



JUNE 2020

RESTORING A NATIONAL ESTUARINE TREASURE

The Indian River Lagoon-South and St. Lucie Estuary in Martin and St. Lucie counties are two of the country's most productive and most threatened water bodies. Home to more than 4,300 species of plants and animals, and supporting an annual economic contribution of more than \$730 million, the region will benefit from careful restoration and protection of these water bodies.

The lagoon and estuary have suffered from altered water flow patterns and degraded water quality. Over time, neighborhoods and farms emerged around the 827-square mile watershed. Outdated stormwater management systems and fertilizer-laden runoff caused both fresh water and pollutants to enter the estuary and lagoon. In recent years, excessive rains required additional freshwater releases from Lake Okeechobee. These releases, combined with large volumes of stormwater runoff, introduced contaminants and altered salinity levels, stressing the sensitive ecosystem of the estuary and lagoon.

The Indian River Lagoon-South (IRL-S) Restoration Project is now under way to reverse the damaging effects of pollution and unnaturally large freshwater discharges into these ecologically vital water bodies. The delicate balance of fresh and salt water in the lagoon and estuary will be restored, polluted water will be treated, and degraded habitats will be revitalized.



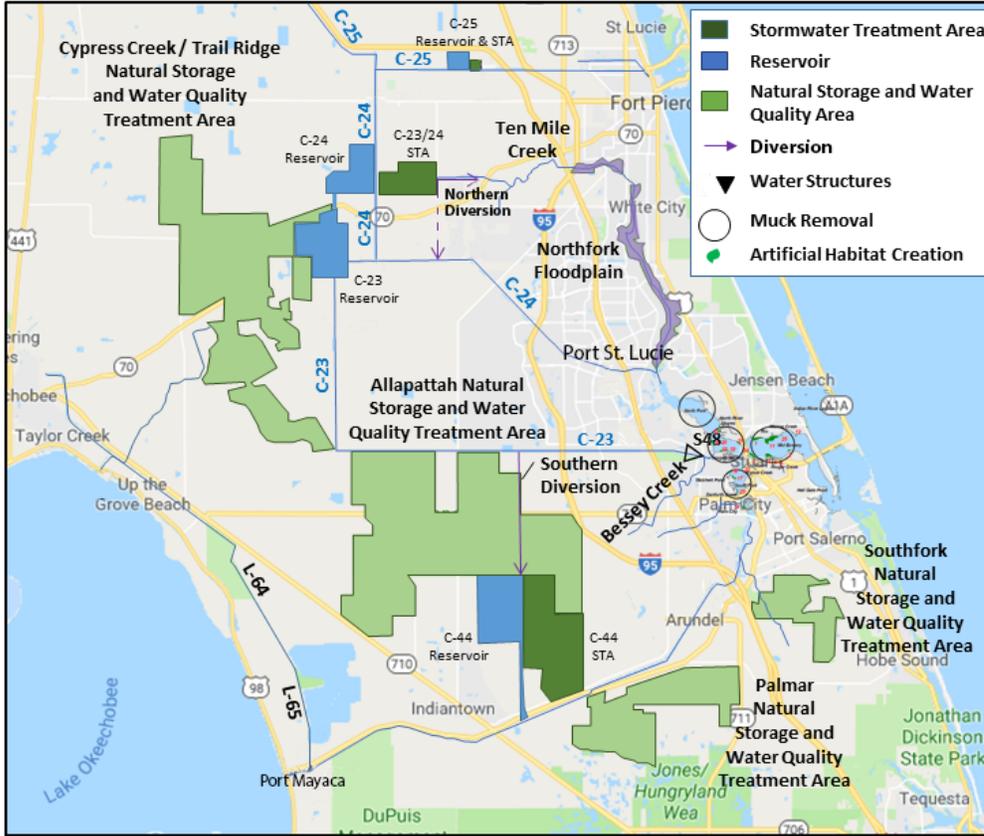
FEATURES AND BENEFITS

- 12,000 acres of aboveground storage
- 9,000 acres of manmade wetlands
- 90,000 acres of natural areas, including 53,000 acres of restored wetlands providing additional water storage
- 90 acres of artificial submerged habitat created for aquatic vegetation
- 922 acres of submerged aquatic vegetation restored
- 7.9 million cubic yards of muck removed
- 41 percent long-term reduction in phosphorus
- 26 percent long-term reduction in nitrogen
- 2,650 acres of benthic habitat created in St. Lucie River and Estuary
- 889 acres of restored oyster habitat
- \$6.1 million in improved agricultural productivity through improved freshwater supplies and \$6 billion in regional economic benefit (based on 2007 price levels)

INDIAN RIVER LAGOON - SOUTH | IRL-S

PROJECT COMPONENTS LOCATION MAP

The Indian River Lagoon-South Project employs a regional approach to restore the St. Lucie Estuary and the southern portion of the lagoon. Based on the Project Implementation Report approved by Congress in 2007, the IRL-S project is expected to include the



following components that will work together to protect and restore the lagoon and estuary:

- Construction and operation of four new aboveground reservoirs and their connecting canals, control structures, levees, and pumps to capture water from the C-44, C-23, C-24 and C-25 canals for storage of water runoff.
- Construction and operation of three new stormwater treatment areas (STA) to reduce sediment, phosphorus, and nitrogen going to the St. Lucie River Estuary and the southern portion of the Indian River Lagoon. STAs are planned for each of the C-44, C-23/24, and C-25 basins.
- Restoration of the upland/wetland mosaic and habitat with ditch plugging, berm construction, and periodic fire maintenance.
- Redirection of water from the C-23/24 basin to the north fork of the St. Lucie River, attenuating freshwater flows to the estuary.
- Muck removal from the north and south forks of the St. Lucie River and the middle estuary.
- Addition of oyster shell, reef balls, and artificial submerged aquatic vegetation near muck removal sites for habitat improvement.
- In total, approximately 130,000 acre-feet of new water storage provided by project's reservoirs and STAs, and an additional 30,000 acre-feet provided by the natural areas.
- Total phosphorous and nitrogen nutrient load reductions of 597 metric tons/year.

C-44 BASIN COMPONENTS

- C-44 – Reservoir
- C-44 – Stormwater Treatment Area
- Palmar Complex – Natural Storage and Water Quality Area

C-23/24 BASIN COMPONENTS

- C-23/24 – North and South Reservoirs
- C-23/24 – Stormwater Treatment Area
- Allapattah, Cypress Creek and Trail Ridge Complex – Natural Storage and Water Quality Area

C-25, NORTH FORK AND SOUTH FORK BASIN COMPONENTS

- C-25 – Reservoir
- C-25 – Stormwater Treatment Area
- North Fork Floodplain Restoration Muck Remediation and Artificial Habitat



C-44 CONTRACTS

Contract 1 (USACE) <i>completed 2014</i>	Contract 2 (USACE)	Contracts 3–5 (SFWMD)	Intake Canal Bank Stabilization (USACE)	Comm. Tower (SFWMD) <i>completed 2014</i>
<ul style="list-style-type: none"> • Intake Canal • Access Roads • C-133A and C-133 Drainage Canal and Outlet • Removing culvert under Citrus Boulevard for C-133 canal* • New bridge over intake canal for Citrus Boulevard* • Turning lanes on Citrus Boulevard for main project access road* 	<ul style="list-style-type: none"> • Reservoir • Reservoir seepage canals • Reservoir discharge tower and canal • 1-2 years of testing and commissioning 	<ul style="list-style-type: none"> • STA cells • STA distribution canals • STA collection canals • STA discharge to C-44 canal • Pump station • 1-2 years of testing and commissioning 	<ul style="list-style-type: none"> • Reinforcement of C-44 Reservoir Intake Canal • Riprap and Embankment placement 	<ul style="list-style-type: none"> • Communication tower • Communication equipment • Support buildings
* Portions funded by SFWMD and constructed by USACE.				

CONSTRUCTION TIMELINE

Project	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
C-44 Reservoir	[Solid Blue]													
C-44 ICBS	[Solid Light Blue]													
C-44 STA	[Solid Light Blue]													
C-23/24 STA	[Diagonal Stripes]		[Solid Green]											
C-23/24 Reservoir North	[Diagonal Stripes]		[Solid Green]											
C-23/24 Reservoir South	[Diagonal Stripes]		[Diagonal Stripes]			[Solid Green]								

stripes = design phase
solid = construction phase



C-25 RESERVOIR & STORMWATER TREATMENT AREA (STA)

This feature is located in St. Lucie County. It includes a 741-acre aboveground reservoir with a maximum depth of 8 feet, and a 163-acre STA. The reservoir will capture the first 0.4 inches of runoff from both the C-25 Basin and the Ft. Pierce Farms Basin (approximately 147,225 acres). The STA will treat 80 percent of the phosphorus load entering the STA from the reservoir. The reservoir and STA are north of and adjacent to C-25 at the S-99 structure. Their combined storage capacity is approximately 5,392 acre-feet.

NATURAL STORAGE & WATER QUALITY TREATMENT AREAS

Creating natural storage and water quality treatment areas will require acquisition of approximately 92,000 acres of upland/wetland mosaic, and plugging existing secondary drainage ditches to remove discharge into the Central and South Florida (C&SF) Project system canals. The result will be an effective storage capacity of 30,000 acre-feet (about 10 billion gallons of water) and



phosphorus and nitrogen reduction in the St. Lucie River and Estuary and Indian River Lagoon prior to runoff into east coast canals. The South Florida Water Management District (SFWMD) has acquired approximately 60% of the land needed to restore the Allapattah natural area to its historically natural condition. It has also completed contracts for ditch filling and structure upgrades. The property has been opened to the public for passive recreation usage.

DIVERSION OF EXCESS WATERSHED FLOWS

Diversion of excess watershed runoff, has two goals: diversion of C-23 and C-24 discharges into the north fork rather than near the middle estuary of the St. Lucie River, and diversion of C-23 flows to the C-44 canal where they will be directed to the St. Lucie River's south fork.

ARTIFICIAL HABITAT AND MUCK REMEDIATION

Artificial habitat and muck remediation will remove 7.9 million cubic yards of muck from a total of four "hot spots" located in the north fork, south fork, and middle estuary of the St. Lucie River. This will provide 1,300 acres of new substrate for organisms to recolonize.

FOR MORE INFORMATION



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