Three Parts: A1 FEB, L8 FEB and C44 Reservoir/STA. (L8 FEB Pictured)
1 red dot = 1,000 people
O&M: Nearly 2,000 miles of canals and 2,800 miles of levees; More than 650 structures and 700 culverts and 69 pump stations; Moves more than 20 million acre-feet (5.5 trillion gallons) of water annually

Water Supply: Planning and regulation for public water supply demand of 3 billion gallons/day and agricultural industry; Management of surface and groundwater through consumptive use & environmental resource permitting

Natural Systems: Improve quantity, quality, timing and distribution of water to freshwater and coastal systems; 1.7 billion gallons of water lost to tide/day; Key Initiatives: Comprehensive Everglades Restoration Plan (68 projects), Northern Everglades and Estuaries Protection Program (Lake Okeechobee, St Lucie, Caloosahatchee), Kissimmee River

Water Quality: Key Initiatives: Stormwater Treatment Areas (STAs), Best Management Practices (BMPs); Flow Equalization Basins; Best Management Practices
Any water directed southward must be clean. Currently there are five Stormwater Treatment Areas, or 57,000 acres of converted farm land, already at work reducing phosphorus levels in water before it flows into the Everglades. Those are shown on this map in light green.

Total Phosphorus inflow concentrations range from 104-228 ppb – outflow concentrations range from 17-95 ppb (Avg 38 ppb).

The Governor’s Restoration Strategies water quality plan:

- **Adds three Flow Equalization Basins** to capture and store peak stormwater flows. We can then move water from the FEBs into the existing STAs at a steady rate to better optimize STA performance and achieve water quality improvement targets.

- **It also adds 6,500 acres of additional STA treatment** – which means more water can be treated.

- **These projects will add another 110,000 acre-feet of additional storage** – providing us with greater water management flexibility to capture, treat and move water.
West Side of Hwy 27, north of STA 3/4 and west of STA 2/Compartment B
The A1 FEB project is a part of the overall Everglades restoration effort and specifically is designed to support the operations of STA-3/4 and STA-2/Compartment B.

- 15,000 acre basin that will be utilized to attenuate peak storm water runoff flows from the North New River Canal (NNRC) and the Miami Canal.

- The objective of the Project is to temporarily detain up to 60,000 ac-ft of these excessive flows within the FEB for release to STA-3/4 and STA-2/Compartment B at an ideal rate once the peak runoff flows have subsided in the NNRC.
SE Corner, looking NW up the new inflow channel. G-722 outflow structure at right side of pic, G-721 inflow structure near upper left, existing G-370 Pump Station in foreground.
West side of FEB, looking north and slightly west up the new inflow channel. G-720 Inflow Structure at right.
Rubicon outflow structure, looking south. Rubicons are solar powered, eliminating the need to run powerlines to the structures in remote locations. There are 10 of these (200 cfs each) spaced evenly along the southern perimeter, providing outflow to the STA 3/4 supply canal.
The nearby stadium home to the Miami Dolphins occupies 473,000 square feet of area. So 1,290 of these stadiums would fit inside the A1 FEB footprint.

A1 FEB’s volumetric capacity of 69,000 ac-ft is equivalent to more than 13.5 Billion gallons, or a combined 29,500 Olympic-sized swimming pools.

If an average person wanted to walk one time around the entire perimeter of the 111,000 linear foot containment levee, it would take them 7 hours to do so, nonstop.

The A1 FEB’s inflow channel is 700 feet wide, and water is discharged at a velocity of 8 feet per second at maximum inflow. This is higher than the average speed of the Colorado River through the Grand Canyon.

Larger than the entire cities of Naples, Plantation, Jupiter, Ft. Pierce, Hialeah, Punta Gorda, Boynton Beach, Delray Beach and Bradenton.

$59M construction contract – project generates roughly 1,400 jobs annually.
North of Southern Boulevard, across from S5A Pump Station, east of FPL.
L8 FEB – Project Purpose

- The L8 FEB project is a part of the overall Everglades restoration effort and specifically is designed to support the operations of STA-1E and STA-1W.

- 950 acre basin that will be utilized to attenuate peak storm water runoff flows from the L8 Canal and the C51 Canal.

- The objective of the Project is to temporarily detain up to 45,000 ac-ft of the excess flows within the FEB for release to STA-1E and STA-1W at an ideal rate once the peak runoff flows have subsided in the S5A and C51 West Basins.

- Unique geology allows isolated storage below ground rather than above ground.
3,000 cfs gravity inflow structure, 450 cfs inflow pump station, 45,000 ac-ft of storage between El. (-)37.0’ and (+)16.5’ NAVD.
Looking north, L8 canal on the right side of picture, FPL facility on left, future C-51 Reservoir upper left. Inflow structure at center right. 
~1000 acre site.
Left Pic – inflow structure looking east. Right pic – bridge over inflow channel looking NW, including 36” Reclaimed Water Main serving FPL

Inflow Structure: 3-12’ wide gates, 50’ wide concrete channel with 6’ high side walls, 10:1 slope. Includes a stilling basin with baffle blocks for transition of supercritical to subcritical flow.
Pump Station looking east. 450 cfs total capacity. 2-stage pumping well, 40’ in diameter and 72’ tall. Base slab elevation is (-)48.0’ NAVD. Deck elevation is (+)24.0’ NAVD. Six 150cfs electric submersible pumps.
L8 FEB – Project Scale

There is only one lake in all of Florida with an average depth greater than the 53’ average depth found within the L8 FEB. (Deep Lake, 58’, Collier Co.)

At L8FEB’s volumetric capacity of 45,000 ac-ft, it is equivalent to more than 14.5 Billion gallons, or a combined 22,000 Olympic-sized swimming pools.

At 63.6’ of static head, there is no pump station in all of Florida that moves water over a greater change in elevation.

The L8 FEB pump station is 72′ high and 48′ in diameter, equivalent to a 7-story building.

The 3,000 cfs inflow structure is 450′ long, with 45′ of elevation change and transports water at a maximum velocity of 42 feet per second.

$303.8M construction contract – project generates roughly 1,310 jobs annually.
Design will be complete by **July 2015** (on schedule)
STA-1W Expansion #1

- A 4,600 acre expansion of STA 1W
- Consist of new Canals, Embankments, and Water Control Structures
- Canals – 17.5 miles
- Levees – 19 miles
- Structures –
  - 10 gated box culverts, 5 roller gate spillways,
  - 6 overflow weirs, 14 box culverts
- NTP January 2016
- Construction completion – December 2018
L-16 Bolles Canal Conveyance Improvement

- This project involves the deepening and widening of the nine mile L-16 Bolles East Canal in order to increase the conveyance capacity. The new canal cross section will be 40 foot bottom width with an invert elevation of -2.0 ft.
- In addition, the work will include constructing a farm ditch and access road along the length of the newly excavated canal.
- Will be constructed in segments of 1.2 to 2 miles each over a period of years.
- Construction cost estimate of $7M per segment.
- First segment to start construction in October.
$6.5M construction cost estimate
The C-44 Reservoir & STA is a component of CERP, and part of the overall Indian River Lagoon South Project.

- Primary goal is to capture excess surface water runoff that currently flows to the Atlantic Ocean via the St. Lucie Estuary.
- Reduces peak freshwater runoff quantities from the C-44 Basin into the St. Lucie Estuary.
- Reduces nutrient loading from the C-44 Basin runoff into the St. Lucie Estuary.
1,880 cfs gravity flow
Total Project storage volume – 170,000 acre-feet
Cell 1 storage volume – 90,000 acre-feet
Max Pool Depth (normal full): 25 feet (Depth at NW corner of reservoir. Only 15 feet deep at SE corner of reservoir)
Height of embankment: 27 – 38 feet
Length of embankment: 16.3 miles (does not include 2.8 mile separator dam)
Ten Mile Creek Reservoir

- Fill Interior Collector Ditch with borrow materials from Reservoir Interior and bentonite mixture
- Install geo-synthetic liner within the collector ditch fill area, further reducing seepage
- Bring water into reservoir up to a stage of ~22.0’ (4 ft depth)
- 2,515 ac ft in reservoir storage yields a 32-day water supply to STA
- Estimated Costs of $10 M
**O&M Capital Projects FY16**

**FY16 Preliminary Budget:**
- $45,598,003 Total Budget

**Major Projects Included:**
- S5A Pump Station Refurbishment (Continuing)
- North Shore Pump Stations Automation (Continuing)
- C-4 Canal Bank Stabilization (Continuing)
- B-66 Tower Replacement
- S-46 Tailwater Weir and Gate Replacement
- G-103 Weir Replacement

Photos: S-46, B-66 Tower
S5A Pump Station Repowering

- Refurbish 6 pumps, chain drives and Fairbanks Morse engines
- Upgrade and replace station electrical equipment
- Upgrade and replace control systems for full station automation
- Replace discharge gates
- Construction estimate of $55 Million
- Construction Completion by October 2022
Additional FY16 Construction

- G58 Culvert
- C-4 Canal Bank Improvement Palmetto Phase 1
- STA Pump Stations Fuel Tank Platforms
- B66 Communications Tower Replacement
- S34 Culvert & S141 Weir
- S39A Culvert
- S140 Trash Rakes
Sweetwater Substantial Completion = February 18, 2016
Current and Future Design Projects

- Hillsboro Package 3 (Atkins)
- C4 Detention Basin Pump Stations Feasibility Study (Hazen & Sawyer)
- S140 Trash Rake (Mock-Roos)
- S-151 Replacement (CSA Group)
- S-351 / S-354 Manatee Grate Lifting Mechanisms (ADA)
- G58 Gate Replacement (ADA Engineering)
- S39A Replacement (Atkins)
- S9/S9A Trash Rake Replacements (Parsons)
- S40/S41/S44 Gate and Hoist Replacements
- S178 Automation
- G310 & G335 Refurbishments and Trash Rakes
- S2, S3, S3, S7 & S8 Engine Controls
Pump station progress pic, inflow gate at bottom.