TABLES

TABLE 2.2.8-1
Overall Emergency Response Organizations and Suborganizations

Organization/Officer	General Location	Specific Location	Classification
CR3 Emergancy Organization	On-Site	Crytal River, Fl	Corporate
EOF Staff	Off-Site	Crytal River, Fl	Corporate
State Warning Point-Tallahassee	Off-Site	Tallahassee, FL	State
Division of Emergancy Management	Off-Site	Tallahassee, FL	State
Department of Health, Bureau of Radiation Control	Off-Site	Orlando, FL	State
Division of Florida Highway Patrol, Department of Highway Safety and Motor Vehicles	Off-Site	Crytal River, FL	State
Divison of Road Operations, Department of Transportion	Off-Site	Tallahassee, FL	State
Department of Agriculture & Consumer Services	Off-Site	Tallahassee, FL	State
Division of Forestry and Consumer Services	Off-Site	Tallahassee, FL	State
Division of Law Enforcement, Department of Natural Resources	Off-Site	Tallahassee, FL	State
Fish and Wildlife Conservation Commission	Off-Site	Crytal River, Fl	State
Citrus County Emergancy Management	Off-Site	Lecanto, FL	County
Citrus County Health Officer	Off-Site	Inverness, FL	County
Citrus County Sheriff	Off-Site	Inverness, FL	County
Citrus County Road Department	Off-Site	Inverness, FL	County
Local Emergancy Medical Services	Off-Site	Crytal River, FL	County
Levy County Emergancy Management	Off-Site	Bronson, FL	County
Citrus Memorial Hospital	Off-Site	Inverness, FL	Local
Seven Rivers Community Hospital	Off-Site	Crytal River, FL	Local
NRC, Region II	Off-Site	Atlanta, GA	Federal
NRC, Operations Center	Off-Site	Rockville, MD	Federal
Department of Homeland Security Chemical Nuclear Preparedness Protection Divison (formely Federal Emergancy Management Agency (FEMA)), Region IV	Off-Site	Atlanta, GA	Federal
Institute of Nuclear Power Operations	Off-Site	Atlanta, GA	Private
Nuclear Safety Department, Nuclear Power Division of Electric Power Research Institute	Off-Site	Palo Alto, CA	Private
Framatome Technologies	Off-Site	Lynchnburg, VA	Private
Contractors	Off-Site	Various	Private
Radiation Emergancy Assistance Center/Training Site	Off-Site	Oak Ridge, TN	Private

MEAN ANNUAL STREAMFLOW FOR WITHLACOOCHEE AND CRYSTAL RIVERS

Date	Withlacoochee Mean Annual Flow (cfs)[1]	Crystal River Mean Annual Flow (cfs)[2]
1965	NM	979.9
1966	NM	785.4
1967	NM	719.8
1968	NM	839.7
1969	NM	1,149
1970	1,573	1,076
1971	255	798.1
1972	212	594.6
1973	343	956.9
1974	406.6	1,189
1975	95.6	986
1976	139.3	925.1
1977	80.9	1,673
1978	235.3	NM
1979	126.7	NM
1980	397.2	NM
1981	78.8	NM
1982	671.2	NM
1983	1,224	NM
1984	693.4	NM
1985	310.1	NM
1986	344.5	NM
1987	382.6	NM
1988	467.1	NM
1989	311.5	NM
1990	205.5	NM
1991	227.4	NM
1992	122.2	NM
1993	165.6	NM
1994	312.6	NM
1995	741.2	NM
1996	810	NM
1997	123.4	NM
1998	1,645	NM
1999	233.6	NM
2000	134.9	NM
2001	138.4	NM
2002	180.5	NM
2003	1,219	NM
2004	379.4	NM
2005	1,255	NM
2006	305.2	NM

NM = Not measured

1 - USGS Station #02313230 period of record 1969-2006

2 - USGS Station #02310750 period of record 1964-1977

TABLE 2.3.4-2
SURFACE WATER QUALITY, CRYSTAL BAY

Parameter	Water Quality Standard[1]	Intake Canal Vicinity[2]					Discharge Canal Vicinity[3]				
		Average	Maximum	Minimum	95th Percentile	Number of Samples	Average	Maximum	Minimum	95th Percentile	Number of Samples
FECAL COLIFORM,A-1 MOD,WATER,44.5C,24HR (MPN/100ML)	<200 monthly ave <400 in 10% <800 on 1 day	3.11	79.00	1.00	13.00	274.00	3.64	33.00	1.00	16.50	74.00
OXYGEN ,DISSOLVED, ANALYSIS BY PROBE (MG/L)	>5.0 24-hr ave, >4.0	8.11	14.30	3.00	11.00	414.00	7.42	11.50	3.20	10.50	125.00
OXYGEN, DISSOLVED, PERCENT OF SATURATION (%)	-	92.90	160.27	36.59	66.33	406.00	89.36	132.00	39.51	54.93	125.00
PH, LAB (SU)	6.5 to 8.5	8.11	8.50	7.50	8.30	173.00	8.01	8.30	7.60	8.20	48.00
SALINITY BASED ON CONDUCTIVITY	-	22.76	36.80	5.80	30.07	490.00	21.59	29.90	5.10	26.99	144.00
TEMPERATURE, WATER (°C)	92°F Max, +2°F AM-Summer 90°F Max, +4°F AM-Remainder	21.77	34.80	6.10	31.00	1171.00	30.43	39.00	11.30	38.00	309.00
TURBIDITY,LAB (NTU)	≤ 29 above background	15.34	80.00	0.00	39.50	171.00	18.55	58.00	0.00	53.40	44.00

Source:

[1] Chapter 62-302, F.A.C.

[2] EPA STORET Station Numbers 21FLA34076SEAS,21FLA34064SEAS, 21FLA34050SEAS, 21FLA34051SEAS, 23010121

[3] EPA STORET Station Numbers 21FLA34069SEAS,21FLA34094SEAS, 23010122

TABLE 2.3.5-1

FLORIDA NATURAL AREAS INVENTORY
1018 Thomasville Road, Suite 200-C
Tallahassee, FL 32303
(850) 224-8207, FAX (850) 681-9364

January 2004

Citrus County Summary

Rare Species and Natural Communities Documented or Reported

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
AMPHIBIANS					
Notophthalmus perstriatus	Striped Newt	G2G3	S2S3	N	N
Pseudobranchus striatus lustricolus	Gulf Hammock Dwarf Siren	G5T1	S1	N	N
Rana capito	Gopher Frog	G3	S3	N	LS
REPTILES					
Alligator mississippiensis	American Alligator	G5	S4	T(S/A)	LS
Caretta caretta	Loggerhead	G3	S3	LT	LT
Chelonia mydas	Green Turtle	G3	S2	LE	LE
Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Dermochelys coriacea	Leatherback	G2	S2	LE	LE
Drymarchon couperi	Eastern Indigo Snake	G3	S3	N	LT
Eretmochelys imbricata	Hawksbill	G3	S1	LE	LE
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS
Lepidochelys kempii	Kemp's Ridley	G1	S1	LE	LE
Nerodia clarkii clarkii	Gulf Salt Marsh Snake	G4T3	S3?	N	N
Pituophis melanoleucus mugitus	Florida Pine Snake	G4T3?	S3	N	LS
Pseudemys concinna suwanniensis	Suwannee Cooter	G5T3	S3	N	LS
Stilosoma extenuatum	Short-tailed Snake	G3	S3	N	LT
BIRDS					
Accipiter cooperii	Cooper's Hawk	G5	S3	N	N
Aimophila aestivalis	Bachman's Sparrow	G3	S3	N	N
Ajaia ajaja	Roseate Spoonbill	G5	S2	N	LS
Ammodramus maritimus peninsulae	Scott's Seaside Sparrow	G4T3	S3	N	LS
Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	LT	LT
Aramus guarauna	Limpkin	G5	S3	N	LS
Ardea alba	Great Egret	G5	S4	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	LS
Buteo brachyurus	Short-tailed Hawk	G4G5	S1	N	N
Charadrius melodus	Piping Plover	G3	S2	LT	LT
Cistothorus palustris marianae	Marian's Marsh Wren	G5T3	S3	N	LS
Dendroica discolor paludicola	Florida Prairie Warbler	G5T3	S3	N	N
Egretta caerulea	Little Blue Heron	G5	S4	N	LS
Egretta thula	Snowy Egret	G5	S3	N	LS
Egretta tricolor	Tricolored Heron	G5	S4	N	LS
Elanoides forficatus	Swallow-tailed Kite	G5	S2	N	N
Eudocimus albus	White Ibis	G5	S4	N	LS
Falco columbarius	Merlin	G5	S2	N	N
Falco peregrinus	Peregrine Falcon	G4	S2	N	LE
Falco sparverius paulus	Southeastern American Kestrel	G5T4	S3	N	LT
Fregata magnificens	Magnificent Frigatebird	G5	S1	N	N
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	LT
Haematopus palliatus	American Oystercatcher	G5	S2	N	LS
Haliaeetus leucocephalus	Bald Eagle	G4	S3	LT	LT
Ixobrychus exilis	Least Bittern	G5	S4	N	N
Laterallus jamaicensis	Black Rail	G4	S2	N	N
Mycteria americana	Wood Stork	G4	S2	LE	LE
Nyctanassa violacea	Yellow-crowned Night-heron	G5	S3	N	N
Nycticorax nycticorax	Black-crowned Night-heron	G5	S3	N	N
Pandion haliaetus	Osprey	G5	S3S4	N	LS*
Pelecanus occidentalis	Brown Pelican	G4	S3	N	LS
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	LS
Picoides villosus	Hairy Woodpecker	G5	S3	N	N

Citrus County Summary

Rare Species and Natural Communities Documented or Reported

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
BIRDS					
Plegadis falcinellus	Glossy Ibis	G5	S3	N	N
Rallus longirostris scottii	Florida Clapper Rail	G5T3?	S3?	N	N
Rynchops niger	Black Skimmer	G5	S3	N	LS
Sterna antillarum	Least Tern	G4	S3	N	LT
Sterna caspia	Caspian Tern	G5	S2	N	N
Sterna maxima	Royal Tern	G5	S3	N	N
Sterna sandvicensis	Sandwich Tern	G5	S2	N	N
MAMMALS					
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S2	N	N
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3	S3	N	N
Mustela vison halilimnetes	Gulf Salt Marsh Mink	G5T3	S3	N	N
Myotis austroriparius	Southeastern Bat	G3G4	S3	N	N
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	LS
Puma concolor coryi	Florida Panther	G5T1	S1	LE	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	LS
Sorex longirostris eionis	Homosassa Shrew	G5T3	S3	N	LS
Trichechus manatus	Manatee	G2	S2	LE	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	LT*
INVERTEBRATES					
Cincinnatia helicogyra	Helicoid Spring Siltsnail	G1	S1	N	N
Crangonyx hobbsi	Hobbs' Cave Amphipod	G2G3	S2S3	N	N
Procambarus lucifugus	Light-fleeing Cave Crayfish	G2G3	S2S3	N	N
Troglocambarus maclanei	North Florida Spider Cave Crayfish	G2G3	S2	N	N
PLANTS					
Adiantum tenerum	Brittle Maidenhair Fern	G5	S3	N	LE
Agrimonia incisa	Incised Groove-bur	G3	S2	N	LE
Asplenium pumilum	Dwarf Spleenwort	G5	S1	N	LE
Asplenium x curtissii	Curtiss' Spleenwort	GNA	S1	N	N
Blechnum occidentale	Sinkhole Fern	G5	S1	N	LE
Centrosema arenicola	Sand Butterfly Pea	G2Q	S2	N	LE
Cheilanthes microphylla	Southern Lip Fern	G5	S3	N	LE
Glandularia tampensis	Tampa Vervain	G2	S2	N	LE
Matelea floridana	Florida Spiny-pod	G2	S2	N	LE
Monotropsis reynoldsiae	Pigmy Pipes	G1Q	S1	N	LE
Pavonia spinifex	Yellow Hibiscus	G4G5	S2	N	N
Peperomia humilis	Terrestrial Peperomia	G5	S2	N	LE
Pteroglossaspis ecristata	Giant Orchid	G2	S2	N	LT
Spiranthes polyantha	Green Ladies'-tresses	G4	S1S2	N	LE
Stylisma abdita	Scrub Stylisma	G3	S3	N	LE
Thelypteris reptans	Creeping Maiden Fern	G5	S2	N	LE
Triphora craigheadii	Craighead's Nodding-caps	G1	S1	N	LE
NATURAL COMMUNITIES					
Aquatic cave		G3	S3	N	N
Basin marsh		G4	S4	N	N
Basin swamp		G4	S3	N	N
Depression marsh		G4	S4	N	N
Floodplain swamp		G4	S4	N	N
Hydric hammock		G4	S4	N	N
Marine tidal marsh		G5	S4	N	N
Marine tidal swamp		G5	S4	N	N
Maritime hammock		G3	S2	N	N
Sandhill		G3	S2	N	N
Sandhill upland lake		G3	S2	N	N
Scrub		G2	S2	N	N
Shell mound		G2	S2	N	N
Sinkhole		G2	S2	N	N

Citrus County Summary

Rare Species and Natural Communities Documented or Reported

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
NATURAL COMMUNITIES					
Terrestrial cave		G3	S2	N	N
Upland hardwood forest		G5	S3	N	N
Upland mixed forest		G4	S4	N	N
Xeric hammock		G3	S3	N	N
OTHER ELEMENTS					
Bird rookery		GNR	SNR	N	N
Geological feature		GNR	SNR	N	N
Manatee aggregation site		GNR	SNR	N	N

Total count:

Number of tracked elements: 109
Number of distinct occurrences: 325

TABLE 2.3.7-1
Monthly and Annual Average Temperatures Measured at Tampa International Airport

	Daily Avg.Temperatures (°F)[a]			Daily Extremes (°F)[b]	
Month	Average	Maximum	Minimum	Maximum	Minimum
January	61.3	70.1	52.4	86	21
February	62.7	71.6	53.8	88	24
March	67.4	76.3	58.5	91	29
April	71.5	80.6	62.4	93	40
May	77.6	86.3	68.9	98	49
June	81.5	88.9	74.0	99	53
July	82.5	89.7	75.3	97	63
August	82.7	90.0	75.4	98	67
September	81.6	89.0	74.3	96	57
October	75.8	84.1	67.6	94	40
November	69.3	78.0	60.7	90	23
December	63.3	72.0	54.7	86	18
Annual	73.1	81.4	64.8	99	18

[a] 30-year period of record, climatological normal, 1971 to 2000
[b] 59-year period of record, 1947 to 2005.

Source: National Oceanic and Atmospheric Administration (NOAA), 2005.

TABLE 2.3.7-2
Monthly and Annual Average Precipitation and Relative Humidity Measured at Tampa International Airport

Month	Precipitation (inches) Average[a]	Humidity (%) hour (LT) [a] Maximum[b]	Minimum[b]	1 a.m.	7 a.m.	1 p.m.	7 p.m.
January	2.27	8.02	< 0.01	85	87	60	74
February	2.67	10.82	0.21	84	87	57	70
March	2.84	12.64	0.06	83	87	55	68
April	1.80	10.71	<0.01	82	86	52	64
May	2.85	17.64	0.02	82	85	54	64
June	5.50	13.75	1.46	85	86	60	70
July	6.49	20.59	1.65	86	88	64	74
August	7.60	18.59	2.35	88	90	65	76
September	6.54	13.98	0.79	88	91	63	76
October	2.29	7.36	0.06	86	90	58	73
November	1.62	6.12	<0.01	86	88	59	74
December	2.30	15.57	0.07	86	88	61	75
Annual	44.77	67.71	29.85	85	88	59	72

[a] 30-year period of record, climatological normal, 1971 to 2000.
[b] 59-year period of record, 1947 to 2005.

Note: LT = local time.

Source: NOAA, 2005.

TABLE 2.3.7-3
Seasonal and Annual Average Wind Direction and Wind Speed Measured at Tampa International Airport

Season	Average Wind Speed (mph)	Calm (Percent)	Prevailing Wind Direction
Winter	6.6	13.2	North-northeast
Spring	7.4	10.5	West
Summer	5.7	18.0	West-southwest
Fall	6.7	12.0	Northeast
Annual	6.6	13.4	North-northeast

[a] 5-year period of record, 2001 to 2005. The data for this period were also used in the air quality impact analyses for the project.

Source: NOAA, 2007.

TABLE 2.3.7-4
Seasonal and Annual Average Atmospheric Stability Classes Determined at Tampa International Airport

	Occurrence (Percent) of Stability Class [a]					
Season	Very Unstable	Moderately Unstable	Unstable	Slightly Neutral	Stable	Slightly Stable
Winter	0.0	3.5	12.2	41.7	18.4	24.2
Spring	0.5	8.6	17.1	33.1	18.0	22.8
Summer	2.6	13.4	19.0	20.8	14.7	29.6
Fall	0.6	7.5	15.4	30.3	17.5	28.8
Annual	0.9	8.3	15.9	31.4	17.1	26.3

[a] 5-year period of record, 1991 to 1995.

Source: NOAA, 1995.

TABLE 2.3.7-5

Seasonal and Annual Average Morning and Afternoon Mixing Heights Determined at Tampa International Airport

Season	Mixing Height (m) Morning	Afternoon
Winter	475	1,032
Spring	691	1,531
Summer	657	1,398
Fall	481	1,132
Annual	577	1,275

[a]5-year period of record, 1991 to 1995. Mixing heights based on surface temperatures and upper-air data from the NWS stations at Tampa International Airport and Ruskin, respectively.

Source: NOAA, 1995.

TABLE 2.3.7-6
NATIONAL AND STATE AAQS, ALLOWABLE PSD INCREMENTS, AND SIGNIFICANT IMPACT LEVELS

Pollutant	Averaging Time	National AAQS (µg/m³) [a] Primary Standard	National AAQS (µg/m³) [a] Secondary Standard	Florida AAQS [a] (µg/m³)	Significant Impact PSD Increments (µg/m³) [a] Class I	Significant Impact PSD Increments (µg/m³) [a] Class II	Significant Impact Levels (µg/m³) [b] Class I	Significant Impact Levels (µg/m³) [b] Class II
Particulate Matter (PM_{10})	Annual Arithmetic Mean	50	50	50	4	17	0.2	1
	24-Hour Maximum	150	150	150	8	30	0.3	5
Particulate Matter [c] ($PM_{2.5}$)	Annual Arithmetic Mean	15	15	50	NA	NA	NA	NA
	24-Hour Maximum	35	35	150	NA	NA	NA	NA
Sulfur Dioxide	Annual Arithmetic Mean	80	NA	60	2	20	0.1	1
	24-Hour Maximum	365	NA	260	5	91	0.2	5
	3-Hour Maximum	NA	1,300	1,300	25	512	1.0	25
Carbon Monoxide	8-Hour Maximum	10,000	10,000	10,000	NA	NA	NA	500
	1-Hour Maximum	40,000	40,000	40,000	NA	NA	NA	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100	2.5	25	0.1	1
Ozone [c]	1-Hour Maximum [d]	235	235	235	NA	NA	NA	NA
	8-Hour Maximum [e]	160	160					
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	1.5	NA	NA	NA	NA

Note: Particulate matter (PM_{10}) = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.
Particulate matter ($PM_{2.5}$) = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.
NA = Not applicable, i.e., no standard exists or not promulgated yet.

[a] Short-term maximum concentrations are not to be exceeded more than once per year, except for PM_{10}, $PM_{2.5}$, and O_3 AAQS which are based on expected exceedances.

[b] Maximum concentrations are not to be exceeded.

[c] 24-hour standard based on the 3-year averages of the 98th percentile values; annual standard based on 3-year average at community monitors. These standards must be implemented in the 2007-2008 timeframe. On October 17, 2006, EPA finalized the PM AAQS (71 FR 61236). The 24-hour $PM_{2.5}$ standard was changed to 35 µg/m³. The FDEP has not yet adopted the revised standards.

[d] 0.12 ppm; achieved when the expected number of days per year with concentrations above the standard is fewer than 1.

[e] 0.08 ppm; achieved when the 3-year average of 99th percentile values is 0.08 ppm or less. These standards must be implemented in the 2007-2008 timeframe. The FDEP has not yet adopted the revised standards.

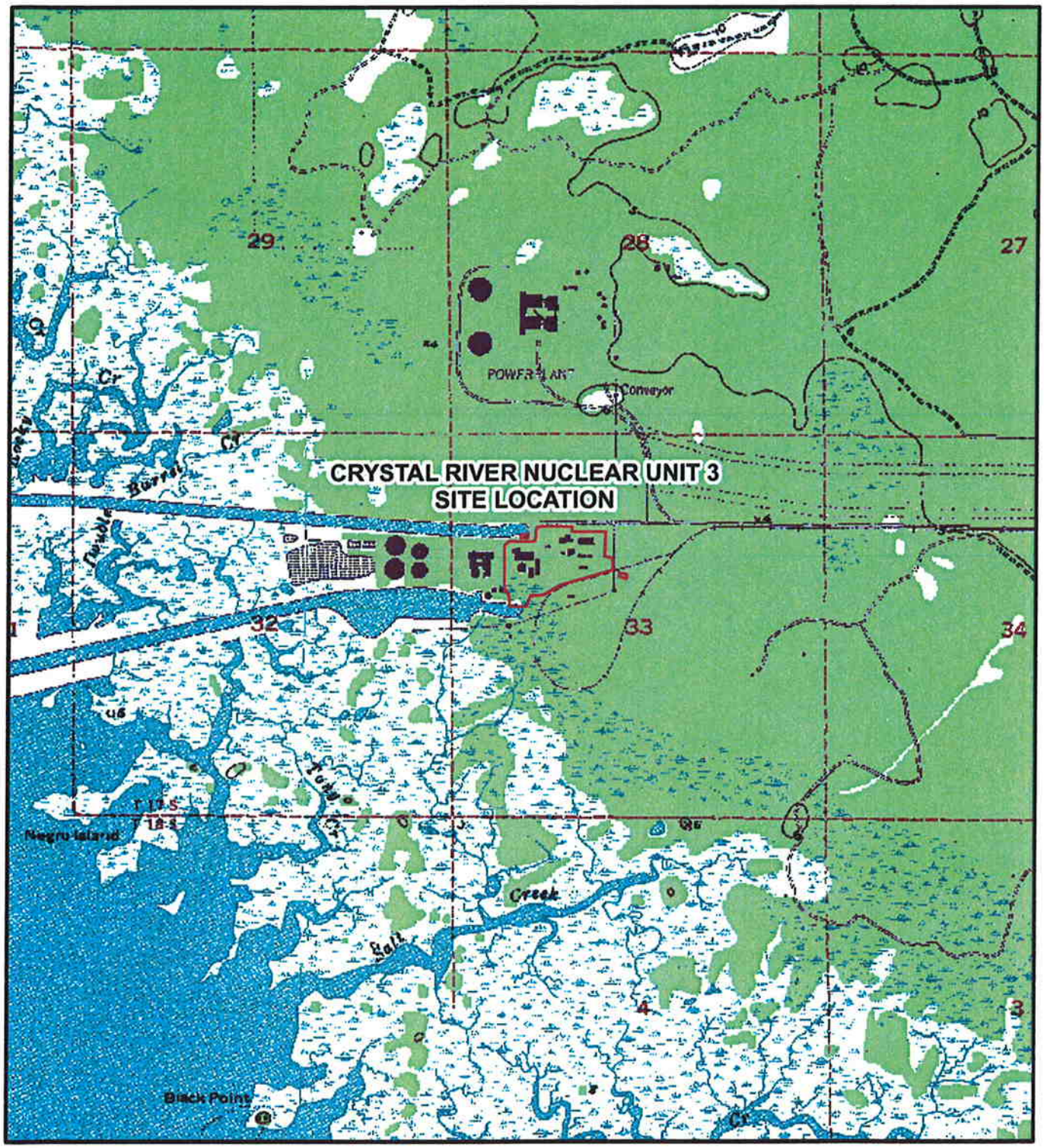
Sources: Federal Register, Vol. 43, No. 118, June 19, 1978; 40 CFR 50; 40 CFR 52.21; Florida Chapter 62.204, F.A.C.
Golder, 2006.

TABLE 2.3.8-1
Baseline Ambient Sound Pressure Levels (dBA) Observed at the Crystal River Energy Complex

Site	Coordinates	Date	Time	Sound Levels (dBA)				Observations
				Min	Max	L_{10}	Leq	
1. On-site North of reactor	28° 57' 32.6" N	11-Apr-07	Daytime	60	85	65	66	Plant traffic and plant operations
	82° 41' 52.7"W	11-Apr-07	Nighttime	61	76	62	63	Plant traffic, plant operations, and insect noise
2. On-site East of reactor	28° 57' 28.1" N	11-Apr-07	Daytime	63	68	65	64	Plant operations, conveyor, and fence construction
	82° 41' 37.6"W	11-Apr-07	Nighttime	62	66	63	63	Plant operations, conveyor, and insect noise
3. On-site South of reactor	28° 57' 22.96" N	11-Apr-07	Daytime	67	75	70	70	Plant operations, conveyor, and traffic
	82° 41' 51.3"W	11-Apr-07	Nighttime	69	72	71	70	Plant operations, conveyor, and insect noise
4. West of plant near cooling	28° 57' 34.7" N	11-Apr-07	Daytime	52	60	57	55	Plant traffic, plant operations, and cooling tower ops,
towers	82° 42' 15.2"W	11-Apr-07	Nighttime	56	63	60	59	Plant traffic and rain
5. Northeast corner of fenceline	28° 58' 11.0" N	11-Apr-07	Daytime	47	57	51	50	Coal plant operations and air plane traffic
	82° 41' 07.8"W	11-Apr-07	Nighttime	47	63	57	55	Coal plant operations and insect noise
6. Intersection of Tallahasse and	28° 57' 35.4" N	11-Apr-07	Daytime	42	68	56	53	Traffic, powerline buzz, and neigboring facility noise
Powerline Rd	82° 38' 00.2"W	11-Apr-07	Nighttime	39	95	74	73	Traffic, powerline buzz, insects, and train passing
7. Middle point on Powerline Rd	28° 57' 34.2" N	11-Apr-07	Daytime	39	74	62	59	Traffic, powerline buzz, and airplane traffic
	82° 39' 37.5"W	11-Apr-07	Nighttime	44	54	47	46	Plant operations and powerline buzz
Commercial Maximum Allowable Sound Pressure Levels (L_{10})			Daytime			65		
			Nighttime			60		

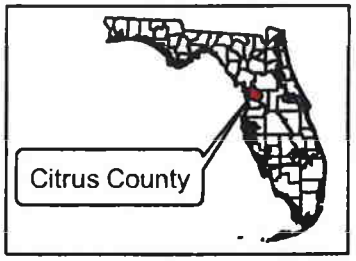
Source: Golder Associates Inc, 2007

FIGURES



LEGEND

Crystal River Nuclear Unit 3 Site Location



0 0.4 0.8 Miles

N

REFERENCE

1. Topo scanned from existing USGS 7.5" quads in 1997.

PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
SITE LOCATION

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	**FIGURE**	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007	**2.1.1-1**	
REVIEW	MM	April 17, 2007		

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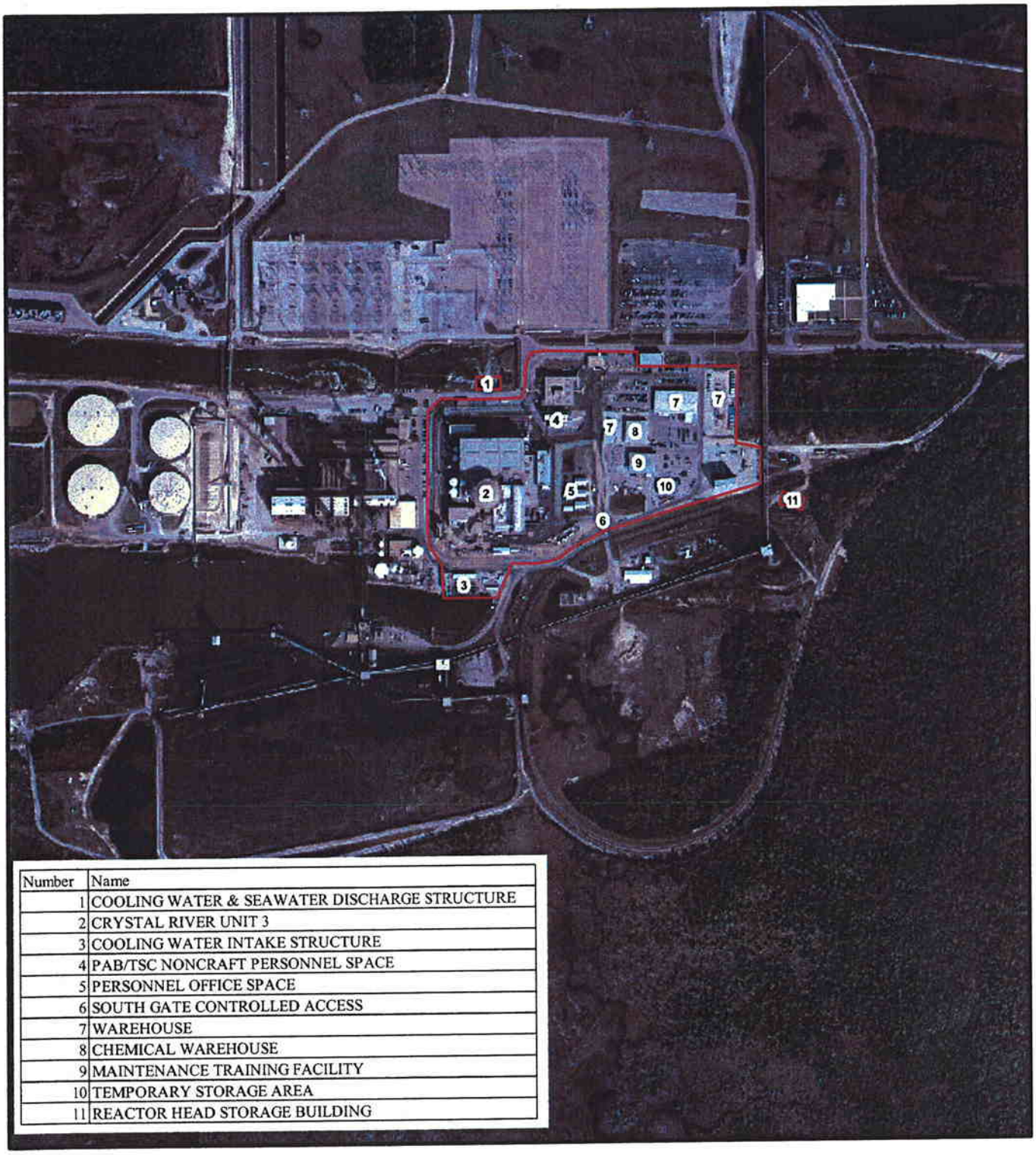
073-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A014 Site Locatic
_1-1.mxd



Number	Name
1	COOLING WATER & SEAWATER DISCHARGE STRUCTURE
2	CRYSTAL RIVER UNIT 3
3	COOLING WATER INTAKE STRUCTURE
4	PAB/TSC NONCRAFT PERSONNEL SPACE
5	PERSONNEL OFFICE SPACE
6	SOUTH GATE CONTROLLED ACCESS
7	WAREHOUSE
8	CHEMICAL WAREHOUSE
9	MAINTENANCE TRAINING FACILITY
10	TEMPORARY STORAGE AREA
11	REACTOR HEAD STORAGE BUILDING

LEGEND

Crystal River Nuclear Unit 3 Site Location

0 0.1 0.2 Miles

N

REFERENCE

1. 2006 SWFWMD Aerial.
2. Cyrstal River Unit 3 Site Location by Golder Associates Inc.

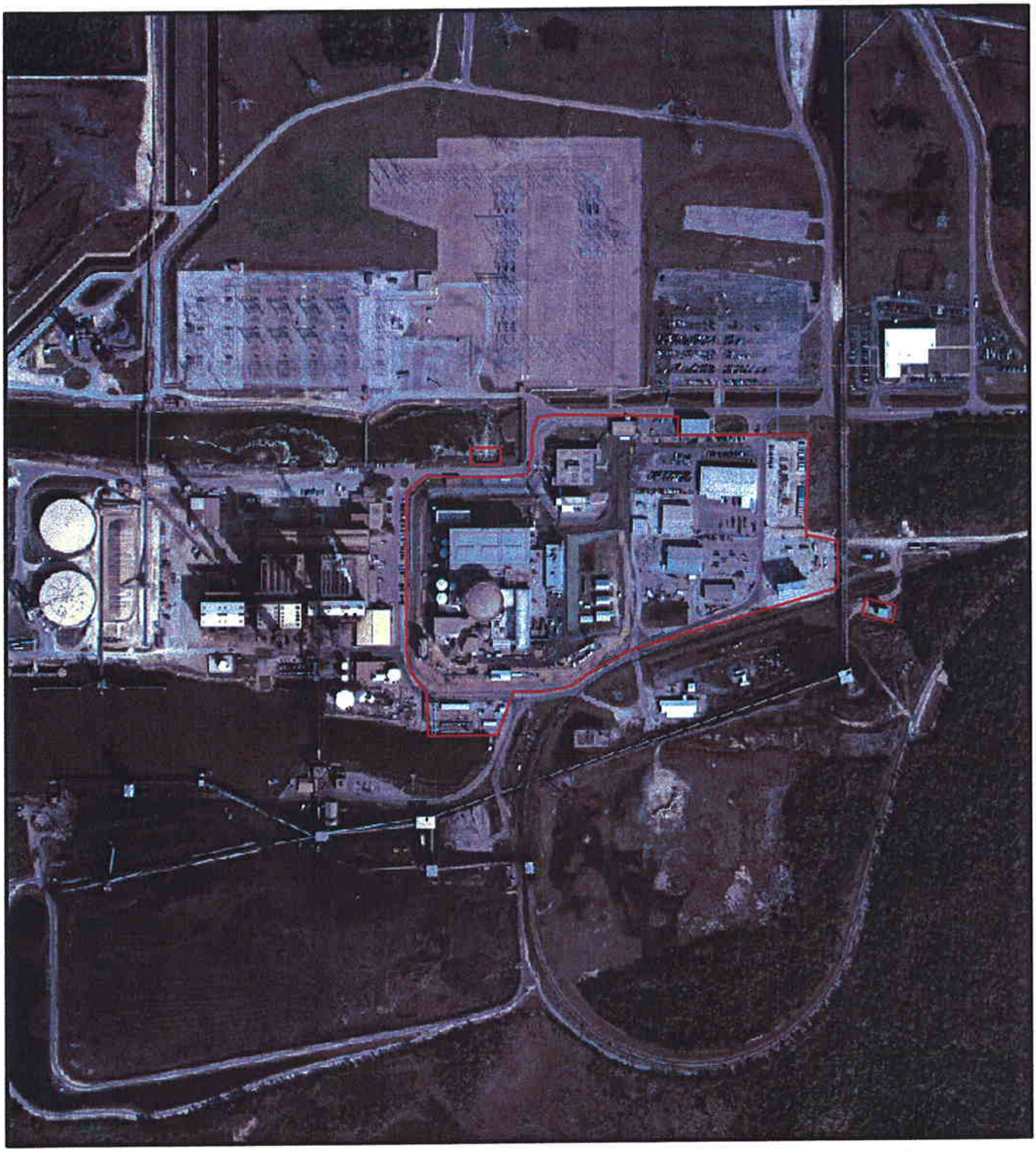
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
CRYSTAL RIVER NUCLEAR UNIT 3 SITE LAYOUT/CERTIFICATION BOUNDARY

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.1.2-1	

F:\PROJECTS\2007 3-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A001 Crystal River Unit 3 Site Layout Fig 2_1_2-1.mxd



0 0.1 0.2 Miles

LEGEND

Crystal River Nuclear Unit 3 Site Location

N

REFERENCE

1. 2006 SWFWMD Aerial.
2. Cyrstal River Unit 3 Site Location by Golder Associates Inc.

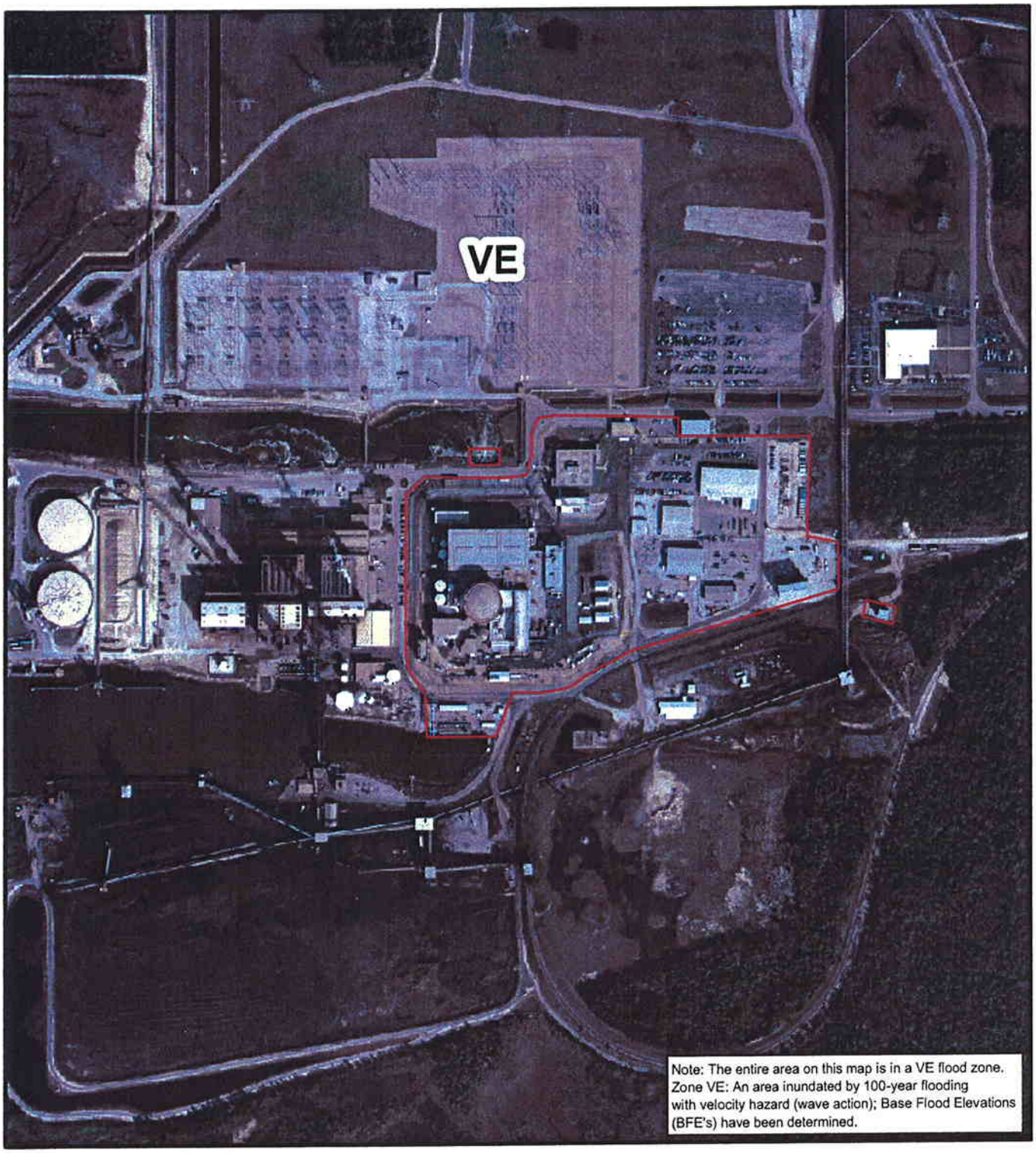
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
AERIAL PHOTOGRAPH

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.1.2-2	

F:\PROJECTS\2007 3-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A002 Aerial Photog 2_1_2-2.mxd



LEGEND

Crystal River Nuclear Unit 3 Site Location

0 0.1 0.2 Miles

N

REFERENCE

1. 2006 SWFWMD Aerial.
2. FEMA flood zone information fron the FDEP.
3. Cyrstal River Site Location by Golder Associates Inc.

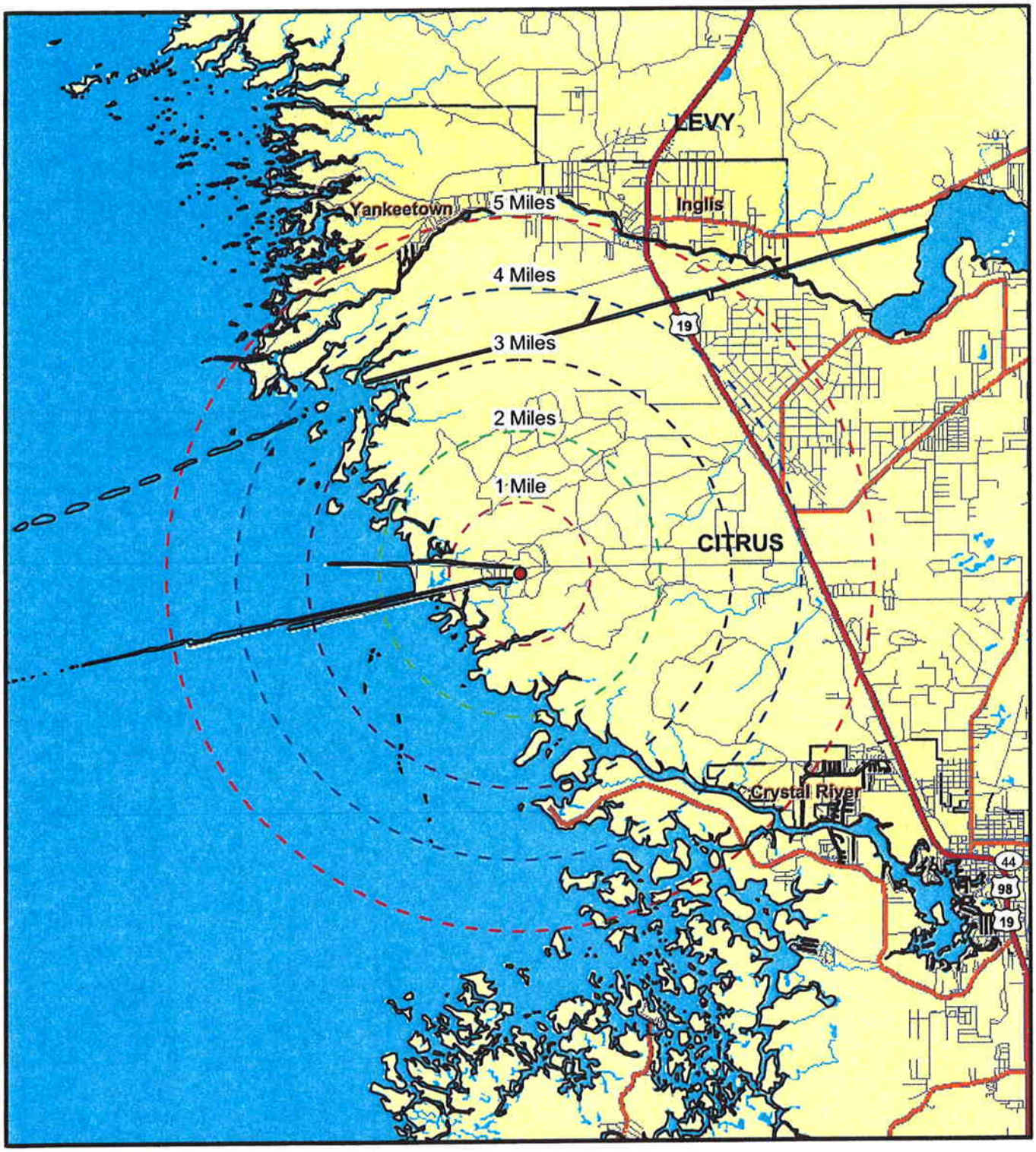
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
FLOOD ZONE

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	**FIGURE**	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007	**2.1.5-1**	
REVIEW	MM	April 17, 2007		

F:\PROJECTS\2007 3-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A017 Flood Zone F 1.mxd



LEGEND

- Crystal River Nuclear Unit 3 Site Location
- County Boundaries
- 5 Mile Radius
- 4 Mile Radius
- 3 Mile Radius
- 2 Mile Radius
- 1 Mile Radius
- Highway
- Major Road
- Local Road
- Municipalities

0 2 4 Miles

N

REFERENCE

1. ESRI Street Map was used as background.

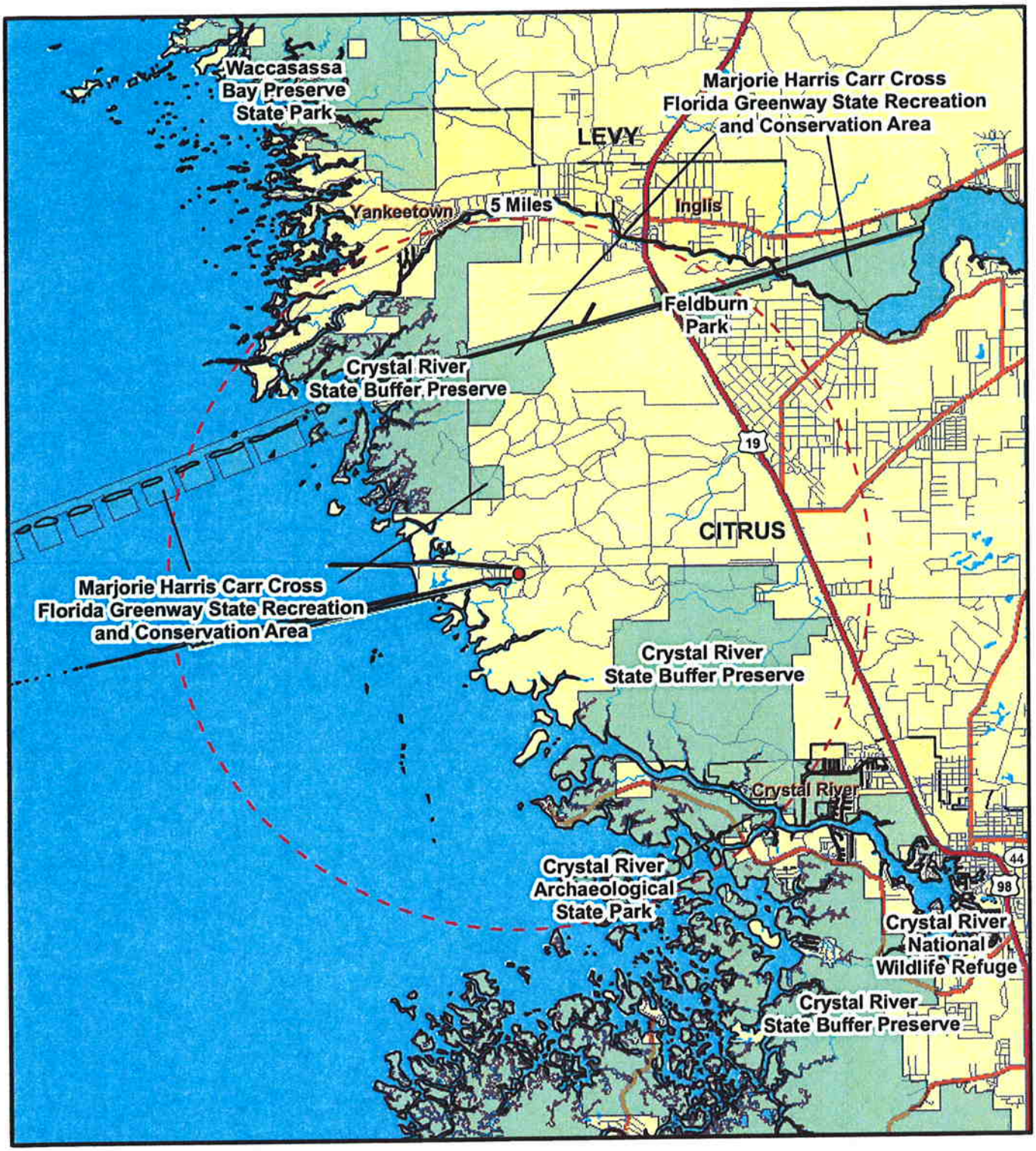
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
GOVERNMENTAL JURISDICTIONS (Within 1,2,3,4, and 5 Mile Radii)

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.2.1-1	

F:\PROJECTS\2007_073-89531_CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A016 Governmenti tions Within 1, 2, 3, 4, and 5 Mile Radii Fig 2_2_1-1.mxd



0 2 4 Miles

LEGEND

- Crystal River Nuclear Unit 3 Site Location
- Highway
- Major Road
- Local Road
- 5 Mile Radius
- Conservation Lands
- Municipalities
- County Boundaries

REFERENCE

1. ESRI Street Map was used as background.
2. Conservation Lands represent public and some private lands that the Florida Natural Areas Inventory (FNAI) has identified as having natural resource value and are being managed at least partially for conservation.

N

PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

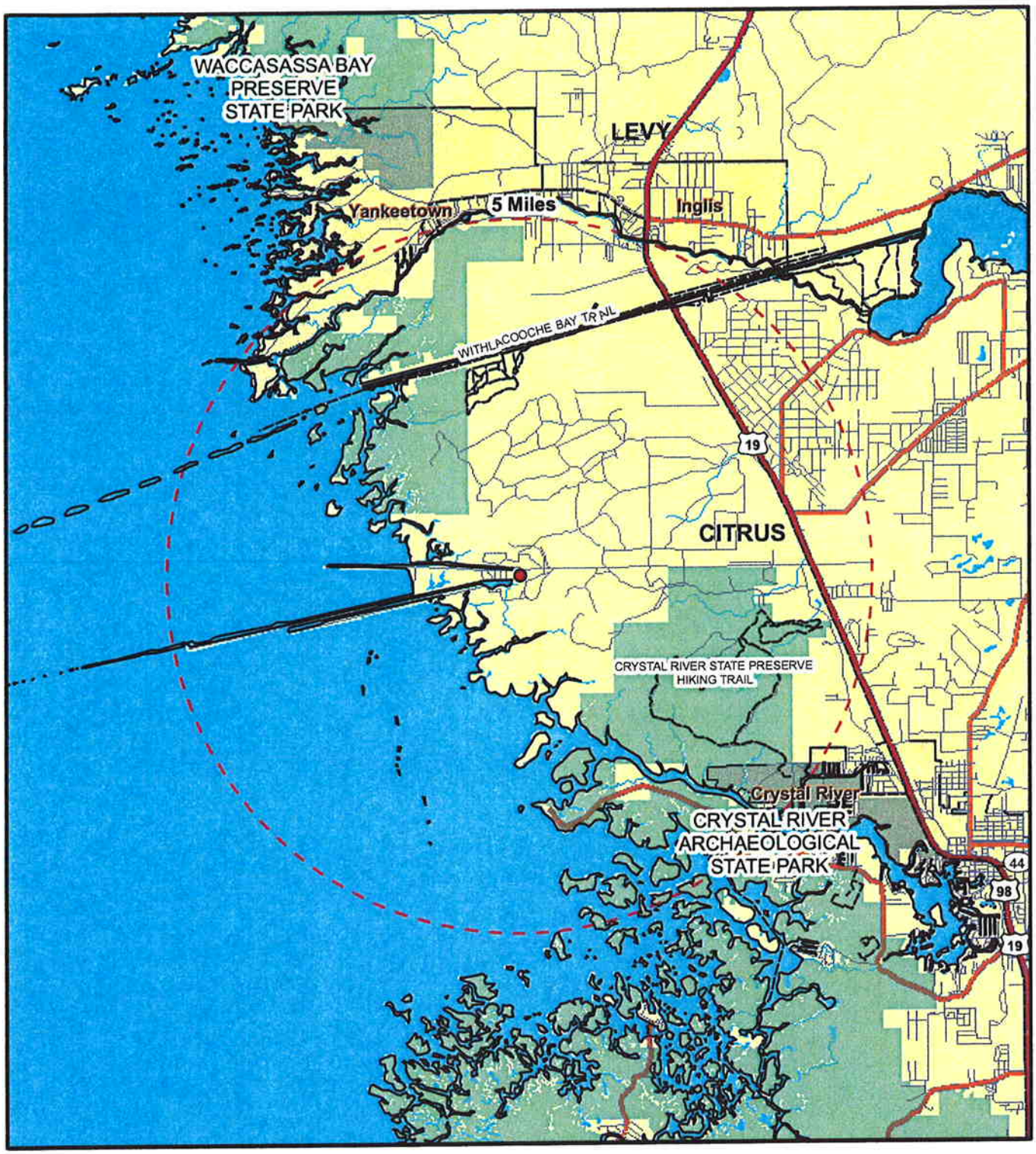
TITLE
CONSERVATION LANDS WITHIN 5 MILE RADIUS

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.2.1-2	

J:\89531_CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A018 Conservation

F:\PROJECTS\2007\...\thin 5 Mile Radius Fig 2_2_1-2.mxd



LEGEND

- Crystal River Nuclear Unit 3 Site Location
- 5 Mile Radius
- Highway
- Major Road
- Local Road
- Existing Trails
- State Parks
- Municipalities
- County Boundaries

REFERENCE

1. ESRI Street Map was used as background.
2. State Parks & Existing Trails from the Florida Department of Environmental Protection.

0 2 4 Miles

N

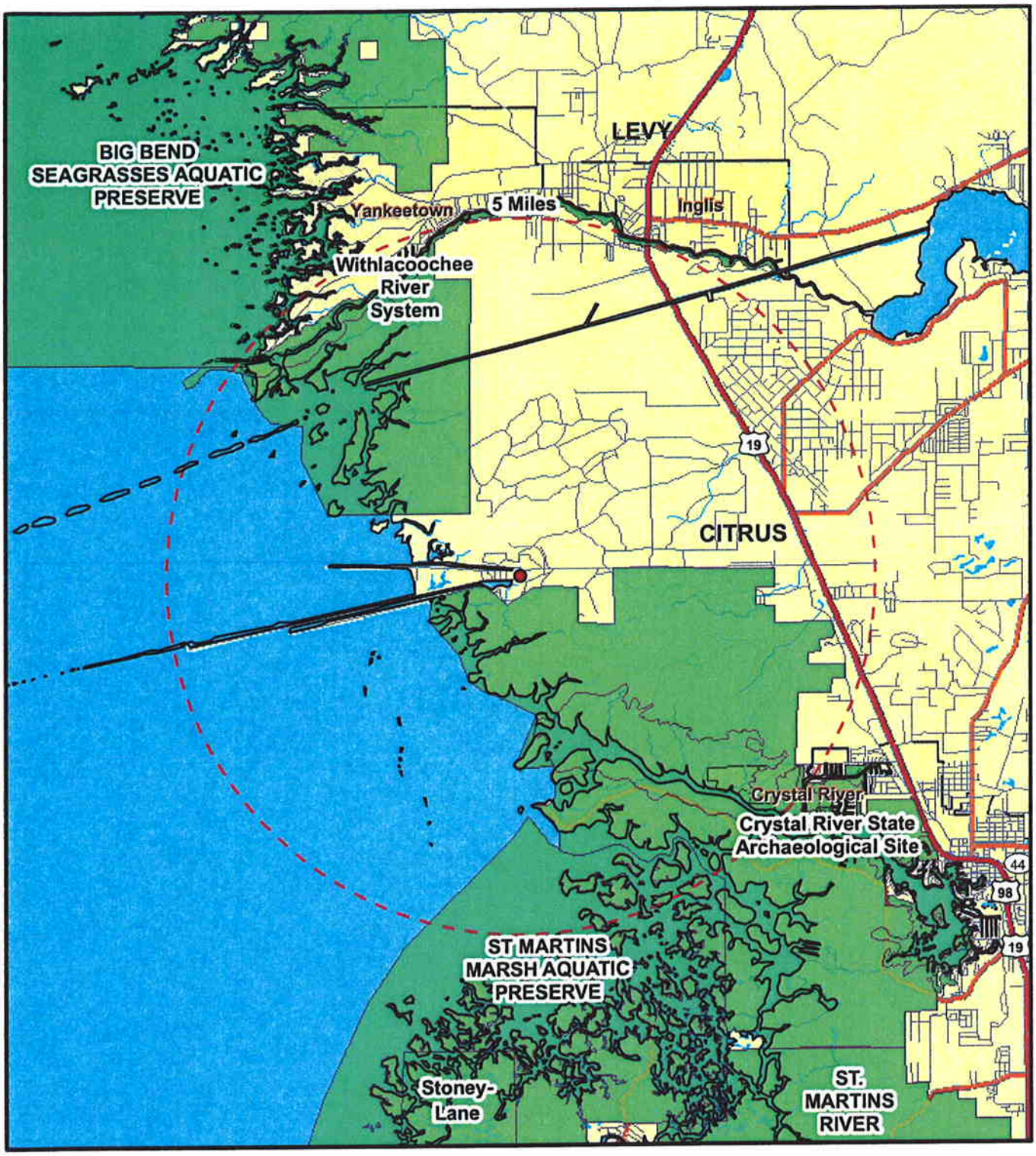
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
STATE PARKS & EXISTING TRAILS WITHIN 5 MILE RADIUS

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.2.1-3	

F:\PROJECTS\2007-89531_CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A019 State Parks & Trails Within 5 Mile Radius Fig 2_2_1-3.mxd



0 2 4 Miles

LEGEND

- Crystal River Nuclear Unit 3 Site Location
- Highway
- Major Road
- Local Road
- 5 Mile Radius
- Outstanding Florida Waters
- Municipalities
- County Boundaries

REFERENCE

1. ESRI Street Map was used as background.
2. Outstanding Florida Waters from the Florida Department of Environmental Protection.

N

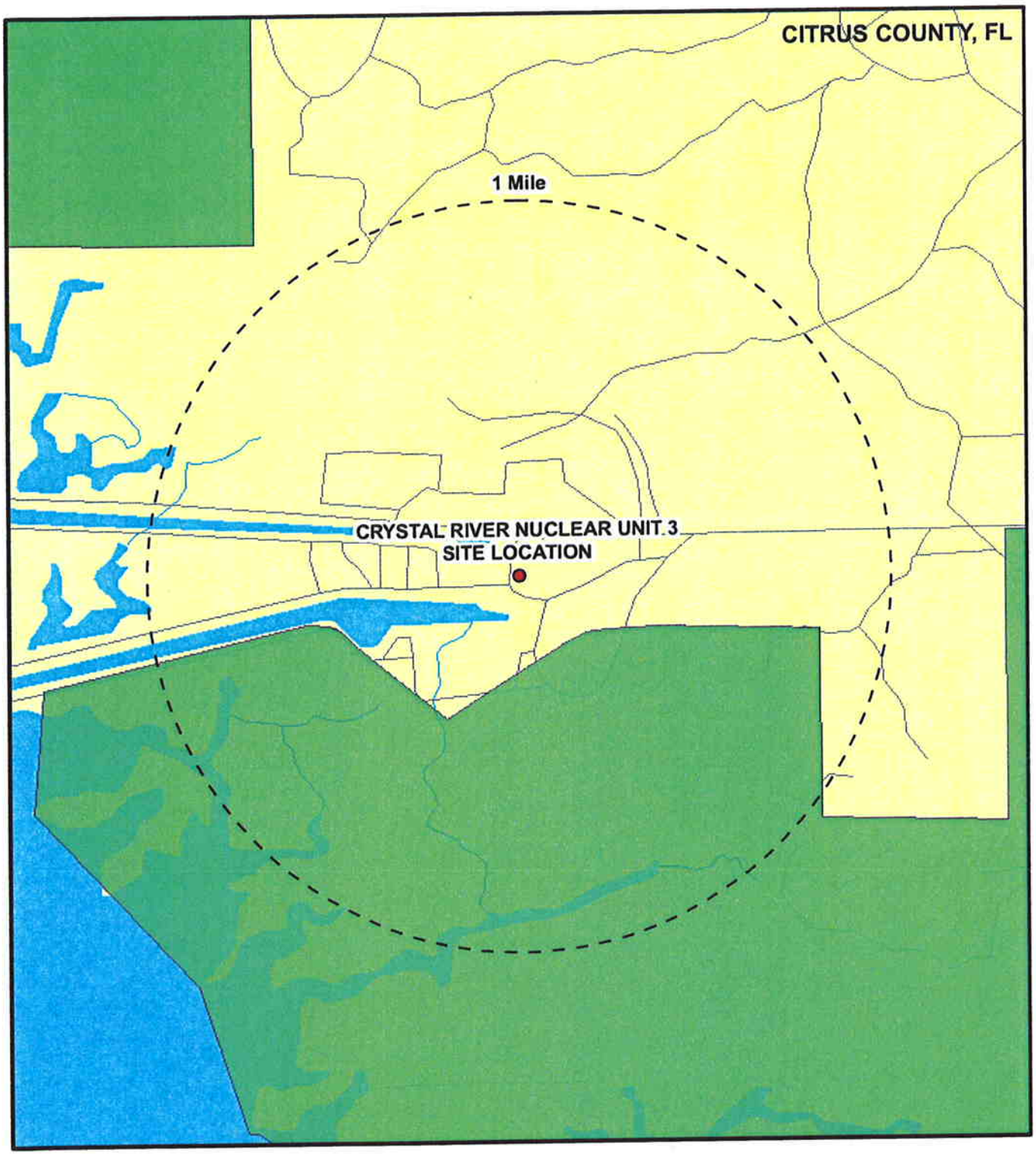
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
OUTSTANDING FLORIDA WATERS WITHIN 5 MILE RADIUS

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.2.1-4	

F:\PROJECTS\2007\...\073-89531_CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A020 Outstanding F...ters Within 5 Mile Radius Fig 2_2_1-4.mxd



0 0.4 0.8 Miles

LEGEND

- Crystal River Nuclear Unit 3 Site Location
- Outstanding Florida Waters
- 1 Mile Radius
- Local Road

REFERENCE

1. ESRI Street Map was used as background.
2. Outstanding Florida Waters from the Florida Department of Environmental Protection.

N

PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
GOVERNMENTAL JURISDICTIONS WITHIN 1 MILE RADIUS

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007	2.2.1-5	
REVIEW	MM	April 17, 2007		

F:\PROJECTS\2007\F-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A025 Governmental Jurisdictions Within 1 Mile Radius Fig 2_2_1-5.mxd

LEGEND

Crystal River Nuclear Unit 3 Site Location

0 0.1 0.2 Miles

N

REFERENCE

1. 2006 Southwest Florida Water Management District Aerial.
2. Future Land Use Map from Citrus County.
3. Cyrstal River Site Location by Golder Associates Inc.

PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
FUTURE LAND USE

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.2.2-1	

F:\PROJECTS\2007\073-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A010 Future Land_2_2-1.mxd

LEGEND

Crystal River Nuclear Unit 3 Site Location

0 0.1 0.2 Miles

N

REFERENCE

1. 2006 Southwest Florida Water Management District Aerial.
2. Zoning map from Citrus County zoning maps.
3. Cyrstal River Site Location by Golder Associates Inc.

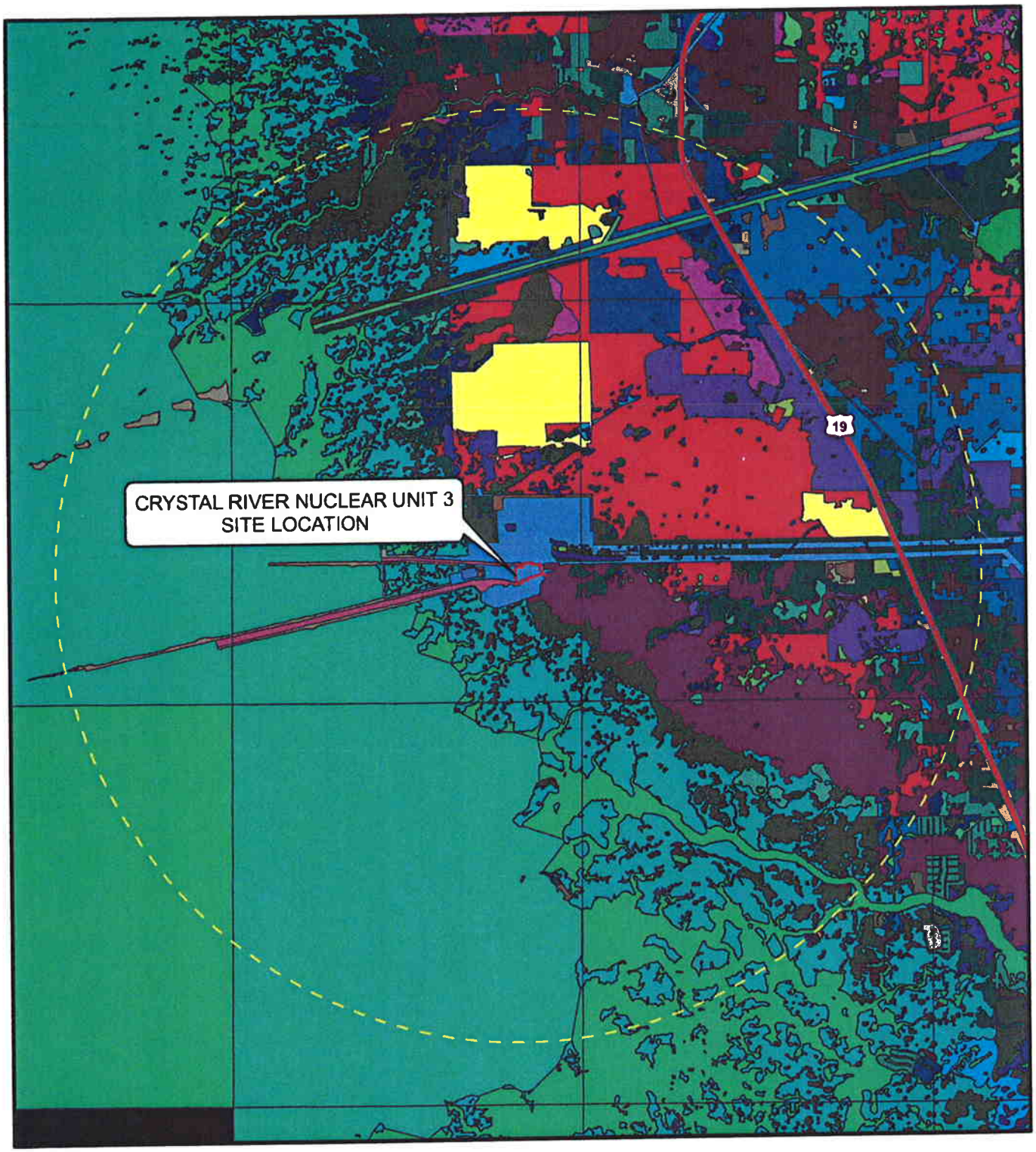
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
ZONING

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	**FIGURE**	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007	**2.2.2-2**	
REVIEW	MM	April 17, 2007		

F:\PROJECTS\2007_73-89531_CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\WXD\073-89531A012 Zoning Fig 2.xd



LEGEND

- Crystal River Nuclear Unit 3 Site Location
- Highway
- 5 Mile Radius

Florida Land Use and Cover Classification System

LEV2, FLUCCS CODE, DESCRIPTION

- 11, 1100, RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS
- 13, 1300, RESIDENTIAL HIGH DENSITY
- 14, 1400, COMMERCIAL AND SERVICES
- 15, 1500, INDUSTRIAL
- 16, 1600, EXTRACTIVE
- 17, 1700, INSTITUTIONAL
- 18, 1800, RECREATIONAL
- 19, 1900, OPEN LAND
- 21, 2100, CROPLAND AND PASTURELAND
- 26, 2600, OTHER OPEN LANDS <RURAL>
- 31, 3100, HERBACEOUS
- 32, 3200, SHRUB AND BRUSHLAND
- 33, 3300, MIXED RANGELAND
- 41, 4120, LONGLEAF PINE - XERIC OAK
- 41, 4110, PINE FLATWOODS
- 41, 4100, UPLAND CONIFEROUS FOREST
- 43, 4340, HARDWOOD CONIFER MIXED
- 44, 4400, TREE PLANTATIONS
- 51, 5100, STREAMS AND WATERWAYS
- 52, 5200, LAKES
- 53, 5300, RESERVOIRS
- 54, 5400, BAYS AND ESTUARIES
- 57, 5720, GULF OF MEXICO
- 61, 6150, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 62, 6210, CYPRESS
- 63, 6300, WETLAND FORESTED MIXED
- 64, 6420, SALTWATER MARSHES
- 64, 6440, EMERGENT AQUATIC VEGETATION
- 64, 6410, FRESHWATER MARSHES
- 64, 6430, WET PRAIRIES
- 65, 6530, INTERMITTENT PONDS
- 74, 7400, DISTURBED LAND
- 81, 8100, TRANSPORTATION
- 83, 8300, UTILITIES

0 2 4 Miles

N

REFERENCE

1. Florida Land Use and Cover Classification System (2004) from Southwest Florida Water Management Department (SWFWMD).
2. Crystal River Site Location by Golder Associates Inc.

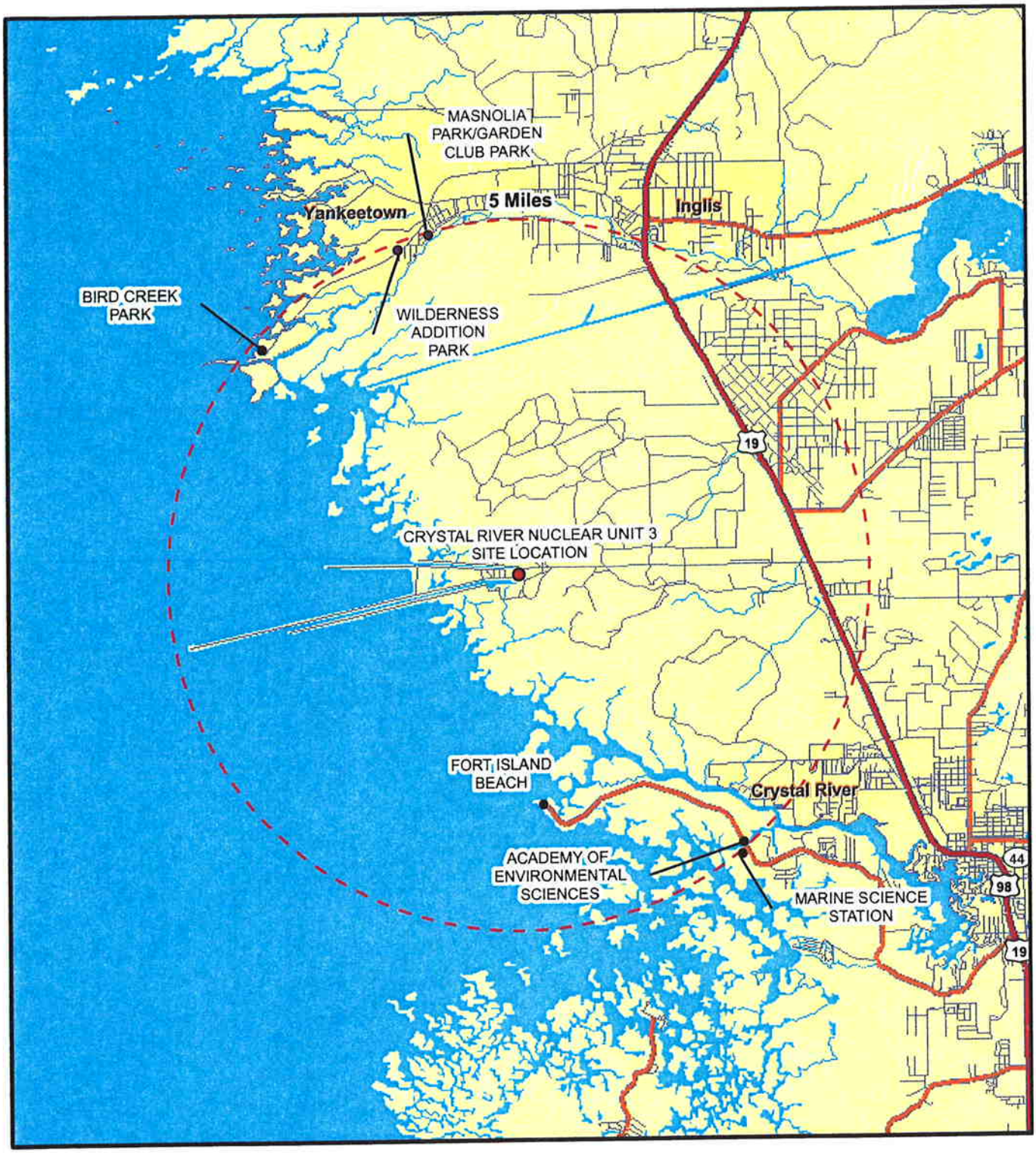
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
EXISTING LAND USE

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007	2.2.3-1	
REVIEW	MM	April 17, 2007		

F:\PROJECTS\2007 P... -89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A022 Existing Land L... 2_3-1.mxd



LEGEND

- Crystal River Nuclear Unit 3 Site Location
- Schools & Recreation Locations
- 5 Mile Radius

0 2 4 Miles

N

REFERENCE

1. ESRI Street Map was used as background.
2. Schools & Recreation Locations from FGDL (Florida Geographic Data Library).

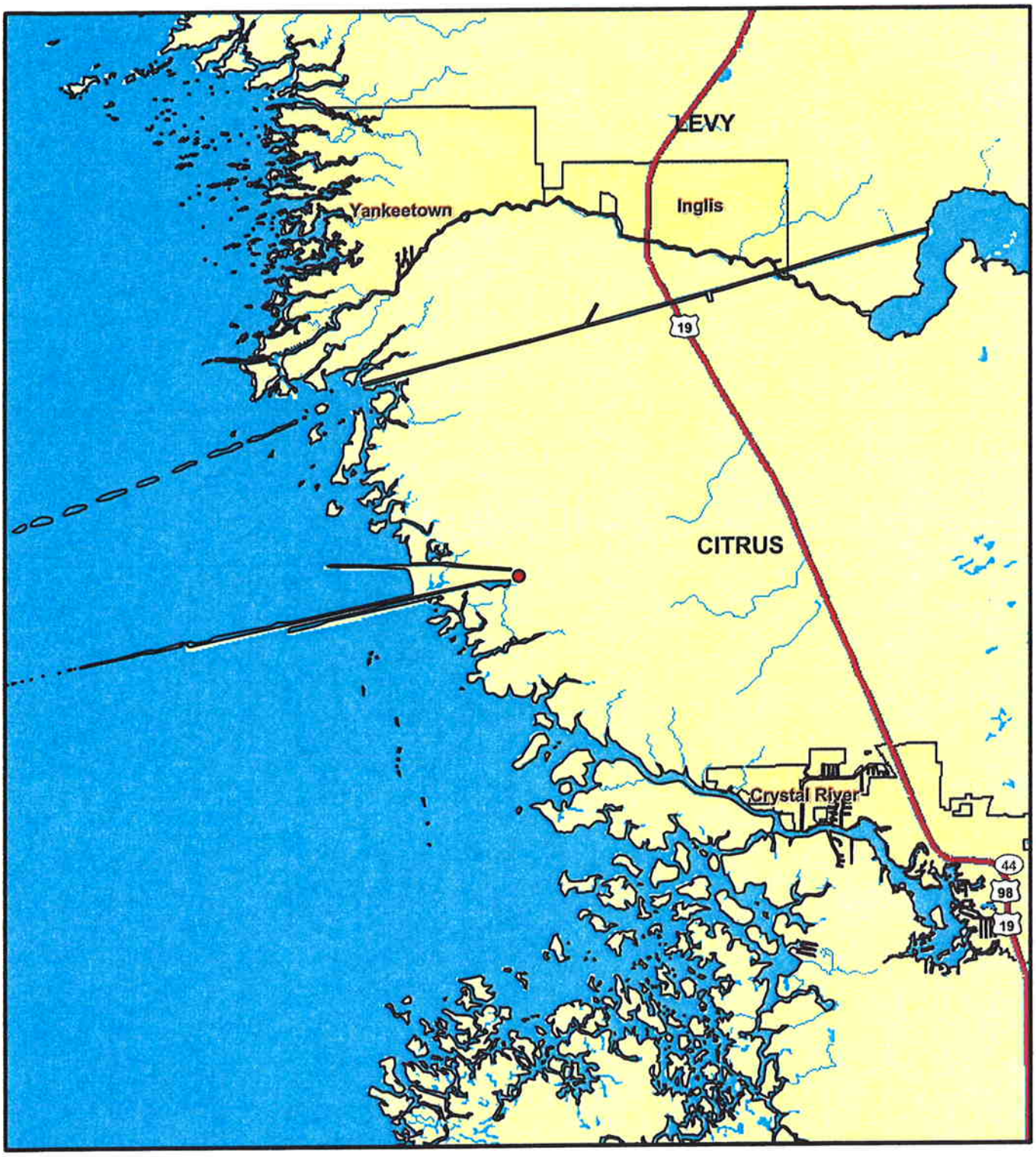
PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
SCHOOLS & RECREATION LOCATIONS

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.2.8-1	

F:\PROJECTS\2007\
073-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A021 School and Re
Locations FIG 2_2_8-1.mxd



0 2 4 Miles

LEGEND

- Crystal River Nuclear Unit 3 Site Location
- Municipalities

Major Roads

- Highway
- County Boundaries

N

REFERENCE

1. ESRI Street Map was used as background.

PROJECT
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE
MAJOR ROADS

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JG	April 17, 2007	FIGURE	
GIS	JG	April 17, 2007		
CHECK	KG	April 17, 2007		
REVIEW	MM	April 17, 2007	2.2.8-2	

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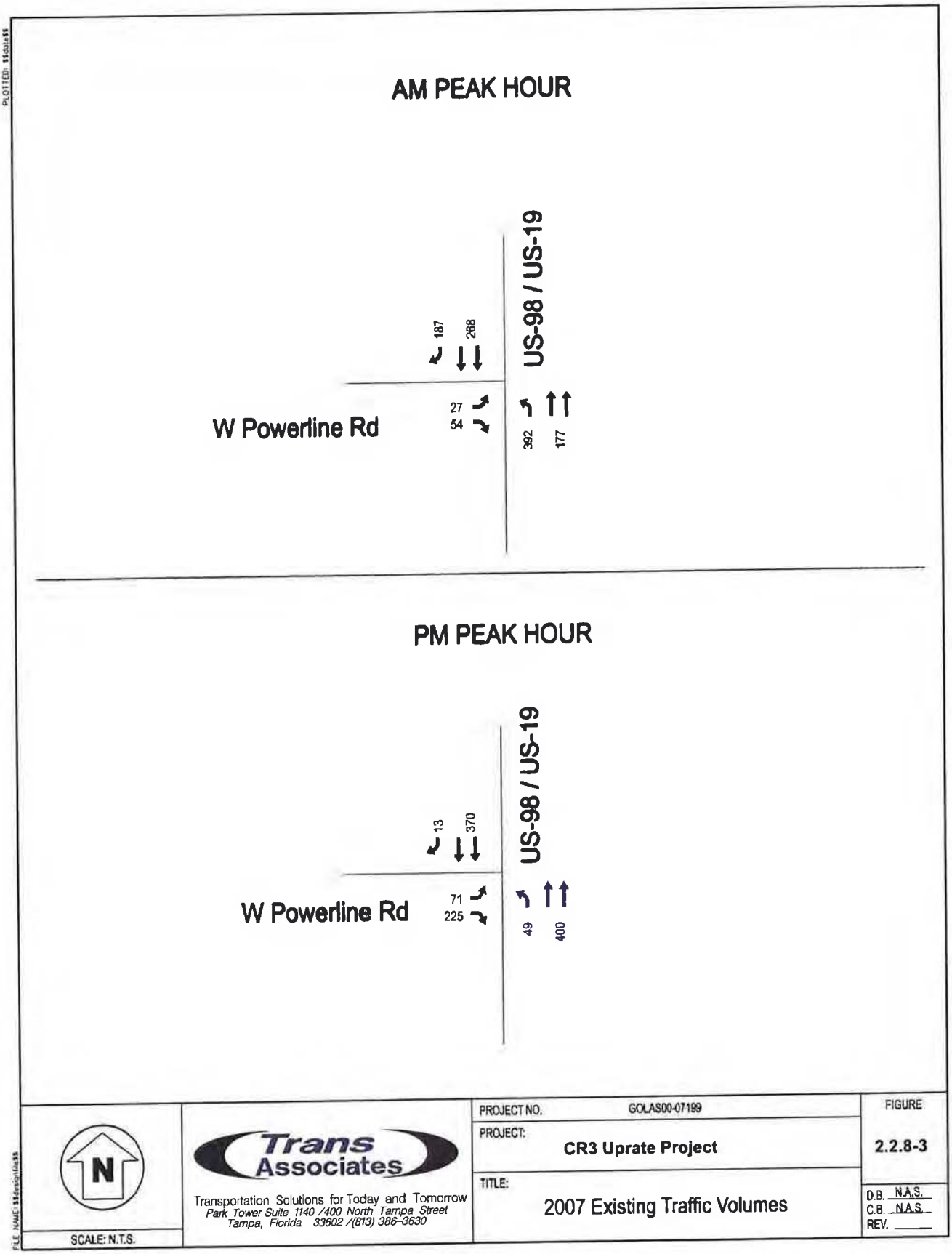
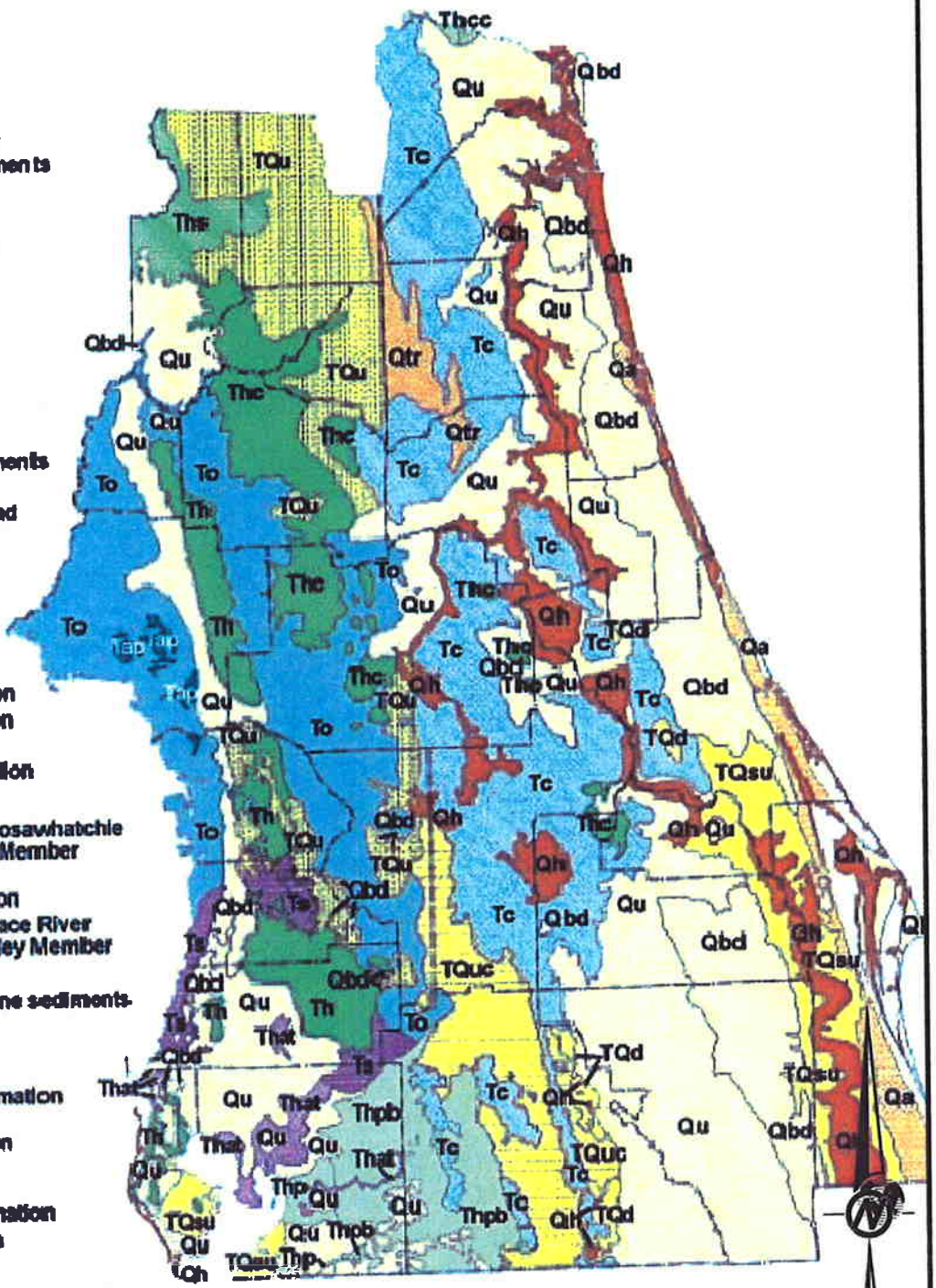


[Home use only]



Quaternary

Holocene

- Qh — Holocene sediments

Pleistocene/Holocene

- Qal — Alluvium
- Qbd — Beach ridge and dune
- Qu — Undifferentiated sediments

Pleistocene

- Qa — Anastasia Formation
- Qk — Key Largo Limestone
- Qm — Miami Limestone
- Qtr — Trail Ridge sands

Tertiary/Quaternary

Pliocene/Pleistocene

- TQsu — Shelly sediments of Plio-Pleistocene age
- TQu — Undifferentiated sediments
- TQd — Dunes
- TQuc — Reworked Cypresshead sediments

Tertiary

Pliocene

- Tc — Cypresshead Formation
- Tci — Citronelle Formation
- Tmc — Miccosukee Formation
- Tic — Intracoastal Formation
- Tt — Tamiami Formation
- Tjb — Jackson Bluff Formation

Miocene/Pliocene

- Thcc — Hawthorn Group, Coosawhatchie Formation, Charlton Member
- Thp — Hawthorn Group, Peace River Formation
- Thpb — Hawthorn Group, Peace River Formation, Bone Valley Member

Miocene

- Trm — Residuum on Miocene sediments
- Tab — Alum Bluff Group
- Th — Hawthorn Group
- Thc — Hawthorn Group, Coosawhatchie Formation
- Ths — Hawthorn Group, Statenville Formation
- Tht — Hawthorn Group, Torreya Formation
- Tch — Chattahoochee Formation
- Tsmk — St. Marks Formation

Oligocene/Miocene

- Tha — Hawthorn Group, Arcadia Formation
- That — Hawthorn Group, Arcadia Formation, Tampa Member

Oligocene

- Tro — Residuum on Oligocene sediments
- Ts — Suwannee Limestone
- Tsm — Suwannee Limestone - Marianna Limestone undifferentiated

Eocene

- Tre — Residuum on Eocene sediments
- To — Ocala Limestone
- Tap — Avon Park Formation

REFERENCES

1.) FLORIDA GEOLOGICAL SURVEY OPEN FILE REPORT 80, 2001

PROJECT
PROGRESS ENERGY - FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

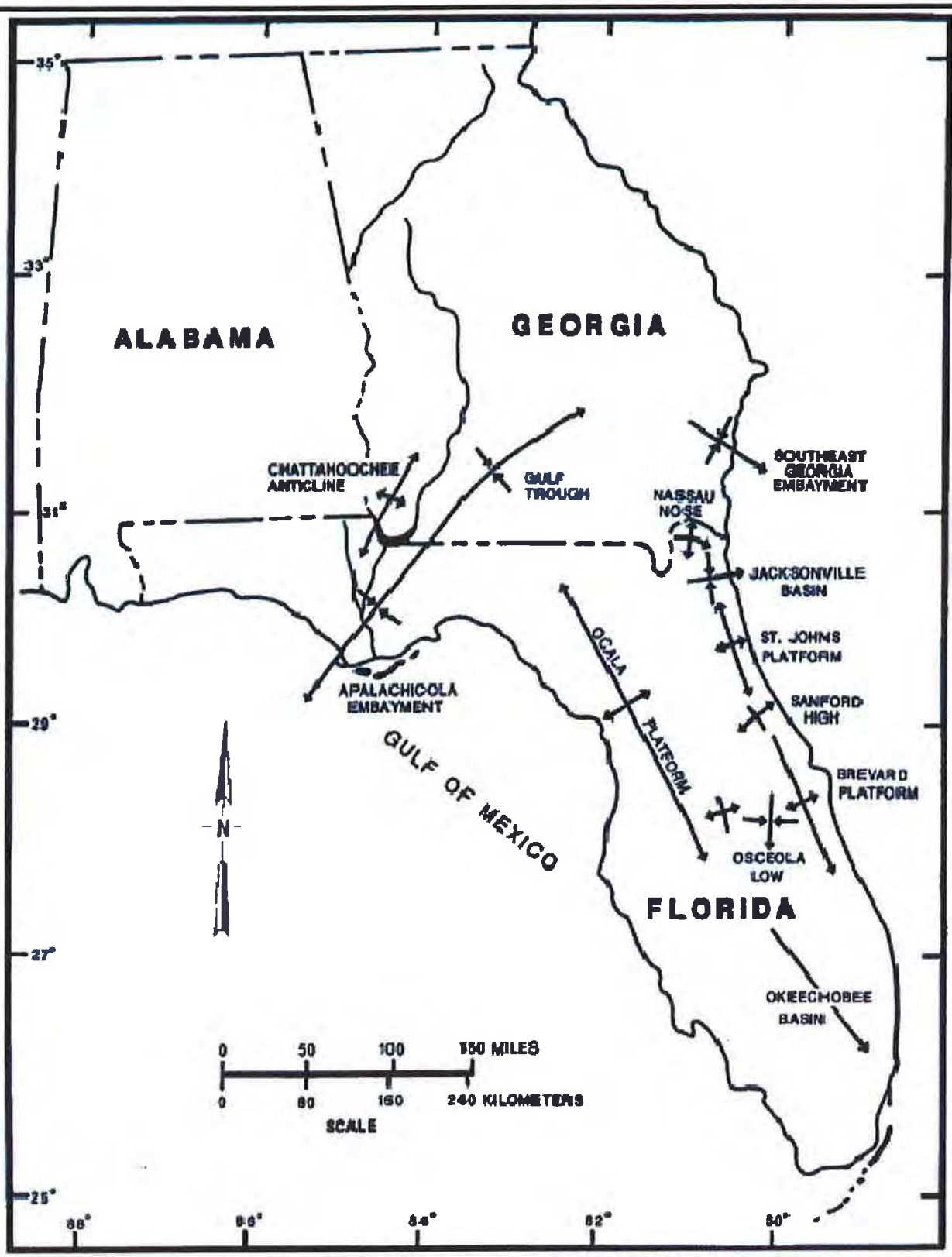
TITLE
NORTHERN PENINSULA GEOLOGIC MAP

Golder Associates
Tampa, Florida

PROJECT No.	073-89531		FILE No.	073895318004	
DESIGN	MEF	04/24/07	SCALE	AS SHOWN	REV. 0
CADD	GAV	04/24/07			
CHECK	MEF	04/30/07			
REVIEW	MM	04/30/07			

FIGURE 2.3.1-1

Drawing file: 073...31B004.dwg Apr 30, 2007 - 3:37pm



REFERENCES

1.) FLORIDA GEOLOGICAL SURVEY OPEN FILE REPORT 80, 2001

PROJECT

PROGRESS ENERGY - FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE

FLORIDA GEOLOGIC STRUCTURES

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	073895318005
DESIGN	MEF	04/24/07	SCALE AS SHOWN	REV. 0
CADD	GAV	04/24/07		
CHECK	MEF	04/30/07		
REVIEW	MM	04/30/07		

FIGURE 2.3.1-2

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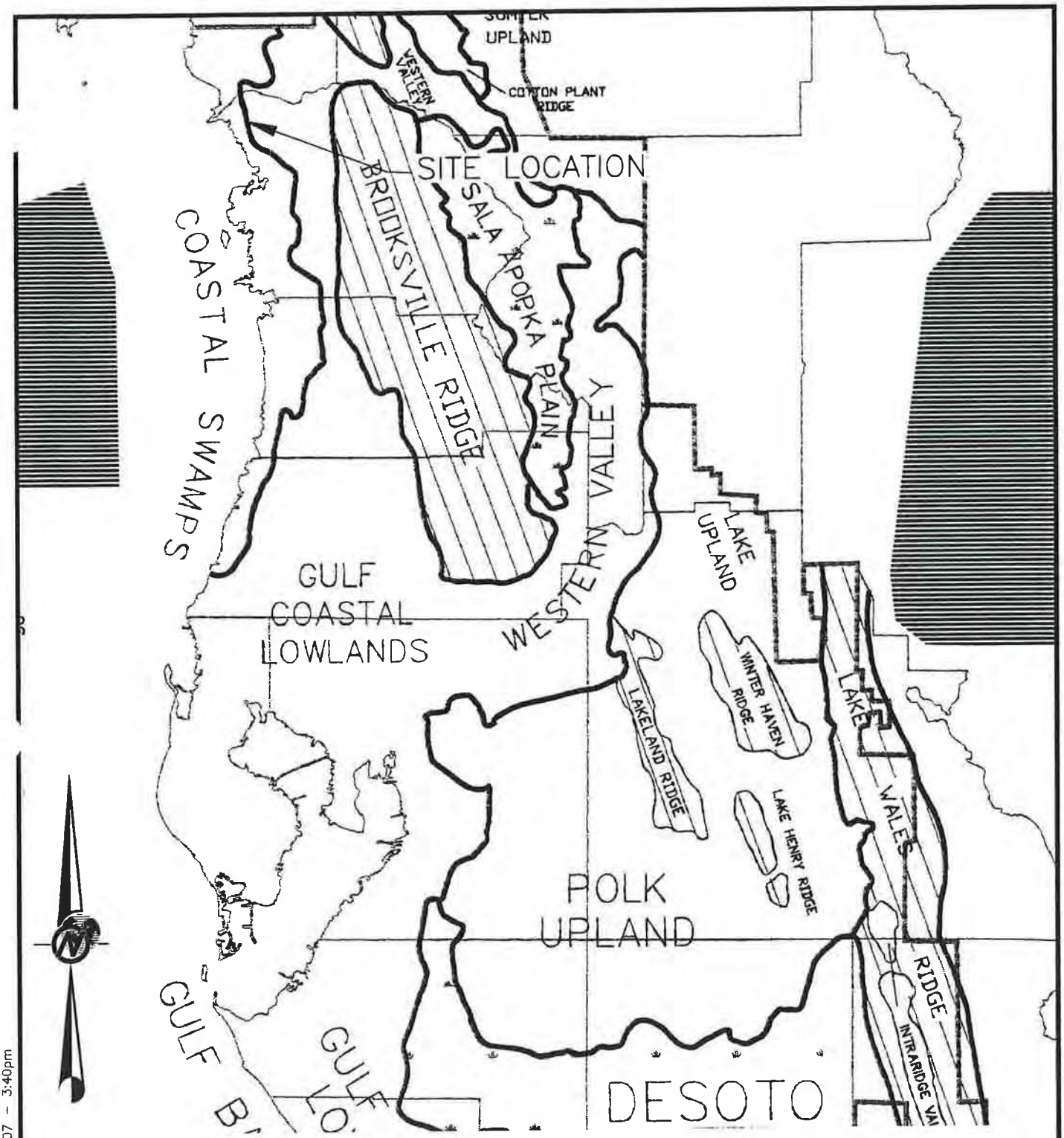


REFERENCES

1.) FLORIDA GEOLOGICAL SURVEY GEOLOGICAL OVERVIEW OF CRYSTAL RIVER, FLORIDA 1992.

PROJECT: PROGRESS ENERGY - FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

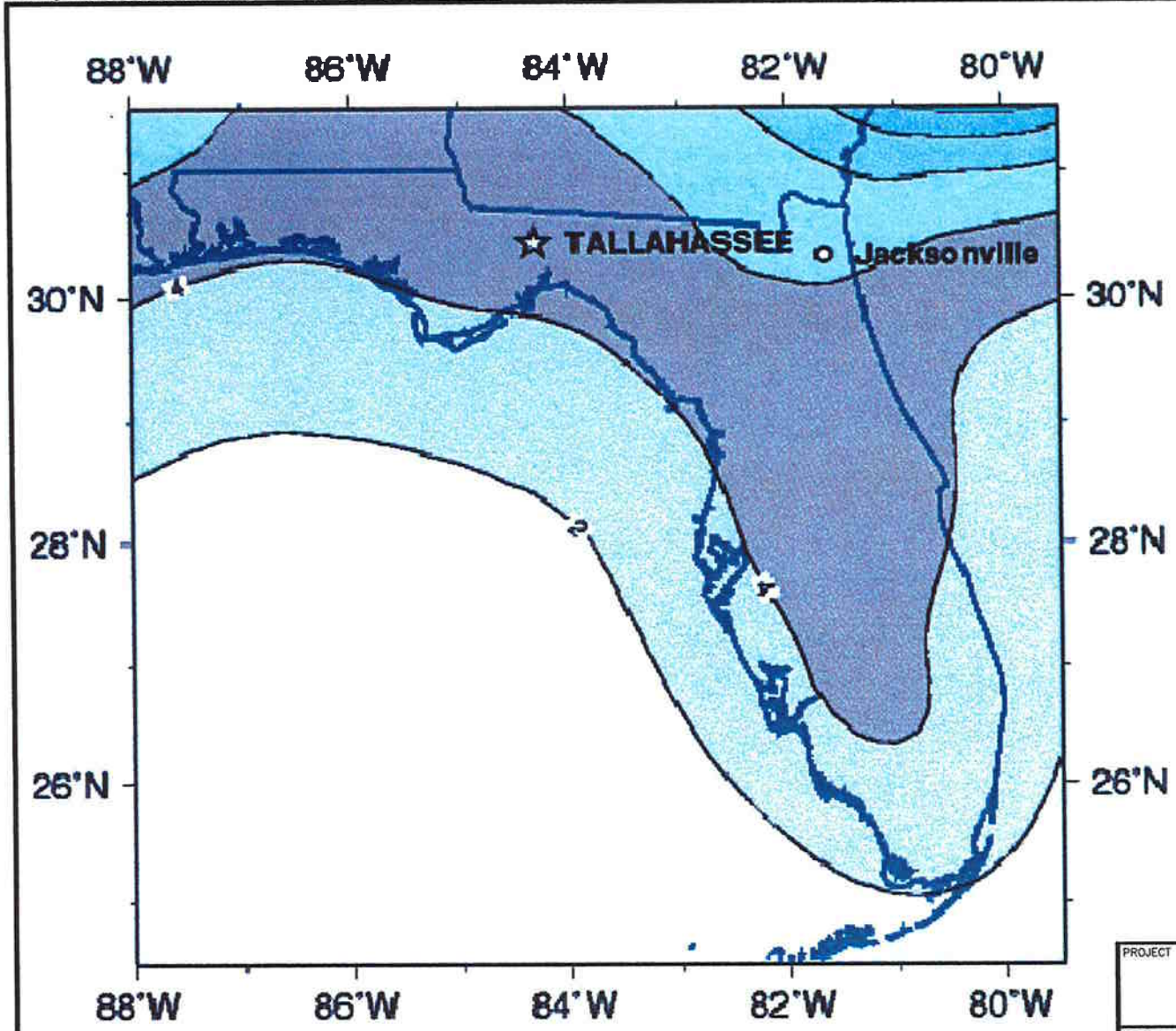
TITLE: **GEOMORPHOLOGIC FEATURES OF SWFWMD WATER MANAGEMENT DISTRICT**

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	07389531B006
DESIGN	MEF	04/24/07	SCALE AS SHOWN	REV. 0
CADD	GAV	04/27/07		
CHECK	MEF	04/27/07		
REVIEW	MM	04/30/07		

FIGURE 2.3.1-3

Drawing file: 073. 1B006.dwg Apr 30, 2007 - 3:40pm



REFERENCES

1.) NATIONAL SEISMIC HAZARD MAPPING PROJECT SITE:NEHRP B–C BOUNDARY

PROJECT

PROGRESS ENERGY - FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

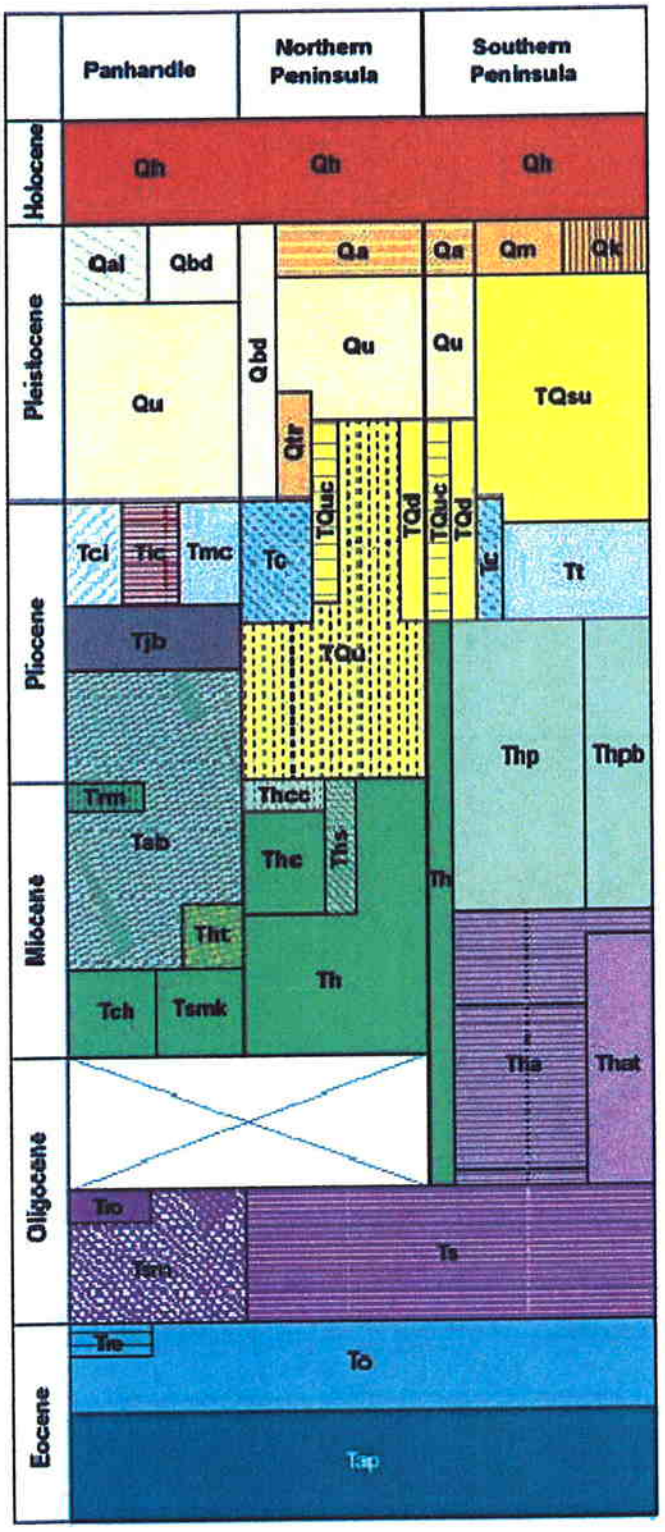
TITLE

PEAK ACCELERATION WITH 2% PROBABILITY OF EXCEEDANCE IN 50 YEARS

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	073895318007	
DESIGN	MEF	04/24/07	SCALE AS SHOWN	REV.	0
CADD	GAV	04/24/07			
CHECK	MEF	04/30/07			
REVIEW	MM	04/30/07			

FIGURE 2.3.1-4



Quaternary

Holocene

- Qh — Holocene sediments

Pleistocene/Holocene

- Qal — Alluvium
- Qbd — Beach ridge and dune
- Qu — Undifferentiated sediments

Pleistocene

- Qa — Anastasia Formation
- Qk — Key Largo Limestone
- Qm — Miami Limestone
- Qtr — Trail Ridge sands

Tertiary/Quaternary

Pliocene/Pleistocene

- TQsu — Shelly sediments of Plio-Pleistocene age
- TQu — Undifferentiated sediments
- TQd — Dunes
- TQuc — Reworked Cypresshead sediments

Tertiary

Pliocene

- Tc — Cypresshead Formation
- Tci — Citronelle Formation
- Tmc — Miocosukee Formation
- Tic — Intracoastal Formation
- Tt — Tamiami Formation
- Tjb — Jackson Bluff Formation

Miocene/Pliocene

- Thcc — Hawthorn Group, Coosawhatchie Formation, Charlton Member
- Thp — Hawthorn Group, Peace River Formation
- Thpb — Hawthorn Group, Peace River Formation, Bone Valley Member

Miocene

- Trm — Residuum on Miocene sediments
- Tab — Alum Bluff Group
- Th — Hawthorn Group
- Thc — Hawthorn Group, Coosawhatchie Formation
- Ths — Hawthorn Group, Statenville Formation
- Tht — Hawthorn Group, Torreya Formation
- Tch — Chatahoochee Formation
- Tsmk — St. Marks Formation

Oligocene/Miocene

- Tha — Hawthorn Group, Arcadia Formation
- That — Hawthorn Group, Arcadia Formation, Tampa Member

Oligocene

- Tro — Residuum on Oligocene sediments
- Ts — Suwannee Limestone
- Tsm — Suwannee Limestone - Marianna Limestone undifferentiated

Eocene

- Tre — Residuum on Eocene sediments
- To — Ocala Limestone
- Tap — Avon Park Formation

REFERENCES

1.) FLORIDA GEOLOGICAL SURVEY OPEN FILE REPORT 80, 2001

PROJECT

PROGRESS ENERGY - FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE

STRATIGRAPHIC COLUMN SHOWING LITHOSTRATIGRAPHIC UNITS

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	07389531B008
DESIGN	MEF	04/24/07	SCALE	AS SHOWN REV. 0
CADD	GAV	04/24/07		
CHECK	MEF	04/30/07		FIGURE 2.3.1-5
REVIEW	MM	04/30/07		

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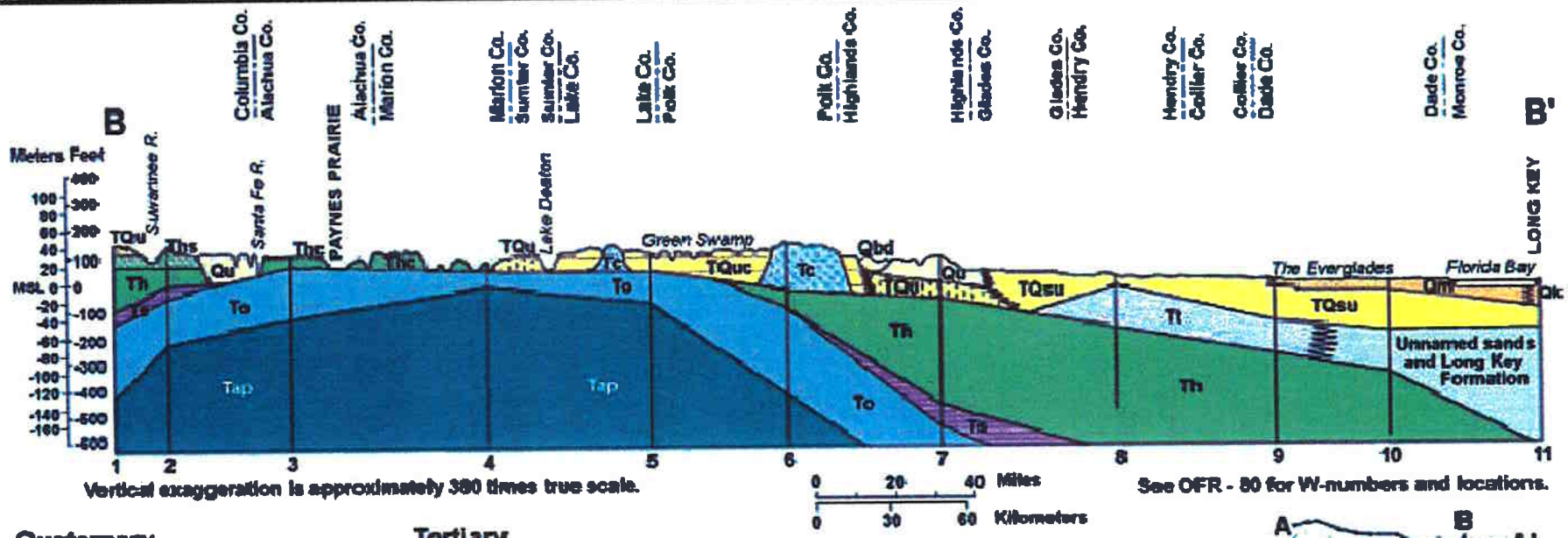

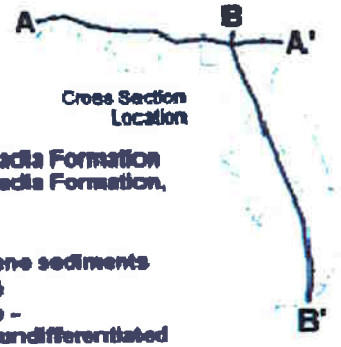

Quaternary

Holocene

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Pleistocene/Holocene

- Qal — Alluvium
- Qbd — Beach ridge and dune
- Qu — Undifferentiated sediments

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- Qk — Key Largo Limestone
- Qm — Miami Limestone
- Qtr — Trail Ridge sands

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Pliocene/Pleistocene

- TQsu — Shelly sediments of Plio-Pleistocene age
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- Tt — Tamiami Formation
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- Thpb — Hawthorn Group, Peace River Formation, Bone Valley Member

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- Th — Hawthorn Group
- Thc — Hawthorn Group, Coosawhatchie Formation
- Ths — Hawthorn Group, Statenville Formation
- Tht — Hawthorn Group, Torreya Formation
- Tch — Chattahoochee Formation
- Tsmk — St. Marks Formation

Oligocene/Miocene

- Tha — Hawthorn Group, Arcadia Formation
- That — Hawthorn Group, Arcadia Formation, Tampa Member

Oligocene

- Tro — Residuum on Oligocene sediments
- Ts — Suwannee Limestone
- Tsm — Suwannee Limestone - Marianna Limestone undifferentiated

Eocene

- Tre — Residuum on Eocene sediments
- To — Ocala Limestone
- Tap — Avon Park Formation

REFERENCES

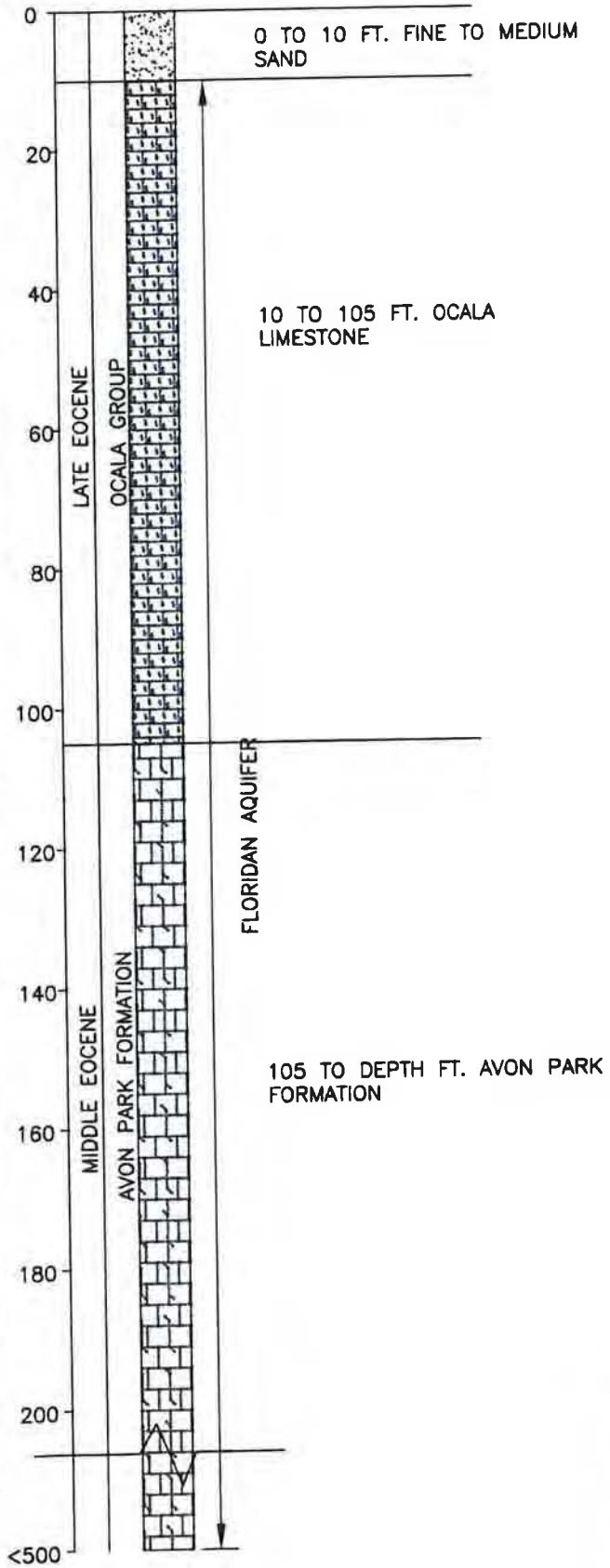
1.) FLORIDA GEOLOGICAL SURVEY OPEN FILE REPORT 80, 2001

PROJECT
PROGRESS ENERGY-FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE
GEOLOGIC CROSS-SECTION B

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	073895318019	
DESIGN	MEF	04/30/07	SCALE AS SHOWN	REV.	0
CADD	MEF	04/30/07	FIGURE 2.3.1-6		
CHECK	MM	04/30/07			
REVIEW	MM	04/30/07			



LEGEND

SAND

FRACTUTRED LIMESTONE

LIMESTONE

REFERENCES

1.) GERAGHTY AND MILLER, INC, 1977.

0 00 00 00

SCALE: 1" = 00'

PROJECT

PROGRESS ENERGY-FLORIDA
CRYSTAL RIVER UNIT3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE

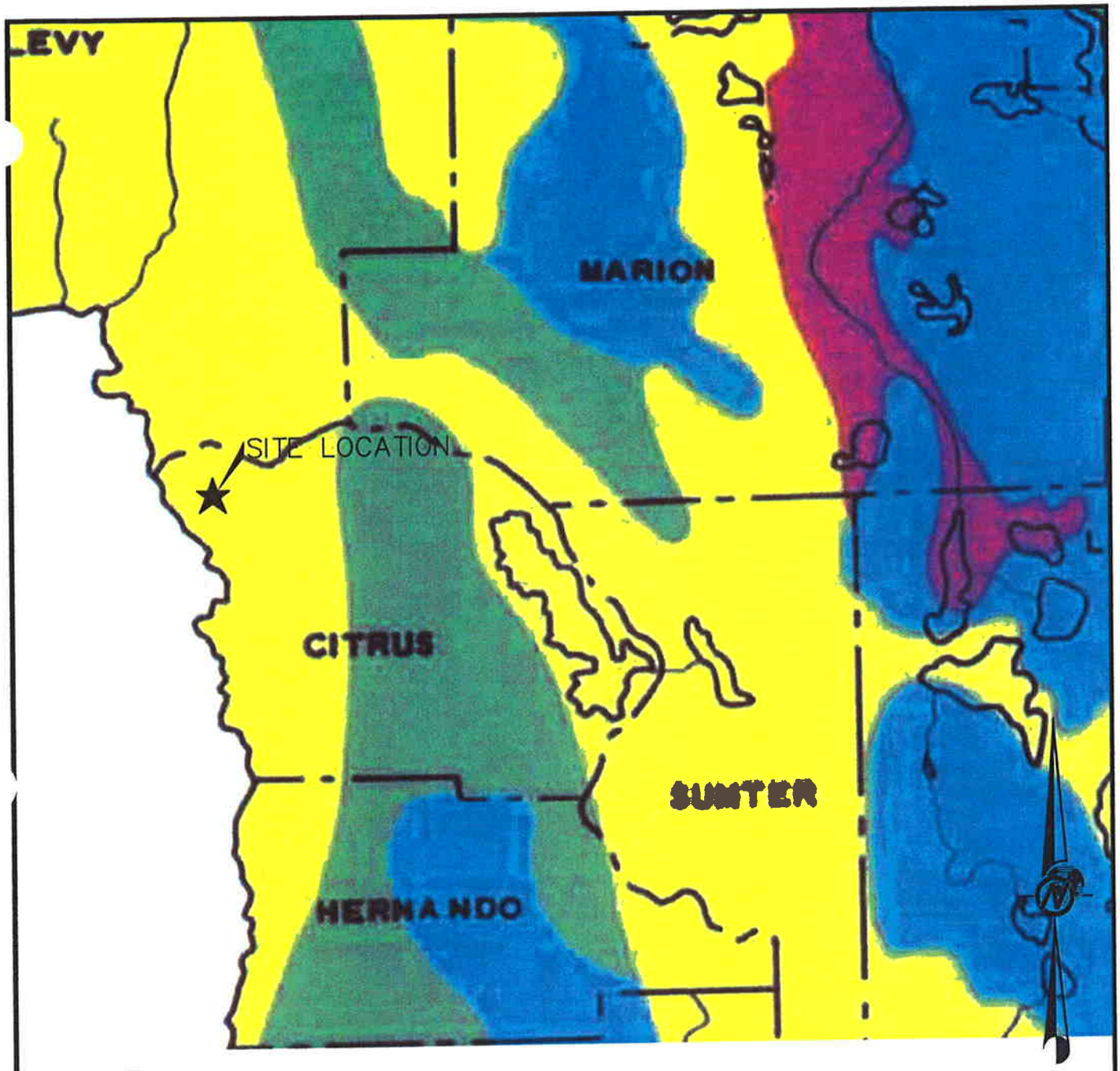
GENERALIZED STRATIGRAPHIC COLUMN

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	07895318020
DESIGN	MEF	04/30/07	SCALE AS SHOWN	REV. 0
CADD	MEF	04/30/07		
CHECK	MM	04/30/07		
REVIEW	MM	04/30/07		

FIGURE 2.3.1-7

Drawing file: 0736__-18020.dwg Apr 30, 2007 - 3:28pm



LEGEND

- **AREA I. BARE OR THINLY COVERED LIMESTONE**
  Sinkholes are few, generally shallow and broad, and develop gradually. Solution sinkholes dominate
- **AREA II. COVER IS 30 TO 200 FEET THICK**
  Consists mainly of incohesive and permeable sand. Sinkholes are few, shallow, of small diameter, and develop gradually. Cover-subsidence sinkholes dominate
- **AREA III. COVER IS 30 TO 200 FEET THICK**
  Consists mainly of cohesive clayey sediments of low permeability. Sinkholes are most numerous, of varying size, and develop abruptly. Cover-collapse sinkholes dominate
- **AREA IV. COVER IS MORE THAN 200 FEET THICK**
  Consists of cohesive sediments interlayered with discontinuous carbonate beds. Sinkholes are very few, but several large diameter, deep sinkholes occur. Cover-collapse sinkholes dominate.

10 0 10
1" = 10 MILES MILES

REFERENCES

1.) FLORIDA DEPARTEMENT OF ENVIRONMENTAL PROTECTION MAP SERIES 110

PROJECT
PROGRESS ENERGY - FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

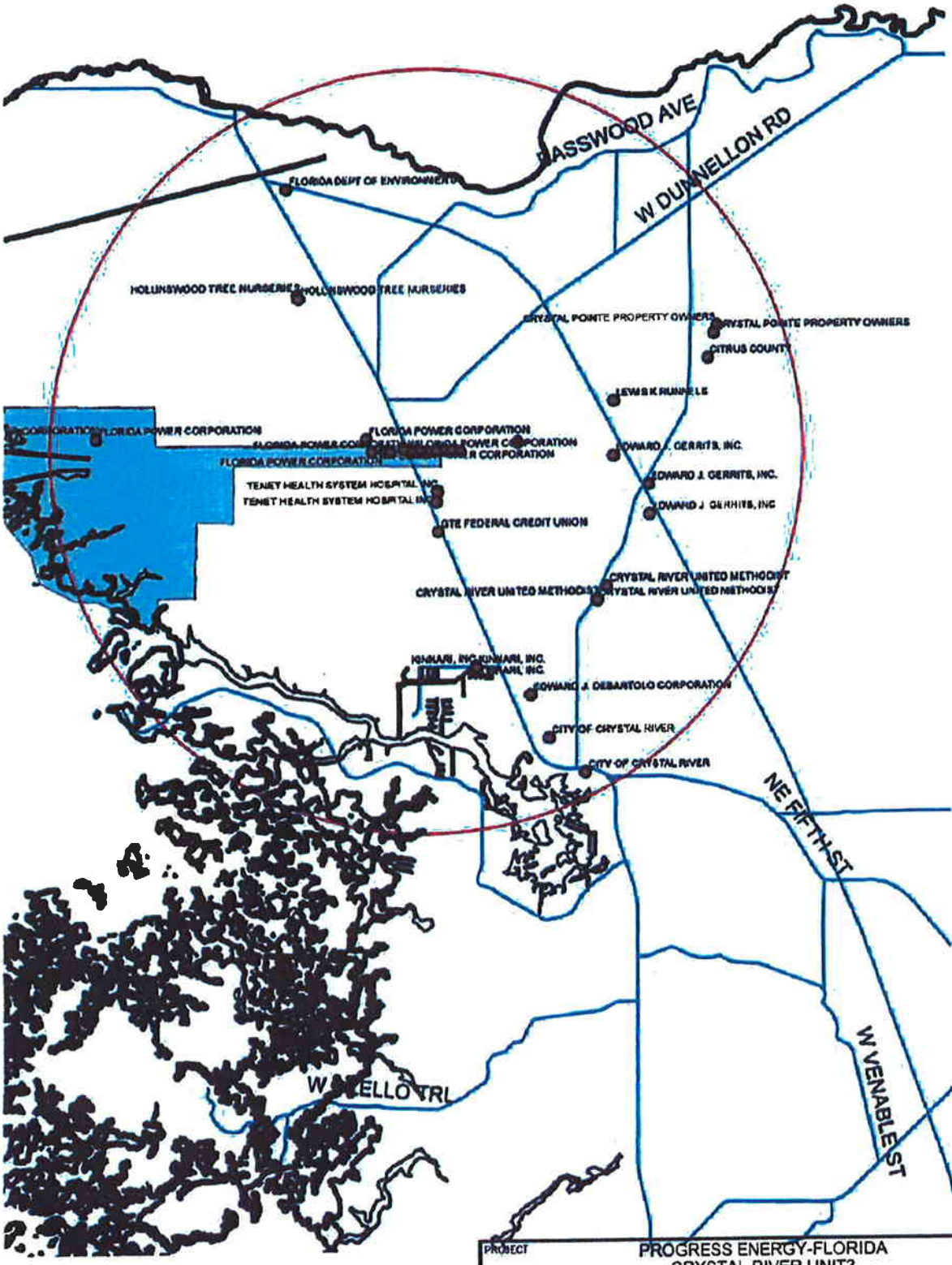
TITLE
SINKHOLE TYPE, DEVELOPMENT AND DISTRIBUTION IN FLORIDA MAP

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	073895318017
DESIGN	MEF	04/24/07	SCALE AS SHOWN	REV. 0
CADD	GAV	04/24/07		
CHECK	MM	04/30/07		
REVIEW	MM	04/30/07		

FIGURE 2.3.2-1

Drawing file: 073... J1B017.dwg Apr 30, 2007 - 3:24pm



2 0 2

1 INCH = 2 MILES MILES

REFERENCES

1.) PROGRESS ENERGY FLORIDA, WUP APPLICATION, 2006

PROJECT

PROGRESS ENERGY-FLORIDA
CRYSTAL RIVER UNIT3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE

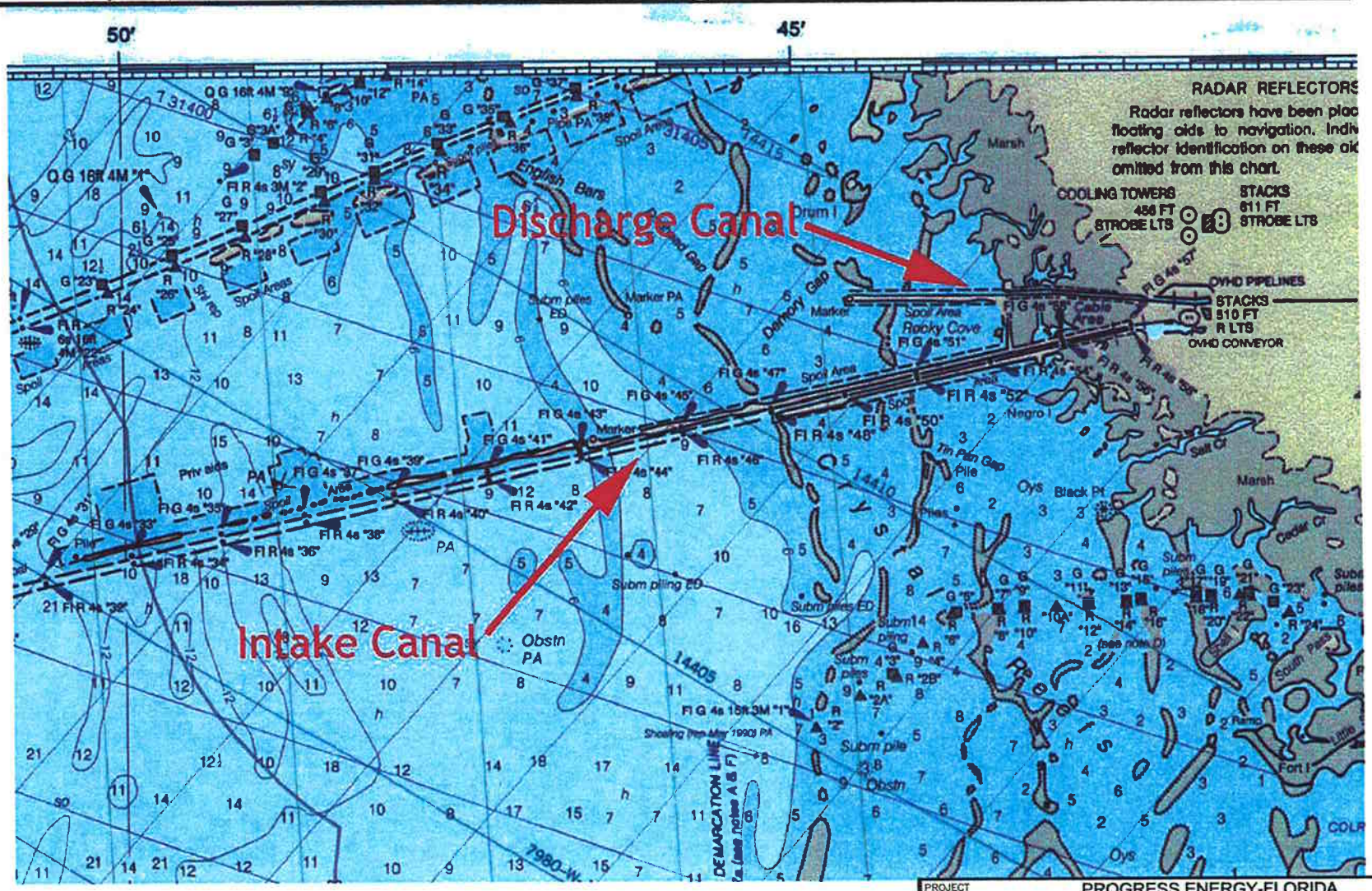
SWFWMD PERMITTED WATER USE WELLS WITHIN 5 MILES OF CREC

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	07895318028
DESIGN	MEF	05/21/07	SCALE AS SHOWN	REV. 0
CADD	MEF	05/21/07		
CHECK	MM	05/21/07		
REVIEW	MM	05/21/07		

FIGURE 2.3.3-1

Drawing file: 0...318028.dwg May 21, 2007 - 1:30pm



PROJECT

PROGRESS ENERGY-FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE

CREC INTAKE AND DISCHARGE CANALS

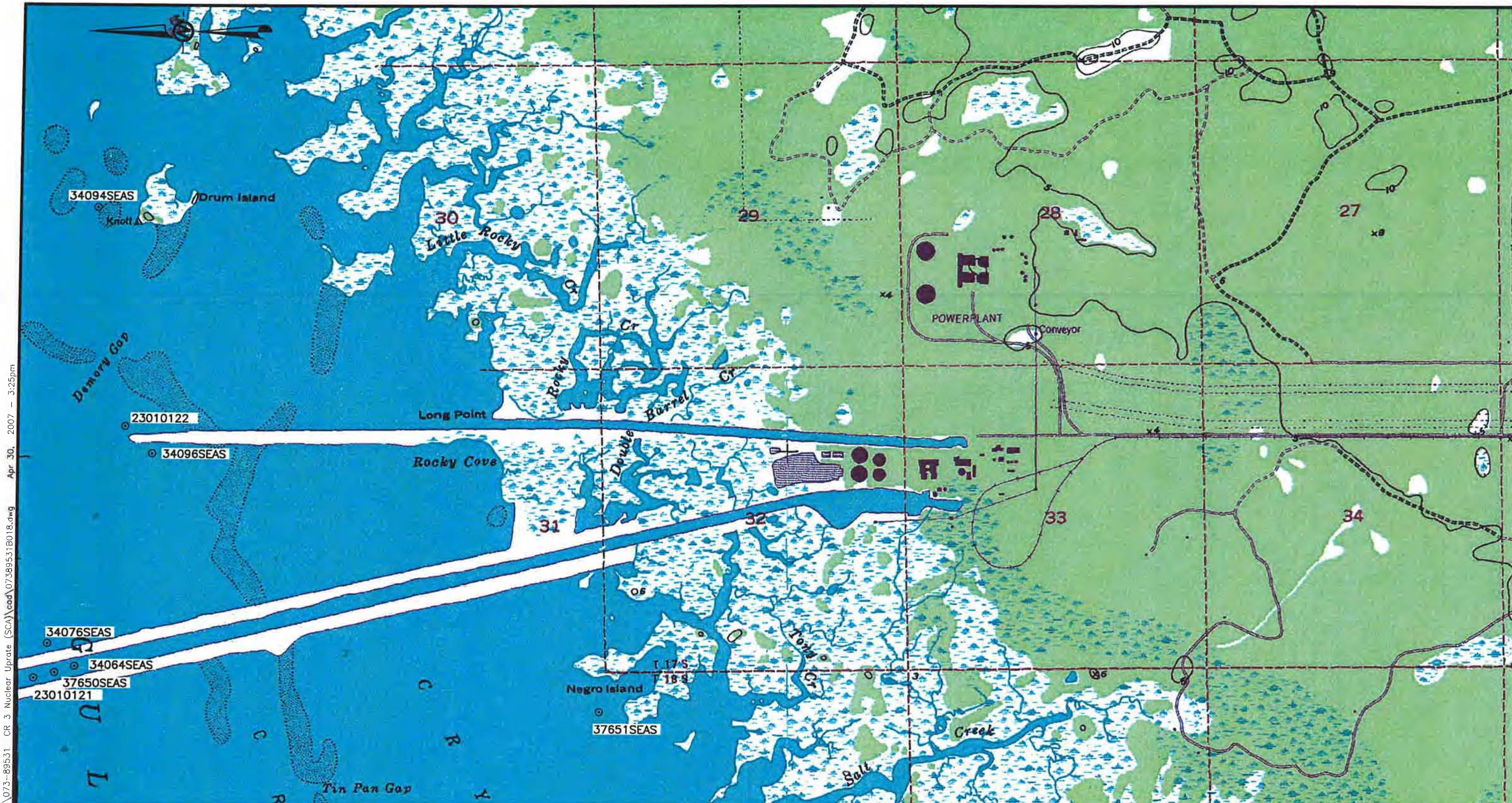
REFERENCES

1.) NOAA NAUTICAL CHART

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	07389531B021	
DESIGN	HF	04/30/07	SCALE	AS SHOWN	REV. 0
CADD	MEF	04/30/07			
CHECK	MM	04/30/07			
REVIEW	MM	04/30/07			

FIGURE 2.3.4-1



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REFERENCES

1.) USGS 7.5 MIN DRG (FLORIDA) RED LEVEL

LEGEND

⊙ CRYSTAL BAY WATER QUALITY STATION

0 2,500 5,000
SCALE: 1" = 5,000'

PROJECT
PROGRESS ENERGY - FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FL

TITLE
WATER QUALITY STATIONS

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	07389531B018
DESIGN	MEF	04/26/07	SCALE AS SHOWN	REV.
CADD	GAV	04/27/07	**FIGURE 2.3.4-2**	
CHECK	MEF	04/27/07		
REVIEW	MM	04/30/07		

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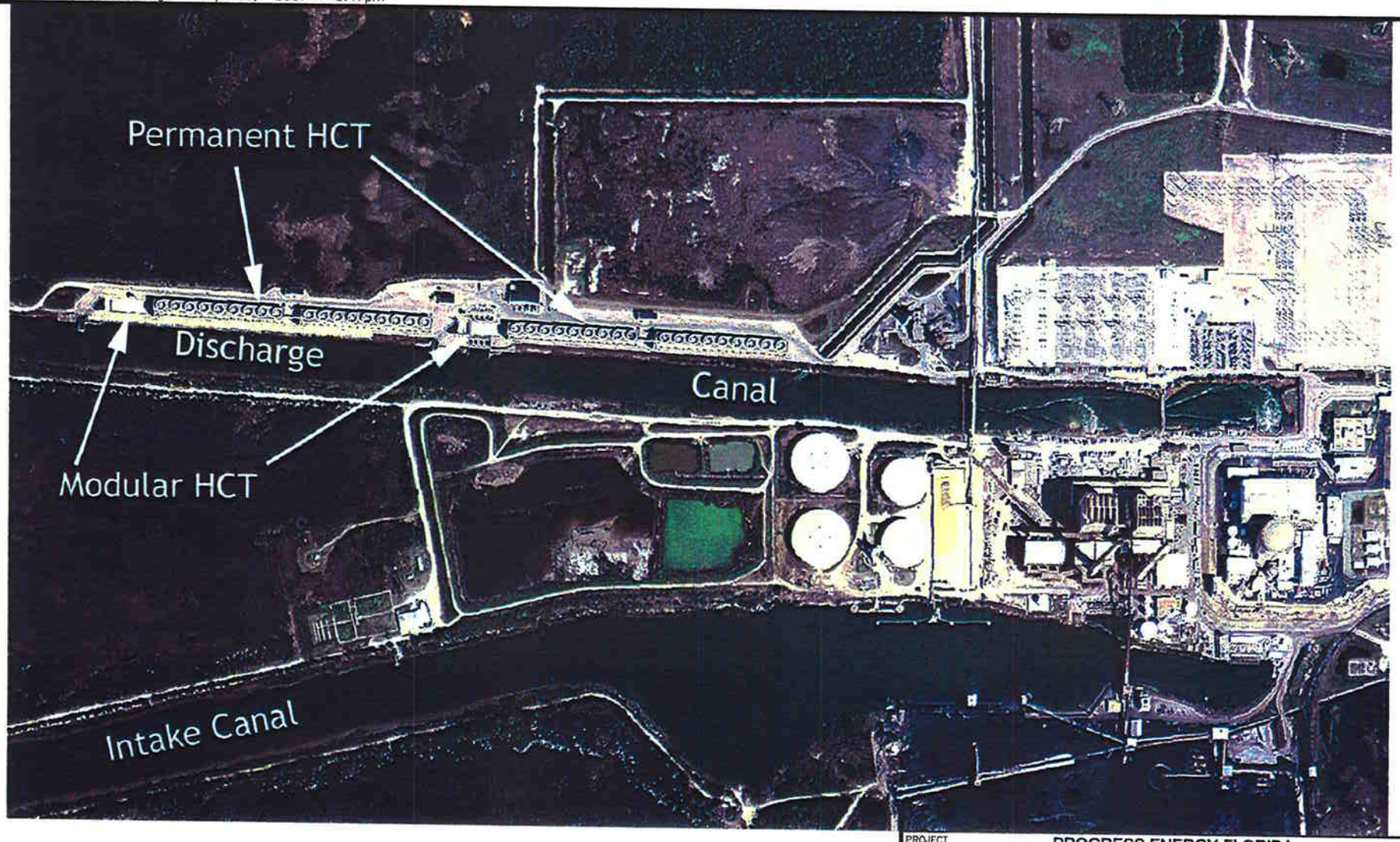


PROJECT

PROGRESS ENERGY-FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE

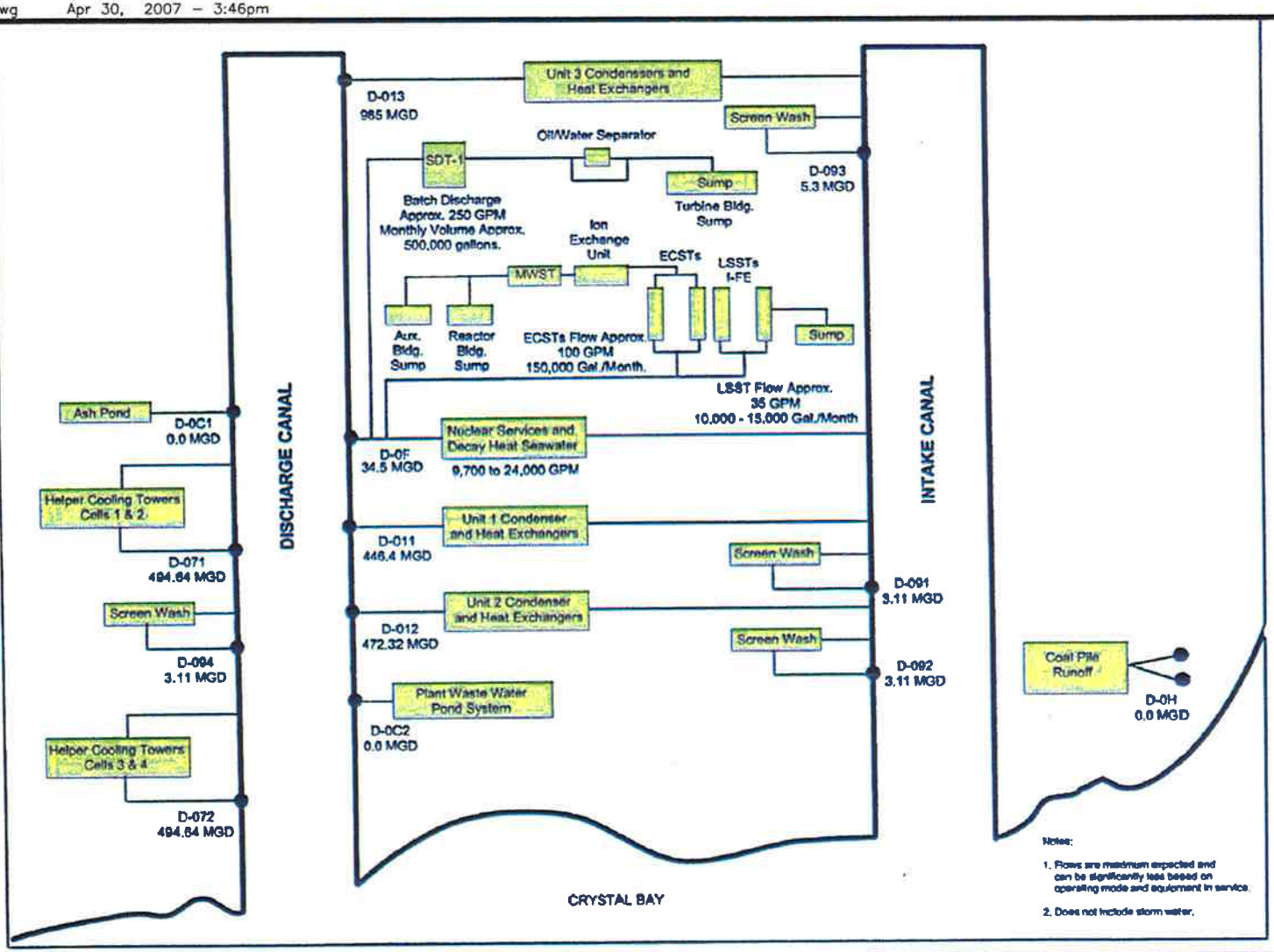
EXISTING CR 1,2,3 HEAT DISSIPATION SYSTEM FEATURES

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	07389531B025
DESIGN	HF	04/30/07	SCALE AS SHOWN	REV. 0
CADD	MEF	04/30/07		
CHECK	MM	04/30/07		
REVIEW	MM	04/30/07		

FIGURE 2.3.4-3

Drawing file: 07389531B022.dwg Apr 30, 2007 - 3:46pm



PROJECT

PROGRESS ENERGY-FLORIDA
CRYSTAL RIVER UNIT 3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

TITLE

EXISTING CR 1,2,3 WATER USE FLOW DIAGRAM

REFERENCES

1.) NPDES FLOW DIAGRAM #FL0000159

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	073895318022	
DESIGN	HF	04/30/07	SCALE AS SHOWN	REV.	0
CADD	MEF	04/30/07	FIGURE 2.3.4-4		
CHECK	MM	04/30/07			
REVIEW	MM	04/30/07			

Figure 2.3.4-5 Once Through Cooling Water Flow

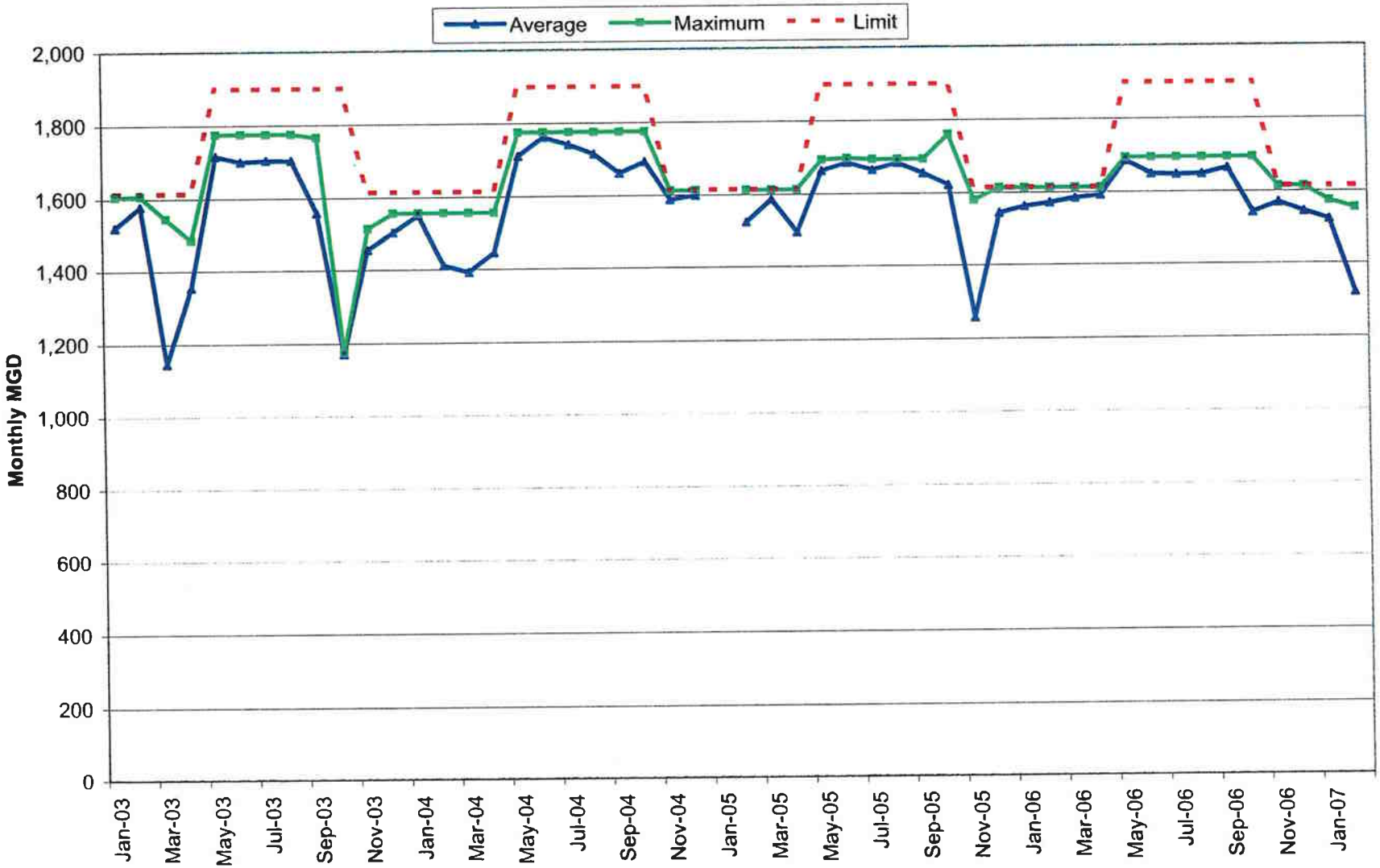


Figure 2.3.4-6 Total Dissolved Solids in the Discharge Channel

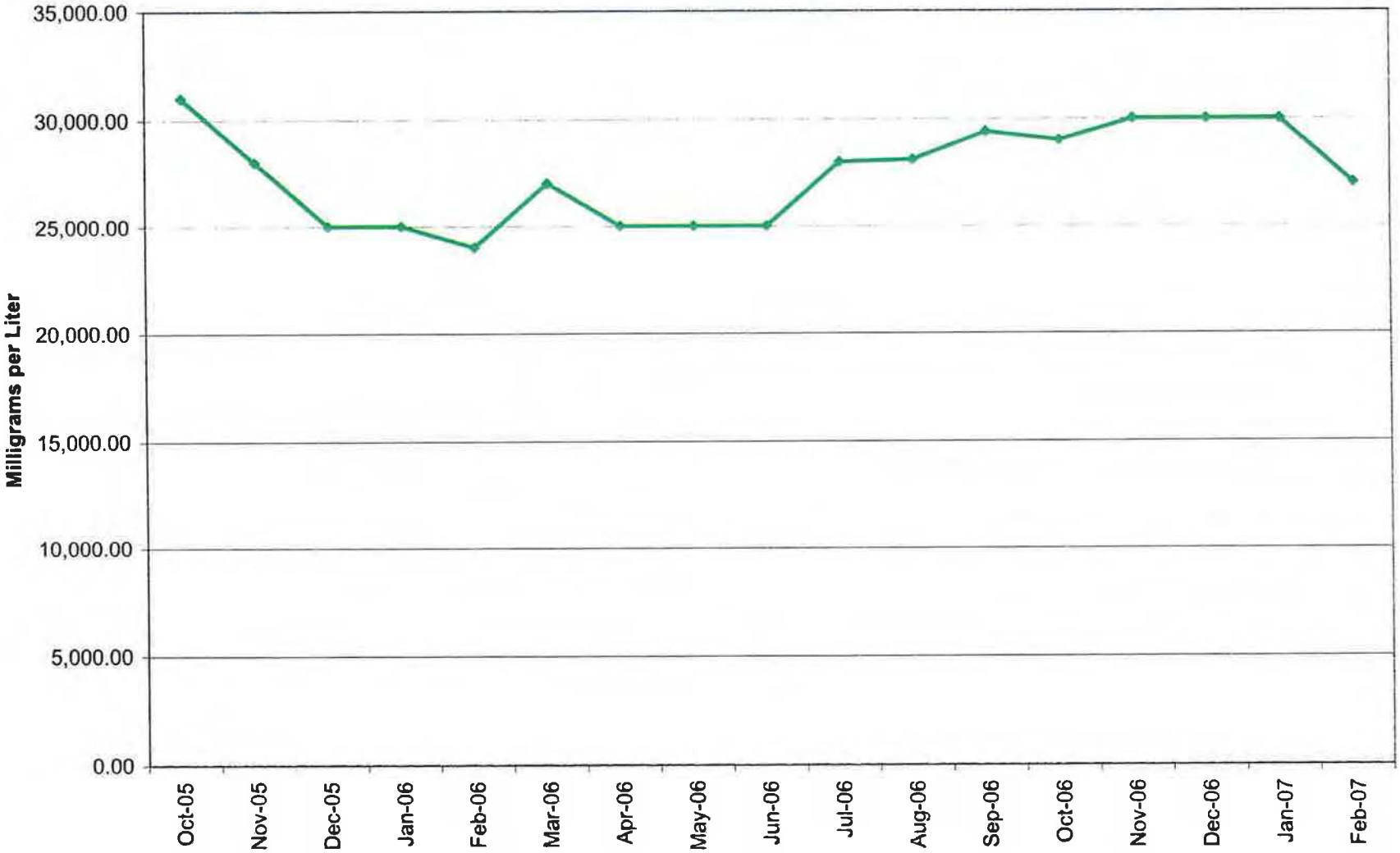


Figure 2.3.4-7 Once Through Cooling Water Temperatures

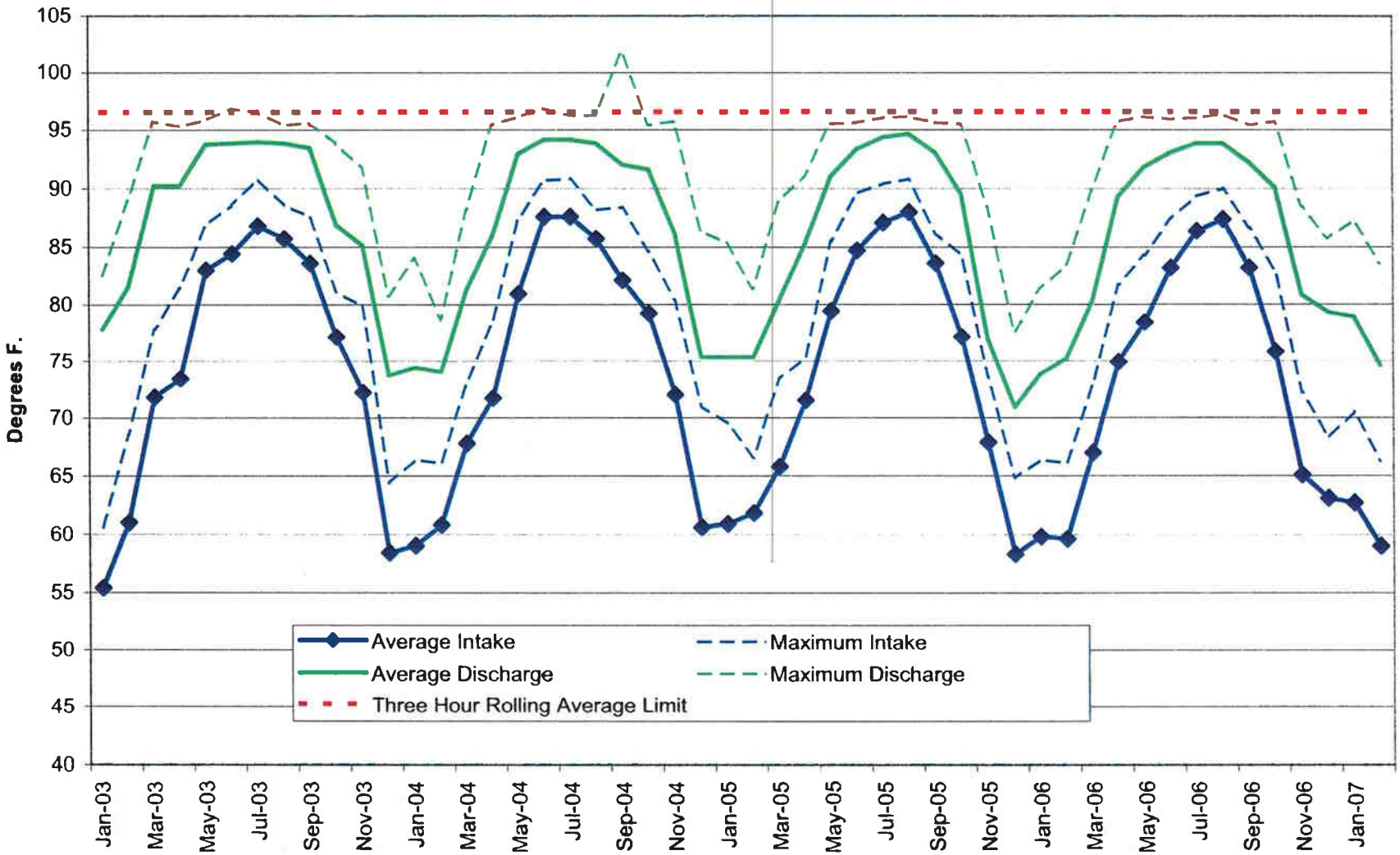
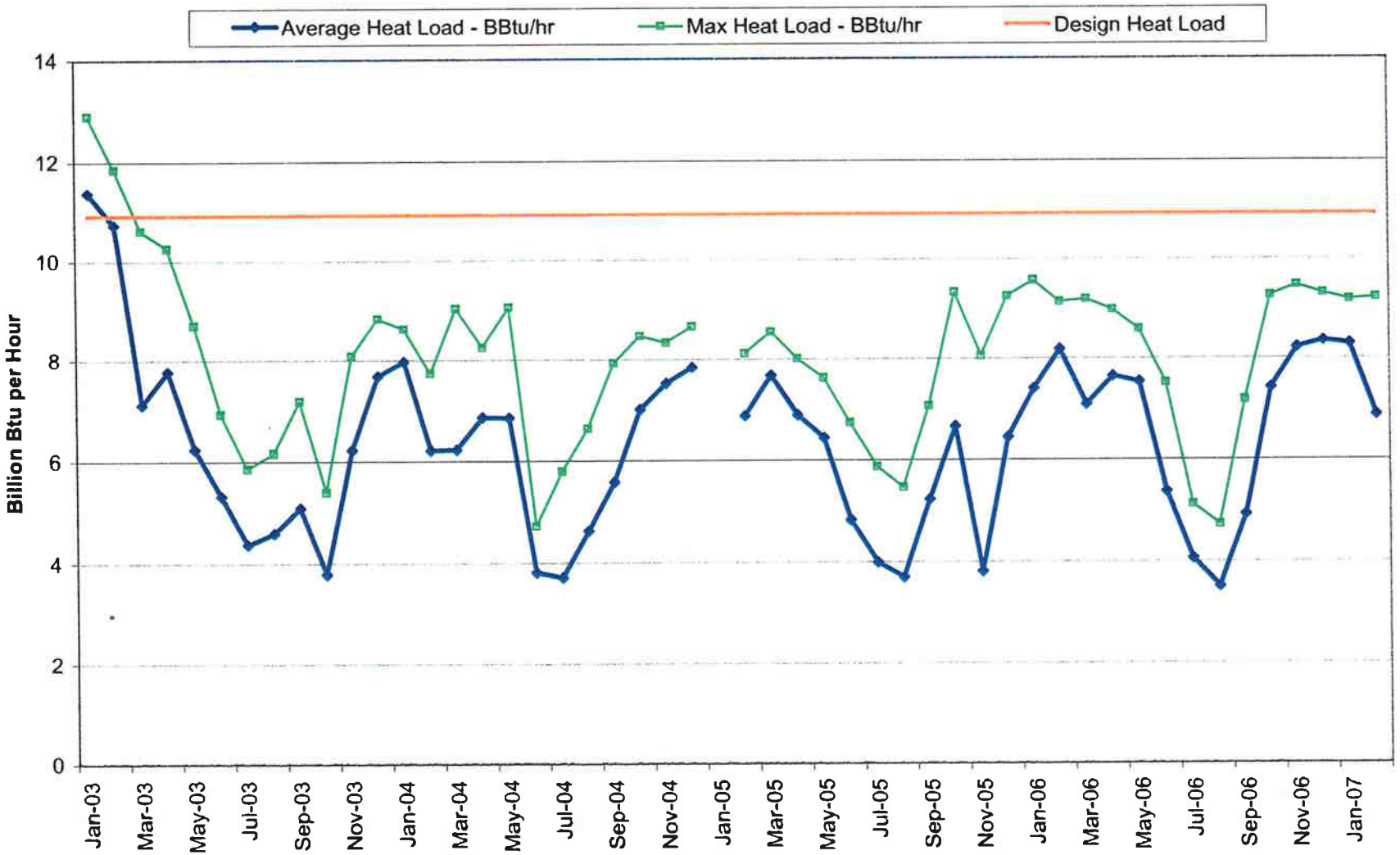
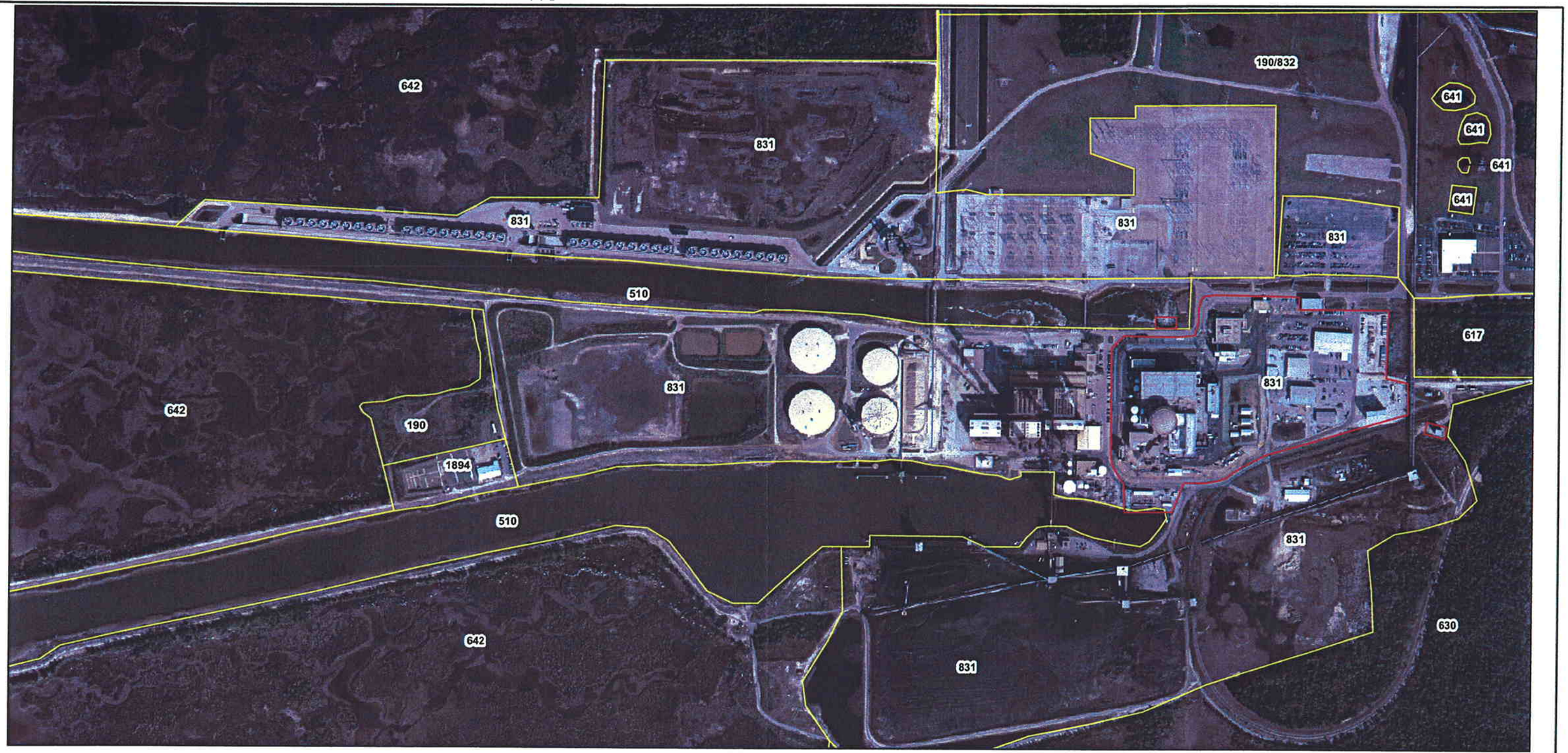


Figure 2.3.4-8 Discharge Canal Heat Load



F:\PROJECTS\2007 PROJ\073-89531 CR 3 Nuclear Uprate (SCA)\A-PG Crystal River Nuclear Site Upgrade\GIS\MXD\073-89531A031 FLUCCS Fig 2_3_5-1.mxd



LEGEND

- Crystal River Nuclear Unit 3 Site Location
- FLUCFCS

FLUCFCS	Description
1894	Shooting Range
190	Open Land
190/832	Open Land/Electric Power Transmission
510	Intake/Discharge Canals
617	Mixed Wetland Hardwoods
630	Wetland Forested Mixed
641	Freshwater Marsh
642	Saltwater Marsh
831	Electric Power Facilties

500 0 500 Feet

SCALE 1:6,000

N

REFERENCE

1. 2006 Southwest Florida Water Management Aerial.
2. Crystal River Unit 3 Site Location by Golder Associates Inc.
3. FLUCFCS by Golder Associates Inc.

PROJECT

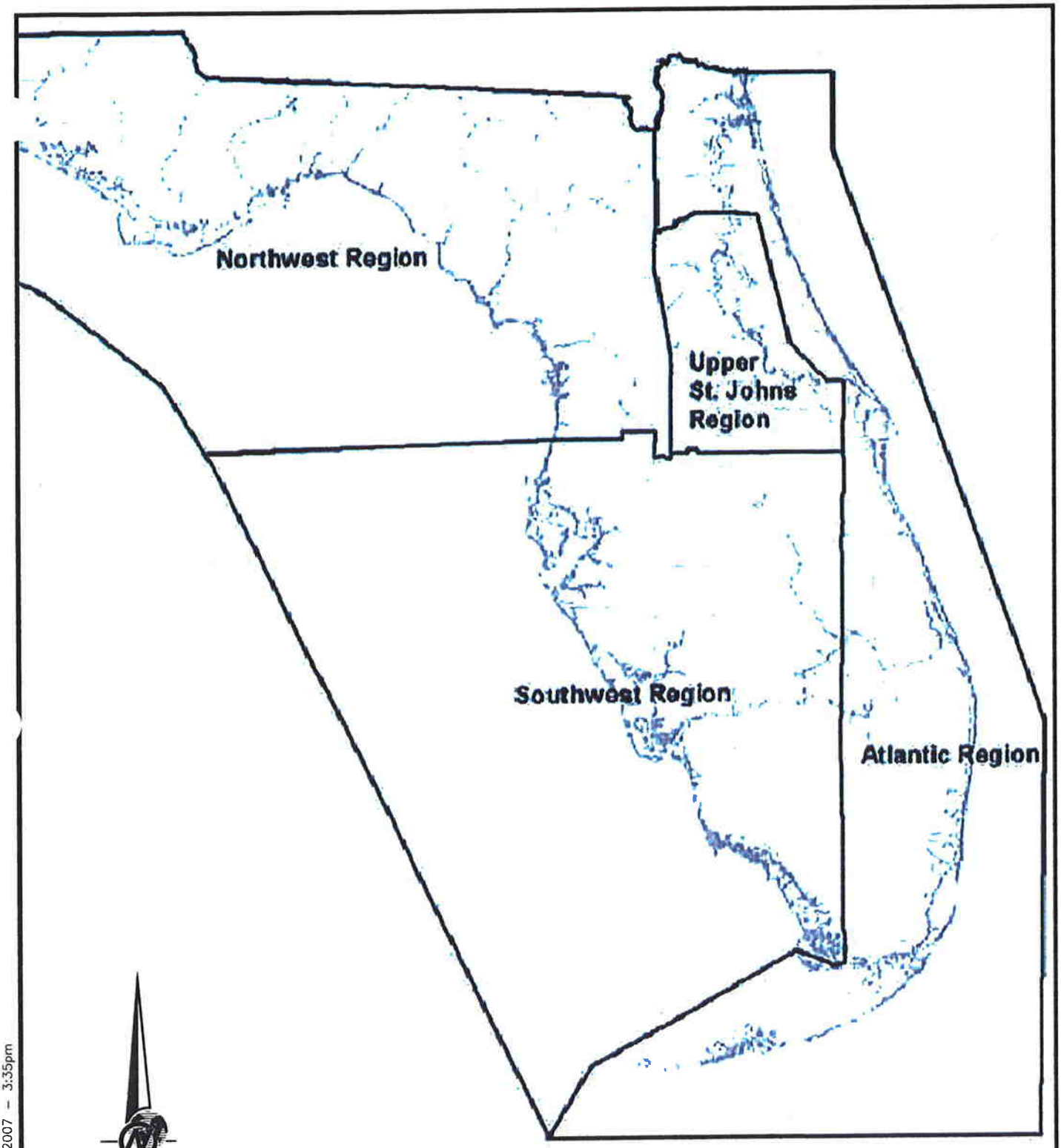
PROGRESS ENERGY FLORIDA, CRYSTAL RIVER NUCLEAR UNIT 3 UPRATE PROJECT

TITLE

FLORIDA LAND USE, COVER, AND FORMS CLASSIFICATION SYSTEM MAP

Golder Associates
Tampa, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0	
DESIGN	JG	June 01, 2007	FIGURE		
GIS	JG	June 01, 2007	2.3.5-1		
CHECK	KG	June 01, 2007			
REVIEW	MM	June 01, 2007			



0 15 30 60

SCALE: 1" = 60 MILES

REFERENCES

1.) USFWS 2001.

PROJECT: PROGRESS ENERGY-FLORIDA
CRYSTAL RIVER UNIT3
POWER UPRATE PROJECT
CITRUS COUNTY, FLORIDA

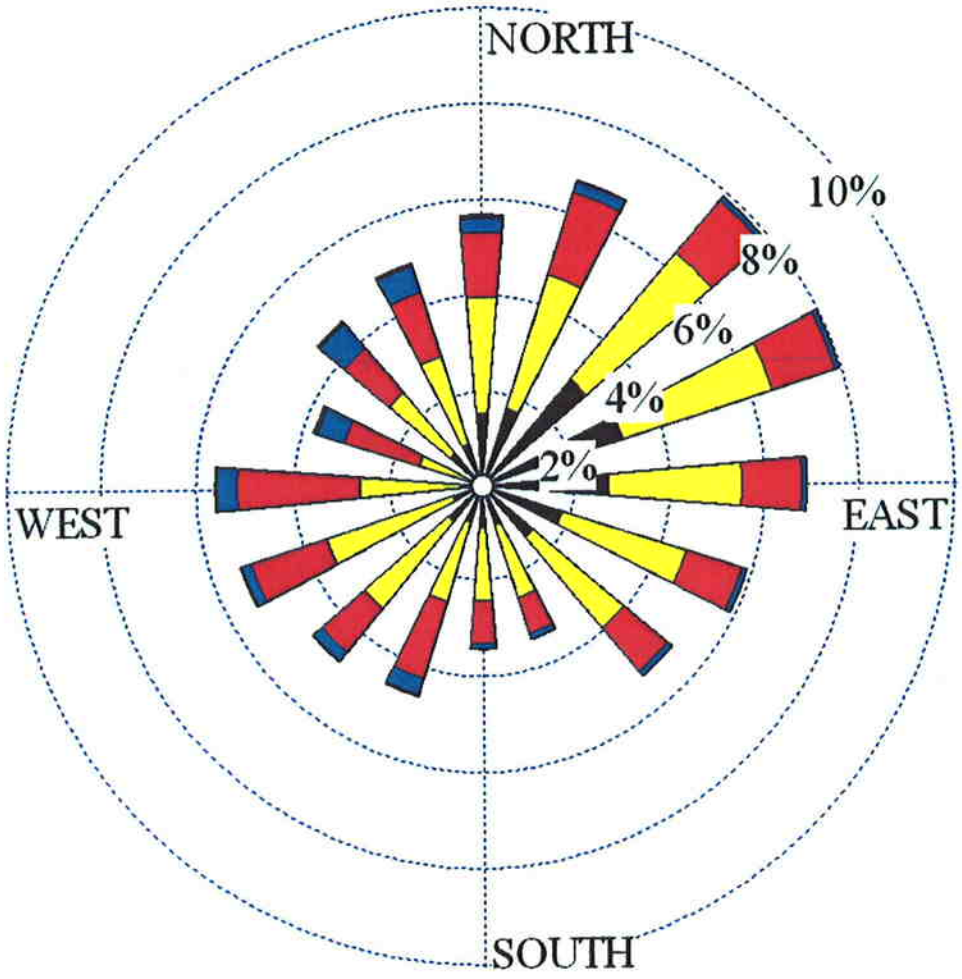
TITLE: **SUBPOPULATIONS OF THE MANATEE IN FLORIDA**

Golder Associates
Tampa, Florida

PROJECT No.		073-89531	FILE No.	0789531B026
DESIGN	AP	04/30/07	SCALE AS SHOWN	REV. 0
CADD	MEF	04/30/07		
CHECK	MM	04/30/07		
REVIEW	MM	04/30/07		

FIGURE 2.3.6-1

Drawing file: 07389_1B026.dwg Apr 30, 2007 - 3:35pm

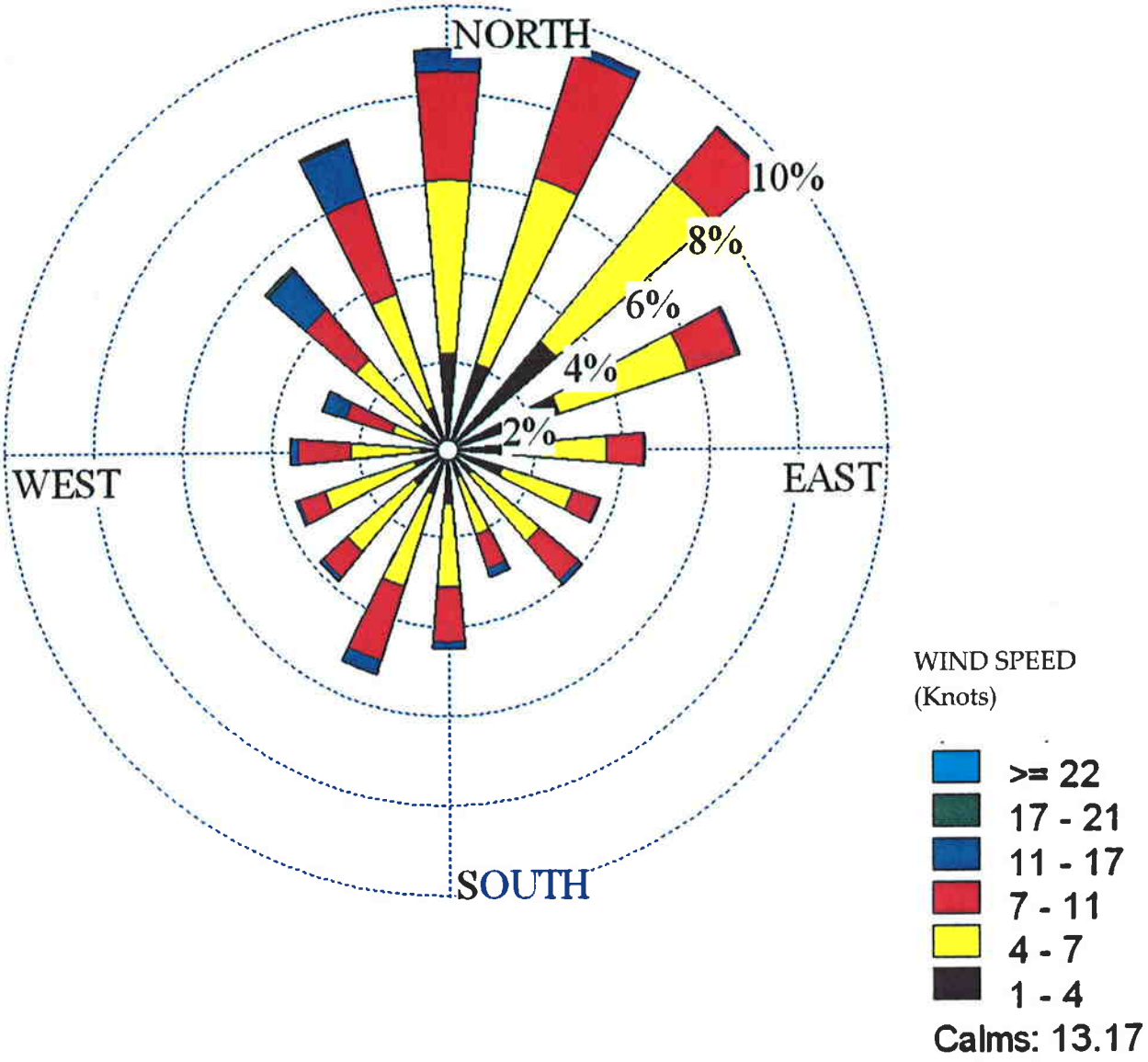


Average Wind Speed	5.73 Knots
Calm Winds	13.4 %

Note: 1 knot = 1.151 miles per hour.

Figure 2.3.7-1.
Annual Wind Rose for 2001 to 2005
Tampa International Airport (Station No. 12842)

Source: National Climatic Data Center. 2001-2005.

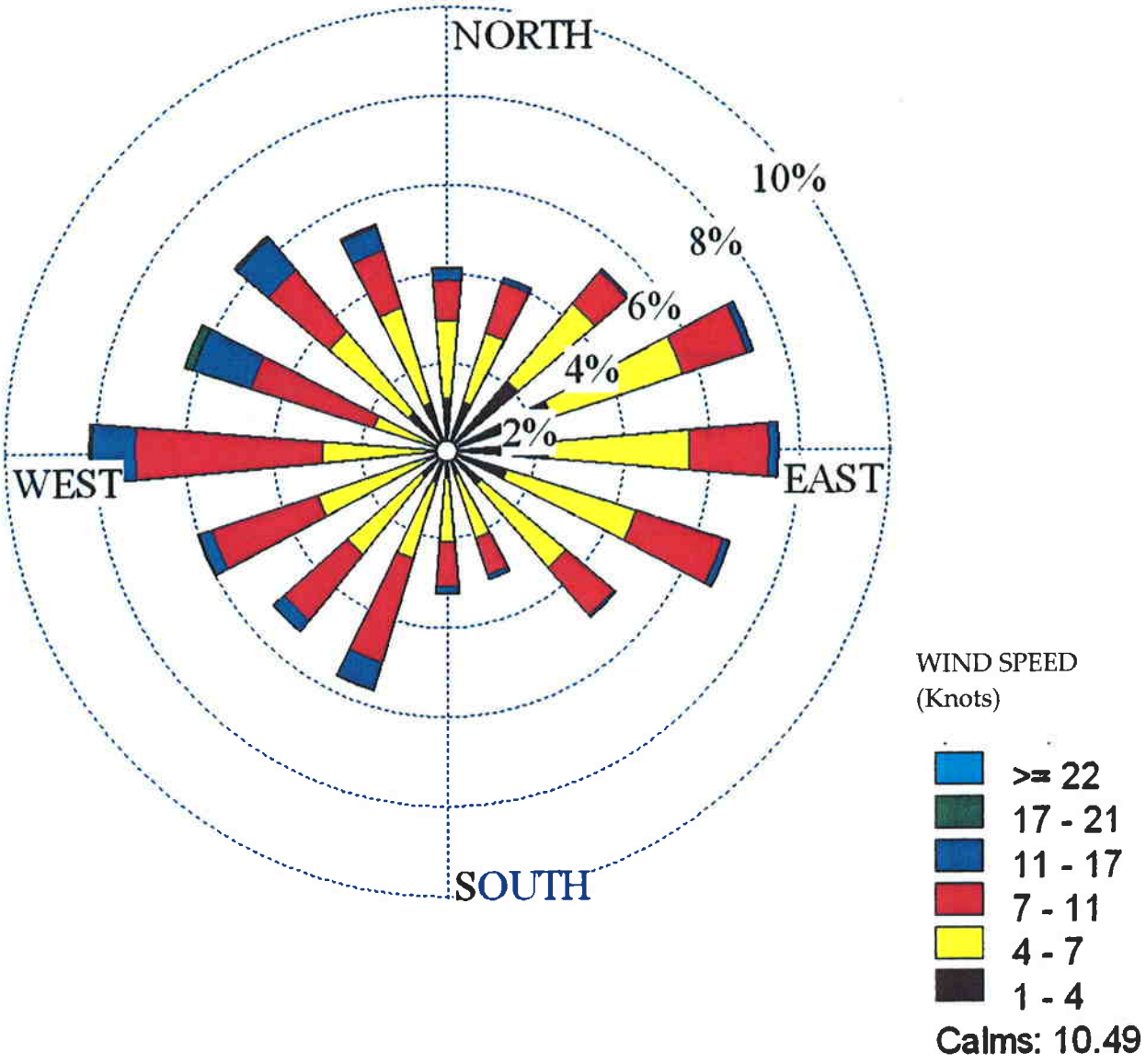


Average Wind Speed	5.74 Knots
Calm Winds	13.17 %

Note: 1 knot = 1.151 miles per hour.

Figure 2.3.7-2.
Winter Wind Rose for 2001 to 2005
Tampa International Airport (Station No. 12842)

Source: National Climatic Data Center. 2001-2005.

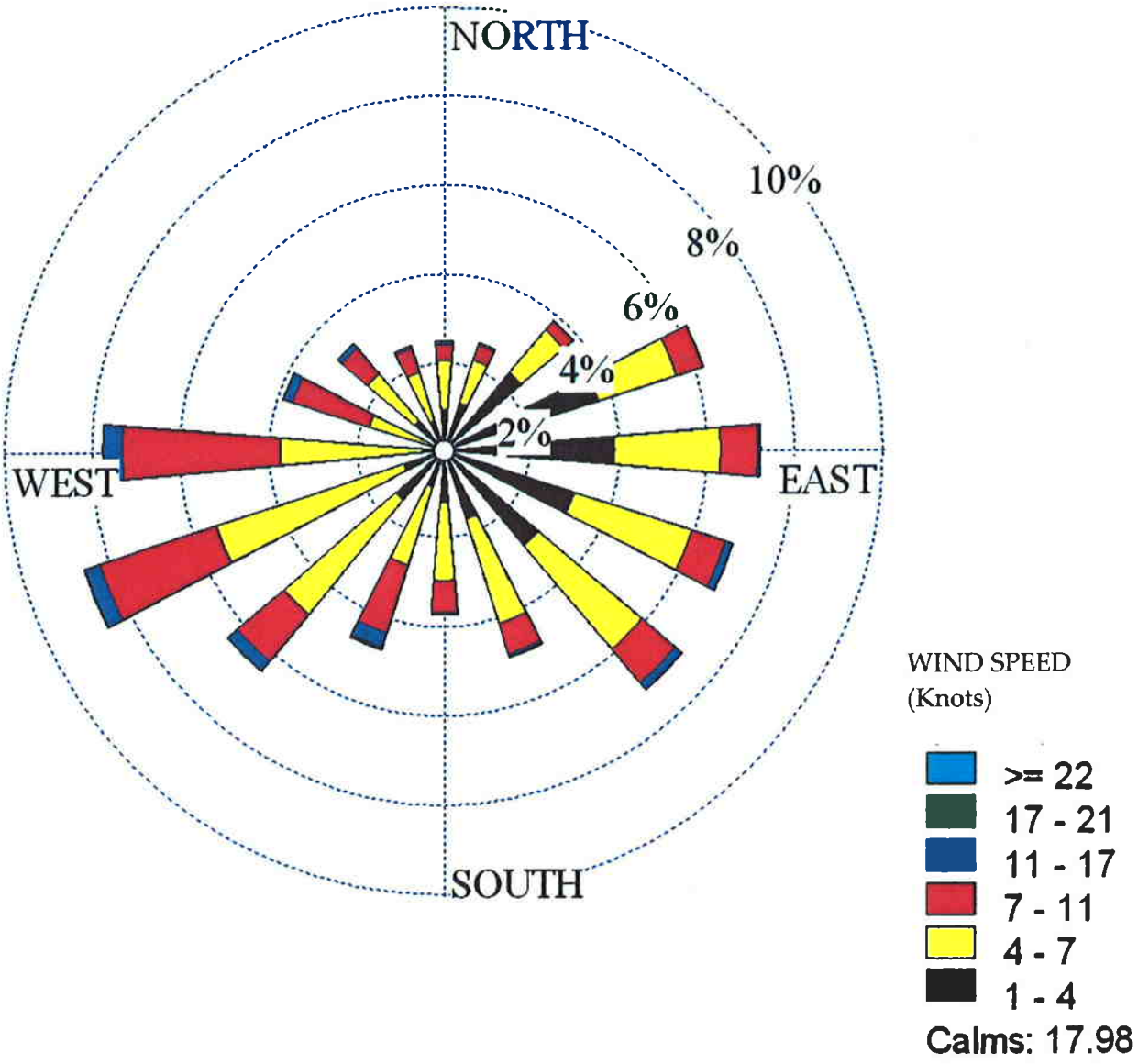


Average Wind Speed	6.39 Knots
Calm Winds	10.49 %

Note: 1 knot = 1.151 miles per hour.

Figure 2.3.7-3.
Spring Wind Rose for 2001 to 2005
Tampa International Airport (Station No. 12842)

Source: National Climatic Data Center. 2001-2005.

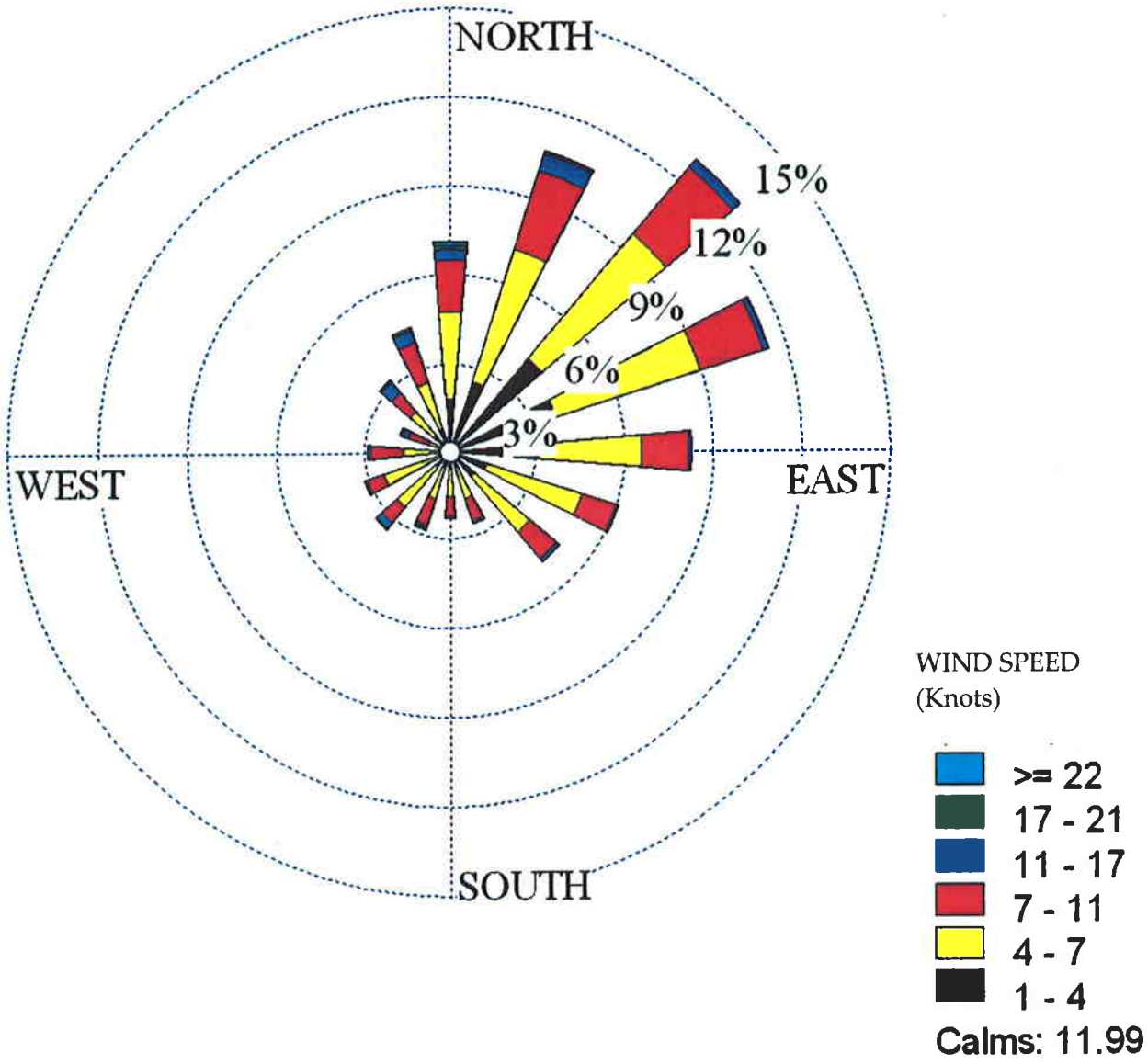


Average Wind Speed	4.98 Knots
Calm Winds	17.98 %

Note: 1 knot = 1.151 miles per hour.

Figure 2.3.7-4.
Summer Wind Rose for 2001 to 2005
Tampa International Airport (Station No. 12842)

Source: National Climatic Data Center, 2001-2005.



Average Wind Speed	5.78 Knots
Calm Winds	11.99 %

Note: 1 knot = 1.151 miles per hour.

Figure 2.3.7-5.
Fall Wind Rose for 2001 to 2005
Tampa International Airport (Station No. 12842)

Source: National Climatic Data Center. 2001-2005.

LEGEND

▲ Noise Monitoring Locations

REFERENCE

Projection: Transverse Mercator Datum: NAD 1983 Coordinate System: UTM Zone 17N

1,000 0 1,000

SCALE 1:43,774 METRES

PROJECT

Crystal River Power Plant

TITLE

Noise Monitoring Locations

Golder Associates
Gainesville, Florida

PROJECT No. 073-89531			SCALE AS SHOWN	REV. 0
DESIGN	JH	03 May 2007		
GIS	JH	03 May 2007		
CHECK	GM	03 May 2007		
REVIEW				

Figure 2.3.8-1