

Item 33

**Short-Term Water Withdrawals by FPL**

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# FPL Cooling Canal



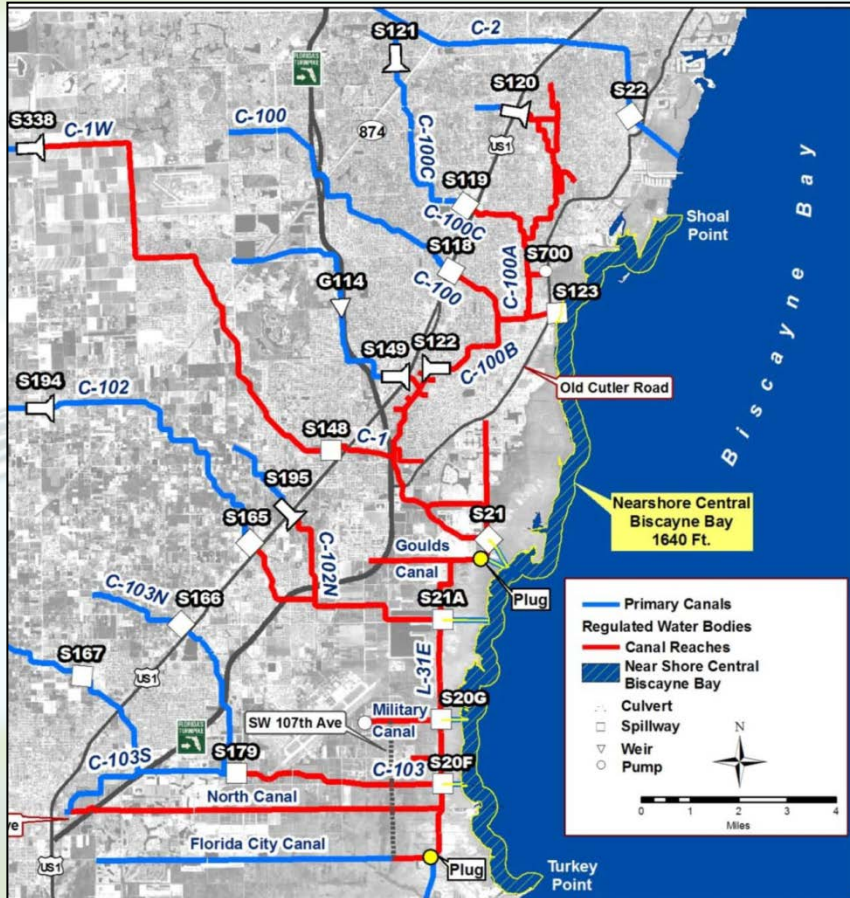
- FPL Cooling Canal System (CCS) constructed in early '70s
- No surface water inflows or outflows into CCS to maintain water levels, temperature, or salinity
- Recharge from direct rainfall and saline groundwater seepage
- Average annual rainfall at S-20F is  $\approx 50$  inches
  - 2014 rainfall:  $\approx 41$  inches

# FPL Operational Issues



- **CCS temperatures usually rise beginning in late spring**
- **Thermal compliance temperature is 104°F**
- **Increasing evaporation increases salinity**
- **SFWMD issued an Emergency Order: August 2014 through October 2014**
- **Water inflows resulted in temperature and salinity reductions**
- **14 mgd from Floridan Aquifer intended as long-term temperature solution**
- **Awaiting resolution of objections to use of the Floridan Aquifer**
- **As a temporary, interim step, FPL seeks an authorization to provide water to cool the CCS and reduce salinity**

# Nearshore Central Biscayne Bay Reservation



- Effective July 2013
- Reservation based on fish and wildlife protection criteria contained in the BBCW CERP PIR
- BBCW phase I infrastructure
- Redistributes freshwater runoff from the existing canal discharges
- Provides a more natural and historical overland flow pattern through existing systems
- Reservation distributed across several coastal reaches; southern reach of L-31E is 504 acre-ft/day

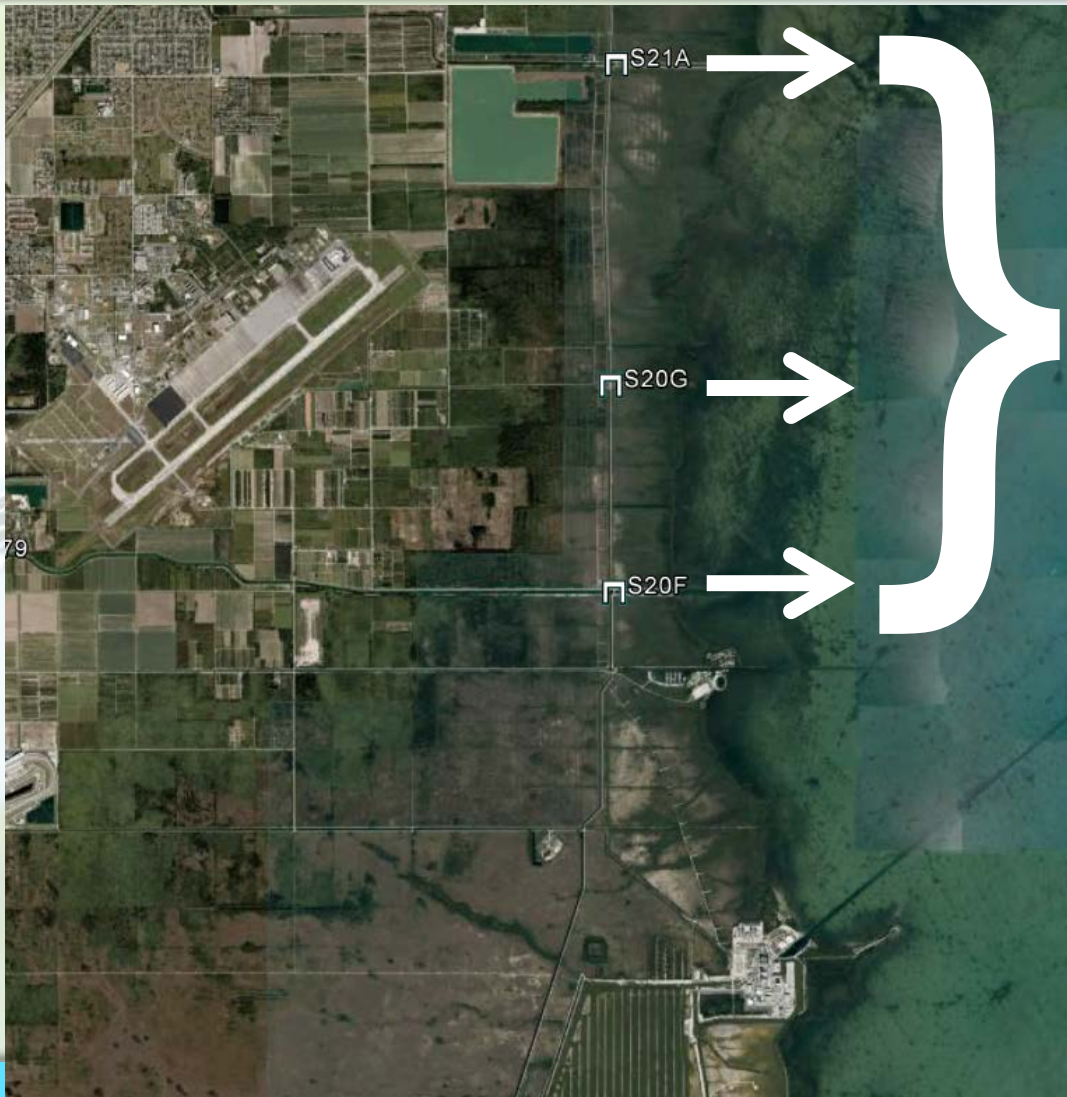
# Short-Term Withdrawal Authorization

- **FPL is prohibited from withdrawing and using water from the L-31E Canal system that is reserved for fish and wildlife for the Nearshore Central Biscayne Bay.**
- **The only water available for the purpose of this Order is that water which is in excess of the flows reserved for protection of fish and wildlife.**

# 2-Step Criteria for Availability

- **Step 1: Calendar Constraint**
  - Seasonal withdrawals only: June 1 to November 30
- **Step 2: Excess from the L-31E Canal System**
  - Part 1 – All pumps are off at the start of each day
  - Part 2 – Remain off until the sum of discharges from S-20F, S20G, and S21A meets or exceeds 504 acre-feet
  - Part 3 – Withdrawals authorized
  - Part 4 – Withdrawals terminated at 11:59 PM

# Step 2: Water Availability Criteria



Sum of flow from:

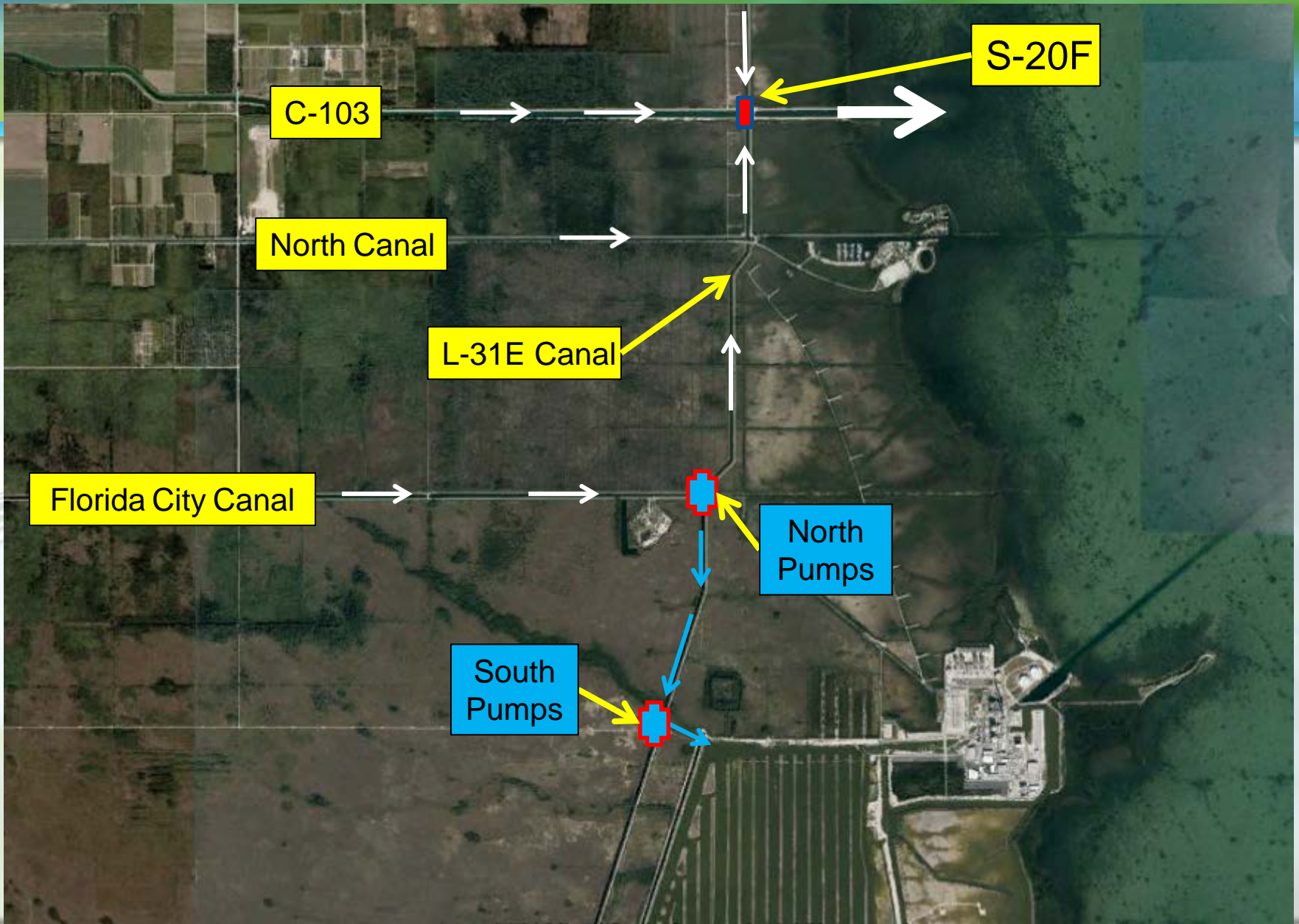
- S-20F
- S20G
- S21A

Must exceed 254 cfs  
(504 acre-ft/day)

# Preventing Over-Withdrawal

- **Volume of water pumped from the C-103 Basin into L-31E must exceed the daily volume pumped from the L-31E into the CCS**
- **North Pumps shall always be started at least five minutes before the pumps withdrawing water from the L-31E and discharging into the CCS (South Pumps)**
- **South Pumps shall cease first and the North Pumps shall cease within 5 minutes**





# Order Requirements

- **Water Availability Determination**

- Flows available on District web page
- FPL responsible for accessing District's data and performing calculations

- **Monitoring and Reporting**

- FPL shall generate detailed reports including:
  - Water availability determination for each day
  - Pump usage and timing
  - The amount of water diverted to the CCS
  - Temperature and salinity data
  - Weekly summary reports

# Order Requirements

- **Special Pump Station Criteria**

- The District may require pumping to terminate at any time within two hours of receipt of any oral or written request
- FPL shall coordinate the pumping at both stations
- Storm/hurricane contingency plan

- **Pump Requirements**

- Pumps shall be staffed on a 24-hour basis
- Pump discharge rating curves prior to operation
- Calibrated totaling flow meters

# Recommendation

**Staff recommends the Governing Board enter an Order authorizing short-term water withdrawals by Florida Power and Light from the L-31E Canal System; Miami-Dade County, Florida.**



**Thank You**