63.2 km (39.3 mi.) SW
Ocala National Forest	N/A	N/A	N/A	N/A	63.7 km (39.6 mi.) W
Paynes Prairie Preserve State Park	533	2820	18.9%	2850	57.3 km (35.6 mi.) SW
Rainbow Springs State Park	541	1775	30.5%	1835	16.9 km (10.5 mi.) W
San Felasco Hammock Preserve State Park	157	816	19.2%	1616	71.6 km (44.5 mi.) S

Table 2.5-26 (Sheet 2 of 2)
Recreational Areas within 80 Km (50 Mi.) of the LNP Site

Area	Average Daily Attendance	Daily Capacity	Average Percent Utilization	Projected Capacity	Approximate Distance and Direction to LNP (c)
Silver River State Park	629	1074	58.6%	1602	56.7 km (35.2 mi.) W
Wacasassa Bay State Park	72	208	34.6%	280	9.5 km (5.9 mi.) E
Withlacoochee State Forest	1869	N/A	N/A	N/A	22.5 km (14.0 mi.) W
Yulee Sugar Mill Ruins Historic State Park	87	288	30.2%	288	32.1 km (20.0 mi.) N
TOTAL	7346	22,059	25.0%	24,691	

Notes:

a) Attendance is estimated based on the amount of fees paid. Due to the open access of multiple entrances of the forest, many people do not pay fees, and are therefore not accounted for in attendance estimate.

b) Attendance reported for the portion of the Greenway to the west of Lake Rosseau.

c) Distances and directions were obtained from Figure 2.5-5.

N/A = Data not available (due to open access in these recreation areas, capacity information is unavailable)

Sources: References 2.5-058, 2.5-061, 2.5-065, 2.5-148, 2.5-149, 2.5-150, 2.5-151, 2.5-152, 2.5-153, 2.5-154, 2.5-155, 2.5-156, 2.5-157, 2.5-158, 2.5-159, 2.5-160, 2.5-161, and 2.5-162

Table 2.5-27
2006 – 2007 Hunting Statistics at Goethe State Forest

Hunt Method	Number of Hunters [a]	Required Quota Permits (Maximum Hunter Capacity)	Number of Deer Killed	Number of Hogs Killed
Archery	920	N/A	22	2
Muzzleloading	173	250 per hunt	6	1
General Gun	339	300 per 2 still hunts; 150 per 2 dog hunts	11	10
Spring Turkey	92	130 per 2 hunts	N/A	N/A
TOTAL	**1524**	**N/A**	**39**	**13**

Notes:

a) Numbers are based on actual vehicle counts for designated hunting parking areas. A 1.5 multiplier is used by the park vehicle counter to account for vehicles parked in inappropriate areas and two-person vehicles.

N/A = not applicable

Sources: References 2.5-163 and 2.5-164

Table 2.5-28
Number of Marinas in the Region

County	Number of Marinas
Levy	3
Citrus	12
Marion	5
Dixie	2
Hernando	6
Lake [(a)]	2
Pasco [(a)]	4
Sumter	1
Total	**35**

Notes:

a) These counties are not included in the region of influence for economic analysis since less than 2 percent of their total land area fell within the region.

Table 2.5-29
Total Trail Distances in the Region

County	Trail Distances (Mi.) [a]	
	Land Trails	Water Trails
Levy	117.14	1.73
Citrus	164.5	33.89
Marion	270.95	16.1 [b]
Alachua	110.42	0
Dixie	18.2	32.2
Gilchrist	11.14	45.65 [c]
Hernando	101.62	24.1
Lake [e]	9.81	0
Pasco [e]	11.1	1.06
Sumter	51.9	40.03 [d]

Notes:

a) Distances were obtained from Figure 2.5-7.

b) Trail is the border between Marion and Citrus counties.

c) 16.94 mi. of total also borders Dixie County and 28.71 mi. of total also borders Sumter County.

d) 28.71 mi. of total also borders Gilchrist County and 11.32 mi. of total also borders Hernando County.

e) These counties are not included in the region of influence for economic analysis since less than 2 percent of their total land area fell within the region.

Table 2.5-30
Levy County Small-Scale Potable Water Facilities

Small-Scale Potable Water Facilities	Type of Use	# of Users	# of Connections	Average Plant Output (mgd)	Plant Capacity Design (mgd)	Storage Capacity (gal.)	Maximum Daily Use (mgd)
Springside Mobile Home	Residential	--	--	.003	--	--	--
University Oaks Water Treatment Plant	Residential	200	75	.020	.648	5,000	.030
Cedar Key Resorts	Non-community	40	17	.006	.05	420	.008
Bett's Big T	Commercial	300	1	.015	.03	250	.023
Jenkins Restaurant & Gifts	Commercial	65	2	--	--	--	--
Manatee Springs State Park	Recreation	250	100	.003	--	4,000	.0125
Holiday Times Motel	Motel	25	15	--	.036	80	--

Notes:

gal. = gallon
mgd = million gallons per day

Source: Reference 2.5-044

Table 2.5-31
Levy County Projected Residential Water Consumption

	1995	2000	2005	2010	2020
Total Population	28,943	31,599	34,108	36,437	41,275
Unincorporated Population	19,970	21,803	23,534	25,141	28,480
Per Capita Consumption (gpd)	150	149	149	143	134
Unincorporated Consumption (mgd)	3.00	3.25	3.51	3.60	3.82
County Wide Consumption (mgd)	4.34	4.71	5.08	5.21	5.53

Notes:

gpd = gallons per day
mgd = million gallons per day

Source: Reference 2.5-044

Table 2.5-32
Marion County Wastewater Treatment Facilities

Facility Name	Permitted Capacity (mgd)	Annual Average Flow (mgd)
Silver Springs Shores WRF	1.500	1.010
Silver Springs Regional WWTF	0.450	0.155
Salt Springs WTP	0.080	0.047
NW Sub-Regional WWTF	0.015	0.008
Stone Crest WWTP	0.225	0.171
Spruce Creek South WWTF	0.450	0.121
Lock Harbor WWTF	0.024	0.006
Oak Run WWTP	0.800	0.407
Spruce Creek Preserve WWTF	0.095	0.045
Marion Oaks WWTF	0.225	0.226
Summer Glen WWTF	0.200	0.081

Notes:

mgd = million gallons per day
WRF = water reclamation facility
WTP = water treatment plant
WWTF = wastewater treatment facility

Table 2.5-33
Citrus County Wastewater Treatment Facilities

Wastewater Facility	Gallons Per Day	Expansion plans	Service Area (ac.)
Brentwood	500,000	1.5 million gpd in 2008	21,000
Meadowcrest	500,000	1.5 million gpd in 2007	13,000
Canterbury	95,000	Proposed to be connected to Brentwood system	30,000
South Dunnelon	46,000		

Notes:

ac. = acre
gpd = gallons per day

Sources: References 2.5-043, 2.5-165, 2.5-166, 2.5-167, and 2.5-168

Table 2.5-34 (Sheet 1 of 2)
Medical Facilities within the Region

Hospital Name (number corresponds with Figure 2.5-10)	Phone Number	Physicians	Beds	Occupancy of Beds	Expansion
		Levy County			
1) Nature Coast Regional Hospital	352-528-2801	3	40	15	No current plans to expand.
		Citrus County			
2) Seven Rivers Regional Medical Center	352-795-6560	85	128	124	Add an additional 16 beds with in 1 year.
3) Citrus Memorial Hospital	352-726-1551	237	198	198	Plans to expand the emergency room.
		Marion County			
4) Munroe Regional Medical Center	352-351-7200	450	421	380	Add 50 to 60 beds within the next 5 years.
5) West Marion Community Hospital	352-291-3000	390[a]	70	63	No current plans to expand.
6) Ocala Regional Medical Center	352-291-3000	390[a]	200	180	No current plans to expand.
		Lake County			
7) Leesburg Regional Hospital	352-323-5568	296	309	226	No current plans to expand.
8) The Villages Regional Medical Center	352-323-5568	244	198	119	Currently expanding with an additional 60 beds.
		Alachua County			
9) North Florida Regional Medical Center	352-333-4970	400	325	236	New Cancer center in 2008.
10) Malcolm Randall VA Medical center	352-373-8040	430	285	285	Plan to expand with more beds within 5 years.
11) Shands Teaching Hospital and Clinic	919-265-0373	850[b]	634	600	New Cancer Center in 2008.
12) Shands Alachua General Hospital	352-372-4321	850[b]	262	200	No current plans to expand.
		Hernando County			
13) Spring Hill Regional Hospital	352-688-8200	389[c]	124	77	No current plans to expand.
14) Brooksville Regional Hospital	352-796-5111	389[c]	120	80	No current plans to expand.
15) Oak Hill Hospital	352-596-6632	300	204	N/A	Expansion in 2-3 years.

Table 2.5-34 (Sheet 2 of 2)
Medical Facilities within the Region

Hospital Name	Phone Number	Physicians	Beds	Occupancy of Beds	Expansion
		Pasco County			
16) Regional Medical Center Bayonet Point	727-819-2929	340	300	240	No current plans to expand.
	Total	4414	3818	85 percent[(d)]	N/A

Notes:

a) Total includes both West Marion Community Hospital and Ocala Regional Medical Center.

b) Total includes both Shands Teaching Hospital and Clinic and Shands Alachua General Hospital.

c) Total includes both Spring Hill Regional Hospital and Brooksville Regional Hospital.

d) Average occupancy percentage excludes Oak Hill Hospital because information was unavailable.

N/A = not applicable

Table 2.5-35 (Sheet 1 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
NRHP Eligible and Listed Properties				
CI00849	1234 Florida Avenue	Citrus	Residential	Local Significance
CI00850	1860 Test Court	Citrus	Residential	Local Significance
CI00851	1866 Test Court	Citrus	Residential	Local Significance
CI00852	1870 Test Court	Citrus	Residential	Local Significance
CI00001	Crystal River Archaeological State Park	Citrus	Native American site	NHL Listed
LV00707	6302 Riverside Drive	Levy	Commercial	Eligible for NRHP
LV00708	6304 Riverside Drive	Levy	Institutional	Eligible for NRHP
MR01900	Dunnellon Boomtown Historic District	Marion	Residential	NRHP Listed
Surveyed Properties				
CI00338	Sportsman Fish Camp Log Cabin	Citrus	Residential	Not Evaluated by SHPO
CI00339	Fish Camp Cabin	Citrus	Residential	Not Evaluated by SHPO
CI00340	Red Level Baptist Church	Citrus	Storage	Not Evaluated by SHPO
CI00346	Second Bethel Baptist Church	Citrus	Institutional	Not Evaluated by SHPO
CI00347	Mount Olive Baptist Church	Citrus	Religious	Not Evaluated by SHPO
CI00408	Red Level Cemetery	Citrus	Cemetery	Not Evaluated by SHPO
CI00409	Winn House	Citrus	Residential	Not Evaluated by SHPO
CI00410	Sassard House	Citrus	Residential	Not Evaluated by SHPO
CI00933	Citronelle Cemetery	Citrus	Cemetery	Not Evaluated by SHPO
CI01008	Johns Family Cemetery	Citrus	Cemetery	Not Evaluated by SHPO

Table 2.5-35 (Sheet 2 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
CI01009	12664 West HCR Limestone Trail	Citrus	Residential	Ineligible for NRHP
CI01108	5832 US 19 (SR55)	Citrus	Residential	Ineligible for NRHP
LV00263	Sand Pond Cemetery	Levy	Cemetery	Not Evaluated by SHPO
LV00490	Mashburn House	Levy	Residential	Not Evaluated by SHPO
LV00513	Ten Mile Creek	Levy	Bridge	Not Evaluated by SHPO
LV00551	Abe Middleton Grave	Levy	Cemetery	Not Evaluated by SHPO
LV00623	Jubb Island Cemetery	Citrus	Cemetery	Not Evaluated by SHPO
LV00643	Hodges Family Cemetery	Citrus	Cemetery	Not Evaluated by SHPO
LV00659	King Family Cemetery	Levy	Cemetery	Not Evaluated by SHPO
LV00660	Priest Family Cemetery	Levy	Cemetery	Not Evaluated by SHPO
LV00661	Robinson Family Cemetery	Levy	Cemetery	Not Evaluated by SHPO
LV00675	Hawthorne Cemetery	Citrus	Cemetery	Not Evaluated by SHPO
LV00698	Riverside Marina House	Levy	Residential	Ineligible for NRHP
LV00699	Riverside Marina Cottage	Levy	Residential	Ineligible for NRHP
LV00700	Riverside Marina Cottage	Levy	Residential	Ineligible for NRHP
LV00701	Riverside Marina Pump House	Levy	Marine	Ineligible for NRHP
LV00703	Saxon Oil Building	Levy	Commercial	Ineligible for NRHP
LV00709	#3 63rd Street	Levy	Office	Ineligible for NRHP
MR01139	Wise Home	Marion	Residential	Not Evaluated by SHPO

Table 2.5-35 (Sheet 3 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01140	Cedar Street	Marion	Vacant	Not Evaluated by SHPO
MR01141	Cedar Street	Marion	Vacant	Not Evaluated by SHPO
MR01142	Beall/King House	Marion	Residential	Not Evaluated by SHPO
MR01143	Carriage House	Marion	Storage	Not Evaluated by SHPO
MR01144	Guest/Diehl House	Marion	Residential	Not Evaluated by SHPO
MR01145	Inlow House	Marion	Residential	Not Evaluated by SHPO
MR01146	GrahamlMitchie House	Marion	Residential	Not Evaluated by SHPO
MR01147	Westberry House	Marion	Residential	Not Evaluated by SHPO
MR01148	Neville/Rogers House	Marion	Residential	Not Evaluated by SHPO
MR01149	Kinard House	Marion	Residential	Not Evaluated by SHPO
MR01150	Dugan House	Marion	Residential	Not Evaluated by SHPO
MR01151	Morris House	Marion	Residential	Not Evaluated by SHPO
MR01152	Dunnellon Presbyterian Church	Marion	Religious	Not Evaluated by SHPO
MR01153	O'Donald/Starlin House	Marion	Residential	Not Evaluated by SHPO
MR01154	201 Chestnut Street	Marion	Residential	Not Evaluated by SHPO
MR01155	Williams House	Marion	Residential	Not Evaluated by SHPO
MR01156	Caraway House	Marion	Residential	Not Evaluated by SHPO
MR01157	Wilson House	Marion	Residential	Not Evaluated by SHPO
MR01158	209 Chestnut ST	Marion	Residential	Not Evaluated by SHPO
MR01159	Cocowitch/Smith House	Marion	Residential	Not Evaluated by SHPO

Table 2.5-35 (Sheet 4 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01160	Smith/Cocowitch Carriage House	Marion	Outbuilding	Not Evaluated by SHPO
MR01161	Gunter House	Marion	Residential	Not Evaluated by SHPO
MR01162	Knight/Bennett House	Marion	Residential	Not Evaluated by SHPO
MR01163	Trowbridge House	Marion	Residential	Not Evaluated by SHPO
MR01164	Butler House	Marion	Residential	Not Evaluated by SHPO
MR01165	Brodus/Burke/Eastep House	Marion	Vacant	Not Evaluated by SHPO
MR01166	Gingerbread House	Marion	Mixed use	Not Evaluated by SHPO
MR01167	Carriage House of Gingerbread House	Marion	Commercial	Not Evaluated by SHPO
MR01168	Metcalf House	Marion	Residential	Not Evaluated by SHPO
MR01169	Chaulker House	Marion	Residential	Not Evaluated by SHPO
MR01170	Simmons House	Marion	Residential	Not Evaluated by SHPO
MR01171	Niblack/Pedrick/Daley House	Marion	Residential	Not Evaluated by SHPO
MR01172	North/Foor House	Marion	Residential	Not Evaluated by SHPO
MR01173	107 Hale Street	Marion	Residential	Not Evaluated by SHPO
MR01174	Beulah Baptist Church	Marion	Religious	Not Evaluated by SHPO
MR01175	Fancy Pantry	Marion	Commercial	Not Evaluated by SHPO
MR01176	C W Rush Mercantile	Marion	Commercial	Not Evaluated by SHPO
MR01177	405 Illinois Street	Marion	Residential	Not Evaluated by SHPO
MR01178	Roland House	Marion	Residential	Not Evaluated by SHPO
MR01179	Bunting House	Marion	Residential	Not Evaluated by SHPO

Table 2.5-35 (Sheet 5 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01180	Sanders/Dean House	Marion	Residential	Not Evaluated by SHPO
MR01181	L G Powell House	Marion	Residential	Not Evaluated by SHPO
MR01182	Dorothy & Frank Meredith House	Marion	Residential	Not Evaluated by SHPO
MR01183	Lockett	Marion	Residential	Not Evaluated by SHPO
MR01184	Phosphate Workers Cottage	Marion	Storage	Not Evaluated by SHPO
MR01185	103 McKinney Street	Marion	Residential	Not Evaluated by SHPO
MR01186	Queen Bostick House	Marion	Residential	Not Evaluated by SHPO
MR01187	Shed	Marion	Vacant	Not Evaluated by SHPO
MR01188	Henry/Boone House	Marion	Residential	Not Evaluated by SHPO
MR01189	Johnson/McLendon House	Marion	Residential	Not Evaluated by SHPO
MR01190	Gallon House	Marion	Residential	Not Evaluated by SHPO
MR01191	206 McKinney Street	Marion	Residential	Not Evaluated by SHPO
MR01192	208 McKinney Street	Marion	Residential	Not Evaluated by SHPO
MR01193	Jayne House	Marion	Residential	Not Evaluated by SHPO
MR01194	Armstrong House	Marion	Residential	Not Evaluated by SHPO
MR01195	Rawls House	Marion	Residential	Not Evaluated by SHPO
MR01196	Riederman House	Marion	Residential	Not Evaluated by SHPO
MR01197	Watkins Carriage House / Garage	Marion	Outbuilding	Not Evaluated by SHPO
MR01198	Methodist Church	Marion	Other	Not Evaluated by SHPO

Table 2.5-35 (Sheet 6 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01199	Personal Touch/Ware	Marion	Commercial	Not Evaluated by SHPO
MR01200	306 Ohio Avenue	Marion	Residential	Not Evaluated by SHPO
MR01201	407 Ohio Avenue	Marion	Residential	Not Evaluated by SHPO
MR01202	N Ohio Avenue	Marion	Residential	Not Evaluated by SHPO
MR01203	Baskin/King House	Marion	Residential	Not Evaluated by SHPO
MR01204	Baskin/King House Garage	Marion	Storage	Not Evaluated by SHPO
MR01205	Metcalf/Porter House	Marion	Residential	Not Evaluated by SHPO
MR01206	Brownstein Apartments / Marcum	Marion	Residential	Not Evaluated by SHPO
MR01207	Marion Health Clinic	Marion	Commercial	Not Evaluated by SHPO
MR01208	Scroggins House	Marion	Residential	Not Evaluated by SHPO
MR01209	John Waters House	Marion	Residential	Not Evaluated by SHPO
MR01210	J G Morris/Limbaugh House	Marion	Residential	Not Evaluated by SHPO
MR01211	Ogle High Point/Lawrence House	Marion	Residential	Not Evaluated by SHPO
MR01212	High Point Carriage House	Marion	Outbuilding	Not Evaluated by SHPO
MR01213	Barksdale House	Marion	Vacant	Not Evaluated by SHPO
MR01214	Brooks House/Methodist Youth Center	Marion	Mixed use	Not Evaluated by SHPO
MR01215	Dunnellon Auditorium/Old High School	Marion	Institutional	Not Evaluated by SHPO
MR01216	Rural One Room School House	Marion	Institutional	Not Evaluated by SHPO
MR01217	May House	Marion	Residential	Not Evaluated by SHPO

Table 2.5-35 (Sheet 7 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01218	Peterson House	Marion	Residential	Not Evaluated by SHPO
MR01219	Peterson House Cottage	Marion	Storage	Not Evaluated by SHPO
MR01220	Parker House	Marion	Residential	Not Evaluated by SHPO
MR01221	Warren House	Marion	Residential	Not Evaluated by SHPO
MR01222	J M Walker House	Marion	Residential	Not Evaluated by SHPO
MR01223	Sim's House	Marion	Residential	Not Evaluated by SHPO
MR01224	Coulter House	Marion	Residential	Not Evaluated by SHPO
MR01225	Dixon House	Marion	Residential	Not Evaluated by SHPO
MR01226	Clarence L Kinkins House	Marion	Residential	Not Evaluated by SHPO
MR01227	Russell House	Marion	Residential	Not Evaluated by SHPO
MR01228	Bosewell House	Marion	Residential	Not Evaluated by SHPO
MR01229	Turner House	Marion	Residential	Not Evaluated by SHPO
MR01230	Nall/Miller House	Marion	Residential	Not Evaluated by SHPO
MR01231	Old Methodist Parsonage	Marion	Residential	Not Evaluated by SHPO
MR01232	Oil Station/Dunnellon Real Estate	Marion	Commercial	Not Evaluated by SHPO
MR01233	Buckhorn Bar	Marion	Commercial	Not Evaluated by SHPO
MR01234	Baileys Gym	Marion	Commercial	Not Evaluated by SHPO
MR01235	Dunnelion Fire House	Marion	Institutional	Not Evaluated by SHPO
MR01236	Lee/Rush Building	Marion	Commercial	Not Evaluated by SHPO
MR01237	Renfro Boarding House	Marion	Mixed use	Not Evaluated by SHPO

Table 2.5-35 (Sheet 8 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01238	Cochran House	Marion	Residential	Not Evaluated by SHPO
MR01239	Paulk Home for Senior Citizens	Marion	Residential	Not Evaluated by SHPO
MR01240	114 W Pennsylvania Avenue	Marion	Commercial	Not Evaluated by SHPO
MR01241	Leitner House	Marion	Residential	Not Evaluated by SHPO
MR01242	Leitner Outhouse	Marion	Outbuilding	Not Evaluated by SHPO
MR01243	Wise/Davis House	Marion	Mixed use	Not Evaluated by SHPO
MR01244	Edwards House	Marion	Commercial	Not Evaluated by SHPO
MR01245	C W Hood Avenue	Marion	Residential	Not Evaluated by SHPO
MR01246	Robinson/Shuman House	Marion	Residential	Not Evaluated by SHPO
MR01247	Waters/Boetius House	Marion	Residential	Not Evaluated by SHPO
MR01248	Shrum/J W Waters House	Marion	Residential	Not Evaluated by SHPO
MR01249	301 W Pennsylvania Avenue	Marion	Mixed use	Not Evaluated by SHPO
MR01250	Blue Run Cable Office	Marion	Commercial	Not Evaluated by SHPO
MR01251	306 W Pennsylvania Avenue	Marion	Residential	Not Evaluated by SHPO
MR01252	Sammons House of Flowers	Marion	Commercial	Not Evaluated by SHPO
MR01253	404 W Pennsylvania Avenue	Marion	Residential	Not Evaluated by SHPO
MR01254	406 W Pennsylvania Avenue	Marion	Residential	Not Evaluated by SHPO
MR01255	408 W Pennsylvania Avenue	Marion	Residential	Not Evaluated by SHPO
MR01256	Farrell House	Marion	Residential	Not Evaluated by SHPO
MR01257	504 W Pennsylvania Avenue	Marion	Residential	Not Evaluated by SHPO

Table 2.5-35 (Sheet 9 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01258	506 W Pennsylvania Avenue	Marion	Residential	Not Evaluated by SHPO
MR01259	Collins House	Marion	Residential	Not Evaluated by SHPO
MR01260	207 River Drive	Marion	Residential	Not Evaluated by SHPO
MR01261	Macleod House	Marion	Residential	Not Evaluated by SHPO
MR01262	302 River Drive	Marion	Residential	Not Evaluated by SHPO
MR01263	Middaugh/Caughron House	Marion	Residential	Not Evaluated by SHPO
MR01264	Middaugh/Caughron Stable	Marion	Storage	Not Evaluated by SHPO
MR01265	405 River Drive	Marion	Residential	Not Evaluated by SHPO
MR01266	Boon House	Marion	Residential	Not Evaluated by SHPO
MR01267	411 River Drive	Marion	Residential	Not Evaluated by SHPO
MR01268	109 Summit Street	Marion	Residential	Not Evaluated by SHPO
MR01269	Benson House	Marion	Residential	Not Evaluated by SHPO
MR01270	Benson Cabin	Marion	Vacant	Not Evaluated by SHPO
MR01271	E FL Telephone/Meredith Grocery	Marion	Commercial	Not Evaluated by SHPO
MR01272	Meredith House	Marion	Residential	Not Evaluated by SHPO
MR01273	Watson Boarding House	Marion	Residential	Not Evaluated by SHPO
MR01274	Pedric/Howard House	Marion	Residential	Not Evaluated by SHPO
MR01275	Jackson/Hartley House	Marion	Residential	Not Evaluated by SHPO
MR01276	Segler House	Marion	Residential	Not Evaluated by SHPO
MR01277	Titcomb/Tullis/Roger House	Marion	Residential	Not Evaluated by SHPO

Table 2.5-35 (Sheet 10 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01278	Walace House	Marion	Residential	Not Evaluated by SHPO
MR01279	206 Walnut Street	Marion	Residential	Not Evaluated by SHPO
MR01280	208 Walnut Street	Marion	Residential	Not Evaluated by SHPO
MR01281	Witte House	Marion	Residential	Not Evaluated by SHPO
MR01282	Stousland House	Marion	Residential	Not Evaluated by SHPO
MR01283	Strange/Corbett House	Marion	Residential	Not Evaluated by SHPO
MR01284	Strange/Alford House	Marion	Residential	Not Evaluated by SHPO
MR01285	Parker/Knight House	Marion	Residential	Not Evaluated by SHPO
MR01286	Baptist Church Hall	Marion	Residential	Not Evaluated by SHPO
MR01287	Grumble/Meredith/Britt House	Marion	Residential	Not Evaluated by SHPO
MR01288	Grumble's Small Outbuilding	Marion	Outbuilding	Not Evaluated by SHPO
MR01289	Koonce House	Marion	Residential	Not Evaluated by SHPO
MR01290	Osteen House	Marion	Residential	Not Evaluated by SHPO
MR01291	Dr Black/Gresham House	Marion	Residential	Not Evaluated by SHPO
MR01292	J * R Auto	Marion	Commercial	Not Evaluated by SHPO
MR01293	Blue Lodge/Masonic Building	Marion	Commercial	Not Evaluated by SHPO
MR01294	Bank of Dunnellon	Marion	Commercial	Not Evaluated by SHPO
MR01295	Roof Motor Company	Marion	Commercial	Not Evaluated by SHPO
MR01296	First Bethel Baptist Church	Marion	Religious	Not Evaluated by SHPO
MR01297	Dinkins Service Store	Marion	Commercial	Not Evaluated by SHPO

Table 2.5-35 (Sheet 11 of 11)
Surveyed and Historic Properties within a 16-Km (10-Mi.) Radius of the LNP Site

Site ID#	Site Name	County	Property Type	Status
MR01298	301 N Williams Street	Marion	Residential	Not Evaluated by SHPO
MR01299	303 N Williams Street	Marion	Residential	Not Evaluated by SHPO
MR01300	405 N Williams Street	Marion	Residential	Not Evaluated by SHPO
MR01301	McQuay Cottage	Marion	Residential	Not Evaluated by SHPO
MR01302	Myers Building/H & R Block	Marion	Commercial	Not Evaluated by SHPO
MR01303	Bob Rogers Real Estate	Marion	Commercial	Not Evaluated by SHPO
MR01304	Christian & Gamble Mercantile	Marion	Commercial	Not Evaluated by SHPO
MR01305	City Hall	Marion	Institutional	Not Evaluated by SHPO
MR01306	RR Depot/Terminal Facility	Marion	Transportation	Not Evaluated by SHPO
MR01307	First Avenue	Marion	Vacant	Not Evaluated by SHPO
MR01308	Barn	Marion	Barn	Not Evaluated by SHPO
MR01309	Powell Tractor Barn	Marion	Barn	Not Evaluated by SHPO
MR01310	P A Powell House	Marion	Residential	Not Evaluated by SHPO
MR01311	Fisherman's Cabin	Marion	Residential	Not Evaluated by SHPO
MR01312	Luke P Nicholson House	Marion	Residential	Not Evaluated by SHPO
MR01313	C A Dinkins House	Marion	Residential	Not Evaluated by SHPO
MR01314	260 First Avenue	Marion	Residential	Not Evaluated by SHPO
MR01315	First Baptist Church Bell	Marion	Other	Not Evaluated by SHPO

Source: Reference 2.5-093

Table 2.5-36 (Sheet 1 of 4)
Previously Recorded Sites within/adjacent to the Proposed Off-Site Transmission Corridors

FMSF#	Resource Name	County	Resource Type	NRHP Evaluation [(a)]
8CI70	Cross Florida Barge Canal 12	Citrus	Archaeological Site/Prehistoric Lithic Scatter; Redeposited Site	Not Evaluated
8CI74	Cross Florida Barge Canal 16	Citrus	Archaeological Site/Prehistoric Non-Quarry Lithic Scatter	Not Evaluated
8CI340	Red Level Baptist Church	Citrus	Historic Structure	Not Evaluated
8CI405	Black Community of Holder Church	Citrus	Historic Structure	Not Evaluated
8CI789	No Name	Citrus	Archaeological Site/Low Density Nineteenth Century-American Artifact Scatter	Ineligible
8CI977	Bevens Station UNK Phosphate Mine I	Citrus	Archaeological Site / Nineteenth to Twentieth Century-American Historic Refuse; Pre-Columbian Quarry	Not Evaluated
8CI978	Bevens Station UNK Phosphate Mine II	Citrus	Archaeological Site / Nineteenth to Twentieth Century-American Historic Refuse; Pre-Columbian Quarry	Not Evaluated
8CI1005	Dixon	Citrus	Archaeological Site / Nineteenth to Twentieth Century-American Homestead, Well, and Low Density Artifact Scatter	Ineligible
8CI1038	Lone Flake	Citrus	Archaeological Site / Pre-Columbian Lithic (Isolated Find)	Ineligible
8LA123	No Name	Lake	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8LA124	No Name	Lake	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8LA125	No Name	Lake	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1108	Powerline Cut	Marion	Archaeological Site / Informant Report of Pottery and Lithics	Not Evaluated
8MR1109	Second Cut	Marion	Archaeological Site / Pre-Columbian Lithic Surface Scatter	Not Evaluated

Table 2.5-36 (Sheet 2 of 4)
Previously Recorded Sites within/adjacent to the Proposed Off-Site Transmission Corridors

FMSF#	Resource Name	County	Resource Type	NRHP Evaluation [(a)]
8MR1910	Marion Oaks 1	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1911	Marion Oaks 2	Marion	Archaeological Site / Low Density Pre-Columbian Artifact Scatter	Not Evaluated
8MR1912	Marion Oaks 3	Marion	Archaeological Site / Archaic Campsite	Not Evaluated
8MR1913	Marion Oaks 4	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1914	Marion Oaks 5	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1915	Marion Oaks 6	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1938	Ross Prairie 10	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Ineligible
8MR1939	Ross Prairie 11	Marion	Archaeological Site / Pre-Columbian Lithic / Ceramic Scatter	Ineligible
8MR1954	Turkey Oak	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1955	Sandy Bluff	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1956	Two Trailers	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1957	Florida Highlands 1	Marion	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8MR1959	Rockin' F Ranch	Marion	Archaeological Site / Early and Late Archaic Lithic Scatter	Not Evaluated
8MR2343	Inferno	Marion	Archaeological Site / Middle Archaic Campsite	Not Evaluated
8MR2351	Section 20	Marion	Archaeological Site / Pre-Columbian Extractive Campsite	Ineligible
8SM10	Bowman Mound	Sumter	Archaeological Site / Pre-Columbian Burial Mound	Not Evaluated
8SM25	Area 5 Central Kathleen	Sumter	Archaeological Site / Late Archaic Lithic / Ceramic Scatter	Not Evaluated

Table 2.5-36 (Sheet 3 of 4)
Previously Recorded Sites within/adjacent to the Proposed Off-Site Transmission Corridors

FMSF#	Resource Name	County	Resource Type	NRHP Evaluation [(a)]
8SM75	FPC Substation	Sumter	Archaeological Site / Historic Earthworks and Low Density Artifact Scatter	Not Evaluated
8SM76	Royal Spring	Sumter	Archaeological Site / Pre-Columbian Habitation; Homestead; Ceramic / Lithic Scatter	Not Evaluated
8SM77	Cattle Path	Sumter	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8SM78	Small Rise	Sumter	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8SM79	Single Flake	Sumter	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8SM80	RV Park	Sumter	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8SM81	Small Sink	Sumter	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8SM82	Fill Dirt	Sumter	Archaeological Site / Pre-Columbian Lithic Scatter	Not Evaluated
8SM83	Redeposited	Sumter	Archaeological Site / Redeposited Pre-Columbian Site	Not Evaluated
8SM84	Royal Cemetery	Sumter	Historic Cemetery	Not Evaluated
8SM89	Single Flake II	Sumter	Archaeological Site / Pre-Columbian Lithic (Isolated Find)	Not Evaluated
8SM90	Sand Pit North	Sumter	Archaeological Site / Pre-Columbian Campsite and Non-Quarry Lithic Scatter	Ineligible
8SM91	Sand Pit East	Sumter	Archaeological Site / Pre-Columbian Non-Quarry Lithic Scatter	Not Evaluated
8SM92	Billboard	Sumter	Archaeological Site / Pre-Columbian Lithic (Isolated Find)	Not Evaluated
8SM97	Bleach Bottle	Sumter	Archaeological Site / Pre-Columbian Non-Quarry Lithic Scatter	Not Evaluated

Table 2.5-36 (Sheet 4 of 4)
Previously Recorded Sites within/adjacent to the Proposed Off-Site Transmission Corridors

FMSF#	Resource Name	County	Resource Type	NRHP Evaluation [a]
8SM100	Russell Stover East	Sumter	Archaeological Site / Pre-Columbian Non-Quarry Lithic Reduction Site	Not Evaluated
8SM107	Wildwood	Sumter	Archaeological Site / Pre-Columbian Campsite	Ineligible
8SM108	DH	Sumter	Archaeological Site / Pre-Columbian Site	Ineligible
8SM109	John Simpson	Sumter	Archaeological Site / Pre-Columbian Site	Ineligible
8SM128	West Pasture	Sumter	Archaeological Site / Seminole (1716 - present) Homestead; Pre-Columbian Habitation	Potentially Eligible
8SM129	East Pasture	Sumter	Archaeological Site / Middle Archaic Campsite	Ineligible
8SM130	Muldrews	Sumter	Archaeological Site / Pre-Columbian Lithic / Ceramic	Not Evaluated
8SM131	Edwards	Sumter	Archaeological Site / Pre-Columbian Campsite	Not Evaluated
8SM249	1016 South Main Street (US 301)	Sumter	Historic Structure	Ineligible
8SM402	Bigham Ranch	Sumter	Archaeological Site / Pre-Columbian Campsite	Ineligible
8SM446	Sumter II	Sumter	Archaeological Site / Pre-Columbian Campsite	Ineligible
8SM473	Seaboard Air Line Railroad	Sumter	Historic Structure / Twentieth Century-American Historic Rail Line	Insufficient Information for Evaluation
8SM497	CSX Railroad	Sumter	Archaeological Site / Twentieth Century-American Railroad Corridor	Ineligible

Notes:

a) As required in the FMSF, some previously evaluated sites may require re-evaluation.

FMSF = Florida Master Site File

Source: Reference 2.5-099

Table 2.5-37 (Sheet 1 of 3)
Surveyed and Historic Properties within a 2-Km (1.2-Mi.) Radius of Off-Site Areas

Site ID#	Site Name	County	Property Type	Status
Blowdown Pipeline Corridor				
CI00999	Hunting Lodge Ridge	Citrus	Campsite (prehistoric)	Ineligible for NRHP
CI01143	Stuck Nowhere	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01144	Blowing Willows	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01146	Many Places	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01160	Cool Place to Sit	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01167	Bird Town	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01185	Everett Island 6	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI00103	FPC 21 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00105	FPC 19 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00106	FPC 18 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00107	FPC 17 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00108	FPC 16 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00109	FPC 15 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00110	FPC 14 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00111	FPC 13 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00112	FPC 12 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00113	FPC 11 (Florida Power Corp.)	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI01135	Buckford 2	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01137	Sinte 1	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01139	Beaten Face	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01140	Thla Rakke 1	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01145	Falling off the Rock	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01147	Crunchy Ground	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO

Table 2.5-37 (Sheet 2 of 3)
Surveyed and Historic Properties within a 2-Km (1.2-Mi.) Radius of Off-Site Areas

Site ID#	Site Name	County	Property Type	Status
CI01148	Old Snakes path	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01149	Berry Cakes	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01150	Grandfather Egret's Pool	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01151	Mother's Dimple	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01152	Moving Dirt	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01153	Two Rock Houses	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01154	Crab warrriors	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01155	Gossiping Palms	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01156	Limus	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01157	Terrapin Wipes his nose	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01158	Weeping Rock	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01159	Noisy Woods	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01161	Dying Cedars	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01162	Grandma sits alone	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01163	Fish Splashers	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01164	Fiery Palms	Citrus	Habitation; Prehistoric shell midden	Not Evaluated by SHPO
CI01165	Rocky Place	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01166	Broken Cups	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01168	Pond in the Rock	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01182	Telling Secrets	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01183	Feet Getting Wet	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01186	Turtle Left his shell	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01187	Scorpion Palace	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI01190	Everett 3	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO

Table 2.5-37 (Sheet 3 of 3)
Surveyed and Historic Properties within a 2-Km (1.2-Mi.) Radius of Off-Site Areas

Site ID#	Site Name	County	Property Type	Status
CI01192	Everett 5	Citrus	Habitation (prehistoric)	Not Evaluated by SHPO
CI00064	Everett Island	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
CI00065	Richardson Creek	Citrus	Prehistoric burial mound(s)	Not Evaluated by SHPO
CI00066	Florida Barge Canal 1	Citrus	Lithic scatter/quarry (prehistoric: no ceramics)	Not Evaluated by SHPO
CI00067	Florida Barge Canal 2	Citrus	Lithic scatter/quarry (prehistoric: no ceramics)	Not Evaluated by SHPO
CI00068	Florida Barge Canal 3	Citrus	Lithic scatter/quarry (prehistoric: no ceramics)	Not Evaluated by SHPO
CI00074	Florida Barge Canal 16	Citrus	Land-terrestrial; Prehistoric	Not Evaluated by SHPO
CI00188	River Shack	Citrus	Prehistoric shell midden	Not Evaluated by SHPO
LV00600	Gulf Hammock Southeast Drainage	Levy	Artifact scatter-Prehistoric	Ineligible for NRHP
LV00601	Melissa Band	Levy	Artifact scatter; Prehistoric lacking pottery	Ineligible for NRHP
LV00602	Dan's Drive	Levy	Artifact scatter; Prehistoric lacking pottery	Ineligible for NRHP
LV00503	Inglis East	Levy	Artifact scatter; Prehistoric	Not Evaluated by SHPO

Source: Reference 2.5-093

Table 2.5-38
Existing Population and Growth Rates[a]

		Projections									
County	Census 2000	2005	% Growth (2000 to 2005)	2010	% Growth (2000 to 2010)	Estimated 2015 Growth	2020	% Growth (2010 to 2020)	2030	% Growth (2020 to 2030)	AVERAGE % Growth
ALACHUA	217,955	240,764	10.47%	260,751	19.64%	6.59%	295,115	13.18%	321,090	8.80%	13.87%
CITRUS	118,085	132,635	12.32%	147,437	24.86%	8.86%	173,576	17.73%	195,037	12.36%	18.32%
DIXIE	13,827	15,377	11.21%	16,973	22.75%	8.39%	19,820	16.77%	22,174	11.88%	17.13%
GILCHRIST	14,437	16,221	12.36%	18,583	28.72%	11.17%	22,734	22.34%	26,284	15.62%	22.22%
HERNANDO	130,802	150,784	15.28%	169,976	29.95%	10.13%	204,408	20.26%	232,695	13.84%	21.35%
LAKE	210,528	263,017	24.93%	313,154	48.75%	14.47%	403,774	28.94%	480,109	18.91%	32.20%
LEVY	34,450	37,985	10.26%	42,411	23.11%	9.27%	50,271	18.53%	56,861	13.11%	18.25%
MARION	258,916	304,926	17.77%	350,923	35.54%	11.71%	433,076	23.41%	501,227	15.74%	24.89%
PASCO	344,765	406,898	18.02%	463,635	34.48%	11.11%	566,673	22.22%	650,997	14.88%	23.86%
PUTNAM	70,423	73,764	4.74%	76,957	9.28%	3.79%	82,785	7.57%	87,677	5.91%	7.59%
SUMTER	53,345	74,052	38.82%	92,211	72.86%	18.05%	125,498	36.10%	154,116	22.80%	43.92%

Sources: References 2.5-001 and 2.5-002

Notes:

a) These numbers do not include transient or migrant populations.

2.6 GEOLOGY

This section presents a brief description of the geologic conditions that are present at the LNP site and in the vicinity of the site. Final Safety Analysis Report (FSAR) Section 2.5, which is Part 2 of this COLA, presents a detailed evaluation of geologic conditions for the LNP site, the site vicinity, and surrounding area.

2.6.1 GEOLOGIC SETTING

2.6.1.1 Physiography

The LNP site is located within the mid-peninsular physiographic zone of the Coastal Plain province of the Atlantic Plain division of North America. The mid-peninsular zone is characterized by discontinuous subparallel ridges lying parallel to the length of the peninsula. These ridges are separated by broad valleys of gently sloping to nearly level terrain. (Reference 2.6-001)

As shown on Figure 2.6-1, the LNP site lies in the localized subdivision of the mid-peninsular zone known as the Gulf Coastal Lowlands. Karst topography is a typical component of the Gulf Coastal Lowlands where carbonate rocks are near the land surface and are subject to dissolution by downward-infiltrating rainfall (Reference 2.6-002).

The LNP site is a Greenfield site, formerly used as a pine plantation (silviculture), but is otherwise undeveloped except for one grade road and a perimeter unpaved road loop (Reference 2.6-003). No wells were known to exist on the property prior to the COLA field work. The site is relatively level, with very little variation in surface topography, with no rivers, no streams, and no other major drainage features on-site (Reference 2.6-004).

A series of wetlands exist on-site, mainly associated with existing cypress tree growth areas. These wetlands and cypress “domes” provide preferential recharge to both the surficial and Floridan aquifers, and may be associated with increased karst development in the limestone of the Avon Park Formation underlying the Quaternary deposits (Reference 2.6-005).

2.6.1.2 Geologic History

A summary of the geologic history of the site and vicinity is presented in this subsection. In the site vicinity, basement rocks have a Gondwanaland provenance and were joined to the North American Plate, originally part of the West African continental margin during the final stages of development of the Appalachian Mountains approximately 200,000,000 years ago (Reference 2.6-006). The basement rocks include felsic volcanic rocks, granite, and local higher-grade metamorphic rocks that underlie the Suwannee terrane, an Ordovician to Devonian sedimentary sequence that contains fossil faunas of African affinity. The following is a summary of the proposed geotectonic history of the Suwannee terrane: During the late Proterozoic, the Suwannee terrane was part of a felsic volcanic province that may have been part of an island arc or backarc basin on the margin of Africa-South America. Following the Pan-African deformation, the region evolved into a shallow shelf in the Cambrian or Early Ordovician. The Suwannee terrane remained stable until at least Middle Devonian, but during the Hercynian orogeny that closed parts of Iapetus, the strata were gently folded. The exact timing at which the Suwannee part of Gondwana docked with Laurasia is still uncertain, and position of the suture (the Suwannee-Wiggins suture) has not been positively identified. (Reference 2.6-007)

During the Early Mesozoic, rifting in the Gulf of Mexico and Atlantic Ocean led to normal faulting throughout the Suwannee terrane, especially in the area of the South Georgia basin, which may have connected spreading centers in the Gulf of Mexico and Atlantic Ocean. Approximately 175,000,000 years ago, the spreading center jumped to the Blake Spur anomaly, leaving the Suwannee terrane appended to the North American Plate. (Reference 2.6-006)

Beginning in the Cretaceous through to the Holocene, the Florida platform has been tectonically quiescent, allowing a thick sequence of shallow-water marine carbonate deposition to occur within the site vicinity (Reference 2.6-005). This sequence of sedimentary rocks as observed in the Humble Oil and Refining Company, C.E. Robinson No. 1 well is approximately 1293 m (4242 ft.) thick and lies unconformably upon the eroded surface of the basement rocks.

Periodically, pulses of siliciclastic sediments would migrate onto the platform from the north, temporarily interrupting the carbonate deposition. In the Late Paleogene, a significant siliciclastic depositional event occurred as a result of increased erosion from the Appalachians, Piedmont, and inner Coastal Plain. The influx of the siliciclastics suppressed the carbonate deposition in northern Florida, and by the middle to late Pliocene, there was no more carbonate deposition on the platform. (Reference 2.6-005)

Sea-level fluctuations throughout the Neogene and Quaternary influenced the sediment deposition and distribution on the Florida platform in the site vicinity. In the Late Oligocene, there was a major sea-level regression that limited deposition to southern Florida, and the platform was sub-aerially exposed in the site vicinity. In the Early and Middle Miocene, the sea level rose, covering the entire Florida platform. Sediments deposited on the crest of the Ocala Platform during the Miocene were subsequently eroded away. Sea levels fell during the Late Miocene, again exposing most of the platform including the site vicinity. During the Early Pliocene, the sea levels rose, and again most of the platform was submerged. By the Late Pliocene, the sea levels had significantly dropped, exposing much of the platform to sub-aerial conditions. (Reference 2.6-005)

The timing and magnitude of the sea level high stands during the Pleistocene that would have affected the site vicinity are best constrained by the geologic record in southern Florida. The record in southern Florida, which is consistent with well-dated reefs in Barbados, indicates that sea level during the last interglacial period (marine oxygen isotope stage [MIS] 5e, approximately

120,000 years ago) was approximately 6 m (20 ft.) above present and would have inundated much of the western half of the site vicinity. (Reference 2.6-008)

Subsequent deposition of thick siliciclastic sediments (beach and eolian deposits) on the platform has obscured the exact location of the MIS 5e shoreline. During the last glacial maximum (approximately 21,000 years ago), sea level dropped to approximately 120 m (390 ft.) below present. The paleogeography of Florida and the site vicinity would have been very different from present, with the Gulf Coast shoreline considerably farther to the west near the edge of the presently submerged shelf break. (Reference 2.6-008)

Following the latest Pleistocene regression, sea level has risen to its present position in the Holocene. Holocene sediments form the present coastline and represent today's beaches, dunes, marshes, and lagoonal environments. (Reference 2.6-005)

2.6.1.3 Geologic Units

The oldest units penetrated within the site vicinity are Paleozoic shales and quartzite pebble sands that are overlain by Triassic diabase, encountered at depths of approximately 1400 m (4600 ft.) below land surface. Overlying these sediments is a thick section of Cretaceous and Cenozoic carbonates (limestone and dolomite) that are overlain by undifferentiated Pleistocene- to Holocene-age surficial sands, clayey sands, and alluvium. Geologic units present at or near land surface are presented on the State of Florida geological map and range from Middle Eocene to Holocene age, as shown on Figure 2.6-2.

A geologic cross section of west-central Florida compiled by USGS shows the stratigraphic relationship of the various geologic units, with the Avon Park Formation thickness estimated at approximately 305 m (1000 ft.) in the LNP site vicinity. This cross section is shown on Figure 2.6-3.

The local stratigraphic-hydrostratigraphic sequence at the LNP site consists of Quaternary surficial aquifer deposits lying directly over the Floridan Aquifer limestones and dolostones of the Avon Park Formation. The generalized hydrostratigraphic column of Floridan Aquifer system carbonate depositional sequence in west central Florida is shown on Figure 2.6-4. Several of the geologic units shown on the general stratigraphic column do not occur on the LNP site. The Hawthorn Group is not present at the LNP site, nor are the Tampa, Suwannee, or Ocala Limestones. (Reference 2.6-002) The Upper Floridan Aquifer at the LNP site contains fresh potable water and is separated physically and hydraulically from the underlying Lower Floridan Aquifer by sequences of lower permeability evaporite rock units known as the MCU, which act as an aquitard. (Reference 2.6-009)

A site investigation was conducted at the LNP site during late 2006 and 2007. This investigation included geotechnical borings to characterize the thickness of unconsolidated Quaternary sediment deposits, to determine the depth to the limestone bedrock of the Avon Park Formation, and to evaluate the engineering properties of this rock beneath the proposed improved areas. A total of 118 boreholes were advanced during the COLA field investigations to characterize the subsurface conditions at the LNP site.

Rotary drilling with SPT was the typical method employed to advance through soil and subsurface sediments into the upper zone of Avon Park Formation rock. Rock coring was then initiated, using double-tube wireline coring methods to the borehole termination depth. Borehole depths ranged from approximately 18 to 152 m (60 to 500 ft.) bgs. Sonic drilling methods were also utilized in the initial phase for 5 borings at each reactor site to be used for downhole geophysical testing.

The geotechnical boring program results confirmed that the first carbonate rock units encountered below the surficial aquifer deposits are the deposits of the middle Eocene age limestone of the Avon Park Formation. To the maximum investigated depth of 152 m (500 ft.), neither the MCU nor the Lower Floridan aquifer units were encountered.

The Avon Park Formation of Middle Eocene age is the oldest stratigraphic unit exposed in Florida. It lies unconformably over the underlying Oldsmar Formation, suggesting an intervening episode of sub-aerial exposure and erosion (sea level fall). The contact, observed only in drill cores, typically is recognized by the contrast between older, porous, foraminiferal grainstones and packstones and younger dolomitic wackestones-mudstones. The Avon Park Formation is a carbonate mud-dominated peritidal sequence, pervasively dolomitized in places and not dolomitized in others, and contains some intergranular and interbedded evaporites in its lower part. Fossils are mostly benthic forms showing limited faunal diversity. Seagrass beds are well preserved at certain horizons. The lower portion of the Avon Park Formation consists of lower permeability evaporite deposits, which act as an aquitard separating the upper Floridan Aquifer within the Avon Park Formation from the Lower Floridan aquifer within the Oldsmar Limestone. (Reference 2.6-005)

The closest deep exploratory boring to the LNP site is the Robinson No. 1 well drilled in 1949 by Humble Oil and Refining Company, located approximately 500 m (1640 ft.) north of the LNP site. This well was drilled to a depth of 1405 m (4609 ft.) and the top of the Paleozoic rock surface was at a depth of 1330 m (4377 ft.) The boring encountered approximately 71 m (232 ft.) of Paleozoic sediment that was described as light gray, hard, quartzitic sandstone, locally interbedded with thin beds of hard, dark gray to black, somewhat silty, micaceous shale. Based on the fossil assemblage, the Paleozoic rocks are interpreted to be Lower Ordovician. A Mesozoic diabase was encountered in this well in the depth interval of 1320 to 1334 m (4331 to 4377 ft.). (Reference 2.6-010)

2.6.1.4 Geologic Structures

The geologic regime underlying the LNP site is known as the Floridan platform, consisting of recently emergent Mesozoic and Cenozoic age shallow marine carbonate and evaporite sediments in a sequence approximately 5 km (3.1 mi.)

thick. These sediments overlie Paleozoic igneous, sedimentary, and volcanic basement rocks (Reference 2.6-005).

Recent geologic maps show only one major subsurface structural feature, the Ocala platform, and no faults within the site vicinity (40 km [25 mi.]). No known structures were observed within the site location (1 km [0.6 mi.]). The Ocala platform is thought to have been produced by sedimentary processes, either as an anomalous buildup of Middle Eocene carbonate sediments or a differential compaction of Middle Eocene carbonate material shortly after deposition. (Reference 2.6-002)

The Ocala platform is described as a plunging anticline, approximately 370 km (230 mi.) long and about 113 km (70 mi.) wide, where exposed in central peninsular Florida. The regional dips of the Tertiary beds that make up the Ocala platform are southwest and northeast along the flanks and northwest and southeast along the plunge. The regional dips are approximately 2.7 m per km (9 ft. per mi.) on the flanks and 0.9 m per km (3 ft. per mi.) along the plunge. The top of basement surface appears to slope gently (1 degree) to the southeast across the site area. (Reference 2.6-010)

The LNP site, located within the Gulf Coastal Lowlands physiographic province, is characterized by both depositional and erosional features. Broad plains underlain by a series of late Tertiary and Quaternary surfaces and shorelines are pitted with karstic depressions within the limestone at or near the present land surface in the site area. The Gulf Coastal Lowlands represent a typical mature karst terrain overlain by a thin mantle of permeable terrace deposits (that is, a mantled epikarstic subsurface). (Reference 2.6-011)

Based on a regional study of Florida, the LNP site is shown to be located in a region where the limestone is bare or thinly covered, and sinkholes are few, generally shallow, broad, and develop gradually (Reference 2.6-012).

2.6.1.5 Soils and Weathering

As summarized in Table 2.6-1, the surface soils present at the LNP site are undifferentiated Quaternary sands of the Smyrna-Immokalee-Basinger (S1547) Series, described as a loamy fine silica sand and fine silty sand, and are poorly to very poorly drained (Reference 2.6-013). Distribution of surface soils within a 10-mi. radius of the LNP site is shown on Figure 2.6-5. The surficial aquifer resides within these soils, which grade into the carbonate-derived silty sediments of the underlying Avon Park Formation unconformity zone at varying depths on-site.

2.6.2 REFERENCES

2.6-001 Florida Geological Survey, “Florida’s Groundwater Quality Monitoring Program,” Special Publication No. 32, October 1992.

2.6-002 Miller, James A., "Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina," U.S Geological Survey Professional Paper 1403-B, 1986.

2.6-003 Florida Department of Environmental Protection, Division of Water Resource Management, "Basin Status Report: Suwannee (Including Aucilla, Coastal, Suwannee and Waccasassa Basins in Florida)," November 2001.

2.6-004 U.S. Geological Survey, "Gainesville, Florida," 1:250,000 Topographic Bathymetric Map, Revised 1978.

2.6-005 Randazzo, Anthony F. and Douglas S. Jones, eds., "The Geology of Florida," University Press of Florida, 1997.

2.6-006 Smith, Douglas L., "Review of the Tectonic History of the Florida Basement," *Tectonophysics*, 1982, Vol. 88, pp. 1 – 22.

2.6-007 Thomas, William A., et al., The Subsurface Appalachians beneath the Atlantic and Gulf Coastal Plains," in Hatcher, R.D., Jr., W.A. Thomas, and G.W. Viele, eds., "The Appalachian-Ouachita Orogen in the United States," The Geology of North America, Geological Society of America, Vol. F-2, 1989, Chapter 10, pp. 445 – 458.

2.6-008 Muhs, Daniel R., et al., "Quaternary Sea-Level History of the United States," in Gillespie, A.R., S.C. Porter, and B.F. Atwater, eds., "The Quaternary Period in the United States," *Developments in Quaternary Science*, Vol. 1, Elsevier, 2004.

2.6-009 Southwest Florida Water Management District, "Aquifer Characteristics within the Southwest Florida Water Management District," Report 99-1, Fourth Edition, Revised February 2006.

2.6-010 Vernon, Robert O., *Geology of Citrus and Levy Counties, Florida*, Florida Geological Society Bulletin No. 33, 1951.

2.6-011 Denizman, C., and A.F. Randazzo, "Post-Miocene Subtropical Karst Evolution, Lower Suwannee River Basin, Florida," *GSA Bulletin*, Vol. 112, No. 12, December 2000, pp. 1804–1813.

2.6-012 U.S. Geological Survey, Department of Natural Resources, Bureau fo Geology,Sinclair, W.C., and J.W. Stewart, "Sinkhole Type, Development, and Distribution in Florida," Florida Geological Survey Map Series 110, 1985.

2.6-013 U.S. Department of Agriculture, Natural Resources Conservation Service, "Soil Data Mart," Website, soildatamart.nrcs.usda.gov/Survey.aspx?State=FL, accessed February 11, 2008.

Table 2.6-1
USDA Soil Summary

Soil Name	Depth (in.)	USDA Texture	Unified Classification	Fragment: Greater than 10 Inches (%)	Fragment: 3-10 Inches (%)	Sieve No. 200 (%)	Organic Matter (%)	Available Water Capacity [(a)] (in/in)	Moist Bulk Density [(b)] (g/cm^3)	Porosity [(c)] (cm^3/cm^3)	Saturated Hydraulic Conductivity [(d)] (μm/sec)	pH [(e)]
Smyrna	0-5	Fine sand	SP, SP-SM	0	0	2-12	1.0-5.0	0.03-0.07	1.35-1.50	0.43-0.49	42-141	3.5-7.3
	5-19	Fine sand, sand	SP, SP-SM	0	0	2-12	0.0-0.5	0.03-0.07	1.35-1.50	0.43-0.49	42-141	3.5-7.3
	19-23	Fine sand, loamy Fine sand, sand	SM, SP-SM	0	0	5-20	1.5-6.0	0.10-0.20	1.30-1.45	0.45-0.51	4-42	3.5-7.3
	23-80	Fine sand, sand	SP, SP-SM	0	0	2-10	0.0-0.5	0.03-0.07	1.45-1.70	0.36-0.45	42-141	4.5-5.5
Immokalee	0-9	Fine sand	SP, SP-SM	0	0	2-10	1.0-2.0	0.05-0.10	1.20-1.50	0.43-0.55	42-141	3.5-6.0
	9-38	Fine sand, sand	SP, SP-SM	0	0	2-10	0.0-0.5	0.02-0.05	1.45-1.70	0.36-0.45	42-141	3.5-6.0
	38-43	Fine sand, sand	SM, SP-SM	0	0	5-21	2.0-5.0	0.10-0.25	1.30-1.70	0.36-0.51	4-14	3.5-6.0
	43-80	Fine sand, sand	SP, SP-SM	0	0	2-10	0.0-0.3	0.02-0.05	1.40-1.70	0.36-0.47	42-141	3.5-6.0
Basinger	0-6	Sand	SP-SM	0	0	5-12	0.5-4.0	0.03-0.07	1.40-1.55	0.42-0.47	141-353	4.5-6.0
	6-35	Sand	SP-SM	0	0	5-12	0.0-0.5	0.05-0.10	1.40-1.55	0.42-0.47	141-353	5.6-7.8
	35-64	Sand	SP-SM	0	0	5-12	0.5-2.0	0.10-0.15	1.40-1.65	0.38-0.47	141-353	5.6-7.8
	64-80	Sand	SP-SM	0	0	5-12	0.0-0.5	0.05-0.10	1.50-1.70	0.36-0.43	141-353	5.6-7.8

Notes:

a) Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in given in inches of water per inch of soil for each soil layer.

b) Moist bulk density is the weight of soil (oven dry) per unit volume. The moist bulk density of a soil indicated the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration.

c) Porosity was calculated using the following equation: Porosity = 1 - (Bulk Density/ Particle Density), where particle density is assumed to equal 2.65 grams per cubic centimeter (g/cm^3)

d) Saturated hydraulic conductivity refers to the ease with which pores in a saturated soil transmit water.

e) pH refers to the soil pH range in water.

in. = inch
μm/sec = micrometers per second
SM = silty sand
SP = poorly graded sand
SP-SM = poorly graded sand with silt

Source: Reference 2.6-013

2.7 METEOROLOGY AND AIR QUALITY

2.7.1 GENERAL CLIMATE

This subsection describes the general climate of the region surrounding the LNP. A climatological summary of normal and extreme values of relevant meteorological parameters is presented for the first-order NWS stations or Automated Surface Observing System (ASOS) stations located in Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, Florida. Figure 2.7-1 shows the locations of these meteorological observation stations with respect to the LNP site. Additional information regarding regional climatology was derived from various documents, which are referenced in the text below.

2.7.1.1 General Description

The LNP site is located near the geographical west central portion of Florida in the gulf coast region. Five first-order meteorological observation stations are located within the general area surrounding the LNP site. The locations of these stations, which are all in Florida, and their distances from the LNP site are presented in Table 2.7-1. The Gainesville station is approximately 76 km (47 mi.) to the north-northeast of the LNP site; the Jacksonville station is 181 km (112 mi.) to the northeast; the Orlando station is 146 km (91 mi.) to the east-southeast; the Tallahassee station is 222 km (138 mi.) to the northwest; and the Tampa station is 125 km (78 mi.) to the south of the site. These fully instrumented meteorological stations are "first-order" meteorological observing stations, continuously recording a complete range of meteorological parameters. The observations are recorded continuously, either by automated instruments or by human observer, for the 24-hour period from midnight to midnight. The LNP site is located in Florida's North Central state climate division of the National Climatic Data Center (NCDC). (Reference 2.7-026)

Climatological data for the general area surrounding the LNP site were obtained from several sources containing statistical summaries of historical meteorological data for these meteorological observation stations The references used to characterize the climatology include the following:

- Gale Research Company, *Climates of the States*, Third Edition (Reference 2.7-001).
- Gale Research Company, *Weather of U.S. Cities*, Fourth Edition (Reference 2.7-002).
- "Local Climatological Data, Annual Summary with Comparative Data" for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, Florida, as published by the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007).

The climatology of central Florida is characterized by mild winters and long, warm, and humid summers. Low temperatures are typically about 10°C (50°F) in the winter and 21.1°C (70°F) during the summer. Afternoon highs range from the low 70s (°F) in the winter to the low 90s (°F) from June to September. Invasions of cold northern air can produce an occasional cool winter morning. Freezing temperatures typically occur one or two mornings per year during December, January, and February. In some years no freezing temperatures occur. Temperatures rarely fail to rise into the 60s (°F) on even cooler winter days. Temperatures above the low 90s (°F) are generally uncommon in the summer because of the afternoon sea breezes and thunderstorms.

Information on prevailing wind speed and direction for the region is contained in ER Subsection 2.7.4.1.1. An outstanding feature of the climate is the summer thunderstorm season. Most thunderstorms occur in the late afternoon hours from June through September. The resulting sudden drop in temperature (associated with evaporative cooling) from about 32.2°C (90°F) to around 21.1°C (70°F) makes for a pleasant change. Between a dry spring and a dry fall, approximately 60 percent of the annual rainfall occurs during the summer months. Snowfall is very rare. Measurable snowfall in the area (more than $^1/_4$ inch) has occurred only a few times in the last 100 years.

Although the surface of Florida is largely sandy in nature, the presence of prolific vegetation throughout the area is expected to preclude the occurrence of dust or sand storms. Given the generally flat and low elevation of the topography near the coast makes the area vulnerable to tidal surges. Tropical storms have threatened the area on a few occasions most years. The greatest risk of hurricanes has been during the months of June and October. Many hurricanes, by replenishing the soil moisture and raising the water table, do far more good than harm. The heaviest recorded rains during a 24-hour period have typically been associated with hurricanes.

Table 2.7-2 presents a summary of historical climatological observations from the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa meteorological observation stations.

2.7.1.2 Winds

The prevailing wind direction is east-northeasterly for the Gainesville and Tampa meteorological observation stations, northerly for the Orlando and Tallahassee meteorological observation stations, and northeasterly for the Jacksonville meteorological observation station. The annual average wind speeds for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations are 10.1 km/h (6.3 mph), 10.9 km/h (6.8 mph), 12.7 km/h (7.9 mph), 9.0 km/h (5.6 mph), and 11.4 km/h (7.1 mph), respectively (References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007). The highest recorded fastest mile/peak gust of wind was 103 km/h (64 mph [September of 2004]), 124 km/h (77 mph [July of 1998]), 169 km/h (105 mph [August of 2004]), 134 km/h (83 mph [September of 1993]), and 98 km/h (61 mph [June of 1988]) for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa meteorological observation stations, respectively (Reference 2.7-002).

2.7.1.3 Temperature

The annual average temperatures for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa meteorological observation stations are 20.4°C (68.7°F), 20.4°C (68.8°F), 22.5°C (72.5°F), 19.8°C (67.6°F), and 22.4°C (72.3°F), respectively. Extreme temperatures that were recorded in the region range from a maximum of 42.2°C (108°F [July of 2000]), 40.6°C (105°F [July of 1942]), 38.9°C (102°F [May of 1945]), 39.4°C (103°F [July of 2000]), and 37.2°C (99°F [June of 1985]) to a minimum of -12.2°C (10°F [January of 1985]), -13.9°C (7°F [January of 1985]), -7.2°C (19°F [January of 1985]), -14.4°C (6°F [January of 1985]), and -7.8°C (18°F [December of 1962]) for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, respectively. Maximum temperatures were equal to or exceeding 32.2°C (90°F) an average of 89.5 (Gainesville), 78.4 (Jacksonville), 108.7 (Orlando), 92.2 (Tallahassee), and 90.0 (Tampa) days per year. Minimum temperatures were less than or equal to 0°C (32°F) an average of 11.7 (Gainesville), 18.3 (Jacksonville), 2.7 (Orlando), 34.4 (Tallahassee), and 2.7 (Tampa) days per year. (References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007)

2.7.1.4 Atmospheric Moisture

Maximum relative humidity usually occurs during the early morning hours, and minimum relative humidity is typically observed in the mid-afternoon. For the annual cycle, the lowest relative humidity occurs in mid-spring, with the summer months typically exhibiting the highest relative humidity. The annual average relative humidity for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa meteorological observation stations ranges from 93 percent, 91 percent, 91 percent, 91 percent, and 88 percent in the early morning to 59 percent, 58 percent, 56 percent, 55 percent, and 59 percent in the early afternoon, respectively. (References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007)

2.7.1.5 Precipitation

Annual average precipitation for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations are 122.83 cm (48.36 in.), 132.94 cm (52.34 in.), 122.81 cm (48.35 in.), 160.55 cm (63.21 in.), and 113.72 cm (44.77 in.), respectively. Maximum annual precipitation recorded for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations are 148.26 cm (58.37 in.), 202.26 cm (79.63 in.), 172.34 cm (67.85 in.), 264.62 cm (104.18 in.), and 171.98 cm (67.71 in.), respectively. The maximum 24-hour precipitation recorded at the stations were 15.65 cm (6.16 in. [September of 1988]), 25.83 cm (10.17 in. [September of 1950]), 24.56 cm (9.67 in. [September of 1945]), 25.73 cm (10.13 in. [July of 2001]), and 30.76 cm (12.11 in. [July of 1960]), for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, respectively. Monthly maximum snowfall recorded for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa are trace amount (April of 1997), 3.81 cm

(1.5 in. [February of 1958]), trace amount (May of 1997), 2.54 cm (1.0 in. [December of 1989]), and 0.51 cm (0.2 in. [January of 1977]), respectively. The maximum 24-hour snowfall recorded at the stations were trace amount (April of 1997), 3.81 cm (1.5 in. [February of 1958]), trace amount (May of 1997), 2.54 cm (1.0 in. [December of 1989]), and 0.51 cm (0.2 in. [January of 1977]) for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, respectively. (References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007)

2.7.2 REGIONAL AIR QUALITY

Presently, the entire State of Florida is designated as being in attainment of the National Ambient Air Quality Standards (NAAQS) and the Florida Ambient Air Quality Standards (FAAQS) for all pollutants. The LNP site is located in Levy County, which is currently designated by the USEPA as being in attainment of the NAAQS for all pollutants (Reference 2.7-008). The FDEP, in collaboration with local environmental programs, operates a network of ambient air quality monitoring stations throughout the state. There are 13 monitoring stations in the geographic area surrounding the LNP site. The monitoring stations are located in Alachua, Citrus, Lake, Marion, and Pasco counties. There are no monitoring stations located within Levy County. These stations monitor for various NAAQS and FAAQS criteria pollutants (that is, ozone, particulate matter of 2.5 micrometers [μm] and smaller [$PM_{2.5}$], particulate matter of 10 μm and smaller [PM_{10}], sulphur dioxide [SO_2], and carbon monoxide [CO]). (References 2.7-009 and 2.7-010) The monitoring data from these ambient air quality monitors suggests that the air quality of the area is good and that there are no areas where the ambient air quality standards are considered to be at risk of being threatened or exceeded. Additionally, the air emissions from the LNP are expected to be minimal and are not expected to be significant for ambient air quality (including local and regional visibility) at any location. Prior to construction and operation of the LNP facility, all appropriate air quality permits will be obtained to demonstrate the ability to comply with all applicable air quality regulations. It is noted that the NAAQS for ozone was revised by the USEPA on March 12, 2008. The new standard, which will not be implemented in Florida for several years until the State Implementation Plan can be revised and approved by the USEPA, will be more restrictive than the previous standard; however, the attainment status of Levy County is not expected to change as a result of this revision.

The Clean Air Act Amendments of 1977 identify “clean air areas,” designated as Prevention of Significant Deterioration (PSD) Class I areas. PSD Class I areas include all international parks, national wilderness, and memorial parks that exceed 2023.4 ha (5000 ac.), and national parks that exceed 2428.1 ha (6000 ac.). The three closest PSD Class I areas are the Chassahowitzka Class I area located approximately 40 km (25 mi.) south of the LNP site, the St. Marks Class I area located approximately 175 km (109 mi.) to the northwest of the site, and the Okefenokee Class I area located approximately 175 km (109 mi.) to the north-northeast of the site. Because of the very small quantity of air emissions that will be emitted from a nuclear generating facility of the type being proposed by PEF, no significant air quality impacts attributable to the construction or operation of the LNP are expected in any of these Class I areas.

2.7.3 SEVERE WEATHER

2.7.3.1 Thunderstorms, Hail, and Lightning

The Local Climatological Data (LCD) summaries for the cities in the area surrounding the LNP site indicate that thunderstorms have been observed on an average of 75.7 days per year in Gainesville (23-year period of record [POR]), 67.5 days per year in Jacksonville (59-year POR), 80.6 days per year in Orlando (50-year POR), 81.2 days per year in Tallahassee (59-year POR), and 81.3 days per year in Tampa (59-year POR). The LCD summaries for these cities also indicate that thunderstorms occur most frequently during the months of June, July, and August in all five locations. Gainesville averaged 14 days of thunderstorms in June, 18 days in August, and 16 days in July. Jacksonville averaged 12 days in June, 16 days in August, and 14 days in July. Orlando averaged 15 days in June, and 18 days in July and August. Tallahassee averaged 14 days, 19 days, and 16 days in June, July, and August, respectively. Tampa averaged 14 days in June, and 20 days July and August. Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa averaged five or more thunderstorm days per month from May through September and less than three days per month from October through April. (References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007) A thunderstorm is normally recorded only if thunder is heard at the weather observation station. It is reported on a regularly scheduled observation if thunder is heard within 15 minutes preceding the observation (Reference 2.7-011). Otherwise, special observations are recorded as a thunderstorm whenever thunder is heard.

A severe thunderstorm is defined by NOAA as a thunderstorm that possesses one or more of the following characteristics (Reference 2.7-012):

- Winds of 50 knots (58 mph) or more.
- Hail 1.9 cm (0.75 in.) or more in diameter.
- Thunderstorms that produce tornadoes.

Severe thunderstorms producing hail events with hail greater than 1.9 cm (0.75 in.) or more in diameter have been recorded since 1950. Forty-five events were reported in Levy County during the period from January 1, 1950, to November 30, 2008. Four storms resulted in reported property and crop damage (Reference 2.7-013). The number of reported hail events has increased significantly over time, primarily as a result of increased reporting efficiency and confirmation skill and the possible overlooking of storms in the early years of data collection. Additionally, the increase in urbanization over the past 50 years has effectively resulted in an increase in the number of reported storms, if for no other reason than there are more targets damaged by hail and thunderstorms in an urban area than in a rural area. As a result, there is a higher frequency of reported storms in urban areas than in rural areas. While 45 hail storms were reported in Levy County over the period of 1950 to 2008, the more recent storm reports (Reference 2.7-012) indicate that there is a greater frequency of reported storms in more recent years.

The frequency of lightning flashes per thunderstorm day over a specific area can be estimated using the following equation, which takes into account the distance of the location from the equator (Reference 2.7-014):

$$N = (0.1 + 0.35 \sin \theta)(0.40 \pm 0.20)$$

where

N = Number of flashes to earth per thunderstorm day per square kilometer (km^2)

θ = Geographical latitude

For the LNP site, the most northern boundary of the site is located at approximately 29.07 degrees (°) north latitude. The frequency of lightning flashes (N) is predicted to range from 0.054 to 0.162 flashes per thunderstorm day per km^2. The value 0.162 is used as the most conservative estimate of lightning frequency in the following calculations:

The average annual number of thunderstorm days in the area (as reported at the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa observation stations) is 77.26. This results in a predicted mean frequency of 12.52 lightning flashes per km^2 per year, as calculated below:

$$\frac{0.162\,flashes}{(thunderstorm - day)(km^2)} \times \frac{77.26\,thunderstorm - days}{year} = \frac{12.52\,flashes}{(km^2)(year)}$$

The total area of the LNP site is approximately 1257 ha (3105 ac.). Hence, the predicted frequency of lightning flashes within the area of the LNP property is 157 per year, as calculated below:

$$\frac{12.52\,flashes}{(km^2)(year)} \times 12.57 km^2 = \frac{157\,flashes}{(year)}$$

The EAB for LNP 1 and LNP 2 is a radius of 1340 m (4396 ft.) around each unit. This is considered to be the approximate operational area of the LNP site. The predicted frequency of lightning flashes in the LNP exclusion area of a single reactor can be calculated as follows:

$$\frac{12.52\,flashes}{(km^2)(year)} \times 5.64 km^2 = \frac{70.6\,flashes}{(year)}$$

Therefore, the predicted number of lightning flashes in the immediate vicinity of LNP 1 and LNP 2 is predicted to be 70.6 per year.

2.7.3.2 Tornadoes and Severe Wind

Based on a 57.25-year POR, the average number of tornadoes reported in Florida was 50.8 per year. A summary of the tornadoes reported in Florida is provided in Table 2.7-3, which summarizes by tornado intensity all tornadoes during the period from January 1, 1950, to March 31, 2007. (Reference 2.7-015) The storm intensities reported in the table are based on the original Fujita (as opposed to the recently introduced Enhanced-Fujita [E-F]) Tornado Scale. Both scales are used to estimate wind speeds associated with the amount of damage observed after the storm event, as opposed to actual measured wind speeds. During this period, the numbers and types of tornadoes reported in Florida were:

- 150 (F)
- 1559 (F0)
- 819 (F1)
- 327 (F2)
- 42 (F3)
- 4 (F4)
- 0 (F5)
- 1043 (Waterspouts)

These totals equate to an average of 27 F0, 14 F1, 6 F2, less than 1 F3, less than 1 F4, and 0 F5 tornadoes reported in Florida per year.

During the same period (January 1, 1950, to March 31, 2007), a total of 21 tornadoes were reported in Levy County. The number of reported tornadoes for Levy County and nine adjacent counties surrounding the LNP site are summarized in Table 2.7-4 using the original Fujita scale. A total of 336 tornadoes were reported during the period of record for the 10 counties (Levy, Dixie, Gilchrist, Alachua, Marion, Lake, Sumter, Citrus, Hernando, and Pasco) surrounding the LNP site (Reference 2.7-015). The worst reported tornado in Levy County, an F2, occurred in March of 1993. This tornado resulted in three fatalities, 10 injuries, and a published damage estimate of $50 million. Table 2.7-5 summarizes the number of tornadoes in Florida by year and the (original) Fujita Tornado Scale Category for the period from January 1, 1950, to March 31, 2007. During this period, there were a maximum of 116 tornadoes (in 1997) and a minimum of six (in 1950).

Based on a statistical analysis of tornado occurrences in the United States over a 70-year period, Fujita concluded that the indicated increase in tornado occurrences was primarily a result of increased reporting efficiency and confirmation skill and that F0- and F1-class tornadoes were typically overlooked during the early data collection years (Reference 2.7-016). Additionally, research conducted by Grazulis (as reported by Gaya et al.) concluded that the increase in urbanization over the past 50 years has effectively resulted in an increase in the number of reported tornadoes, if for no other reason than there are more targets destroyed or damaged by a tornado in an urban area than in a rural area (Reference 2.7-017). As a result, there is a higher frequency of reported incidents in urban areas than in rural areas.

The probability of a tornado strike for the LNP site can be calculated using an empirical relationship such as the following:

$$P_s = \overline{n}\left(a/A\right)$$

where

P_s = Probability that a tornado will strike a particular location during a 1-year interval.

$\overline{n}$ = Average number of tornadoes per year (equal to 5.8 for the ten-county area containing and surrounding the LNP site, as calculated from Table 2.7-4).

a = Average individual tornado area, equal to 0.81 km^2 (0.314 square miles [mi.^{2}]) for the LNP site, as calculated from Table 2-14 in NUREG/CR-4461, Rev. 2.

A = Total area of concern (for example, 1° square between 29° and 30° latitude and -82° and -83° longitude) is equal to approximately 10,709.8 km^2 (4183.5 mi.^{2}).

Using this equation, the tornado strike probability for the LNP site, P_s, is estimated to be 0.000439, which corresponds to a return frequency of once in 2280 years.

Waterspouts, which are similar to tornadoes, have been observed to occur only over very large bodies of water, such as the Gulf of Mexico. Waterspouts are only recorded as "Waterspouts/Tornadoes" in the NCDC Storm Event Database, and a review of the database indicated that approximately 1043 waterspouts have been reported in the State of Florida during the period from January 1, 1950, to March 31, 2007 (Reference 2.7-015).

Design-basis tornado parameters have traditionally been based on the NRC Regulatory Guide 1.76 and other NRC published documents that have stated that the probability of occurrence of a tornado that exceeds the design-basis tornado should be less than about 1.0E-7 per year per nuclear power plant. The NRC's original Regulatory Guide 1.76 delineates maximum wind speeds of 386 km/h (240 mph) to 579 km/h (360 mph), depending on the region of the United States in which the site is located. More recent evaluations have resulted in recommendations for reduced design-basis tornado wind conditions. American National Standards Institute (ANSI)/American Nuclear Society (ANS) 2.3 recommends a maximum tornado wind speed of 418 km/h (260 mph) and a tornado recurrence of 1.0E-6 per year. Although this standard has not been endorsed by the NRC, the NRC staff has endorsed and recommended the use of a maximum tornado wind speed of 483 km/h (300 mph) in the design of evolutionary and passive advanced light water reactors (ALWR) for sites east of the Rocky Mountains.

The determination of a design-basis tornado for a specific area of the United States is not design-specific, but is location-specific. In other words, for a given geographic location, a tornado with specific properties is related to an acceptable mean recurrence interval. This conclusion is unrelated to the reactor type. The maximum wind speed of 483 km/h (300 mph) for sites east of the Rocky Mountains, along with other associated parameters, have previously been evaluated and accepted by the NRC staff as an appropriate design-basis tornado.

The NRC reevaluated the available tornado data in NUREG/CR-4461, Revision 1. The NRC study was based on a tornado data tape prepared by the National Severe Storm Forecast Center that contains 30 years' worth of data, including the data for approximately 30,000 tornadoes that occurred during the period from 1954 through 1983. Wind speed values associated with a tornado having a mean recurrence interval of 1.0E-7 per year were estimated to be about 322 km/h (200 mph) for states west of the Rocky Mountains and 483 km/h (300 mph) for states east of the Rocky Mountains.

Other characteristics associated with a maximum wind speed of 483 km/h (300 mph) have been identified by NRC for a wind speed of 483 km/h (300 mph); that is, rotational speed of 386 km/h (240 mph), maximum translational speed of 97 km/h (60 mph), radius of maximum rotational speed of 46 m (150 ft.), pressure drop of 2.0 psi, and rate of pressure drop of 1.2 psi per second (psi/sec).

Because actual measurement of site-specific tornado parameters is not practical, the site characteristics for tornado parameters have historically been based on the best available information, which has generally been reflected in the NRC guidance for the design-basis tornado (NRC Regulatory Guide 1.76). Further, NUREG/CR-4461, Revision 1 represents better available information than Regulatory Guide 1.76, and the latest NRC position on design basis tornadoes is based on the information in NUREG/CR-4461, Revision 1. This is further supported by NRC's recent draft guidance, as published in NRC Draft Guidance 1143, as follows:

- Rotational velocity = 386 km/h (240 mph).
- Maximum translational velocity = 97 km/h (60 mph).
- Maximum wind speed = 483 km/h (300 mph).
- Radius of maximum rotational velocity = 46 m (150 ft.).
- Total pressure drop = 13.8 kilopascals (kPa) (2.0 psi).
- Rate of pressure drop = 8.3 kilopascals per second (kPa/sec) (1.2 psi/sec).

The design parameters for the Westinghouse AP1000 meet these criteria, as noted in Subsection 3.3.2.1 of Westinghouse Electric Company, LLC, AP1000 Design Control Document for the certified design as amended (DCD). However, it is noted that NRC's most recent guidance on "Design Basis Tornadoes and Tornado Missiles for Nuclear Power Plants" is provided in Revision 1 of Regulatory Guide 1.76, Revision 1, published in March 2007. The revised guidance is based on the E-F scale rather than the original Fujita scale and provides for lower design-basis tornado characteristics than were previously specified in NRC's guidance. The current Regulatory Guide 1.76, Revision 1, guidance is as follows:

- Rotational velocity = 82 meters per second (m/s) (184 mph).
- Maximum translational velocity = 21 m/s (46 mph).
- Maximum wind speed = 103 m/s (230 mph).
- Maximum rotational velocity radius = 45.7 m (150 ft.).
- Pressure drop total = 83 millibars (mb) (1.2 psi).
- Pressure drop rate = 37 mb per second (mb/s) (0.5 psi/sec).

These parameters are NRC's published design-basis tornado parameters for the region surrounding the LNP site. They are less stringent than the proposed design criteria for the AP1000 units that will be used for LNP 1 and LNP 2.

Peak observed wind speeds at the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations were previously identified in Table 2.7-2. As indicated in the table, the peak observed wind speeds at the stations were 103 km/h (64 mph), 124 km/h (77 mph), 169 km/h (105 mph), 134 km/h (83 mph), and 98 km/h (61 mph), respectively. An importance factor of 1.15 is applied to this wind speed in the design of safety-related structures (Reference 2.7-018). Therefore, the maximum sustained wind speeds for the design-basis tornado would be 119 km/h (74 mph), 143 km/h (89 mph), 195 km/h (121 mph), 153 km/h (95 mph), and 113 km/h (70 mph) for Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, respectively.

In addition to the maximum observed wind speeds in the region, a site characteristic 3-second gust wind speed that represents a 100-year return period for the LNP site has been established at 224 km/h (139 mph). The 3-second gust wind speed is also based on the American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI) 7-05, "Minimum Design Loads for Buildings and Other Structures" (Reference 2.7-018). The 3-second gust wind speed was obtained from the Engineering Weather Data (EWD) compact disc (CD) published by NOAA for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa weather stations (Reference 2.7-019). The maximum published 3-second gust wind speed for these stations is 209 km/h (130 mph) (Orlando and Tampa) and is represented as the nominal design 50-year return, 3-second gust at 10 m (33 ft.) above the ground. A conversion factor to estimate the 100-year return period for this value is provided in Table C6-7 of the reference document, "Conversion Factors for Other Mean Recurrence Intervals." The conversion factor for a 100-year return period is 1.07, resulting in the nominal design 3-second gust wind speed of 224 km/h (139 mph).

2.7.3.3 Heavy Snow and Severe Glaze Storms

Winter weather events are defined as the occurrence of measurable precipitation in the form of snow, sleet, freezing rain, or cold rain. Large-scale cyclone and frontal activity is responsible for some winter precipitation; however, this is usually in the form of rain.

Trace amounts of snowfall do occur in Florida, but measurable snowfalls are extremely rare (typically less than a quarter of an inch) and occur only a few times in most locations in Florida, as indicated in Table 2.7-2. The record snowfall in the region was at Jacksonville, where 3.81 cm (1.5 in.) of snow fell in February of 1958. The 50-year recurrent Ground Snow Load for the Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa stations is reported by the EWD data as zero (Reference 2.7-019). Therefore, estimations of the weight of 100-year return period snowpack and probable maximum winter precipitation are not necessary for the LNP site.

2.7.3.4 Hurricanes

Hurricanes have made landfall on both the Atlantic and Gulf of Mexico coastlines of Florida. From 1899 through 2002, Florida received 60 direct hits from hurricanes, an average of 0.57 storms per year. This accounts for 35.7 percent of all hurricanes affecting the entire United States coastline during the 104-year period. Florida has a coastline length of approximately 2172.6 km (1350 statute mi.), resulting in an average distance between landfalls of 36.2 km (22.5 mi.). Tropical storms (a storm with sustained winds of 39 to 73 mph) affect Florida with greater frequency than hurricanes. Florida has experienced 79 tropical storms in the same period — an average of 0.76 storms per year (Reference 2.7-020).

From 1899 through 2007, Florida has experienced 150 hurricanes and tropical storms. Of the 150 storms, 85 are tropical storms, 19 are Category 1, 19 are Category 2, 19 are Category 3, six are Category 4, and two are Category 5 hurricanes (References 2.7-020, 2.7-029, 2.7-030, 2.7-031, 2.7-032, and 2.7-033). Table 2.7-6 summarizes the number of tropical storms and hurricanes in Florida by year and the Saffir-Simpson Scale Category for the period from 1899 to 2007. The NOAA Coastal Services Center reports that during the 157-year period between 1851 and 2007, 21 hurricanes rated Category 1-5 have passed within 50 nautical miles of the LNP site, and 45 hurricanes rated Category 1-5 have passed within 100 nautical miles of the LNP site. Based on the reported number of hurricanes passing within the vicinity of the LNP site, the annual frequency of hurricanes is estimated to be 0.13 and 0.29 storms per year within 50 and 100 nautical miles of the LNP site, respectively. (Reference 2.7-028)

Hurricanes deteriorate rapidly as they move onshore as a result of increased frictional drag and loss of energy. Once onshore, the increased frictional effects have a tendency to turn the winds inward toward the hurricane's center. This results in decreased surface wind speeds but enhanced low-level convergence and greater vertical velocities that are capable of producing intense rainfall and isolated tornadoes. The LNP site lies approximately 9.7 km (6 mi.) from the nearest coastline. The major effects from hurricanes on the area are expected to be high winds, heavy precipitation, and potential flooding due to storm surges.

2.7.3.5 Inversions and High Air Pollution Potential

Weather records from many U.S. weather stations have been analyzed by Hosler (Reference 2.7-021), Holzworth (Reference 2.7-022), and Holzworth (Reference 2.7-023) with the objective of characterizing atmospheric dispersion potential. The expected seasonal frequencies of inversions based below 152 m (500 ft.) for Tampa, which is 125 km (78 mi.) to the south of the LNP site, are shown in Table 2.7-7. The extent of vertical mixing is a major factor in the determination of atmospheric diffusion characteristics. Low-level temperature inversions inhibit vertical mixing. As shown in Table 2.7-7, the inversion frequency in Tampa averaged 28 percent in summer season and 37 percent in winter season (Reference 2.7-021).

In general, mixing depths are characterized by a diurnal cycle of nighttime minimum and daytime maximum depths. The nighttime minimum is the result of surface radiational cooling. This cooling produces stable conditions, frequently coupled with low-level temperature inversions or isothermal layers. Daytime maximums are the result of surface heating, which produces instability and convective overturning through a larger portion of the atmosphere. When daytime (maximum) mixing depths are shallow (low inversion heights), air pollution potential is considered to be greatest. Mean monthly mixing depths for Tampa are shown in Table 2.7-8. The lowest mean monthly mixing depth occurs in

January (730 m [2395 ft.]), and the greatest mean mixing depth occurs in May (1410 m [4625 ft.]) (Reference 2.7-022).

2.7.3.6 Effects of Global Climate Change on Regional Climatology

Global trends in various meteorological and geophysical parameters are currently the subject of much discussion in both the scientific community and in the media. While it may be evident (and expected) that changes in the averages of certain meteorological parameters are occurring over time (that is, such as temperature and precipitation), it is also evident and generally acknowledged that the prediction of any such changes are difficult if not impossible to reliably predict. Even the most reliable climate change models are not capable of accurately predicting design basis extremes in weather patterns. A discussion of public concerns or speculations about climate change would not add to the resolution of these issues, nor would a discussion of changes in average global trends, because these data cannot be reviewed on a site-specific basis with any degree of accuracy or reliability. It is relatively easy to demonstrate that an increase in the average value of temperature (or precipitation) at a given location is much more likely to be a result of numerous increases in temperatures (or precipitation) in the "normal range" rather than increases in extreme values, because a change in a select number of extreme values will essentially have no measurable effect on longer term average values. Therefore, the information presented in this section is focused on the extreme meteorological conditions that will facilitate a plant design that will operate within these safety margins. This is accomplished by identifying historical extremes and projecting, in a scientifically defensible manner, the potential effects weather will have on the safety and operation of the LNP.

2.7.4 LOCAL METEOROLOGY

An on-site meteorological monitoring system has been in operation at the LNP site since February 1, 2007. The on-site tower is located approximately 1.4 km (0.9 mi.) west-southwest of the proposed locations of LNP 1 and LNP 2 and consists of a 60.4-m (198-ft.) guyed, open-latticed design. The location of the tower is shown on Figure 2.7-2. The base of the tower is at approximately 13.7 m (45 ft.) above mean sea level (msl). Local meteorological monitoring results and summaries of the parameters monitored by the on-site system are described and presented in this subsection. A more detailed description of the on-site meteorological monitoring system and operational program is provided in ER Section 6.4.

The POR of on-site meteorological measurements is the 2-year period from February 1, 2007, to January 31, 2009.

2.7.4.1 Normal and Extreme Values of Meteorological Parameters

2.7.4.1.1 Wind Summaries

Hourly wind speed and direction measurements at the LNP site for the 2-year POR were used to prepare monthly and annual average joint frequency distributions of wind speed and direction by Pasquill Stability Category (refer to ER Subsection 2.7.4.1.6) for the 10-m (33-ft.) and 60-m (197-ft.) levels of the onsite meteorological tower. The wind speed categories presented in the joint frequency distributions correspond to the 11 wind speed categories recommended in Regulatory Guide 1.23, Revision 1.

The lower-level (10-m [33-ft.]) wind direction and wind speed are summarized by individual Pasquill stability category (A through G) and for the "All Stability" category in Tables 2.7-9, 2.7-10, 2.7-11, 2.7-12, 2.7-13, 2.7-14, 2.7-15, and 2.7-16 for the 2-year POR.. Additionally, the lower-level wind direction and wind speed are summarized monthly for the POR for the "All Stability" category in Tables 2.7-17, 2.7-18, 2.7-19, 2.7-20, 2.7-21, 2.7-22, 2.7-23, 2.7-24, 2.7-25, 2.7-26, 2.7-27, and 2.7-28. For this same period, graphical illustrations of the wind roses of wind speed and direction for the lower-level tower measurements are shown on Figure 2.7-3 (all stabilities, 1-year POR) and on Figures 2.7-4, 2.7-5, 2.7-6, 2.7-7, 2.7-8, 2.7-9, 2.7-10, 2.7-11, 2.7-12, 2.7-13, 2.7-14, and 2.7-15 (all stabilities by month). It is noted that the information in Tables 2.7-9 through 2.7-28 indicates a high frequency of "calm" winds at the 10-meter level (i.e., 18.8 percent of the total observations in Table 2.7-16). A review of the meteorological data indicates that, during the 2-year period of record, nearly all of the observed winds at the 10-meter level were observed to be in the range of "greater than 0" to less than 0.4 meters per second (m/s) (0.9 mph). Wind directions associated with these measurements do not reflect the characteristics of calm wind conditions in that the directions are not highly variable or abruptly changing, as would be expected during true calm (stagnant) conditions. The very low wind speeds observed at the 10-meter level are believed to be attributable to the height of the surrounding forest canopy and its corresponding frictional influence on wind speeds at the 10-meter elevation.

The upper-level (60-m [197-ft.]) wind direction and wind speed data are summarized by individual Pasquill stability category (A through G) and for the "All Stability" category in Tables 2.7-29, 2.7-30, 2.7-31, 2.7-32, 2.7-33, 2.7-34, 2.7-35, and 2.7-36 for the POR. Additionally, the upper-level wind direction and wind speed are summarized monthly for the POR for the "All Stability" category in Tables 2.7-37, 2.7-38, 2.7-39, 2.7-40, 2.7-41, 2.7-42, 2.7-43, 2.7-44, 2.7-45, 2.7-46, 2.7-47, and 2.7-48.

Graphical wind roses of wind speed and direction from the nearby Tampa, Gainesville, and Tallahassee airports are also provided for comparison with the on-site wind measurements described above. Figures 2.7-16, 2.7-17, and 2.7-18 illustrate these wind roses for the 5-year period from January 1, 2001, through December 31, 2005. It is noted that the wind roses for the Tampa and Gainesville observing stations are most similar to the LNP on-site annual wind rose (Figure 2.7-3) in that there is a notable east-west bias in the results, which is most likely attributable to the diurnal influence of sea breeze effects. These effects are much more distinct in the on-site data where a strong east-west wind direction is evident in the observations. The Tallahassee wind rose is seen to exhibit more of a north-south bias in the results, which is also believed to be attributable to sea breeze influences, which is consistent with the proximity of the station to the east-west shoreline in that part of the state.

2.7.4.1.2 Ambient Temperatures

Ambient temperature from the on-site monitoring system is measured at 10-m (33-ft.), and differential temperature (used in determining wind stability classification) is measured between the 10-m (33-ft.) and 60-m (197-ft.) levels of the tower. The maximum temperature recorded by the system for the first year of onsite data was 34.6°C (94.3°F), and the minimum temperature was -3.9°C (25.0°F). A summary of the on-site temperature information by month and for the 1-year POR is presented in Table 2.7-49. Based on the maximum and minimum temperature observations in the table, the diurnal temperature range of the on-site temperatures during this period is approximately 20 to 22 degrees in the fall, winter, and spring seasons and approximately 14 to 17 degrees in the summer and early fall seasons. The on-site temperature measurements are consistent with the long-term regional observations from Tampa, Gainesville, Orlando, Tallahassee, and Jacksonville, which are also summarized in Table 2.7-49.

2.7.4.1.3 Atmospheric Moisture

2.7.4.1.3.1 Relative Humidity

Maximum relative humidity usually occurs during the early morning hours, and minimum relative humidity is typically observed in the mid-afternoon. For the annual cycle, the lowest relative humidities occur in mid-spring, with the summer months typically exhibiting the highest relative humidities. Table 2.7-50 summarizes relative humidity observations from the Tampa, Gainesville, and Orlando, Tallahassee, and Jacksonville meteorological observing stations.

2.7.4.1.3.2 Dew-Point Temperature

Dew-point temperature is used as a measure of the absolute humidity in the air. It is the temperature to which air must be cooled to reach saturation/condensation, assuming pressure and water vapor content remain constant. The on-site composite monthly and annual dew-point measurements for the first year of onsite data are compared with regional long-term observations from the Tampa, Gainesville, Orlando, Tallahassee, and Jacksonville stations in Table 2.7-51. The observed on-site dew-point temperatures are consistent and generally bounded by the long-term regional observations of dew-point temperatures.

2.7.4.1.3.3 Wet Bulb Temperature

Table 2.7-52 provides a summary of statistically significant dry and wet bulb temperatures in the region surrounding the LNP site, as obtained from the Jacksonville, Tallahassee, and Tampa meteorological observing stations. These data were obtained from the 30-year (1961-1990) Solar and Meteorological Surface Observation Network (SAMSON) database (Reference 2.7-024) and from the 24-year (1973-1996) NOAA Engineering Weather Data (EWD) database (Reference 2.7-019).

2.7.4.1.4 Precipitation

The total precipitation observed at the LNP meteorological monitoring station during the first year of onsite monitoring 109.09 cm (42.95 in.). Table 2.7-53 compares average monthly and annual precipitation measurements at the Tampa, Gainesville, Orlando, Tallahassee, and Jacksonville meteorological observation stations with the monthly and annual precipitation measurements from the LNP on-site meteorological monitoring station. The region displays some variance in total monthly and annual precipitation between stations from month-to-month and year-to-year, and the wettest period of the year is typically the summer, with approximately twice the monthly totals in those months as compared to winter months. The one year of on-site precipitation data presented here are considered to be consistent with generally bounded by the long-term regional observations from the Tampa, Gainesville, Orlando, Tallahassee, and Jacksonville meteorological observing stations when compared with long-term periods of record at those locations (Table 2.7-53). Based on a review of the regional precipitation data, it appears to be reasonably representative of the site area; and there is no reason to expect that on-site measurements of precipitation would be significantly different.

2.7.4.1.5 Fog

Fog is an aggregate of minute water droplets suspended in the atmosphere near the surface of the earth. According to international definition, fog reduces visibility to less than 1.0 km (0.62 mi.). According to United States observing practice, ground fog is a fog that hides less than 60 percent of the sky and does not extend to the base of any clouds that may lie above it. Ice fog is fog composed of suspended particles of ice; it usually only occurs in high latitudes in calm, clear weather at temperatures below -28.9°C (-20°F) and increases in frequency as temperature decreases. (Reference 2.7-025)

Table 2.7-54 summarizes the occurrence of fog at the Tampa, Gainesville, Orlando, Tallahassee, and Jacksonville meteorological observation stations. Heavy fog (that is, visibility less than or equal to 0.4 km [0.25 mi.]) has been observed at Tampa, Gainesville, Orlando, Tallahassee, and Jacksonville an average of 15.3, 46.5, 18.0, 49.8, and 39.3 days per year, respectively (Table 2.7-54). The greatest number of fog days typically occurs during the months of December through February. However, fog can be a very localized phenomenon, and the information provided in Table 2.7-54 is used as a regional estimate for fog occurrence. Based on a review of regional fog observations, they appear to be reasonably representative of the site area; and there is no reason to expect that on-site observations of naturally occurring fog would be significantly different. Given that the air quality of Florida is considered to be good, smog (generally considered to be a combination of fog and air pollution episodes) is not expected to occur in the region at any time.

2.7.4.1.6 Atmospheric Stability

A joint frequency distribution of wind speed, wind direction, and atmospheric stability is used in conjunction with a dispersion model to estimate the average rate of dispersion of routine and potential accidental radioactive releases. For the LNP site, joint frequency distributions have been generated from on-site data using the vertical temperature gradient and the variability of the horizontal wind to estimate atmospheric stability, as recommended in NRC Regulatory Guide 1.23, Revision 1. As previously noted, joint frequency distributions of wind speed, wind direction, and atmospheric stability measured at the LNP site for the period from February 1, 2007, to January 31, 2009, are provided in a series of 40 tables, beginning with Table 2.7-9 and ending with Table 2.7-48.

Based on the two years of meteorological data collected on the LNP site, temporal variations within the individual stability categories are relatively small. Almost 50 percent of all hours fall into either neutral (D) or slightly stable (E) stability categories. More that 25 percent of all hours fall into the stable (F) and extremely stable (G) stability categories. Extremely unstable (A), moderately unstable (B), and slightly unstable (C) categories combined occurred approximately 25 percent of the total hours. These distributions of stability category are generally consistent with what would be expected for this region and the high predominance of A through E stability is considered to be conducive to very good atmospheric dispersion conditions during the majority of the hours of the day.

2.7.4.1.7 Topographical Description of the Surrounding Area

The LNP site and surrounding region is relatively flat, with no significant terrain features that will otherwise be expected to adversely or unusually impact natural dispersion downwind of the plant. Figures 2.7-19, 2.7-20, 2.7-21, and 2.7-22 show cross-sectional plots of elevation versus distance from the LNP center for each of 16 directional sectors. Figure 2.7-23 shows the existing topographic features within an 8-km (5-mi.) radius of the LNP. The area surrounding the LNP site is relatively flat, and no significant terrain modifications are expected during and after construction of the LNP that would affect local meteorological measurements an the on-site monitoring station. Figure 2.7-24 shows topographic features within an 80-km (50-mi.) radius of the LNP site, which is noted to be generally flat in all directions.

2.7.4.2 Local Meteorological Conditions for Design and Operating Bases

Design and operating bases, such as tornado parameters, temperature, and precipitation extremes are statistics that, by definition and necessity, are based on long-term regional records. Although data collected by the LNP on-site meteorological monitoring system is representative of site conditions, only 2 years of on-site data are available. Therefore, long-term regional data are considered most appropriate for use in establishing conservative estimates of climatological extremes. Therefore, the design and operating basis conditions were based on regional meteorological data, as previously described in ER Subsection 2.7.1.

2.7.5 ON-SITE METEOROLOGICAL MEASUREMENTS PROGRAM

The LNP on-site meteorological measurement program began in February 2007 with the installation of a 60.4-m (198-ft.) guyed, open-latticed meteorological tower. The tower has been used to monitor meteorological parameters at two levels above ground level and has operated continuously since it was first installed. Table 2.7-55 shows the current elevations of the operational sensors for all monitored parameters for both the lower and upper monitoring levels. Figure 2.7-2 shows a topographical map of the area and the location of the meteorological tower with respect to the LNP site, LNP 1, and LNP 2. The area surrounding the tower is generally covered with low-level vegetation (less than approximately 0.9 m [3 ft.] in height and indigenous to the central region of Florida) within several hundred feet of the tower in all directions. In the immediate vicinity of the tower base and within the security fence, gravel has been used as a means of controlling weeds. The presence of this gravel is not extensive and is not expected to have an influence on the parameters measured on the tower. The location of the LNP meteorological tower is ideally situated for use in support of the LNP COLA. Therefore, the monitoring results obtained from the tower will be used to characterize the on-site meteorological conditions for the LNP site. The topography of the area, as discussed in ER Subsection 2.7.4.1.7, is essentially flat with no significant terrain variations that would influence or otherwise affect dispersion. Topographical cross-sections of the region are provided on Figures 2.7-19, 2.7-20, 2.7-21, and 2.7-22, which show the topographical changes by direction from the center of the site out to a distance of 80 km (50 mi.) of the LNP site.

Two years of continuous and consecutive meteorological data from the on-site tower for the period from February 1, 2007, through January 31, 2009, are submitted with this COLA in the electronic format recommended in Appendix A of Regulatory Guide 1.23, Revision 1. These data are also used for the determination of short- and long-term diffusion estimates, as described in ER Subsections 2.7.6 and 2.7.7, respectively.

Additional information on tower instrumentation, including wind, temperature, precipitation, and solar system, as well as maintenance, data reduction, and measurement accuracy can be found in ER Section 6.4.

2.7.6 SHORT-TERM DIFFUSION ESTIMATES

2.7.6.1 Objective

Conservative estimates of the local atmospheric dilution factors (Chi/Q) for LNP 1 and LNP 2 were made using an atmospheric dispersion model and on-site meteorological data for the period from February 1, 2007, through January 31,

2009. These data were prepared using 11 wind speed categories (including a calm wind category) and were formatted for use in NRC's PAVAN dispersion model. The wind speed categories are the same as recommended in NRC Regulatory Guide 1.23, Revision 1, with the exception that the first two non-calm wind speed categories (less than or equal to 0.5 and 0.5 – 1.0 m/s) were combined and assigned to a wind speed category of 1.0 – 1.05 m/s, effectively assigning all non-calm winds speeds that are recorded as less than 1.0 m/s to a wind speed of 1.0 – 1.05 m/s for modeling purposes. All wind speeds below the manufacturer's stated instrument threshold wind speed (calm winds) were included in the less than 1.0 m/s wind speed category for modeling purposes. This is an exception to NRC Regulatory Guide 1.23, Revision 1, which provides guidance for the use of 11 wind speed categories (plus calms). This change was made in recognition of an unusually high frequency of occurrence of observed light winds at the LNP site. While almost no true "calm" winds were observed (that is, no detectable wind speed) during the period of record, approximately 19 percent of all observed winds at the lower wind speed sensor were observed to be in the range of greater than 0 to less than 1.0 m/s.

2.7.6.2 X/Q Estimates Using the PAVAN Computer Code and On-Site Data

The PAVAN computer code was used to calculate short-term accident X/Q values for the LNP 1 and LNP 2 at the EAB and LPZ. Input to the PAVAN model consisted of the following information:

- Meteorological Data: Joint frequency distribution of wind speed, wind direction, and atmospheric stability for 16 standard azimuthal sectors. Period of record February 1, 2007, to January 31, 2009 (Table 2.7-56).
- Wind Sensor Height: Lower — 10 m (33 ft.).
- Delta-Temperature Heights: 10 – 60 m (33 – 197 ft.).
- Number of Wind Speed Categories: 11 (including calm category).
- Minimum Building Cross-Section: 2730 m^2 (29,385 $ft.^2$) (DCD Figure 3.8.2-1).
- Containment Height: 43.9 m (144 ft.) (DCD Figure 3.8.2-1).
- Release Height: 10 m (33 ft.) (ground level default height).

Based on the locations of the LNP 1 and LNP 2 with respect to the meteorological tower, the atmospheric diffusion parameters, sigma y and sigma z, are not expected to be unduly influenced by the meteorological or topographical conditions in the vicinity of the LNP site. Therefore, no modifications were made to the atmospheric dispersion parameters, sigma y and sigma z.

2.7.6.3 X/Q Estimates for Short-Term Diffusion Calculations

The 50-percent EAB and LPZ Chi/Q values were determined from the PAVAN output and by logarithmic interpolation. The conservative reported 0- to 2-hour 50-percent values at the EAB (without building wake) are 7.81E-05 seconds per cubic meter (sec/m^3) and 1.96E-05 sec/m^3, respectively. The remaining values for the longer time periods for the LPZ are determined using the 0- to 2-hour 50-percent LPZ value and the LPZ average annual value of 4.79E-07 sec/m^3 from the PAVAN output by logarithmic interpolation at the intermediate time periods of 8 hours, 16 hours, 72 hours, and 624 hours. The values are shown in Table 2.7-57.

2.7.7 LONG-TERM DIFFUSION ESTIMATES

2.7.7.1 Objective

Estimates of long-term X/Q and relative deposition (D/Q) were made using a straight-line Gaussian model, consistent with the requirements of NRC Regulatory Guides 1.109 and 1.111. The objective was to calculate X/Q and D/Q values at the following locations in each of the 16 primary directions, including:

- EAB (as described in ER Subsection 2.7.6.2).
- LPZ (as measured from the site centerpoint).
- Distance to nearest milk cow.
- Distance to nearest milk goat.
- Distance to nearest garden.
- Distance to nearest meat animal.
- Distance to nearest residence.
- Distances of 0.8, 1.2, 1.6, 2.4, 3.2, 4.0, 4.8, 5.6, 6.4, 7.2, 8.0, 12.0, 16.0, 22.5, 32.0, 40.0, 48.0, 56.0, 64.0, 72.0, and 80.0 km (0.5, 0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 7.5, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0, 45.0, and 50.0 mi.) from the LNP site.

ER Subsection 2.7.7.2 provides additional information on the calculations and results of long-term X/Q estimates for the LNP site.

2.7.7.2 Calculations

The calculations of X/Q and D/Q values at the locations and distances listed above were made using NRC's XOQDOQ computer program using 2 years of hourly meteorological data.

Assumptions used in the analysis are summarized below:

- Meteorological Data Source – LNP on-site meteorological tower.
- Period of Record – February 1, 2007, to January 31, 2009.
- Wind Reference Level – 10 m (33 ft.).
- Stability Calculation – Delta-Temperature (10- and 60-m [33- and 197-ft.] tower levels).
- Release Type – Ground level.
- Release Height – 10 m (33 ft.).
- Building Wake Effects – Included (see Subsection 2.7.6.2).
- For sectors containing nearest milk cow, milk goat, garden, meat animal, and residence, it was assumed that if these did not exist within 8 km (5 mi.) of the LNP site, 8 km (5 mi.) was assumed as the location of the receptor.

Based on the location of LNP 1 and LNP 2 with respect to surrounding topography, the atmospheric diffusion parameter, sigma z, is not expected to be significantly influenced by the topographical conditions. Therefore, no modifications were made to this atmospheric dispersion parameter.

The results of the long-term X/Q and D/Q have been summarized in Tables 2.7-58, 2.7-59, 2.7-60, and 2.7-61. Table 2.7-58 contains the X/Q calculations for routine releases, and Table 2.7-59 contains D/Q calculations for routine releases accounting for deposition effects. Table 2.7-60 contains X/Q calculations based on radioactive decay with an overall half-life of 2.26 days for short-lived noble gases. Table 2.7-61 contains X/Q calculations based on radioactive decay with an 8-day half-life for all iodines released to the atmosphere.

Based on these analyses, the established site characteristic value for the maximum average annual dispersion factor at the EAB is a value of 2.0E-05 sec/m^3 for any given sector (based on west-southwest sector; refer to Table 2.7-58).

2.7.8 REFERENCES

2.7-001 Gale Research Company, *Climates of the States*, Third Edition, 1985, Volume 1, Alabama – New Mexico, ISBN 0-8103-1042-2.

2.7-002 Gale Research Company, *Weather of U.S. Cities*, Fourth Edition, 1992, ISBN 0-8103-4827-6.

2.7-003 National Oceanic and Atmospheric Administration, National Climatic Data Center, "2006 Local Climatological Data, Annual Summary with Comparative Data, Gainesville, Florida," 2006.

2.7-004 National Oceanic and Atmospheric Administration, National Climatic Data Center, "2006 Local Climatological Data, Annual Summary with Comparative Data, Jacksonville, Florida," 2006.

2.7-005 National Oceanic and Atmospheric Administration, National Climatic Data Center, "2006 Local Climatological Data, Annual Summary with Comparative Data, Orlando, Florida," 2006.

2.7-006 National Oceanic and Atmospheric Administration, National Climatic Data Center, "2006 Local Climatological Data, Annual Summary with Comparative Data, Tallahassee, Florida," 2006.

2.7-007 National Oceanic and Atmospheric Administration, National Climatic Data Center, "2006 Local Climatological Data, Annual Summary with Comparative Data, Tampa, Florida," 2006.

2.7-008 U.S. Environmental Protection Agency, "EPA Green Book for Currently Designated Nonattainment Areas for All Criteria Pollutants," Website, www.epa.gov/air/oaqps/greenbk/mapnmpoll.html, accessed August 17, 2007.

2.7-009 Florida Department of Environmental Protection, "Air Resource Management: Air Monitoring," Website, www.dep.state.fl.us/air/monitoring.htm, accessed November 1, 2007.

2.7-010 U.S. Environmental Protection Agency, "Air Data: Monitor Locator Map – Criteria Air Pollutants," Website, http://www.epa.gov/cgi-bin/broker?_service=airdata&_program=progs.webprogs.monloc.scl&_debug=2&geotype=co&geocode=12001+12017+12029+12041+12053+12069+12075+12083+12101+12119&geoname=Alachua+Co%2C+Citrus+Co%2C+Dixie+Co%2C+Gilchrist+Co%2C+Hernando+Co%2C+Lake+Co%2C+Levy+Co%2C+Marion+Co%2C+Pasco+Co%2C+Sumter+Co%2C+Florida&mpols=CO+NO2+O3+SO2+PM2.5+PM10+PB&mtyps=&myrs=2008&mexc=&exc=&geofeat=&mapsize=zsc&reqtype=viewmap, accessed November 1, 2007.

2.7-011 American Meteorological Society, “Glossary of Meteorology, Definition of Thunderstorm,” Website, amsglossary.allenpress.com/glossary/search?id=thunderstorm1, accessed March 20, 2008.

2.7-012 National Oceanic and Atmospheric Administration, National Climatic Data Center, “A Comprehensive Glossary of Weather Terms for Storm Spotters,” Definition of Severe Thunderstorm, Technical Memorandum NWS SR-145, Website, www.srh.noaa.gov/oun/severewx/glossary4.php, accessed December 18, 2006.

2.7-013 National Oceanic and Atmospheric Administration, National Climatic Data Center, “U.S. Storm Event Database, Hail Storm Events,” Website, www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms, accessed July 17, 2007.

2.7-014 Marshall, J.L., “Probability of a Lightning Strike, Lightning Protection,” 1973, Chapter 3, John Wiley and Sons, New York, New York, in Carolina Power and Light Company, “Shearon Harris Nuclear Power Plant Final Safety Analysis Report,” 1983.

2.7-015 National Oceanic and Atmospheric Administration, National Climatic Data Center, “U.S. Storm Event Database, Tornadoes,” Website, www4.ncdc.noaa.gov/cgi-win/ www.dll?wwevent~storms, accessed July 17, 2007.

2.7-016 Fujita, T.T., “U.S. Tornadoes, Part 1, 70-year Statistics,” 1987, Satellite and Mesometeorology Research Project, Research Paper 218, Published by University of Chicago, Illinois, in “The Fujita Tornado Scale,” Website, www.lwf.ncdc.noaa.gov/oa/satellite/satelliteseye/educational/fujita.html, accessed December 11, 2006.

2.7-017 Gaya, M., Ramis, C., Romero, R., and C.A. Doswell, “Tornadoes in the Balearic Islands (Spain): Meteorological Setting,” 1997, Website, cimms.ou.edu/~doswell/Mallorca/Balearic_tornadoes.html, accessed December 20, 2006.

2.7-018 American Society of Civil Engineers, “Minimum Design Loads for Buildings and Other Structures,” ASCE/SEI-7-05, 2006.

2.7-019 National Oceanic and Atmospheric Administration, National Climatic Data Center, Engineering Weather Data, “2000 Interactive Edition CD-ROM,” 2000, developed by the Air Force Combat Climatological Center as EWD Products Version 1.0, Climate Services Division.

2.7-020 National Oceanic and Atmospheric Administration, National Weather Service Forecast Office, "Atlantic Tropical Storms and Hurricanes Affecting the United States: 1899-2002," Website, www.srh.noaa.gov/lch/research/tropical4.php, accessed August 29, 2007.

2.7-021 Hosler, C.R. "Low-Level Inversion Frequency in the Contiguous United States," in Monthly Weather Review, Volume 89, pp. 319-339, September 1961.

2.7-022 Holzworth, G.C., "Estimates of Mean Maximum Mixing Depths in the Contiguous United States," in Monthly Weather Review, Volume 92(5), pp. 235-242, May 1964.

2.7-023 Holzworth, G.C., "Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States," AP-101, January 1972, U.S. Environmental Protection Agency, Office of Air Programs, Research Triangle Park, North Carolina.

2.7-024 National Oceanic and Atmospheric Administration, National Climatic Data Center, "Solar and Meteorological Surface Observation Network (SAMSON), 1961 – 1990," September 1993, Asheville, North Carolina.

2.7-025 American Meteorological Society, "Glossary of Meteorology, Definition of Fog," Website, amsglossary.allenpress.com/glossary/search?id=fog1, accessed March 20, 2008.

2.7-026 National Climatic Data Center, "Location of US Climate Divisions," Website, www.cdc.noaa.gov/data/usclimate/map.html, accessed July 14, 2009.

2.7-027 National Institute of Standards and Technology, "Extreme Wind Speed Data Sets: Texas Tech/CSU for Tampa, FL," Website, www.itl.nist.gov/div898/winds/nistttu.htm, accessed July 14, 2009.

2.7-028 National Oceanic and Atmospheric Adiminstration, Coastal Services Center, "Historical Hurricane Tracks," Website, www.maps.csc.noaa.gov/hurricanes, Accessed July 14, 2009.

2.7-029 National Oceanic and Atmospheric Administration, National Climatic Data Center, "Climate Monitoring Reports, Climate of 2003: Atlantic Hurricane Season Reports," Website, www.ncdc.noaa.gov/oa/climate/research/2003/hurricanes03.html, accessed July 14, 2009.

2.7-030 National Oceanic and Atmospheric Administration, National Climatic Data Center, "Climate Monitoring Reports, Climate of 2004: Atlantic Hurricane Season Reports," Website, www.ncdc.noaa.gov/oa/climate/research/2004/hurricanes04.html, accessed July 14, 2009.

2.7-031 National Oceanic and Atmospheric Administration, National Climatic Data Center, "Climate Monitoring Reports, Climate of 2005: Atlantic Hurricane Season Reports," Website, www.ncdc.noaa.gov/oa/climate/research/2005/hurricanes05.html, accessed July 14, 2009.

2.7-032 National Oceanic and Atmospheric Administration, National Climatic Data Center, "Climate Monitoring Reports, Climate of 2006: Atlantic Hurricane Season Reports," Website, www.ncdc.noaa.gov/oa/climate/research/2006/hurricanes06.html, accessed July 14, 2009.

2.7-033 National Oceanic and Atmospheric Administration, National Climatic Data Center, "Climate Monitoring Reports, Climate of 2007: Atlantic Hurricane Season Reports," Website, www.ncdc.noaa.gov/oa/climate/research/2007/hurricanes07.html, accessed July 14, 2009.

Table 2.7-1
Regional Meteorological Observation Station Locations

	Latitude		Longitude		Distance from LNP Site [(a)]	Direction from LNP Site [(a)]
Station	**Degree**	**Minute**	**Degree**	**Minute**	**Km (Mi.)**	**(Compass)**
Gainesville, FL	29	41	-82	16	76 (47)	NNE
Jacksonville, FL	30	29	-81	41	181 (112)	NE
Orlando, FL	28	26	-81	19	146 (91)	ESE
Tallahassee, FL	30	23	-84	21	222 (138)	NW
Tampa, FL	27	57	-82	32	125 (78)	S

Notes:

a) See Figure 2.7-1.

E = east
km = kilometer
mi. = mile
N = north
S = south
W = west

Sources: References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007

Table 2.7-2 (Sheet 1 of 3)
Climatological Data from Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, Florida

	Station									
Parameter	**Gainesville**	**POR (years)**	**Jacksonville**	**POR (years)**	**Orlando**	**POR (years)**	**Tallahassee**	**POR (years)**	**Tampa**	**POR (years)**
Location										
Distance from LNP Site (mi.)	47		112		91		138		78	
Direction from LNP Site	NNE		NE		ESE		NW		S	
Elevation Above Mean Sea Level (ft.)	134		26		90		57		8	
Temperature										
Average Annual Observed (°F)	68.7	25	68.8	59	72.5	54	67.6	59	72.3	74
Maximum Observed (°F)	108 (7/2000)	23	105 (7/1942)	65	102 (5/1945)	64	103 (7/2000)	46	99 (6/1985)	60
Minimum Observed (°F)	10 (1/1985)	23	7 (1/1985)	65	19 (1/1985)	64	6 (1/1985)	46	18 (12/1962)	60
Normal Degree days/year (heating)	1143	30	1354	30	580	30	1604	30	591	30
Normal Degree days/year (cooling)	2659	30	2627	30	3428	30	2551	30	3482	30
Relative Humidity (%)										
Annual average at 7 A.M.	93	30	91	30	91	30	91	30	88	30
Annual average at 1 P.M.	59	30	58	30	56	30	55	30	59	30
Wind										
Annual average speed (mph)	6.3	23	6.8	23	7.9	23	5.6	23	7.1	23

Table 2.7-2 (Sheet 2 of 3)
Climatological Data from Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, Florida

	Station									
Parameter	Gainesville	POR (years)	Jacksonville	POR (years)	Orlando	POR (years)	Tallahassee	POR (years)	Tampa	POR (years)
Prevailing direction	ENE	23	NE	39	N	41	N	31	ENE	38
Fastest mile/Peak gust										
Speed (mph) [(a)]	64 (9/2004)	8	77 (7/1998)	10	105 (8/2004)	10	83 (9/1990)	10	98 (5/1979)[b]	11
Direction [(a)]	NE	8	W	10	ESE	10	ESE	10	NNW	11
Precipitation (in.)										
Annual average	48.36	30	52.34	30	48.35	30	63.21	30	44.77	30
Monthly maximum	16.45 (9/2004)	23	19.36 (9/1949)	65	19.57 (7/1960)	64	20.12 (7/1964)	46	20.59 (7/1960)	60
Monthly minimum	T (10/1987)	23	0.04 (12/1956)	65	T (12/1944)	64	T (10/1987)	46	T (3/2006)	60
24-hour maximum	6.16 (9/1988)	23	10.17 (9/1950)	65	9.67 (9/1945)	64	10.13 (7/2001)	46	12.11 (7/1960)	60
Maximum annual	58.37 (2004)	23	79.63 (1991)	30	67.85 (1994)	30	104.18 (1964)	46	67.71 (1997)	30
Snowfall (in.)										
Annual average	0.0	30	0.0	30	0.0	30	0.0	30	0.0	30
Monthly maximum	T (4/1997)	15	1.5 (2/1958)	60	T (5/1997)	34	1.0 (12/1989)	36	0.2 (1/1977)	60
Maximum 24-hour	T (4/1997)	15	1.5 (2/1958)	60	T (5/1997)	34	1.0 (12/1989)	36	0.2 (1/1977)	60

Table 2.7-2 (Sheet 3 of 3)
Climatological Data from Gainesville, Jacksonville, Orlando, Tallahassee, and Tampa, Florida

	Station									
Parameter	**Gainesville**	**POR (years)**	**Jacksonville**	**POR (years)**	**Orlando**	**POR (years)**	**Tallahassee**	**POR (years)**	**Tampa**	**POR (years)**
Mean Annual (number of days)										
Precipitation ≥ 0.01 in.	125.4	30	115.9	30	117.0	30	113.5	30	104.3	30
Snow, sleet, hail ≥ 1.0 in.	0.0	30	0.0	30	0.0	30	0.0	30	0.0	30
Heavy fog (visibility ≤ 0.25 mi.)	46.5	23	39.3	43	18.0	39	49.8	43	15.3	43
Maximum temperature ≥ 90°F	89.5	30	78.4	30	108.7	30	92.2	30	90.0	30
Minimum temperature ≤ 32°F	11.7	30	18.3	30	2.7	30	34.4	30	2.7	30

Notes:

a) Reported wind speeds are the higher of peak gust, 3-second gust, or 5-second gust.
b) See National Institute of Standards and Texhnology (NIST) database of peak gust wind speeds. (Reference 2.7-027)

°F = degrees Fahrenheit
E = east
ft. = foot
in. = inch
mi. = mile
mph = miles per hour
N = north
POR = period of record
S = south
T = trace amount
W = west

Sources: References 2.7-001, 2.7-002, 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007

Table 2.7-3
Summary of Reported Tornado Occurrences in Florida

Tornado Intensity (Fujita Tornado Scale)	Number of Reported Occurrences January 1, 1950, to March 31, 2007
F	150
F0	1559
F1	819
F2	327
F3	42
F4	4
F5	0
Waterspouts	10

Notes:

F = Fujita tornado scale intensity was not available for these storm events.
F0 = 40 – 72 mph
F1 = 73 – 112 mph
F2 = 13 – 157 mph
F3 = 158 – 206 mph
F4 = 207 – 260 mph
F5 = 261 – 318 mph

mph = miles per hour

Source: Reference 2.7-015

Table 2.7-4
Summary of Reported Tornado Occurrences in Levy and Surrounding Counties

County	F0	F1	F2	F3	F4	F5	Number of Reported Occurrences (1950 to 2007)
Levy	11 (1)	7	2	0	0	0	21
Dixie	2	1	0	0	0	0	3
Gilchrist	1	0	2	0	0	0	3
Alachua	18 (1)	12	8	0	0	0	39
Marion	22	22	9	1	0	0	54
Lake	17 (3)	18	7	3	0	0	48
Sumter	6 (1)	1	3	1	0	0	12
Citrus	30 (1)	11	2	1	0	0	45
Hernando	25	7	0	0	0	0	32
Pasco	51 (5)	17	6	0	0	0	79

Notes:

These statistics are based on the reporting periods between January 1, 1950 and March 31, 2006. Numbers listed in parentheses indicate tornadoes reported without a Fujita scale intensity ("F" instead of "F0").

F0 = 40 – 72 mph
F1 = 73 – 112 mph
F2 = 13 – 157 mph
F3 = 158 – 206 mph
F4 = 207 – 260 mph
F5 = 261 – 318 mph

Source: Reference 2.7-015

Table 2.7-5 (Sheet 1 of 3)
Reported Tornado Occurrences in Florida: January 1950 to March 31, 2007

Year	F0	F1	F2	F3	F4	F5	Waterspouts	Total
1950	(1)	3	2	0	0	0	0	6
1951	(1)	4	4	0	0	0	0	9
1952	1	6	3	0	0	0	0	10
1953	5 (2)	8	6	0	0	0	0	21
1954	5 (2)	2	3	1	0	0	0	13
1955	1 (6)	3	2	0	0	0	0	12
1956	3 (1)	0	4	2	0	0	0	10
1957	3 (4)	4	6	0	0	0	0	17
1958	2 (6)	9	4	5	1	0	0	27
1959	2 (5)	5	5	1	0	0	0	18
1960	6 (4)	10	10	1	0	0	0	31
1961	3 (6)	7	8	0	0	0	0	24
1962	3 (1)	6	7	1	0	0	0	18
1963	(7)	10	11	0	0	0	0	28
1964	2 (8)	14	12	1	0	0	0	37
1965	1 (2)	4	4	1	0	0	0	12
1966	4 (10)	9	4	0	3	0	0	30
1967	(6)	5	9	3	0	0	0	23
1968	7 (14)	27	13	0	0	0	0	61
1969	6 (21)	20	11	0	0	0	0	58
1970	2 (23)	10	12	1	0	0	0	48
1971	16	25	16	1	0	0	0	58
1972	18	27	30	2	0	0	0	77
1973	16	18	16	0	0	0	0	50
1974	24	28	6	0	0	0	0	58
1975	42	55	6	1	0	0	0	104
1976	54	13	0	0	0	0	0	67
1977	26	8	1	0	0	0	0	35
1978	62 (1)	21	9	1	0	0	0	94

Table 2.7-5 (Sheet 2 of 3)
Reported Tornado Occurrences in Florida: January 1950 to March 31, 2007

Year	F0	F1	F2	F3	F4	F5	Waterspouts	Total
1979	39 (13)	31	7	0	0	0	0	90
1980	20	38	1	1	0	0	0	60
1981	31	25	4	1	0	0	0	61
1982	31	32	8	0	0	0	0	71
1983	19	50	23	1	0	0	0	93
1984	19	10	1	1	0	0	0	31
1985	20	14	1	1	0	0	0	36
1986	40	10	3	0	0	0	0	53
1987	36	7	2	0	0	0	0	45
1988	27	14	5	1	0	0	0	47
1989	60	9	3	0	0	0	0	72
1990	51	6	0	0	0	0	0	57
1991	46	10	0	0	0	0	0	56
1992	46	11	2	1	0	0	0	60
1993	36 (2)	12	4	0	0	0	1	57
1994	41 (1)	5	1	0	0	0	4	52
1995	67 (3)	14	4	0	0	0	5	93
1996	58	7	5	0	0	0	0	70
1997	88	25	2	1	0	0	0	116
1998	70	32	7	6	0	0	0	115
1999	49	11	1	0	0	0	0	61
2000	65	12	1	0	0	0	0	78
2001	53	14	6	0	0	0	0	73
2002	36	8	0	0	0	0	0	44
2003	35	8	2	0	0	0	0	45
2004	77	26	4	0	0	0	0	107
2005	45	9	2	0	0	0	0	56
2006	33	5	4	0	0	0	0	42
2007 [(a)]	7	3	0	5	0	0	0	15

Table 2.7-5 (Sheet 3 of 3)
Reported Tornado Occurrences in Florida: January 1950 to March 31, 2007

Year	F0	F1	F2	F3	F4	F5	Waterspouts	Total
Total	1559 (150)	819	327	42	4	0	10	2911
Average	26.88 (2.59)	14.12	5.64	0.72	0.07	0	0.17	50.19

Notes:

Numbers listed in parentheses indicate tornadoes reported without a Fujita scale intensity (“F” instead of “F0”).

F0 = 40 – 72 miles per hour (mph)
F1 = 73 – 112 mph
F2 = 13 – 157 mph
F3 = 158 – 206 mph
F4 = 207 – 260 mph
F5 = 261 – 318 mph

a) Data for 2007 are through March 31, 2007.

Source: Reference 2.7-015

Table 2.7-6 (Sheet 1 of 3)
Reported Tropical Storm and Hurricane Occurrences in Florida
Period of Record: 1899 to 2007

Year	TS	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Total
1899	2	0	0	0	0	0	2
1900	1	0	0	0	0	0	1
1901	3	0	0	0	0	0	3
1902	1	0	0	0	0	0	1
1903	0	0	1	0	0	0	1
1904	1	0	0	0	0	0	1
1906	2	1	1	0	0	0	4
1907	2	0	0	0	0	0	2
1909	3	0	0	1	0	0	4
1910	0	0	0	1	0	0	1
1911	0	1	0	0	0	0	1
1914	1	0	0	0	0	0	1
1915	1	1	0	0	0	0	2
1916	1	1	1	0	0	0	3
1917	0	0	0	1	0	0	1
1919	1	0	0	0	1	0	2
1920	1	0	0	0	0	0	1
1921	0	0	0	1	0	0	1
1924	0	2	0	0	0	0	2
1925	0	1	0	0	0	0	1
1926	0	0	1	0	1	0	2
1928	1	0	1	0	1	0	3
1929	0	0	0	1	0	0	1
1930	1	0	0	0	0	0	1
1932	2	0	0	0	0	0	2
1933	1	1	0	1	0	0	3
1934	2	0	0	0	0	0	2
1935	0	0	1	0	0	1	2
1936	2	0	0	1	0	0	3

Table 2.7-6 (Sheet 2 of 3)
Reported Tropical Storm and Hurricane Occurrences in Florida
Period of Record: 1899 to 2007

Year	TS	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Total
1937	3	0	0	0	0	0	3
1938	1	0	0	0	0	0	1
1939	0	1	0	0	0	0	1
1940	1	0	0	0	0	0	1
1941	1	0	1	0	0	0	2
1944	0	0	0	1	0	0	1
1945	1	1	0	1	0	0	3
1946	1	1	0	0	0	0	2
1947	2	1	0	0	1	0	4
1948	1	0	1	1	0	0	3
1949	0	0	0	1	0	0	1
1950	2	0	0	2	0	0	4
1951	1	0	0	0	0	0	1
1952	1	0	0	0	0	0	1
1953	4	1	0	0	0	0	5
1956	0	1	0	0	0	0	1
1957	2	0	0	0	0	0	2
1959	2	0	0	0	0	0	2
1960	0	0	0	0	1	0	1
1964	0	0	3	0	0	0	3
1965	1	0	0	1	0	0	2
1966	0	1	1	0	0	0	2
1968	1	0	1	0	0	0	2
1969	1	0	0	0	0	0	1
1970	1	0	0	0	0	0	1
1972	0	1	0	0	0	0	1
1975	0	0	0	1	0	0	1
1976	1	0	0	0	0	0	1

Table 2.7-6 (Sheet 3 of 3)
Reported Tropical Storm and Hurricane Occurrences in Florida
Period of Record: 1899 to 2007

Year	TS	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Total
1979	0	0	1	0	0	0	1
1981	1	0	0	0	0	0	1
1983	1	0	0	0	0	0	1
1984	1	0	0	0	0	0	1
1985	3	0	1	0	0	0	4
1987	0	1	0	0	0	0	1
1988	1	0	0	0	0	0	1
1990	1	0	0	0	0	0	1
1992	0	0	0	0	0	1	1
1994	3	0	0	0	0	0	3
1995	2	0	1	1	0	0	4
1996	1	0	0	0	0	0	1
1997	1	0	0	0	0	0	1
1998	1	1	1	0	0	0	3
1999	1	1	0	0	0	0	2
2000	2	0	0	0	0	0	2
2001	2	0	0	0	0	0	2
2002	1	0	0	0	0	0	1
2003	0	0	0	0	0	0	0
2004	1	0	1	1	1	0	4
2005	2	0	1	2	0	0	5
2006	2	0	0	0	0	0	2
2007	1	0	0	0	0	0	1
Total	85	19	19	19	6	2	150

Notes:

TS (Tropical Storm) = 39 – 73 miles per hour (mph)
Category 1 = 74 – 95 mph
Category 2 = 96 – 100 mph
Category 3 = 111 – 130 mph
Category 4 = 131 – 155 mph
Category 5 = greater than 155 mph

Source: Reference 2.7-020

Table 2.7-7
Seasonal Frequencies of Inversions below 152 m (500 ft.) in Tampa, Florida

	Percent Frequency of Inversions Based Below 152 m (500 ft.)				
Season	0300 GMT	1500 GMT	0000 GMT	1200 GMT	All Times
Winter	69	17	28	60	37
Spring	59	1	7	52	30
Summer	62	8	14	57	28
Fall	63	2	25	76	38

Notes:

ft. = foot
GMT = Greenwich Mean Time
m = meter

Source: Reference 2.7-021

Table 2.7-8
Mean Monthly Mixing Depths at Tampa, Florida

Month	Depth (m)
January	730
February	950
March	940
April	1310
May	1410
June	1360
July	1310
August	1290
September	1270
October	1290
November	1000
December	810

Notes:

m = meter

Source: Reference 2.7-022

Table 2.7-9
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, Category A

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.5-1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.1-1.5	0	1	0	2	1	0	1	1	0	1	0	3	2	4	1	0	17
1.6-2.0	4	2	2	4	4	0	3	2	3	1	1	5	2	5	6	0	44
2.1-3.0	8	22	16	15	18	9	3	4	2	5	20	21	30	12	11	17	213
3.1-4.0	8	11	30	34	28	11	3	8	7	6	43	106	98	11	13	19	436
4.1-5.0	3	9	11	35	42	13	0	1	3	18	38	77	53	4	6	14	327
5.1-6.0	0	0	7	18	19	1	0	0	3	6	11	19	32	2	0	0	118
6.1-8.0	0	0	0	4	6	0	0	0	0	1	1	1	10	2	0	0	25
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	23	45	66	112	118	34	10	16	18	38	114	232	230	40	37	50	1183

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 0

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-10
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, Category B

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.5-1.0	0	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0	4
1.1-1.5	4	4	5	5	2	0	1	2	4	1	0	2	3	1	3	4	41
1.6-2.0	3	11	9	12	8	4	2	8	5	2	3	5	5	6	5	8	96
2.1-3.0	20	21	41	25	34	16	16	16	2	9	33	39	54	15	24	23	388
3.1-4.0	18	21	34	49	59	34	14	6	7	7	34	70	72	5	9	12	451
4.1-5.0	6	8	23	25	29	6	2	0	1	10	8	19	32	4	1	5	179
5.1-6.0	0	1	10	11	4	3	0	0	2	6	2	3	4	0	0	0	46
6.1-8.0	0	0	0	2	0	1	0	0	0	5	0	0	4	2	0	0	14
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	51	66	124	129	137	64	35	32	21	40	80	139	174	33	42	52	1219

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 0

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-11
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, Category C

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.5-1.0	3	1	0	0	0	0	1	1	0	0	0	1	1	2	3	2	15
1.1-1.5	7	7	6	7	11	3	4	4	6	10	4	6	8	7	7	7	104
1.6-2.0	9	22	10	14	18	15	12	8	10	9	11	14	12	11	6	16	197
2.1-3.0	30	37	39	53	55	24	23	14	18	16	37	53	77	22	13	22	533
3.1-4.0	8	14	43	52	49	24	11	13	10	13	19	53	74	3	3	9	398
4.1-5.0	2	8	21	27	29	11	3	2	2	8	11	14	18	1	0	4	161
5.1-6.0	0	2	6	7	6	1	0	0	3	10	4	0	3	0	0	1	43
6.1-8.0	0	0	0	2	1	0	0	0	0	3	0	1	1	0	0	0	8
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	59	91	125	162	169	78	54	42	49	69	86	142	196	46	32	61	1461

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 1

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-12
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, Category D

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	1	0	0	3	1	0	1	2	1	3	0	1	1	2	1	17
0.5-1.0	23	10	18	16	22	14	13	12	15	17	15	17	10	9	12	8	231
1.1-1.5	40	36	39	26	24	22	31	25	30	20	37	37	27	26	34	27	481
1.6-2.0	50	54	80	60	73	31	31	21	17	28	42	52	61	35	34	35	704
2.1-3.0	102	112	197	196	142	94	51	32	48	59	73	147	198	44	32	54	1581
3.1-4.0	42	73	127	118	113	46	40	18	22	68	39	95	83	11	24	25	944
4.1-5.0	19	30	50	69	52	25	10	8	27	48	27	29	24	12	8	7	445
5.1-6.0	0	1	13	20	22	9	1	1	12	27	12	11	18	2	0	3	152
6.1-8.0	0	0	1	0	4	1	0	0	4	11	8	9	10	1	0	0	49
8.1-10.0	0	0	0	0	0	0	0	0	0	1	1	0	4	0	0	0	6
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	276	317	525	505	455	243	177	118	177	280	257	397	436	141	146	160	4610

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 49

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-13
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, Category E

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	6	5	5	4	3	2	4	4	4	3	3	2	3	3	5	2	58
0.5-1.0	21	60	72	72	62	42	56	53	28	25	34	37	35	52	39	17	705
1.1-1.5	34	82	133	147	133	83	53	35	38	26	47	49	39	32	21	27	979
1.6-2.0	40	51	127	134	126	58	46	14	38	19	19	31	32	15	28	30	808
2.1-3.0	61	82	101	123	131	62	42	17	30	34	9	22	26	12	35	30	817
3.1-4.0	8	15	11	17	23	10	3	1	17	6	3	12	7	2	4	8	147
4.1-5.0	1	0	3	5	1	3	1	2	6	1	0	3	1	5	1	2	35
5.1-6.0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	3
6.1-8.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1-10.0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	171	295	452	502	479	260	205	126	162	115	115	158	143	121	133	116	3553

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 227

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-14
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, Category F

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	5	8	6	18	8	7	8	7	8	8	3	1	4	7	7	1	106
0.5-1.0	21	34	74	109	100	40	32	28	16	16	22	14	25	29	20	19	599
1.1-1.5	29	26	39	119	103	43	12	10	8	7	11	9	6	5	13	18	458
1.6-2.0	15	10	5	31	44	14	3	2	2	0	1	2	2	1	2	10	144
2.1-3.0	1	2	0	0	7	1	0	0	1	2	3	1	3	0	1	0	22
3.1-4.0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3
4.1-5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.1-6.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1-8.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	71	80	124	277	262	105	55	47	35	33	41	27	41	42	44	48	1332

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 643

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-15
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, Category G

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	5	1	16	36	34	6	7	7	6	0	3	1	3	5	6	2	138
0.5-1.0	19	15	32	107	97	49	22	14	11	9	2	4	5	8	27	16	437
1.1-1.5	8	2	7	42	32	10	2	3	2	1	1	1	3	2	3	8	127
1.6-2.0	3	0	0	5	3	2	0	0	0	1	0	0	0	0	1	1	16
2.1-3.0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
3.1-4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.1-5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.1-6.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1-8.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	35	18	55	190	166	69	31	24	19	11	6	6	11	15	37	27	720

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 2303

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-16
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	16	15	27	58	48	16	19	19	20	12	12	4	11	16	20	6	319
0.5-1.0	87	120	198	304	282	145	124	108	70	67	73	74	76	100	101	62	1991
1.1-1.5	122	158	229	348	306	161	104	80	88	66	100	107	88	77	82	91	2207
1.6-2.0	124	150	233	260	276	124	97	55	75	60	77	109	114	73	82	100	2009
2.1-3.0	222	276	394	412	387	208	135	83	101	125	175	283	388	105	116	146	3556
3.1-4.0	84	134	245	270	272	125	71	46	63	100	139	336	335	32	54	73	2379
4.1-5.0	31	55	108	161	153	58	16	13	39	85	84	142	128	26	16	32	1147
5.1-6.0	0	4	36	56	51	14	1	1	21	49	29	35	57	4	0	4	362
6.1-8.0	0	0	1	8	11	2	0	0	4	20	9	11	25	5	0	0	96
8.1-10.0	0	0	0	0	0	0	0	0	0	2	1	0	9	0	0	0	12
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	686	912	1471	1877	1786	853	567	405	481	586	699	1101	1231	438	471	514	14078

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 3223

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-17
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	2	0	2	6	0	2	1	0	0	0	1	1	2	1	5	2	25
0.5-1.0	8	6	8	21	14	9	8	6	6	0	10	6	6	19	15	8	150
1.1-1.5	12	14	10	22	24	12	1	4	7	4	12	6	6	16	7	7	164
1.6-2.0	11	7	8	12	29	8	9	2	2	4	11	10	10	7	10	9	149
2.1-3.0	23	13	18	16	32	17	13	10	5	16	18	16	35	16	13	16	277
3.1-4.0	4	5	15	3	12	9	6	7	9	27	21	34	27	5	13	5	202
4.1-5.0	0	1	5	2	6	6	1	2	7	14	6	8	16	6	5	2	87
5.1-6.0	0	0	0	0	0	0	0	0	5	12	6	5	17	0	0	0	45
6.1-8.0	0	0	0	0	0	0	0	0	0	5	2	0	3	0	0	0	10
8.1-10.0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	60	46	66	82	117	63	39	31	41	83	87	86	122	70	68	49	1110

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 256

a) Wind direction: E = east; N = north; S = south; W = west
m/s = meters per second

Table 2.7-18
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: March (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	2	1	2	6	7	0	0	0	0	0	1	0	2	0	1	2	24
0.5-1.0	10	3	20	32	26	12	7	2	3	6	2	3	6	11	8	7	158
1.1-1.5	5	10	16	31	44	13	6	0	3	2	2	3	5	6	5	6	157
1.6-2.0	9	10	13	43	33	16	11	5	2	4	0	4	14	9	4	3	180
2.1-3.0	22	10	19	41	57	24	21	5	16	10	4	14	26	8	7	11	295
3.1-4.0	3	7	27	42	40	16	11	8	2	8	3	16	37	4	3	6	233
4.1-5.0	8	5	11	19	28	17	6	3	8	8	7	8	11	1	0	5	145
5.1-6.0	0	0	4	1	9	3	0	1	9	13	3	0	9	0	0	1	53
6.1-8.0	0	0	0	0	3	0	0	0	1	12	0	0	5	1	0	0	22
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	59	46	112	215	247	101	62	24	44	63	22	48	121	40	28	41	1273

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 190

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-19
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: April (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	1	0	1	3	2	1	2	3	0	3	0	1	0	3	3	0	23
0.5-1.0	5	14	12	17	33	10	7	7	4	2	2	4	7	15	14	4	157
1.1-1.5	13	9	12	10	11	15	11	4	4	1	4	9	12	9	6	10	140
1.6-2.0	16	6	16	12	11	9	17	6	8	2	3	9	8	3	11	12	149
2.1-3.0	20	10	37	36	39	10	15	14	11	11	12	16	28	15	20	11	305
3.1-4.0	2	8	26	33	27	8	3	5	12	7	9	32	50	4	7	12	245
4.1-5.0	2	3	9	19	2	0	0	0	4	12	29	21	26	2	2	9	140
5.1-6.0	0	0	4	4	1	0	0	0	1	7	7	1	6	1	0	0	32
6.1-8.0	0	0	0	0	0	0	0	0	1	2	2	0	7	3	0	0	15
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	59	50	117	134	126	53	55	39	45	47	68	93	147	55	63	58	1209

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 175

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-20
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: May (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	2	3	4	2	2	1	2	0	1	2	0	3	4	2	0	28
0.5-1.0	1	5	6	30	14	7	2	3	3	7	5	8	5	10	9	3	118
1.1-1.5	7	7	17	44	23	16	7	1	6	5	14	7	7	9	7	4	181
1.6-2.0	2	6	9	22	28	9	12	2	5	2	7	10	12	4	3	4	137
2.1-3.0	8	16	22	30	52	20	9	4	4	7	9	36	34	4	7	8	270
3.1-4.0	1	4	14	32	57	24	3	2	1	1	14	57	43	3	2	7	265
4.1-5.0	0	0	7	27	45	10	0	0	1	4	8	23	25	0	0	0	150
5.1-6.0	0	0	4	13	19	1	0	0	0	0	9	7	13	0	0	0	66
6.1-8.0	0	0	0	5	6	0	0	0	0	0	0	8	2	0	0	0	21
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	19	40	82	207	246	89	34	14	20	27	68	156	144	34	30	26	1236

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 227

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-21
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: June (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	1	1	1	4	7	3	2	3	1	1	2	0	0	1	2	0	29
0.5-1.0	6	11	26	39	44	21	23	17	13	11	15	12	3	5	1	3	250
1.1-1.5	17	2	11	24	24	18	15	14	9	6	11	16	18	6	2	9	202
1.6-2.0	5	4	12	23	17	24	9	11	12	7	14	14	8	6	3	6	175
2.1-3.0	7	4	25	27	25	17	5	4	11	2	18	36	56	13	5	6	261
3.1-4.0	2	4	9	11	12	4	3	1	3	2	14	55	50	4	0	1	175
4.1-5.0	0	0	3	4	0	0	0	0	0	0	2	23	16	1	0	0	49
5.1-6.0	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	14
6.1-8.0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	38	26	87	132	129	88	57	50	49	29	76	170	152	36	13	25	1157

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 281

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-22
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: July (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	1	2	2	6	4	3	4	4	7	3	1	1	0	0	0	0	38
0.5-1.0	5	7	11	16	26	24	32	30	9	16	12	12	13	3	10	5	231
1.1-1.5	2	8	6	8	22	17	15	21	19	12	23	21	8	5	14	6	207
1.6-2.0	9	4	4	13	10	9	7	9	12	13	14	15	11	14	6	7	157
2.1-3.0	6	7	8	13	18	15	7	6	4	9	27	53	53	7	5	7	245
3.1-4.0	0	3	5	2	6	4	3	2	0	3	17	58	36	1	1	2	143
4.1-5.0	0	2	5	0	3	0	0	0	0	0	4	35	5	1	0	0	55
5.1-6.0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3
6.1-8.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	23	33	43	58	89	72	68	72	51	56	98	196	126	31	36	27	1079

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 381

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-23
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: August (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	2	2	4	3	2	4	6	2	2	0	1	0	0	0	28
0.5-1.0	8	10	8	27	29	21	18	17	12	12	10	8	9	5	4	4	202
1.1-1.5	4	9	11	12	35	18	7	10	9	11	11	16	6	4	10	6	179
1.6-2.0	3	3	5	13	25	15	9	6	4	4	7	15	14	7	3	5	138
2.1-3.0	1	9	10	25	27	31	16	10	7	6	19	38	53	6	2	18	278
3.1-4.0	9	4	3	18	25	11	11	1	1	3	10	47	27	1	9	7	187
4.1-5.0	2	1	0	7	4	0	5	2	0	3	3	12	15	5	5	0	64
5.1-6.0	0	0	0	1	4	0	0	0	2	0	3	2	3	0	0	0	15
6.1-8.0	0	0	0	0	2	0	0	0	0	0	4	1	4	0	0	0	11
8.1-10.0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	27	36	39	105	155	99	68	50	41	42	70	139	132	28	33	40	1104

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 380

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-24
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: September (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	5	5	7	8	3	2	1	1	1	0	1	0	0	0	2	0	36
0.5-1.0	8	26	36	18	18	13	6	5	2	3	1	3	2	5	4	3	153
1.1-1.5	5	22	33	40	26	14	15	6	8	5	2	7	9	5	0	2	199
1.6-2.0	10	22	29	21	19	2	5	3	3	4	1	3	10	5	3	6	146
2.1-3.0	23	51	47	65	31	15	7	4	8	3	7	15	30	9	4	8	327
3.1-4.0	4	9	35	39	47	14	6	1	1	5	3	10	19	0	3	5	201
4.1-5.0	5	1	27	30	26	11	1	0	0	1	0	0	0	0	0	0	102
5.1-6.0	0	0	9	10	9	0	0	0	2	0	0	0	0	0	0	0	30
6.1-8.0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	60	136	224	231	179	71	41	20	25	21	15	38	70	24	16	24	1195

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 239

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-25
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: October (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	2	2	2	6	3	0	2	0	0	1	0	0	0	4	3	0	25
0.5-1.0	11	15	30	20	19	6	2	8	2	1	1	5	1	5	10	3	139
1.1-1.5	20	26	43	55	17	7	6	4	7	4	0	4	1	3	7	5	209
1.6-2.0	11	20	48	45	24	5	2	2	6	2	1	4	5	7	10	12	204
2.1-3.0	11	45	92	58	36	18	7	6	3	6	2	4	17	8	13	12	338
3.1-4.0	4	34	51	45	19	8	3	1	2	3	10	4	11	0	3	4	202
4.1-5.0	0	24	28	33	28	4	0	0	0	0	2	1	4	0	1	1	126
5.1-6.0	0	1	6	15	8	1	0	0	0	0	0	0	1	0	0	0	32
6.1-8.0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	59	167	300	278	154	49	22	21	20	17	16	22	40	27	47	37	1276

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 193

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-26
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: November (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	4	1	0	0	0	2	0	0	1	2	1	2	1	14
0.5-1.0	11	8	13	28	13	4	3	4	3	3	4	2	7	7	15	8	133
1.1-1.5	17	19	30	26	11	6	7	3	2	2	4	6	5	5	9	16	168
1.6-2.0	24	24	55	21	7	2	3	3	4	7	3	8	5	5	9	13	193
2.1-3.0	48	54	51	38	11	5	9	3	10	15	11	14	24	6	11	19	329
3.1-4.0	10	28	27	21	6	3	2	1	13	12	7	7	14	2	2	6	161
4.1-5.0	7	5	6	12	3	0	0	0	6	4	3	4	0	1	1	8	60
5.1-6.0	0	2	2	4	0	0	0	0	1	3	0	1	1	0	0	0	14
6.1-8.0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	117	140	184	154	52	20	24	14	43	46	33	43	58	27	49	71	1075

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 335

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-27
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: December (2007 and 2008 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	2	3	1	7	0	1	2	0	0	1	0	0	1	0	0	18
0.5-1.0	8	5	16	40	27	10	8	7	5	4	7	5	5	7	7	4	165
1.1-1.5	12	16	22	55	58	19	4	3	5	9	10	9	4	6	4	12	248
1.6-2.0	7	23	23	23	48	17	11	3	3	4	8	7	10	3	8	8	206
2.1-3.0	23	20	24	28	39	23	20	7	7	11	23	18	15	2	8	17	285
3.1-4.0	13	10	10	14	15	17	14	13	8	7	14	9	10	6	9	5	174
4.1-5.0	0	7	1	1	1	4	3	4	2	8	7	0	8	3	0	0	49
5.1-6.0	0	0	0	0	0	3	0	0	0	1	1	3	4	1	0	0	13
6.1-8.0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	3
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	63	83	99	162	195	94	61	39	30	44	71	52	57	29	36	46	1161

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 305

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-28
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: January (2008 and 2009 Combined Hours of Occurrence)
Lower Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	2	0	2	8	8	0	3	0	3	1	1	0	1	1	0	1	31
0.5-1.0	6	10	12	16	19	8	8	2	8	2	4	6	12	8	4	10	135
1.1-1.5	8	16	18	21	11	6	10	10	9	5	7	3	7	3	11	8	153
1.6-2.0	17	21	11	12	25	8	2	3	14	7	8	10	7	3	12	15	175
2.1-3.0	30	37	41	35	20	13	6	10	15	29	25	23	17	11	21	13	346
3.1-4.0	32	18	23	10	6	7	6	4	11	22	17	7	11	2	2	13	191
4.1-5.0	7	6	6	7	7	6	0	2	11	31	13	7	2	6	2	7	120
5.1-6.0	0	1	5	8	1	6	1	0	1	13	0	2	2	2	0	3	45
6.1-8.0	0	0	0	2	0	0	0	0	0	1	0	0	3	1	0	0	7
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	102	109	118	119	97	54	36	31	72	111	75	58	62	37	52	70	1203

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 261

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-29
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, Category A

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**TOTAL**
<0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.5-1.0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
1.1-1.5	1	0	1	0	1	0	1	1	1	1	0	2	2	2	1	1	15
1.6-2.0	1	1	4	2	1	0	2	1	1	0	0	2	0	2	1	0	18
2.1-3.0	5	6	5	5	12	3	2	3	1	2	4	13	6	8	13	6	94
3.1-4.0	8	17	17	19	16	7	2	0	2	2	18	24	23	6	5	4	170
4.1-5.0	3	12	22	17	23	7	2	5	3	4	35	55	70	8	7	15	288
5.1-6.0	5	4	10	21	26	7	1	3	6	7	16	60	65	4	9	9	253
6.1-8.0	3	5	14	35	32	9	0	2	3	14	45	53	46	4	7	10	282
8.1-10.0	0	0	0	5	8	0	0	1	1	6	7	2	16	4	1	0	51
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	9
TOTAL	26	45	73	104	120	33	10	16	18	37	125	211	234	41	44	45	1182

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 0

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-30
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, Category B

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0.5-1.0	3	1	0	2	2	0	0	0	1	1	0	0	0	1	0	0	11
1.1-1.5	1	2	4	1	7	1	1	1	5	1	0	1	3	0	1	3	32
1.6-2.0	4	4	4	6	3	4	2	4	3	1	4	4	1	3	4	6	57
2.1-3.0	13	11	25	15	16	11	11	12	2	1	8	12	14	7	11	10	179
3.1-4.0	14	11	26	30	35	18	6	7	2	8	29	32	40	8	17	10	293
4.1-5.0	17	10	26	30	45	13	11	4	3	4	21	37	58	4	10	8	301
5.1-6.0	4	10	14	21	19	10	4	3	3	8	8	27	29	2	2	5	169
6.1-8.0	4	3	23	18	17	4	1	1	2	7	13	14	24	2	2	3	138
8.1-10.0	0	0	3	4	0	1	0	0	1	7	1	1	2	0	0	0	20
>10.0	0	0	0	0	0	0	0	0	0	3	0	0	4	2	0	0	9
TOTAL	60	53	125	127	144	62	36	32	22	41	84	128	175	29	47	45	1210

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 0

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-31
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, Category C

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	3
0.5-1.0	1	2	1	1	4	2	2	1	3	4	4	1	1	5	3	2	37
1.1-1.5	4	5	6	4	8	3	5	1	3	5	2	3	5	1	5	5	65
1.6-2.0	7	10	9	14	12	5	7	3	3	7	6	6	7	4	3	4	107
2.1-3.0	13	25	15	26	30	20	12	8	13	11	11	22	18	17	9	21	271
3.1-4.0	18	17	33	36	40	11	14	9	7	13	25	32	51	12	5	13	336
4.1-5.0	4	10	16	34	32	15	12	11	7	9	17	36	58	4	4	3	272
5.1-6.0	3	8	21	22	22	10	2	6	3	6	11	15	32	3	2	6	172
6.1-8.0	2	5	25	23	16	5	2	3	2	9	11	11	15	5	1	4	139
8.1-10.0	0	1	1	2	2	0	0	0	1	11	5	1	1	0	0	1	26
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
TOTAL	52	83	127	162	166	71	56	43	42	76	92	128	191	51	32	59	1431

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 6

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-32
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, Category D

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	1	2	0	0	0	2	0	0	2	1	0	1	0	0	0	1	10
0.5-1.0	6	11	8	7	5	9	6	4	11	11	13	7	5	3	9	5	120
1.1-1.5	11	10	8	10	18	12	11	10	16	11	11	8	8	7	8	5	164
1.6-2.0	15	15	15	13	17	11	14	14	11	14	11	13	17	9	15	9	213
2.1-3.0	40	48	63	68	67	34	28	26	24	17	45	53	52	29	27	38	659
3.1-4.0	60	67	102	98	74	55	39	33	20	20	50	83	121	43	24	25	914
4.1-5.0	40	58	128	108	74	39	33	18	19	33	37	78	121	17	19	17	839
5.1-6.0	38	49	96	98	91	26	29	9	24	49	39	47	60	17	16	24	712
6.1-8.0	22	66	88	87	78	26	18	27	32	78	37	48	28	18	20	25	698
8.1-10.0	1	6	13	12	15	5	5	8	10	39	24	14	16	9	7	2	186
>10.0	0	0	1	0	0	0	0	0	3	8	9	8	16	1	0	0	46
TOTAL	234	332	522	501	439	219	183	149	172	281	276	360	444	153	145	151	4561

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 53

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-33
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, Category E

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
0.5-1.0	3	3	3	3	2	0	2	4	5	2	5	0	4	0	1	3	40
1.1-1.5	4	2	2	5	5	4	4	1	7	5	2	5	6	2	1	1	56
1.6-2.0	8	3	6	5	2	6	10	3	10	6	2	7	8	4	2	2	84
2.1-3.0	16	23	23	33	34	33	32	24	23	21	31	26	38	21	17	15	410
3.1-4.0	30	57	81	98	79	62	53	66	48	23	33	47	64	39	20	21	821
4.1-5.0	40	76	173	222	147	97	93	65	62	31	32	35	55	39	26	32	1225
5.1-6.0	38	86	136	155	125	59	47	29	33	18	5	15	18	25	33	36	858
6.1-8.0	10	32	21	18	11	10	10	12	25	6	4	15	9	9	19	18	229
8.1-10.0	0	0	0	1	2	0	2	0	1	0	0	4	1	4	2	0	17
>10.0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL	149	283	445	540	407	271	253	204	214	113	115	154	203	143	121	128	3743

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 20

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-34
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, Category F

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0.5-1.0	2	0	1	1	5	3	1	2	3	2	3	2	2	4	0	0	31
1.1-1.5	2	0	0	2	2	4	5	6	4	1	0	2	4	3	3	0	38
1.6-2.0	3	2	3	4	2	7	5	8	2	4	7	5	5	4	3	4	68
2.1-3.0	4	11	13	29	16	18	15	25	18	18	24	11	26	14	11	7	260
3.1-4.0	15	9	28	41	30	35	55	28	30	15	15	24	33	33	12	14	417
4.1-5.0	13	21	61	85	62	65	51	29	22	13	13	34	26	30	27	9	561
5.1-6.0	22	29	51	106	74	44	33	5	9	2	5	9	13	23	20	22	467
6.1-8.0	19	12	4	12	20	3	0	5	3	0	1	1	0	4	4	15	103
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	80	84	161	280	211	179	165	108	92	55	68	88	109	115	80	71	1946

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 18

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-35
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, Category G

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	1	1	0	0	0	0	0	0	0	2	0	0	1	0	5
0.5-1.0	3	1	2	2	4	3	7	5	7	4	4	7	3	5	6	8	71
1.1-1.5	6	2	7	4	7	5	5	8	5	9	10	7	8	8	6	8	105
1.6-2.0	10	4	11	10	6	8	15	10	14	10	22	11	16	14	10	7	178
2.1-3.0	28	14	23	39	36	47	40	35	32	33	30	36	37	29	35	22	516
3.1-4.0	26	22	35	55	53	32	53	56	40	27	46	47	42	41	47	36	658
4.1-5.0	42	31	46	72	60	62	37	37	23	15	18	37	48	43	50	44	665
5.1-6.0	50	29	33	64	59	44	15	13	9	9	3	1	18	25	37	48	457
6.1-8.0	59	15	18	36	22	19	3	0	11	5	0	0	5	2	22	60	277
8.1-10.0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	224	118	176	283	247	220	176	164	141	112	133	148	177	167	214	233	2933

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 77

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-36
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February 1, 2007, to January 31, 2009
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	1	4	1	1	0	2	0	1	3	2	1	4	0	0	1	1	22
0.5-1.0	18	18	15	16	23	17	18	16	30	25	29	17	15	18	19	18	312
1.1-1.5	29	21	28	26	48	29	32	28	41	33	25	28	36	23	25	23	475
1.6-2.0	48	39	52	54	43	41	55	43	44	42	52	48	54	40	38	32	725
2.1-3.0	119	138	167	215	211	166	140	133	113	103	153	173	191	125	123	119	2389
3.1-4.0	171	200	322	377	327	220	222	199	149	108	216	289	374	182	130	123	3609
4.1-5.0	159	218	472	568	443	298	239	169	139	109	173	312	436	145	143	128	4151
5.1-6.0	160	215	361	487	416	200	131	68	87	99	87	174	235	99	119	150	3088
6.1-8.0	119	138	193	229	196	76	34	50	78	119	111	142	127	44	75	135	1866
8.1-10.0	1	7	17	24	27	6	8	9	14	63	37	22	36	17	10	3	301
>10.0	0	0	1	0	0	0	0	0	3	12	9	8	29	6	0	0	68
TOTAL	825	998	1629	1997	1734	1055	879	716	701	715	893	1217	1533	699	683	732	17006

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 174

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-37
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: February (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**TOTAL**
<0.5	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0.5-1.0	0	2	1	2	1	3	0	1	1	0	2	0	0	1	0	0	14
1.1-1.5	1	0	3	2	1	2	1	0	2	1	2	6	4	0	2	0	27
1.6-2.0	2	2	3	7	3	4	0	1	1	2	4	2	2	3	2	2	40
2.1-3.0	10	10	8	12	8	6	6	5	3	4	10	7	13	15	17	10	144
3.1-4.0	22	15	13	23	14	5	4	6	6	11	26	23	32	23	15	23	261
4.1-5.0	21	27	24	13	32	24	22	13	5	9	15	33	39	21	19	15	332
5.1-6.0	11	18	11	17	32	28	18	10	8	20	9	11	20	15	27	17	272
6.1-8.0	8	2	4	8	20	9	2	12	15	24	10	11	15	12	17	15	184
8.1-10.0	0	0	0	0	0	0	0	1	3	15	6	5	14	2	1	0	47
>10.0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	5
TOTAL	75	76	67	84	111	81	53	49	44	90	84	100	140	92	100	82	1328

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 9

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-38
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: March (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
0.5-1.0	0	1	1	2	0	1	0	1	1	0	3	1	1	0	4	1	17
1.1-1.5	2	1	2	1	4	1	4	0	3	1	0	1	2	1	2	2	27
1.6-2.0	1	3	3	5	3	6	5	1	3	2	0	0	0	1	3	3	39
2.1-3.0	10	11	19	16	24	15	7	4	3	3	4	8	12	5	5	13	159
3.1-4.0	14	10	19	27	39	24	13	7	3	6	4	11	29	18	8	10	242
4.1-5.0	14	17	41	76	70	29	31	10	5	4	3	9	29	17	11	11	377
5.1-6.0	23	13	26	57	93	30	27	1	14	4	2	6	22	10	7	13	348
6.1-8.0	10	1	14	21	34	15	5	11	9	15	6	4	8	5	4	8	170
8.1-10.0	0	0	1	0	3	1	3	2	8	21	6	2	8	0	0	1	56
>10.0	0	0	0	0	0	0	0	0	1	4	0	0	11	1	0	0	17
TOTAL	74	57	126	205	270	123	95	37	50	60	28	42	122	58	44	63	1454

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 9

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-39
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: April (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
0.5-1.0	1	0	1	1	1	1	1	0	1	0	0	1	0	1	0	0	9
1.1-1.5	0	0	1	0	2	1	0	2	3	0	1	0	1	1	0	1	13
1.6-2.0	6	3	3	1	1	2	3	2	1	1	3	1	1	1	2	3	34
2.1-3.0	8	10	11	20	15	9	15	7	11	3	7	9	10	10	6	3	154
3.1-4.0	20	7	43	30	30	11	16	12	6	9	11	14	17	19	17	14	276
4.1-5.0	18	11	34	28	27	19	26	31	16	8	13	20	62	23	18	19	373
5.1-6.0	14	2	16	32	32	18	21	15	10	10	7	21	43	20	14	16	291
6.1-8.0	11	9	19	21	5	0	2	2	5	15	32	7	29	9	13	14	193
8.1-10.0	0	0	2	0	0	0	0	0	0	5	6	0	4	4	1	0	22
>10.0	0	0	0	0	0	0	0	0	1	2	1	0	7	4	0	0	15
TOTAL	78	44	130	133	113	61	84	71	54	53	81	73	174	92	71	70	1382

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 2

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-40
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: May (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0.5-1.0	1	0	1	0	3	1	1	0	0	3	1	1	0	0	2	1	15
1.1-1.5	0	1	1	2	4	0	2	3	3	2	2	2	5	0	0	1	28
1.6-2.0	1	2	2	2	3	3	3	3	4	2	1	1	3	3	1	1	35
2.1-3.0	3	10	7	9	20	8	6	10	3	2	6	8	19	11	10	7	139
3.1-4.0	7	16	22	38	33	20	9	6	4	2	21	26	38	12	5	5	264
4.1-5.0	5	11	25	56	71	31	19	10	7	5	17	34	41	12	13	11	368
5.1-6.0	2	2	19	59	91	25	17	7	4	3	20	37	33	13	5	15	352
6.1-8.0	4	2	15	39	50	12	0	0	0	4	19	41	24	3	2	3	218
8.1-10.0	0	0	0	9	11	0	0	0	0	0	7	6	2	0	0	0	35
>10.0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
TOTAL	23	44	93	214	286	100	57	39	25	23	94	161	165	54	38	44	1460

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 3

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-41
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: June (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**TOTAL**
<0.5	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
0.5-1.0	4	4	2	0	1	1	3	2	4	3	5	3	5	2	2	0	41
1.1-1.5	5	0	1	6	4	6	3	2	5	10	3	8	7	1	3	2	66
1.6-2.0	5	2	9	6	5	9	14	10	6	12	5	9	7	8	4	4	115
2.1-3.0	12	8	24	16	29	21	16	23	24	22	19	29	22	9	7	5	286
3.1-4.0	14	6	24	27	34	20	35	29	35	14	20	41	45	11	5	9	369
4.1-5.0	2	4	23	50	45	27	32	20	16	6	19	42	56	9	2	2	355
5.1-6.0	1	2	4	13	8	9	6	1	5	1	5	25	33	8	0	0	121
6.1-8.0	0	3	3	2	1	0	1	2	0	1	8	34	15	3	0	0	73
8.1-10.0	0	0	0	1	1	1	0	0	0	0	0	3	0	0	0	0	6
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	43	30	90	122	128	95	110	89	95	69	84	194	190	51	23	22	1435

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 5

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-42
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: July (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
0.5-1.0	4	3	2	4	3	2	4	2	9	3	3	6	2	6	3	5	61
1.1-1.5	8	5	4	1	4	4	6	6	7	10	7	2	9	6	6	2	87
1.6-2.0	9	5	5	8	3	5	11	5	10	8	18	13	7	11	10	6	134
2.1-3.0	14	10	6	10	14	19	21	31	19	18	37	38	35	17	22	19	330
3.1-4.0	4	5	6	18	25	19	31	60	36	10	42	59	55	17	11	4	402
4.1-5.0	3	0	7	13	11	10	9	21	30	5	25	71	55	8	9	3	280
5.1-6.0	0	2	3	2	5	0	5	1	3	1	7	34	25	2	3	1	94
6.1-8.0	1	1	11	0	2	1	0	1	0	0	4	16	5	1	1	0	44
8.1-10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	43	31	44	56	67	60	87	127	114	56	143	239	193	68	66	40	1434

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 30

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-43
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: August (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
0.5-1.0	2	2	1	1	4	1	4	1	5	1	2	0	1	3	1	1	30
1.1-1.5	2	3	3	2	5	4	4	6	7	3	2	4	1	5	3	3	57
1.6-2.0	3	0	9	7	5	4	4	9	5	5	6	8	5	4	7	1	82
2.1-3.0	6	4	10	32	27	28	19	12	23	17	28	25	23	19	7	13	293
3.1-4.0	4	6	10	27	42	29	40	17	15	13	23	63	63	22	10	4	388
4.1-5.0	1	3	7	19	27	45	22	16	12	7	20	53	43	3	5	3	286
5.1-6.0	6	1	4	21	14	15	8	6	4	2	6	28	12	2	1	8	138
6.1-8.0	3	8	2	4	11	0	9	5	1	1	3	9	10	1	5	7	79
8.1-10.0	0	1	0	1	4	0	1	2	2	1	7	3	1	4	8	0	35
>10.0	0	0	0	0	0	0	0	0	0	1	6	1	6	0	0	0	14
TOTAL	27	28	46	114	139	126	111	74	74	52	103	195	165	63	47	40	1404

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 31

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-44
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: September (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**TOTAL**
<0.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0.5-1.0	1	1	1	1	5	1	0	2	4	4	1	0	0	2	0	6	29
1.1-1.5	3	2	3	4	7	2	4	2	3	2	0	1	2	2	2	2	41
1.6-2.0	5	4	4	7	1	4	2	3	5	3	3	3	7	3	2	3	59
2.1-3.0	5	19	18	21	17	10	18	13	13	7	5	10	15	7	11	7	196
3.1-4.0	10	41	46	41	18	21	21	14	9	6	7	15	31	13	7	5	305
4.1-5.0	10	41	84	88	41	31	12	7	2	3	3	9	32	10	8	4	385
5.1-6.0	4	33	48	71	49	15	3	1	1	4	1	2	6	1	4	5	248
6.1-8.0	2	14	38	31	31	10	4	1	2	1	0	1	0	0	0	3	138
8.1-10.0	1	0	8	3	2	0	0	0	0	0	0	0	0	0	0	0	14
>10.0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL	41	155	251	267	171	94	64	43	40	30	20	41	93	38	34	35	1417

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 17

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-45
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: October (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
0.5-1.0	2	0	1	2	0	0	1	1	0	1	3	0	2	0	2	0	15
1.1-1.5	1	1	2	0	1	2	2	1	3	1	0	0	0	2	2	1	19
1.6-2.0	3	5	4	1	6	1	5	1	2	1	0	6	7	1	2	3	48
2.1-3.0	15	12	8	24	16	18	4	5	2	3	0	2	3	7	15	10	144
3.1-4.0	7	19	46	43	39	22	14	17	12	7	2	2	14	11	14	7	276
4.1-5.0	3	25	88	98	39	5	7	4	13	6	9	0	15	12	12	8	344
5.1-6.0	24	44	98	113	35	2	3	2	4	3	6	0	8	3	8	20	373
6.1-8.0	19	44	42	53	23	4	3	0	0	1	3	1	4	0	1	14	212
8.1-10.0	0	5	5	6	6	1	0	0	0	0	0	0	1	0	0	0	24
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	74	155	294	340	165	55	39	31	37	23	23	12	54	36	56	63	1457

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 12

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-46
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: November (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [(a)]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.5-1.0	2	1	0	1	3	0	1	0	1	1	0	1	0	0	1	2	14
1.1-1.5	2	2	4	2	5	0	1	2	2	1	2	0	2	2	3	4	34
1.6-2.0	8	8	4	4	2	0	1	0	3	2	0	2	5	3	2	5	49
2.1-3.0	20	19	21	17	7	4	5	2	3	2	7	10	9	7	8	23	164
3.1-4.0	19	29	33	40	8	9	10	7	2	9	8	8	20	10	11	23	246
4.1-5.0	33	41	64	50	16	8	16	10	7	14	6	15	26	14	16	23	359
5.1-6.0	34	42	75	48	5	7	0	3	10	17	11	4	12	10	20	21	319
6.1-8.0	24	26	15	29	3	1	0	1	24	14	2	4	3	1	16	34	197
8.1-10.0	0	1	1	0	0	0	0	0	1	3	0	0	0	0	0	0	6
>10.0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
TOTAL	142	169	217	191	49	29	34	25	54	64	37	44	77	47	77	135	1391

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 19

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-47
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: December (2007 and 2008 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
0.5-1.0	1	2	1	2	1	5	2	4	2	5	6	3	2	0	2	2	40
1.1-1.5	1	3	3	4	8	4	1	0	3	1	4	0	2	2	1	3	40
1.6-2.0	1	2	5	5	9	2	4	2	0	2	6	3	8	1	1	0	51
2.1-3.0	9	10	17	22	27	16	12	7	3	9	14	15	14	9	8	6	198
3.1-4.0	23	22	39	46	31	25	18	13	8	9	20	11	13	12	15	10	315
4.1-5.0	22	23	33	59	35	50	32	14	10	13	21	9	17	8	11	14	371
5.1-6.0	13	11	20	31	40	35	22	15	9	13	4	4	13	7	11	14	262
6.1-8.0	6	8	5	8	5	6	6	8	3	7	7	2	10	4	4	6	95
8.1-10.0	0	0	0	0	0	1	0	3	0	2	4	1	2	1	0	0	14
>10.0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	4
TOTAL	76	82	123	177	156	144	97	67	38	61	87	50	82	44	53	55	1392

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 24

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-48
Joint Frequency Distribution of Wind Speed, Wind Direction, and Atmospheric Stability (Hours of Occurrence)
Period of Record: January (2008 and 2009 Combined Hours of Occurrence)
Upper Wind Level, All Categories

Speed (m/s)	Wind Direction (Blowing From) [a]																
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
<0.5	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
0.5-1.0	0	2	3	0	1	1	1	2	2	4	3	1	2	3	2	0	27
1.1-1.5	4	3	1	2	3	3	4	4	0	1	2	4	1	1	1	2	36
1.6-2.0	4	3	1	1	2	1	3	6	4	2	6	0	2	1	2	1	39
2.1-3.0	7	15	18	16	7	12	11	14	6	13	16	12	16	9	7	3	182
3.1-4.0	27	24	21	17	14	15	11	11	13	12	32	16	17	14	12	9	265
4.1-5.0	27	15	42	18	29	19	11	13	16	29	22	17	21	8	19	15	321
5.1-6.0	28	45	37	23	12	16	1	6	15	21	9	2	8	8	19	20	270
6.1-8.0	31	20	25	13	11	18	2	7	19	36	17	12	4	5	12	31	263
8.1-10.0	0	0	0	4	0	2	4	1	0	16	1	2	4	6	0	2	42
>10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4
TOTAL	129	127	148	94	79	87	48	64	76	134	109	66	78	56	74	83	1452

Notes:

Data represent the number of hours a condition occurred.

Number of Calm Hours: 13

a) Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-49
Summary of Mean Daily Maximum and Minimum Ambient Air Temperatures (°F)

	LNP On-Site [a]		Tampa		Gainesville		Orlando		Tallahassee		Jacksonville	
Month	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**
January	66.6	46.0	70.5	50.9	66.5	42.8	70.4	48.9	63.9	39.8	65.1	42.6
February	67.0	46.5	70.8	51.5	69.7	45.9	72.9	51.4	67.1	42.3	67.9	45.3
March	76.9	55.1	75.5	56.4	75.0	50.4	77.4	55.8	73.2	47.7	73.7	50.4
April	77.0	55.8	81.1	61.5	80.0	54.6	82.5	60.4	80.0	53.4	79.8	56.2
May	85.9	62.4	87.2	68.0	84.6	60.7	87.5	66.4	86.6	61.8	86.0	63.7
June	88.3	70.0	89.0	72.4	89.1	68.2	89.9	71.5	90.4	68.9	89.7	70.0
July	88.4	72.0	90.1	74.5	90.9	71.4	91.1	73.3	91.4	71.7	91.9	72.8
August	89.6	72.8	90.3	74.6	90.1	71.4	90.9	73.7	91.0	71.7	90.9	72.7
September	86.9	70.6	88.4	72.7	87.1	69.0	88.9	72.5	88.0	68.3	87.1	70.1
October	82.5	67.6	84.0	66.3	81.2	60.5	83.6	65.9	80.9	57.0	80.1	60.6
November	73.6	51.3	76.9	57.7	74.6	51.8	77.7	57.9	72.3	47.0	73.0	50.9
December	72.9	52.0	72.0	52.5	67.8	44.3	72.1	51.6	65.5	41.2	66.5	44.3
Annual	79.7	60.3	81.3	63.3	79.7	57.6	82.1	62.4	79.2	55.9	79.3	58.3
Period of Record (years)	1		74		25		50		59		59	

Notes:

a) LNP on-site data are for the period from February 1, 2007, to January 31, 2008.

°F = degrees Fahrenheit

Sources: LNP on-site data; References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007

Table 2.7-50
Summary of Diurnal Relative Humidity (%)

	Tampa				Gainesville				Orlando				Tallahassee				Jacksonville			
Month	**01:00**	**07:00**	**13:00**	**19:00**	**01:00**	**07:00**	**13:00**	**19:00**	**01:00**	**07:00**	**13:00**	**19:00**	**01:00**	**07:00**	**13:00**	**19:00**	**01:00**	**07:00**	**13:00**	**19:00**
January	85	87	60	74	89	90	61	76	86	89	57	70	85	87	58	72	86	88	59	76
February	84	87	57	70	88	90	56	69	85	89	53	64	54	87	54	64	85	88	55	71
March	83	87	55	68	89	91	53	64	85	90	51	62	86	89	51	60	86	89	52	68
April	82	86	52	64	88	91	51	62	85	88	48	60	87	90	47	56	86	89	49	65
May	82	85	54	64	90	91	50	63	87	89	50	64	89	91	51	60	88	90	53	68
June	85	86	60	70	93	93	59	74	90	91	58	73	91	92	56	68	90	90	59	75
July	86	88	64	74	94	94	63	78	91	92	59	76	93	94	61	74	91	91	60	76
August	88	90	65	76	94	96	64	80	92	93	60	78	93	95	61	76	92	93	62	80
September	88	91	63	76	94	96	64	81	92	93	61	79	91	93	58	75	93	94	65	83
October	87	90	58	73	92	94	62	81	89	91	57	76	88	91	53	72	92	93	61	84
November	86	89	59	74	92	93	61	82	89	91	57	75	89	90	56	77	91	92	59	84
December	86	88	61	75	91	91	62	81	88	90	59	74	87	88	58	77	88	90	61	82
Annual	85	88	59	72	78	93	59	74	88	91	56	71	89	91	55	69	89	91	58	76
Period of Record (years)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Sources: References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007

Table 2.7-51
Summary of Mean Dew-Point Temperatures (°F)

Month	LNP On-Site [(a)]	Tampa	Gainesville	Orlando	Tallahassee	Jacksonville
January	47.4	52.3	46.2	51.5	42.1	44.9
February	46.0	54.0	48.4	53.0	44.7	47.4
March	53.0	57.0	52.2	55.8	48.9	51.4
April	53.9	60.2	56.3	58.9	53.9	55.8
May	60.2	66.4	63.3	65.4	62.4	63.4
June	69.4	72.0	70.2	71.4	69.7	70.5
July	72.2	73.7	72.6	73.1	72.6	72.9
August	72.7	74.1	72.7	73.5	72.4	73.1
September	70.5	72.5	70.3	72.2	68.3	70.7
October	67.1	66.0	62.7	66.1	58.7	62.8
November	52.9	60.0	55.5	60.0	51.5	55.1
December	55.0	54.2	48.1	53.8	44.2	47.4
Annual	61.4	63.5	59.9	62.9	57.5	59.6
Period of Record (years)	1	23	23	23	23	23

Notes:

a) LNP on-site data are for the period from February 1, 2007, to January 31, 2008.

°F = degrees Fahrenheit

Sources: LNP on-site data; References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007

Table 2.7-52
Summary of Wet and Dry Bulb Temperature Observations

	Jacksonville, FL		Tallahassee, FL		Tampa, FL	
	Wet Bulb (°C)	Dry Bulb (°C)	Wet Bulb (°C)	Dry Bulb (°C)	Wet Bulb (°C)	Dry Bulb (°C)
Highest Running Average Wet Bulb (with Coincident Dry Bulb)						
30-Day Average	24.9	28.1	248	28.3	25.5	28.6
5-Day Average	26.5	31.0	26.1	30.9	26.9	30.2
1-Day Average	27.7	31.2	27.0	32.1	27.6	31.0
Maximum Ambient Dry Bulb (with Coincident Wet Bulb)						
0% Exceedance	26.0	39.4	27.7	39.4	25.4	36.7
1% Exceedance	26.9	33.5	27.2	33.7	26.3	32.6
Minimum Ambient Dry Bulb (with Coincident Wet Bulb)						
100% Exceedance	-15.3	-13.9	-15.7	-14.4	-8.8	-7.2
99% Exceedance	-1.1	0.0	-3.3	-2.2	2.8	4.4
Maximum Ambient Wet Bulb (with Coincident Dry Bulb)						
0% Exceedance	30.3	33.9	30.4	31.7	29.5	34.4
1% Exceedance	26.1	31.1	26.1	31.1	26.7	31.1

Notes:

Periods of Record: 1973 – 1996 (Reference 2.7-019), 1961 – 1990 (Reference 2.7-024)
°C = degrees Celsius

Source: Reference 2.7-019, 2.7-024

Table 2.7-53
Summary of On-Site and Regional Precipitation Observations (in.)

Month	LNP On-Site [(a)]	Tampa	Gainesville	Orlando	Tallahassee	Jacksonville
January	3.04	2.15	3.18	2.23	4.43	3.10
February	5.74	2.99	3.17	2.73	4.80	3.44
March	3.02	3.11	4.10	3.49	6.06	3.81
April	1.22	2.04	2.54	2.29	3.75	2.96
May	0.45	2.66	2.30	3.37	4.30	3.31
June	5.85	6.59	6.94	7.51	7.14	6.04
July	5.12	7.54	6.45	7.38	8.43	6.51
August	6.21	7.89	6.67	6.67	7.18	7.14
September	4.02	6.48	5.18	5.87	5.64	7.98
October	5.47	2.42	2.93	3.15	3.17	4.00
November	0.77	1.57	2.04	2.01	3.35	1.95
December	2.04	2.28	2.39	2.28	4.20	2.68
Annual	42.95	47.72	47.89	48.98	62.45	52.92
Period of Record (years)	1	74	25	54	59	59

Notes:

a) LNP on-site data are for the period from February 1, 2007, to January 31, 2008.

in. = inch

Source: LNP on-site data; References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007

Table 2.7-54
Average Number of Days of Fog Occurrence

Month	Tampa	Gainesville	Orlando	Tallahassee	Jacksonville
January	3.9	5.9	3.2	6.6	5.3
February	2.5	4.7	2.6	5.0	3.6
March	1.9	3.4	1.7	5.2	3.1
April	0.7	2.7	1.0	4.6	2.5
May	0.2	3.6	1.1	4.8	3.0
June	0.3	2.7	0.7	2.6	1.6
July	0.2	2.3	0.4	2.3	1.2
August	0.2	2.3	0.6	2.4	2.0
September	0.2	3.5	0.8	2.0	2.2
October	0.7	4.0	1.0	3.1	3.4
November	1.9	5.2	1.8	5.0	5.3
December	2.6	6.2	3.1	6.2	6.1
Annual	15.3	46.5	18.0	49.8	39.3
Period of Record	43	23	39	43	43

Sources: References 2.7-003, 2.7-004, 2.7-005, 2.7-006, and 2.7-007

Table 2.7-55
LNP Meteorological Monitoring Tower
Meteorological Sensor Elevations

Sensor	Approximate Elevation Above Tower Base (m)
Wind Speed and Direction	10 and 60
Dew-Point	10
Solar Radiation	2.0
Ambient Temperature	10
Delta-Temperature [(a)]	10 and 60
Precipitation	2.0
Barometric Pressure	2.0

Notes:

a) Used to measure differential temperature channel between these elevations.

m = meter

Table 2.7-56 (Sheet 1 of 7)
Meteorological Input Data for PAVAN Model
Levy Nuclear Plant Meteorological Monitoring Station
Period of Record: February 1, 2007, to January 31, 2009 (Lower Elevation)

Wind Speed (m/s)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Class A																
≤1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤1.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤1.55	0	1	0	2	1	0	1	1	0	1	0	3	2	4	1	0
≤2.05	4	2	2	4	4	0	3	2	3	1	1	5	2	5	6	0
≤3.05	8	22	16	15	18	9	3	4	2	5	20	21	30	12	11	17
≤4.05	8	11	30	34	28	11	3	8	7	6	43	106	98	11	13	19
≤5.05	3	9	11	35	42	13	0	1	3	18	38	77	53	4	6	14
≤6.05	0	0	7	18	19	1	0	0	3	6	11	19	32	2	0	0
≤8.05	0	0	0	4	6	0	0	0	0	1	1	1	10	2	0	0
≤10.05	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
≤15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.7-56 (Sheet 2 of 7)
Meteorological Input Data for PAVAN Model
Levy Nuclear Plant Meteorological Monitoring Station
Period of Record: February 1, 2007 to January 31, 2009 (Lower Elevation)

Wind Speed (m/s)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Class B																
≤1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤1.05	0	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0
≤1.55	4	4	5	5	2	0	1	2	4	1	0	2	3	1	3	4
≤2.05	3	11	9	12	8	4	2	8	5	2	3	5	5	6	5	8
≤3.05	20	21	41	25	34	16	16	16	2	9	33	39	54	15	24	23
≤4.05	18	21	34	49	59	34	14	6	7	7	34	70	72	5	9	12
≤5.05	6	8	23	25	29	6	2	0	1	10	8	19	32	4	1	5
≤6.05	0	1	10	11	4	3	0	0	2	6	2	3	4	0	0	0
≤8.05	0	0	0	2	0	1	0	0	0	5	0	0	4	2	0	0
≤10.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.7-56 (Sheet 3 of 7)
Meteorological Input Data for PAVAN Model
Levy Nuclear Plant Meteorological Monitoring Station
Period of Record: February 1, 2007 to January 31, 2009 (Lower Elevation)

Wind Speed (m/s)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Class C																
≤1.0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
≤1.05	3	1	0	0	0	0	1	1	0	0	0	1	1	2	3	2
≤1.55	7	7	6	7	11	3	4	4	6	10	4	6	8	7	7	7
≤2.05	9	22	10	14	18	15	12	8	10	9	11	14	12	11	6	16
≤3.05	30	37	39	53	55	24	23	14	18	16	37	53	77	22	13	22
≤4.05	8	14	43	52	49	24	11	13	10	13	19	53	74	3	3	9
≤5.05	2	8	21	27	29	11	3	2	2	8	11	14	18	1	0	4
≤6.05	0	2	6	7	6	1	0	0	3	10	4	0	3	0	0	1
≤8.05	0	0	0	2	1	0	0	0	0	3	0	1	1	0	0	0
≤10.05	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
≤15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.7-56 (Sheet 4 of 7)
Meteorological Input Data for PAVAN Model
Levy Nuclear Plant Meteorological Monitoring Station
Period of Record: February 1, 2007 to January 31, 2009 (Lower Elevation)

Wind Speed (m/s)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Class D																
≤1.0	4	3	5	8	8	5	3	3	2	1	1	1	1	2	2	2
≤1.05	23	11	18	16	25	15	13	13	17	18	18	17	11	10	14	9
≤1.55	40	36	39	26	24	22	31	25	30	20	37	37	27	26	34	27
≤2.05	50	54	80	60	73	31	31	21	17	28	42	52	61	35	34	35
≤3.05	102	112	197	196	142	94	51	32	48	59	73	147	198	44	32	54
≤4.05	42	73	127	118	113	46	40	18	22	68	39	95	83	11	24	25
≤5.05	19	30	50	69	52	25	10	8	27	48	27	29	24	12	8	7
≤6.05	0	1	13	20	22	9	1	1	12	27	12	11	18	2	0	3
≤8.05	0	0	1	0	4	1	0	0	4	11	8	9	10	1	0	0
≤10.05	0	0	0	0	0	0	0	0	0	1	1	0	4	0	0	0
≤15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.7-56 (Sheet 5 of 7)
Meteorological Input Data for PAVAN Model
Levy Nuclear Plant Meteorological Monitoring Station
Period of Record: February 1, 2007 to January 31, 2009 (Lower Elevation)

Wind Speed (m/s)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Class E																
≤1.0	17	12	21	35	35	21	14	12	9	6	6	4	7	9	10	8
≤1.05	27	65	77	76	65	44	60	57	32	28	37	39	38	55	44	19
≤1.55	34	82	133	147	133	83	53	35	38	26	47	49	39	32	21	27
≤2.05	40	51	127	134	126	58	46	14	38	19	19	31	32	15	28	30
≤3.05	61	82	101	123	131	62	42	17	30	34	9	22	26	12	35	30
≤4.05	8	15	11	17	23	10	3	1	17	6	3	12	7	2	4	8
≤5.05	1	0	3	5	1	3	1	2	6	1	0	3	1	5	1	2
≤6.05	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0
≤8.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤10.05	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
≤15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 2.7-56 (Sheet 6 of 7)
Meteorological Input Data for PAVAN Model
Levy Nuclear Plant Meteorological Monitoring Station
Period of Record: February 1, 2007 to January 31, 2009 (Lower Elevation)**

Wind Speed (m/s)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Class F																
≤1.0	45	33	61	100	101	61	40	36	26	17	15	13	19	26	27	23
≤1.05	26	42	80	127	108	47	40	35	24	24	25	15	29	36	27	20
≤1.55	29	26	39	119	103	43	12	10	8	7	11	9	6	5	13	18
≤2.05	15	10	5	31	44	14	3	2	2	0	1	2	2	1	2	10
≤3.05	1	2	0	0	7	1	0	0	1	2	3	1	3	0	1	0
≤4.05	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0
≤5.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤6.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤8.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤10.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 2.7-56 (Sheet 7 of 7)
Meteorological Input Data for PAVAN Model
Levy Nuclear Plant Meteorological Monitoring Station
Period of Record: February 1, 2007 to January 31, 2009 (Lower Elevation)**

Wind Speed (m/s)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Class G																
≤1.0	147	117	229	364	367	223	142	131	94	64	52	45	69	93	95	79
≤1.05	24	16	48	143	131	55	29	21	17	9	5	5	8	13	33	18
≤1.55	8	2	7	42	32	10	2	3	2	1	1	1	3	2	3	8
≤2.05	3	0	0	5	3	2	0	0	0	1	0	0	0	0	1	1
≤3.05	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
≤4.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤5.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤6.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤8.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤10.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≤15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

a) Data representative of hours of occurrence by direction and wind speed category.

Wind direction: E = east; N = north; S = south; W = west

m/s = meters per second

Table 2.7-57
0- to 2-Hour 50th Percentile Exclusion Area Boundary Chi/Q Values for LNP 1 and LNP 2

Time Period	Chi/Q (sec/m^3)	Source
0 - 2 hr.	7.81 E -05	PAVAN Model
0- to 30-day 50th Percentile LPZ Chi/Q Values for LNP 1 and LNP 2		
Time Period	**Chi/Q (sec/m^3)**	**Source**
0 - 2 hr.	1.96E-05	PAVAN Model
0 - 8 hr.	1.06E-05	Interpolation
8 - 24 hr.	7.81E-06	Interpolation
1 - 4 days	4.01E-06	Interpolation
4 - 30 days	1.54E-06	Interpolation
Annual Average	4.79E-07	PAVAN Model

Notes:

Chi/Q = atmospheric dilution factor
hr. = hour
sec/m^3 = second per cubic meter

Table 2.7-58 (Sheet 1 of 4)
Long-Term X/Q Calculations for Routine Releases for LNP 1 and LNP 2

	Exclusion Area Boundary		Low Population Zone [(a)]		Nearest Milk Cow		Nearest Milk Goat		Nearest Garden		Nearest Meat Animal	
Downwind Sector [(b)]	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)
N	1340	2.90E-06	4829	5.20E-07	8049	2.70E-07	8049	2.70E-07	2898	1.00E-06	4990	5.00E-07
NNE	1340	2.10E-06	4829	3.60E-07	8049	1.80E-07	8049	1.80E-07	6600	2.40E-07	8049	1.80E-07
NE	1340	1.90E-06	4829	3.10E-07	8049	1.50E-07	8049	1.50E-07	6600	2.00E-07	8049	1.50E-07
ENE	1340	1.80E-06	4829	3.00E-07	8049	1.50E-07	8049	1.50E-07	8049	1.50E-07	7244	1.70E-07
E	1340	2.40E-06	4829	4.00E-07	8049	2.00E-07	8049	2.00E-07	7727	2.10E-07	6922	2.50E-07
ESE	1340	2.80E-06	4829	5.00E-07	8049	2.50E-07	8049	2.50E-07	8049	2.50E-07	5795	3.90E-07
SE	1340	4.50E-06	4829	8.40E-07	8049	4.40E-07	8049	4.40E-07	5956	6.40E-07	6600	5.60E-07
SSE	1340	2.80E-06	4829	5.10E-07	8049	2.60E-07	8049	2.60E-07	8049	2.60E-07	4185	6.10E-07
S	1340	3.80E-06	4829	6.90E-07	8049	3.60E-07	8049	3.60E-07	6761	4.50E-07	8049	3.60E-07
SSW	1340	3.80E-06	4829	6.60E-07	8049	3.40E-07	8049	3.40E-07	4829	6.60E-07	4507	7.20E-07
SW	1340	8.20E-06	4829	1.50E-06	8049	7.70E-07	8049	7.70E-07	4024	1.90E-06	8049	7.70E-07
WSW	1340	1.90E-05	4829	3.50E-06	8049	1.90E-06	8049	1.90E-06	2737	7.30E-06	8049	1.90E-06
W	1340	1.70E-05	4829	3.20E-06	8049	1.70E-06	8049	1.70E-06	8049	1.70E-06	8049	1.70E-06
WNW	1340	7.50E-06	4829	1.40E-06	8049	7.30E-07	8049	7.30E-07	8049	7.30E-07	8049	7.30E-07
NW	1340	4.60E-06	4829	8.50E-07	8049	4.40E-07	8049	4.40E-07	2576	1.90E-06	3541	1.30E-06
NNW	1340	3.60E-06	4829	6.50E-07	8049	3.40E-07	3863	8.70E-07	3380	1.00E-06	4668	6.80E-07

Table 2.7-58 (Sheet 2 of 4)
Long-Term X/Q Calculations for Routine Releases for LNP 1 and LNP 2

Nearest Residence			Downwind Distance (mi.) (X/Q in sec/m^3)										
Downwind Sector [(b)]	Distance (m)	X/Q (sec/m^3)	0.25	0.5	0.75	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
N	2898	1.00E-06	2.20E-05	6.68E-06	3.39E-06	2.19E-06	1.28E-06	8.79E-07	6.57E-07	5.18E-07	4.24E-07	3.57E-07	3.07E-07
NNE	6600	2.40E-07	1.52E-05	4.70E-06	2.44E-06	1.58E-06	9.12E-07	6.19E-07	4.59E-07	3.60E-07	2.93E-07	2.46E-07	2.10E-07
NE	8049	1.50E-07	1.30E-05	4.10E-06	2.17E-06	1.41E-06	8.02E-07	5.38E-07	3.96E-07	3.08E-07	2.50E-07	2.08E-07	1.78E-07
ENE	8049	1.50E-07	1.29E-05	4.12E-06	2.16E-06	1.39E-06	7.82E-07	5.21E-07	3.81E-07	2.96E-07	2.39E-07	1.99E-07	1.69E-07
E	7727	2.10E-07	1.75E-05	5.44E-06	2.84E-06	1.84E-06	1.05E-06	7.03E-07	5.17E-07	4.03E-07	3.27E-07	2.73E-07	2.33E-07
ESE	5956	3.80E-07	2.08E-05	6.35E-06	3.30E-06	2.14E-06	1.25E-06	8.49E-07	6.32E-07	4.97E-07	4.06E-07	3.40E-07	2.92E-07
SE	4185	1.00E-06	3.61E-05	1.07E-05	5.34E-06	3.43E-06	2.04E-06	1.41E-06	1.06E-06	8.39E-07	6.89E-07	5.82E-07	5.01E-07
SSE	4668	5.30E-07	2.19E-05	6.56E-06	3.29E-06	2.12E-06	1.25E-06	8.60E-07	6.44E-07	5.09E-07	4.17E-07	3.52E-07	3.03E-07
S	6761	4.50E-07	2.98E-05	8.97E-06	4.52E-06	2.91E-06	1.71E-06	1.18E-06	8.79E-07	6.94E-07	5.69E-07	4.79E-07	4.12E-07
SSW	4507	7.20E-07	2.76E-05	8.56E-06	4.46E-06	2.90E-06	1.68E-06	1.14E-06	8.43E-07	6.61E-07	5.39E-07	4.52E-07	3.87E-07
SW	3220	2.50E-06	6.33E-05	1.91E-05	9.73E-06	6.29E-06	3.69E-06	2.53E-06	1.89E-06	1.49E-06	1.22E-06	1.03E-06	8.85E-07
WSW	2737	7.30E-06	1.52E-04	4.48E-05	2.22E-05	1.43E-05	8.53E-06	5.92E-06	4.46E-06	3.54E-06	2.92E-06	2.47E-06	2.13E-06
W	8049	1.70E-06	1.39E-04	4.07E-05	2.02E-05	1.30E-05	7.75E-06	5.38E-06	4.05E-06	3.22E-06	2.65E-06	2.24E-06	1.93E-06
WNW	8049	7.30E-07	5.99E-05	1.77E-05	8.83E-06	5.68E-06	3.38E-06	2.34E-06	1.76E-06	1.40E-06	1.15E-06	9.69E-07	8.36E-07
NW	2576	1.90E-06	3.59E-05	1.08E-05	5.48E-06	3.54E-06	2.09E-06	1.43E-06	1.07E-06	8.48E-07	6.95E-07	5.85E-07	5.04E-07
NNW	3380	1.00E-06	2.74E-05	8.27E-06	4.21E-06	2.72E-06	1.60E-06	1.10E-06	8.22E-07	6.49E-07	5.31E-07	4.47E-07	3.85E-07

Table 2.7-58 (Sheet 3 of 4)
Long-Term X/Q Calculations for Routine Releases for LNP 1 and LNP 2

Downwind Sector (b)	Downwind Distance (Mi.) (X/Q in sec/m^3)										
	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
N	2.68E-07	1.60E-07	1.11E-07	6.68E-08	4.68E-08	3.56E-08	2.84E-08	2.36E-08	2.00E-08	1.74E-08	1.53E-08
NNE	1.83E-07	1.08E-07	7.45E-08	4.44E-08	3.09E-08	2.33E-08	1.86E-08	1.54E-08	1.30E-08	1.13E-08	9.89E-09
NE	1.54E-07	8.98E-08	6.14E-08	3.62E-08	2.50E-08	1.88E-08	1.49E-08	1.22E-08	1.03E-08	8.91E-09	7.81E-09
ENE	1.47E-07	8.50E-08	5.79E-08	3.40E-08	2.34E-08	1.76E-08	1.39E-08	1.14E-08	9.65E-09	8.32E-09	7.29E-09
E	2.03E-07	1.18E-07	8.12E-08	4.81E-08	3.33E-08	2.51E-08	2.00E-08	1.65E-08	1.39E-08	1.20E-08	1.06E-08
ESE	2.55E-07	1.51E-07	1.04E-07	6.25E-08	4.36E-08	3.30E-08	2.63E-08	2.18E-08	1.85E-08	1.60E-08	1.41E-08
SE	4.39E-07	2.64E-07	1.85E-07	1.12E-07	7.89E-08	6.02E-08	4.83E-08	4.01E-08	3.41E-08	2.97E-08	2.62E-08
SSE	2.65E-07	1.58E-07	1.10E-07	6.68E-08	4.69E-08	3.57E-08	2.86E-08	2.37E-08	2.02E-08	1.75E-08	1.54E-08
S	3.60E-07	2.15E-07	1.50E-07	9.03E-08	6.34E-08	4.82E-08	3.86E-08	3.20E-08	2.72E-08	2.36E-08	2.08E-08
SSW	3.37E-07	1.99E-07	1.37E-07	8.18E-08	5.69E-08	4.30E-08	3.43E-08	2.83E-08	2.40E-08	2.07E-08	1.82E-08
SW	7.73E-07	4.61E-07	3.21E-07	1.93E-07	1.35E-07	1.03E-07	8.23E-08	6.82E-08	5.79E-08	5.02E-08	4.42E-08
WSW	1.86E-06	1.13E-06	7.88E-07	4.80E-07	3.38E-07	2.58E-07	2.07E-07	1.72E-07	1.47E-07	1.28E-07	1.13E-07
W	1.69E-06	1.02E-06	7.16E-07	4.36E-07	3.07E-07	2.35E-07	1.88E-07	1.57E-07	1.34E-07	1.16E-07	1.02E-07
WNW	7.32E-07	4.41E-07	3.08E-07	1.87E-07	1.32E-07	1.01E-07	8.08E-08	6.71E-08	5.72E-08	4.97E-08	4.38E-08
NW	4.40E-07	2.63E-07	1.83E-07	1.11E-07	7.76E-08	5.90E-08	4.73E-08	3.92E-08	3.33E-08	2.89E-08	2.55E-08
NNW	3.36E-07	2.01E-07	1.40E-07	8.41E-08	5.89E-08	4.48E-08	3.58E-08	2.97E-08	2.52E-08	2.19E-08	1.93E-08

Notes:

Wind Reference Level: 10 m
Stability Type: ΔT (60 – 10 m)
Release Type: Ground Level:10 m
Building Height/Cross Section: 43.9 m/2730 m^2
Period of record: February 1, 2007, to January 31, 2009

Table 2.7-58 (Sheet 4 of 4)
Long-Term X/Q Calculations for Routine Releases for LNP 1 and LNP 2

Notes (continued):

a) The reported distance of the low population zone (LPZ) is measured from the centerpoint of LNP 1 and LNP 2 to the outermost boundary of the LPZ.

b) Downwind Sector: E = east; N = north, S = south W = west

X/Q = local atmospheric dilution factor
m = meter
m^2 = square meter
mi. = mile
sec/m^3 = seconds per cubic meter

Table 2.7-59 (Sheet 1 of 4)
Long-Term Average D/Q Calculations for Routine Releases for LNP 1 and LNP 2

	Exclusion Area Boundary		Low Population Zone [(a)]		Nearest Milk Cow		Nearest Milk Goat		Nearest Garden		Nearest Meat Animal	
Downwind Sector [(b)]	Distance (m)	D/Q (m^{-2})	Distance (m)	D/Q (m^{-2})	Distance (m)	D/Q (m^{-2})	Distance (m)	D/Q (m^{-2})	Distance (m)	D/Q (m^{-2})	Distance (m)	D/Q (m^{-2})
N	1340	2.80E-09	4829	3.10E-10	8049	1.20E-10	8049	1.20E-10	2898	7.60E-10	4990	2.90E-10
NNE	1340	3.20E-09	4829	3.50E-10	8049	1.40E-10	8049	1.40E-10	6600	2.00E-10	8049	1.40E-10
NE	1340	3.70E-09	4829	4.00E-10	8049	1.60E-10	8049	1.60E-10	6600	2.30E-10	8049	1.60E-10
ENE	1340	5.60E-09	4829	6.10E-10	8049	2.40E-10	8049	2.40E-10	8049	2.40E-10	7244	2.90E-10
E	1340	6.30E-09	4829	6.90E-10	8049	2.80E-10	8049	2.80E-10	7727	3.00E-10	6922	3.60E-10
ESE	1340	2.60E-09	4829	2.90E-10	8049	1.10E-10	8049	1.10E-10	8049	1.10E-10	5795	2.10E-10
SE	1340	3.10E-09	4829	3.40E-10	8049	1.40E-10	8049	1.40E-10	5956	2.30E-10	6600	1.90E-10
SSE	1340	3.00E-09	4829	3.20E-10	8049	1.30E-10	8049	1.30E-10	8049	1.30E-10	4185	4.20E-10
S	1340	4.00E-09	4829	4.30E-10	8049	1.70E-10	8049	1.70E-10	6761	2.40E-10	8049	1.70E-10
SSW	1340	5.00E-09	4829	5.50E-10	8049	2.20E-10	8049	2.20E-10	4829	5.50E-10	4507	6.20E-10
SW	1340	8.60E-09	4829	9.30E-10	8049	3.70E-10	8049	3.70E-10	4024	1.30E-09	8049	3.70E-10
WSW	1340	1.30E-08	4829	1.40E-09	8049	5.50E-10	8049	5.50E-10	2737	3.70E-09	8049	5.50E-10
W	1340	1.20E-08	4829	1.30E-09	8049	5.20E-10	8049	5.20E-10	8049	5.20E-10	8049	5.20E-10
WNW	1340	5.50E-09	4829	6.00E-10	8049	2.40E-10	8049	2.40E-10	8049	2.40E-10	8049	2.40E-10
NW	1340	3.60E-09	4829	3.90E-10	8049	1.60E-10	8049	1.60E-10	2576	1.20E-09	3541	6.80E-10
NNW	1340	2.60E-09	4829	2.90E-10	8049	1.10E-10	3863	4.20E-10	3380	5.40E-10	4668	3.00E-10

Table 2.7-59 (Sheet 2 of 4)
Long-Term Average D/Q Calculations for Routine Releases for LNP 1 and LNP 2

	Nearest Residence		Downwind Distance (mi.) (D/Q in m^{-2})										
Downwind Sector [(b)]	Distance (m)	D/Q (m^{-2})	0.25	0.5	0.75	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
N	2898	7.60E-10	1.95E-08	6.61E-09	3.39E-09	2.08E-09	1.04E-09	6.30E-10	4.26E-10	3.09E-10	2.35E-10	1.85E-10	1.50E-10
NNE	6600	2.00E-10	2.20E-08	7.42E-09	3.81E-09	2.34E-09	1.17E-09	7.08E-10	4.78E-10	3.47E-10	2.64E-10	2.08E-10	1.68E-10
NE	8049	1.60E-10	2.53E-08	8.56E-09	4.40E-09	2.70E-09	1.35E-09	8.16E-10	5.52E-10	4.00E-10	3.04E-10	2.40E-10	1.94E-10
ENE	8049	2.40E-10	3.85E-08	1.30E-08	6.68E-09	4.10E-09	2.05E-09	1.24E-09	8.39E-10	6.08E-10	4.62E-10	3.64E-10	2.95E-10
E	7727	3.00E-10	4.36E-08	1.48E-08	7.57E-09	4.65E-09	2.32E-09	1.41E-09	9.51E-10	6.89E-10	5.24E-10	4.13E-10	3.34E-10
ESE	5956	2.00E-10	1.81E-08	6.13E-09	3.15E-09	1.93E-09	9.63E-10	5.84E-10	3.95E-10	2.86E-10	2.18E-10	1.71E-10	1.39E-10
SE	4185	4.40E-10	2.16E-08	7.29E-09	3.74E-09	2.30E-09	1.15E-09	6.95E-10	4.70E-10	3.40E-10	2.59E-10	2.04E-10	1.65E-10
SSE	4668	3.40E-10	2.05E-08	6.93E-09	3.56E-09	2.18E-09	1.09E-09	6.60E-10	4.46E-10	3.23E-10	2.46E-10	1.94E-10	1.57E-10
S	6761	2.40E-10	2.74E-08	9.26E-09	4.76E-09	2.92E-09	1.46E-09	8.83E-10	5.97E-10	4.33E-10	3.29E-10	2.59E-10	2.10E-10
SSW	4507	6.20E-10	3.47E-08	1.17E-08	6.02E-09	3.70E-09	1.84E-09	1.12E-09	7.56E-10	5.48E-10	4.16E-10	3.28E-10	2.66E-10
SW	3220	1.90E-09	5.90E-08	2.00E-08	1.02E-08	6.29E-09	3.14E-09	1.90E-09	1.29E-09	9.32E-10	7.08E-10	5.58E-10	4.52E-10
WSW	2737	3.70E-09	8.67E-08	2.93E-08	1.51E-08	9.25E-09	4.61E-09	2.80E-09	1.89E-09	1.37E-09	1.04E-09	8.21E-10	6.64E-10
W	8049	5.20E-10	8.14E-08	2.75E-08	1.41E-08	8.68E-09	4.33E-09	2.63E-09	1.78E-09	1.29E-09	9.78E-10	7.71E-10	6.24E-10
WNW	8049	2.40E-10	3.79E-08	1.28E-08	6.58E-09	4.04E-09	2.01E-09	1.22E-09	8.26E-10	5.98E-10	4.55E-10	3.59E-10	2.90E-10
NW	2576	1.20E-09	2.48E-08	8.38E-09	4.30E-09	2.64E-09	1.32E-09	7.99E-10	5.40E-10	3.91E-10	2.98E-10	2.34E-10	1.90E-10
NNW	3380	5.40E-10	1.81E-08	6.12E-09	3.14E-09	1.93E-09	9.62E-10	5.83E-10	3.94E-10	2.86E-10	2.17E-10	1.71E-10	1.39E-10

Table 2.7-59 (Sheet 3 of 4)
Long-Term Average D/Q Calculations for Routine Releases for LNP 1 and LNP 2

Downwind Sector [b]	Downwind Distance (mi.) (D/Q in m^{-2})										
	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
N	1.24E-10	6.07E-11	3.81E-11	1.92E-11	1.17E-11	7.81E-12	5.60E-12	4.20E-12	3.27E-12	2.61E-12	2.13E-12
NNE	1.39E-10	6.82E-11	4.28E-11	2.16E-11	1.31E-11	8.77E-12	6.28E-12	4.72E-12	3.67E-12	2.93E-12	2.39E-12
NE	1.60E-10	7.86E-11	4.93E-11	2.49E-11	1.51E-11	1.01E-11	7.25E-12	5.44E-12	4.23E-12	3.38E-12	2.76E-12
ENE	2.44E-10	1.20E-10	7.50E-11	3.79E-11	2.29E-11	1.54E-11	1.10E-11	8.27E-12	6.43E-12	5.14E-12	4.19E-12
E	2.76E-10	1.35E-10	8.50E-11	4.29E-11	2.60E-11	1.74E-11	1.25E-11	9.38E-12	7.29E-12	5.82E-12	4.75E-12
ESE	1.15E-10	5.63E-11	3.53E-11	1.78E-11	1.08E-11	7.24E-12	5.19E-12	3.90E-12	3.03E-12	2.42E-12	1.98E-12
SE	1.37E-10	6.69E-11	4.20E-11	2.12E-11	1.28E-11	8.61E-12	6.17E-12	4.63E-12	3.60E-12	2.88E-12	2.35E-12
SSE	1.30E-10	6.36E-11	3.99E-11	2.02E-11	1.22E-11	8.18E-12	5.86E-12	4.40E-12	3.42E-12	2.74E-12	2.23E-12
S	1.74E-10	8.51E-11	5.34E-11	2.70E-11	1.63E-11	1.10E-11	7.84E-12	5.89E-12	4.58E-12	3.66E-12	2.99E-12
SSW	2.20E-10	1.08E-10	6.75E-11	3.41E-11	2.07E-11	1.39E-11	9.93E-12	7.45E-12	5.80E-12	4.63E-12	3.78E-12
SW	3.74E-10	1.83E-10	1.15E-10	5.81E-11	3.52E-11	2.36E-11	1.69E-11	1.27E-11	9.86E-12	7.88E-12	6.43E-12
WSW	5.50E-10	2.69E-10	1.69E-10	8.54E-11	5.17E-11	3.47E-11	2.48E-11	1.87E-11	1.45E-11	1.16E-11	9.45E-12
W	5.16E-10	2.53E-10	1.59E-10	8.02E-11	4.85E-11	3.25E-11	2.33E-11	1.75E-11	1.36E-11	1.09E-11	8.88E-12
WNW	2.40E-10	1.18E-10	7.38E-11	3.73E-11	2.26E-11	1.51E-11	1.09E-11	8.15E-12	6.33E-12	5.06E-12	4.13E-12
NW	1.57E-10	7.69E-11	4.83E-11	2.44E-11	1.48E-11	9.90E-12	7.09E-12	5.33E-12	4.14E-12	3.31E-12	2.70E-12
NNW	1.15E-10	5.62E-11	3.53E-11	1.78E-11	1.08E-11	7.23E-12	5.18E-12	3.89E-12	3.03E-12	2.42E-12	1.97E-12

Notes:

Wind Reference Level: 10 m
Stability Type: ΔT (60 – 10 m)
Release Type: Ground Level: 10 m

Table 2.7-59 (Sheet 4 of 4)
Long-Term Average D/Q Calculations for Routine Releases for LNP 1 and LNP 2

Notes (continued):

Building Height/Cross Section: 43.9 m/2730 m^2
POR: February 1, 2007 – January 31, 2009

a) The reported distance of the low population zone (LPZ) is measured from the centerpoint of LNP 1 and LNP 2 to the outermost boundary of the LPZ.

b) Downwind Sector: E = east; N = north; S = south; W = west

D/Q = relative deposition
m = meter
mi. = mile
m^{-2} = 1/m^2
m^2 = square meter

Table 2.7-60 (Sheet 1 of 4)
Long-Term Average X/Q Calculations (2.26-Day Decay) for Routine Releases for LNP 1 and LNP 2

	Exclusion Area Boundary		Low Population Zone [(a)]		Nearest Milk Cow		Nearest Milk Goat		Nearest Garden		Nearest Meat Animal	
Downwind Sector [(b)]	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)
N	1340	2.80E-06	4829	4.80E-07	8049	2.40E-07	8049	2.40E-07	2898	9.70E-07	4990	4.60E-07
NNE	1340	2.00E-06	4829	3.40E-07	8049	1.60E-07	8049	1.60E-07	6600	2.20E-07	8049	1.60E-07
NE	1340	1.80E-06	4829	2.90E-07	8049	1.40E-07	8049	1.40E-07	6600	1.90E-07	8049	1.40E-07
ENE	1340	1.80E-06	4829	2.80E-07	8049	1.30E-07	8049	1.30E-07	8049	1.30E-07	7244	1.60E-07
E	1340	2.40E-06	4829	3.80E-07	8049	1.80E-07	8049	1.80E-07	7727	1.90E-07	6922	2.30E-07
ESE	1340	2.80E-06	4829	4.60E-07	8049	2.30E-07	8049	2.30E-07	8049	2.30E-07	5795	3.60E-07
SE	1340	4.40E-06	4829	7.80E-07	8049	3.90E-07	8049	3.90E-07	5956	5.90E-07	6600	5.10E-07
SSE	1340	2.70E-06	4829	4.70E-07	8049	2.40E-07	8049	2.40E-07	8049	2.40E-07	4185	5.80E-07
S	1340	3.80E-06	4829	6.50E-07	8049	3.20E-07	8049	3.20E-07	6761	4.10E-07	8049	3.20E-07
SSW	1340	3.70E-06	4829	6.20E-07	8049	3.00E-07	8049	3.00E-07	4829	6.20E-07	4507	6.80E-07
SW	1340	8.10E-06	4829	1.40E-06	8049	6.90E-07	8049	6.90E-07	4024	1.80E-06	8049	6.90E-07
WSW	1340	1.80E-05	4829	3.30E-06	8049	1.60E-06	8049	1.60E-06	2737	7.00E-06	8049	1.60E-06
W	1340	1.70E-05	4829	3.00E-06	8049	1.50E-06	8049	1.50E-06	8049	1.50E-06	8049	1.50E-06
WNW	1340	7.30E-06	4829	1.30E-06	8049	6.50E-07	8049	6.50E-07	8049	6.50E-07	8049	6.50E-07
NW	1340	4.60E-06	4829	7.90E-07	8049	3.90E-07	8049	3.90E-07	2576	1.80E-06	3541	1.20E-06
NNW	1340	3.50E-06	4829	6.00E-07	8049	3.00E-07	3863	8.20E-07	3380	9.80E-07	4668	6.30E-07

Table 2.7-60 (Sheet 2 of 4)
Long-Term Average X/Q Calculations (2.26-Day Decay) for Routine Releases for LNP 1 and LNP 2

	Nearest Residence		Downwind Distance (mi.) (X/Q in sec/m^3)										
Downwind Sector [(b)]	Distance (m)	X/Q (sec/m^3)	0.25	0.5	0.75	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
N	2898	9.70E-07	2.19E-05	6.60E-06	3.34E-06	2.14E-06	1.24E-06	8.40E-07	6.20E-07	4.84E-07	3.91E-07	3.25E-07	2.76E-07
NNE	6600	2.20E-07	1.51E-05	4.65E-06	2.40E-06	1.55E-06	8.84E-07	5.93E-07	4.35E-07	3.37E-07	2.72E-07	2.25E-07	1.91E-07
NE	8049	1.40E-07	1.29E-05	4.06E-06	2.14E-06	1.39E-06	7.80E-07	5.18E-07	3.77E-07	2.91E-07	2.33E-07	1.93E-07	1.63E-07
ENE	8049	1.30E-07	1.28E-05	4.08E-06	2.13E-06	1.37E-06	7.63E-07	5.04E-07	3.65E-07	2.81E-07	2.25E-07	1.85E-07	1.56E-07
E	7727	1.90E-07	1.74E-05	5.39E-06	2.80E-06	1.80E-06	1.02E-06	6.76E-07	4.93E-07	3.80E-07	3.06E-07	2.53E-07	2.13E-07
ESE	5956	3.50E-07	2.07E-05	6.28E-06	3.24E-06	2.09E-06	1.20E-06	8.12E-07	5.97E-07	4.64E-07	3.74E-07	3.11E-07	2.63E-07
SE	4185	9.40E-07	3.58E-05	1.06E-05	5.24E-06	3.35E-06	1.96E-06	1.34E-06	9.95E-07	7.79E-07	6.32E-07	5.27E-07	4.49E-07
SSE	4668	5.00E-07	2.18E-05	6.48E-06	3.24E-06	2.07E-06	1.21E-06	8.21E-07	6.08E-07	4.75E-07	3.85E-07	3.21E-07	2.73E-07
S	6761	4.10E-07	2.96E-05	8.87E-06	4.45E-06	2.85E-06	1.66E-06	1.12E-06	8.31E-07	6.48E-07	5.25E-07	4.37E-07	3.72E-07
SSW	4507	6.80E-07	2.75E-05	8.48E-06	4.40E-06	2.84E-06	1.63E-06	1.09E-06	8.01E-07	6.21E-07	5.01E-07	4.15E-07	3.52E-07
SW	3220	2.40E-06	6.29E-05	1.89E-05	9.57E-06	6.15E-06	3.57E-06	2.42E-06	1.79E-06	1.40E-06	1.13E-06	9.40E-07	7.98E-07
WSW	2737	7.00E-06	1.51E-04	4.42E-05	2.18E-05	1.39E-05	8.23E-06	5.64E-06	4.20E-06	3.29E-06	2.68E-06	2.23E-06	1.90E-06
W	8049	1.50E-06	1.38E-04	4.02E-05	1.98E-05	1.27E-05	7.48E-06	5.12E-06	3.81E-06	2.99E-06	2.43E-06	2.03E-06	1.73E-06
WNW	8049	6.50E-07	5.95E-05	1.75E-05	8.68E-06	5.54E-06	3.26E-06	2.23E-06	1.66E-06	1.30E-06	1.05E-06	8.80E-07	7.49E-07
NW	2576	1.80E-06	3.57E-05	1.07E-05	5.39E-06	3.46E-06	2.01E-06	1.37E-06	1.01E-06	7.90E-07	6.40E-07	5.32E-07	4.52E-07
NNW	3380	9.80E-07	2.72E-05	8.17E-06	4.14E-06	2.66E-06	1.55E-06	1.05E-06	7.74E-07	6.04E-07	4.89E-07	4.07E-07	3.45E-07

Table 2.7-60 (Sheet 3 of 4)
Long-Term Average X/Q Calculations (2.26-Day Decay) for Routine Releases for LNP 1 and LNP 2

Downwind Sector [(b)]	Downwind Distance (mi.) (X/Q in sec/m^3)										
	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
N	2.39E-07	1.34E-07	8.79E-08	4.71E-08	2.94E-08	1.99E-08	1.43E-08	1.06E-08	8.10E-09	6.33E-09	5.04E-09
NNE	1.64E-07	9.16E-08	5.98E-08	3.19E-08	2.00E-08	1.36E-08	9.75E-09	7.28E-09	5.59E-09	4.40E-09	3.52E-09
NE	1.40E-07	7.73E-08	5.03E-08	2.68E-08	1.68E-08	1.15E-08	8.31E-09	6.25E-09	4.85E-09	3.85E-09	3.11E-09
ENE	1.34E-07	7.41E-08	4.83E-08	2.58E-08	1.63E-08	1.12E-08	8.16E-09	6.19E-09	4.83E-09	3.87E-09	3.15E-09
E	1.83E-07	1.02E-07	6.64E-08	3.55E-08	2.23E-08	1.53E-08	1.11E-08	8.33E-09	6.46E-09	5.13E-09	4.15E-09
ESE	2.27E-07	1.27E-07	8.28E-08	4.42E-08	2.75E-08	1.86E-08	1.33E-08	9.90E-09	7.57E-09	5.91E-09	4.70E-09
SE	3.88E-07	2.19E-07	1.44E-07	7.73E-08	4.82E-08	3.26E-08	2.32E-08	1.72E-08	1.30E-08	1.01E-08	7.98E-09
SSE	2.36E-07	1.33E-07	8.74E-08	4.71E-08	2.95E-08	2.01E-08	1.44E-08	1.07E-08	8.21E-09	6.43E-09	5.13E-09
S	3.21E-07	1.81E-07	1.19E-07	6.39E-08	4.00E-08	2.72E-08	1.96E-08	1.46E-08	1.12E-08	8.76E-09	6.99E-09
SSW	3.03E-07	1.69E-07	1.11E-07	5.94E-08	3.72E-08	2.54E-08	1.83E-08	1.37E-08	1.06E-08	8.34E-09	6.71E-09
SW	6.89E-07	3.88E-07	2.54E-07	1.37E-07	8.53E-08	5.79E-08	4.15E-08	3.09E-08	2.36E-08	1.85E-08	1.47E-08
WSW	1.65E-06	9.34E-07	6.16E-07	3.31E-07	2.07E-07	1.40E-07	1.00E-07	7.41E-08	5.64E-08	4.38E-08	3.47E-08
W	1.50E-06	8.49E-07	5.59E-07	3.01E-07	1.88E-07	1.27E-07	9.09E-08	6.73E-08	5.12E-08	3.98E-08	3.15E-08
WNW	6.48E-07	3.67E-07	2.42E-07	1.30E-07	8.11E-08	5.50E-08	3.93E-08	2.91E-08	2.22E-08	1.73E-08	1.37E-08
NW	3.91E-07	2.20E-07	1.44E-07	7.73E-08	4.81E-08	3.26E-08	2.33E-08	1.72E-08	1.31E-08	1.02E-08	8.11E-09
NNW	2.98E-07	1.68E-07	1.10E-07	5.87E-08	3.65E-08	2.47E-08	1.76E-08	1.31E-08	9.95E-09	7.74E-09	6.14E-09

Notes:

Wind Reference Level: 10 m

Table 2.7-60 (Sheet 4 of 4)
Long-Term Average X/Q Calculations (2.26-Day Decay) for Routine Releases for LNP 1 and LNP 2

Notes (continued):

Stability Type: ΔT (60 – 10 m)
Release Type: Ground Level:10 m
Building Height/Cross Section: 43.9 m/2730 m^2
POR: February 1, 2007 – January 31, 2009

a) The reported distance of the low population zone (LPZ) is measured from the centerpoint of LNP 1 and LNP 2 to the outermost boundary of the LPZ.

b) Downwind Sector: E = east; N = north; S = south; W = west

X/Q = local atmospheric dilution factor
m = meter
m^2 = square meter
mi. = mile
sec/m^3 = seconds per cubic meter

Table 2.7-61 (Sheet 1 of 4)
Long-Term Average X/Q Calculations (Depleted and 8-Day Decayed) for Routine Releases for LNP 1 and LNP 2

	Exclusion Area Boundary		Low Population Zone [(a)]		Nearest Milk Cow		Nearest Milk Goat		Nearest Garden		Nearest Meat Animal	
Downwind Sector [(b)]	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (sec/m^3)	Distance (m)	X/Q (ec/m^3)
N	1340	2.50E-06	4829	4.00E-07	8049	1.90E-07	8049	1.90E-07	2898	8.30E-07	4990	3.80E-07
NNE	1340	1.80E-06	4829	2.80E-07	8049	1.30E-07	8049	1.30E-07	6600	1.80E-07	8049	1.30E-07
NE	1340	1.60E-06	4829	2.40E-07	8049	1.10E-07	8049	1.10E-07	6600	1.50E-07	8049	1.10E-07
ENE	1340	1.60E-06	4829	2.30E-07	8049	1.10E-07	8049	1.10E-07	8049	1.10E-07	7244	1.30E-07
E	1340	2.10E-06	4829	3.10E-07	8049	1.50E-07	8049	1.50E-07	7727	1.60E-07	6922	1.80E-07
ESE	1340	2.50E-06	4829	3.90E-07	8049	1.80E-07	8049	1.80E-07	8049	1.80E-07	5795	3.00E-07
SE	1340	4.00E-06	4829	6.50E-07	8049	3.20E-07	8049	3.20E-07	5956	4.80E-07	6600	4.20E-07
SSE	1340	2.50E-06	4829	4.00E-07	8049	1.90E-07	8049	1.90E-07	8049	1.90E-07	4185	4.90E-07
S	1340	3.40E-06	4829	5.40E-07	8049	2.60E-07	8049	2.60E-07	6761	3.30E-07	8049	2.60E-07
SSW	1340	3.30E-06	4829	5.20E-07	8049	2.40E-07	8049	2.40E-07	4829	5.20E-07	4507	5.70E-07
SW	1340	7.30E-06	4829	1.20E-06	8049	5.60E-07	8049	5.60E-07	4024	1.50E-06	8049	5.60E-07
WSW	1340	1.70E-05	4829	2.80E-06	8049	1.30E-06	8049	1.30E-06	2737	6.00E-06	8049	1.30E-06
W	1340	1.50E-05	4829	2.50E-06	8049	1.20E-06	8049	1.20E-06	8049	1.20E-06	8049	1.20E-06
WNW	1340	6.60E-06	4829	1.10E-06	8049	5.30E-07	8049	5.30E-07	8049	5.30E-07	8049	5.30E-07
NW	1340	4.10E-06	4829	6.60E-07	8049	3.20E-07	8049	3.20E-07	2576	1.60E-06	3541	1.00E-06
NNW	1340	3.10E-06	4829	5.00E-07	8049	2.40E-07	3863	6.90E-07	3380	8.40E-07	4668	5.30E-07

Table 2.7-61 (Sheet 2 of 4)
Long-Term Average X/Q Calculations (Depleted and 8-Day Decayed) for Routine Releases for LNP 1 and LNP 2

	Nearest Residence		Downwind Distance (mi.) (X/Q in sec/m^3)										
Downwind Sector [(b)]	Distance (m)	X/Q (sec/m^3)	0.25	0.5	0.75	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
N	2898	8.30E-07	2.08E-05	6.08E-06	3.01E-06	1.90E-06	1.08E-06	7.19E-07	5.24E-07	4.04E-07	3.24E-07	2.67E-07	2.25E-07
NNE	6600	1.80E-07	1.44E-05	4.28E-06	2.16E-06	1.37E-06	7.68E-07	5.06E-07	3.66E-07	2.81E-07	2.24E-07	1.84E-07	1.55E-07
NE	8049	1.10E-07	1.23E-05	3.73E-06	1.93E-06	1.23E-06	6.76E-07	4.41E-07	3.16E-07	2.41E-07	1.91E-07	1.56E-07	1.31E-07
ENE	8049	1.10E-07	1.22E-05	3.75E-06	1.92E-06	1.21E-06	6.59E-07	4.27E-07	3.05E-07	2.32E-07	1.83E-07	1.50E-07	1.25E-07
E	7727	1.60E-07	1.65E-05	4.96E-06	2.52E-06	1.60E-06	8.81E-07	5.75E-07	4.13E-07	3.15E-07	2.50E-07	2.05E-07	1.72E-07
ESE	5956	2.90E-07	1.96E-05	5.78E-06	2.92E-06	1.86E-06	1.05E-06	6.94E-07	5.04E-07	3.87E-07	3.09E-07	2.55E-07	2.14E-07
SE	4185	8.00E-07	3.41E-05	9.76E-06	4.73E-06	2.98E-06	1.71E-06	1.15E-06	8.42E-07	6.52E-07	5.25E-07	4.34E-07	3.67E-07
SSE	4668	4.20E-07	2.07E-05	5.97E-06	2.92E-06	1.84E-06	1.05E-06	7.03E-07	5.13E-07	3.96E-07	3.18E-07	2.63E-07	2.22E-07
S	6761	3.30E-07	2.81E-05	8.17E-06	4.01E-06	2.53E-06	1.44E-06	9.61E-07	7.01E-07	5.41E-07	4.34E-07	3.58E-07	3.02E-07
SSW	4507	5.70E-07	2.61E-05	7.80E-06	3.96E-06	2.52E-06	1.41E-06	9.31E-07	6.73E-07	5.16E-07	4.12E-07	3.39E-07	2.85E-07
SW	3220	2.10E-06	5.98E-05	1.74E-05	8.63E-06	5.47E-06	3.11E-06	2.07E-06	1.51E-06	1.16E-06	9.33E-07	7.70E-07	6.50E-07
WSW	2737	6.00E-06	1.44E-04	4.07E-05	1.97E-05	1.24E-05	7.17E-06	4.84E-06	3.55E-06	2.76E-06	2.22E-06	1.84E-06	1.56E-06
W	8049	1.20E-06	1.31E-04	3.71E-05	1.79E-05	1.13E-05	6.52E-06	4.39E-06	3.23E-06	2.50E-06	2.02E-06	1.67E-06	1.42E-06
WNW	8049	5.30E-07	5.66E-05	1.62E-05	7.83E-06	4.94E-06	2.84E-06	1.91E-06	1.40E-06	1.09E-06	8.74E-07	7.24E-07	6.12E-07
NW	2576	1.60E-06	3.39E-05	9.85E-06	4.86E-06	3.08E-06	1.75E-06	1.17E-06	8.55E-07	6.60E-07	5.30E-07	4.37E-07	3.69E-07
NNW	3380	8.40E-07	2.59E-05	7.53E-06	3.73E-06	2.37E-06	1.35E-06	8.98E-07	6.55E-07	5.05E-07	4.05E-07	3.34E-07	2.82E-07

Table 2.7-61 (Sheet 3 of 4)
Long-Term Average X/Q Calculations (Depleted and 8-Day Decayed) for Routine Releases for LNP 1 and LNP 2

	Downwind Distance (mi.) (X/Q in sec/m^3)										
Downwind Sector [(b)]	5.0	7.5	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
N	1.93E-07	1.07E-07	6.98E-08	3.76E-08	2.39E-08	1.66E-08	1.22E-08	9.38E-09	7.41E-09	5.98E-09	4.91E-09
NNE	1.32E-07	7.26E-08	4.70E-08	2.51E-08	1.59E-08	1.10E-08	8.09E-09	6.19E-09	4.88E-09	3.94E-09	3.23E-09
NE	1.12E-07	6.06E-08	3.90E-08	2.06E-08	1.30E-08	8.97E-09	6.58E-09	5.03E-09	3.97E-09	3.20E-09	2.63E-09
ENE	1.07E-07	5.76E-08	3.69E-08	1.95E-08	1.23E-08	8.49E-09	6.23E-09	4.77E-09	3.77E-09	3.04E-09	2.50E-09
E	1.47E-07	7.99E-08	5.15E-08	2.74E-08	1.73E-08	1.20E-08	8.81E-09	6.75E-09	5.32E-09	4.30E-09	3.53E-09
ESE	1.84E-07	1.01E-07	6.56E-08	3.52E-08	2.23E-08	1.55E-08	1.14E-08	8.69E-09	6.85E-09	5.53E-09	4.53E-09
SE	3.16E-07	1.77E-07	1.16E-07	6.27E-08	4.00E-08	2.79E-08	2.06E-08	1.58E-08	1.25E-08	1.01E-08	8.26E-09
SSE	1.91E-07	1.06E-07	6.94E-08	3.75E-08	2.39E-08	1.67E-08	1.23E-08	9.46E-09	7.48E-09	6.04E-09	4.97E-09
S	2.60E-07	1.44E-07	9.42E-08	5.08E-08	3.24E-08	2.26E-08	1.66E-08	1.28E-08	1.01E-08	8.16E-09	6.71E-09
SSW	2.44E-07	1.34E-07	8.67E-08	4.63E-08	2.93E-08	2.04E-08	1.50E-08	1.15E-08	9.05E-09	7.31E-09	6.00E-09
SW	5.58E-07	3.10E-07	2.02E-07	1.09E-07	6.91E-08	4.81E-08	3.55E-08	2.72E-08	2.15E-08	1.73E-08	1.42E-08
WSW	1.34E-06	7.52E-07	4.94E-07	2.68E-07	1.71E-07	1.20E-07	8.84E-08	6.79E-08	5.37E-08	4.34E-08	3.57E-08
W	1.22E-06	6.83E-07	4.48E-07	2.44E-07	1.56E-07	1.09E-07	8.03E-08	6.17E-08	4.88E-08	3.94E-08	3.24E-08
WNW	5.27E-07	2.95E-07	1.93E-07	1.05E-07	6.69E-08	4.67E-08	3.45E-08	2.65E-08	2.09E-08	1.69E-08	1.39E-08
NW	3.17E-07	1.76E-07	1.15E-07	6.21E-08	3.95E-08	2.75E-08	2.03E-08	1.55E-08	1.23E-08	9.89E-09	8.12E-09
NNW	2.42E-07	1.34E-07	8.76E-08	4.72E-08	3.00E-08	2.09E-08	1.54E-08	1.18E-08	9.28E-09	7.49E-09	6.15E-09

Notes:

Wind Reference Level: 10 m

Table 2.7-61 (Sheet 4 of 4)
Long-Term Average X/Q Calculations (Depleted and 8-Day Decayed) for Routine Releases for LNP 1 and LNP 2

Notes (continued):

Stability Type: ΔT (60 – 10 m)
Release Type: Ground Level: 10 m
Building Height/Cross Section: 43.9 m/2730 m^2
POR: February 1, 2007 – January 31, 2009

a) The reported distance of the low population zone (LPZ) is measured from the centerpoint of LNP 1 and LNP 2 to the outermost boundary of the LPZ.

b) Downwind Sector: E = east; N = north; S = south; W = west

X/Q = local atmospheric dilution factor
m = meter
m^2 = square meter
mi. = mile
sec/m3 = seconds per cubic meter

2.8 RELATED FEDERAL PROJECT ACTIVITIES

The purpose of this section is to identify federal projects directly related to the development of the LNP and assess the interrelationship and cumulative environmental impacts of the proposed LNP and related federal project activities. This section also determines the potential need for another agency to cooperatively participate in the EIS process. By definition under NUREG-1555, related federal project activities do not include the granting of licenses, permits, or approvals by other federal agencies, since they involve independent review by the involved federal agencies.

As described in the following list, no federal project activities associated with the LNP project were identified:

- No federal projects are planned to provide cooling water. A CWIS, funded by PEF, will be constructed on the north bank of the CFBC and within the CFG and Conservation Area, a state-owned and state-managed facility.

- No federal projects are planned to dispose of cooling tower blowdown water. A PEF-funded pipeline will be constructed along on the northern side of the CFBC and within the CFG, will cross the CFBC and extend south through the Crystal River State Buffer Preserve, and will terminate at the existing discharge system of the CREC.

- No federal projects contingent upon the proposed construction and operation of the LNP are known.

- No federal projects that will result in significant new power purchases within the LNP service area and that justify a need for power were identified.

Several transmission lines connecting the LNP to the power grid will cross state and federal highways, but the acquisition of the necessary approvals and permits to cross those highways does not constitute a related federal project as defined by NUREG-1555. Several access roads to state highways are necessary during construction and operation to allow for access to and from the LNP. Funding for these projects will likely be the responsibility of PEF. Because no direct federal funding would be involved, these projects would not be considered directly related federal projects. However, if the FDOT is involved in funding or constructing the access roads, then FHWA funds may be involved, though it is unlikely the FHWA would need to be an active participant in the EIS process, other than as a commenting agency due to the limited area of impacts associated with the construction of the access roads. Known federal actions associated with the LNP include permits, licenses, and approvals.