

## **Indicator 5.2 - Water Supply for Lower East Coast Service Area**

### **What is the target?**

This interim target is to meet existing and future municipal, industrial, and agricultural water supply needs in the Lower East Coast Service Area up to a 1-in-10 year drought event (Section 373.0361, F.S.). The characteristics of water supply to be measured include the frequency and duration that water restrictions are imposed to protect the water resources from serious harm (Section 373.175, F.S.).

### **Why is this indicator important?**

A goal of the Comprehensive Everglades Restoration Plan (CERP) is to enhance economic values and social well being. One means to accomplish this is through ensuring adequate water supplies for current and future water users. CERP implementation should increase the storage capacity of water in the regional system that can be delivered to the Lower East Coast Service Area. The increase in regional storage capacity provided by the CERP is expected to curtail the probability of water restrictions by supplementing regional and local sources used to prevent saltwater intrusion and diminish demands on Lake Okeechobee and the Water Conservation Areas.

### **How is the interim target for this indicator predicted?**

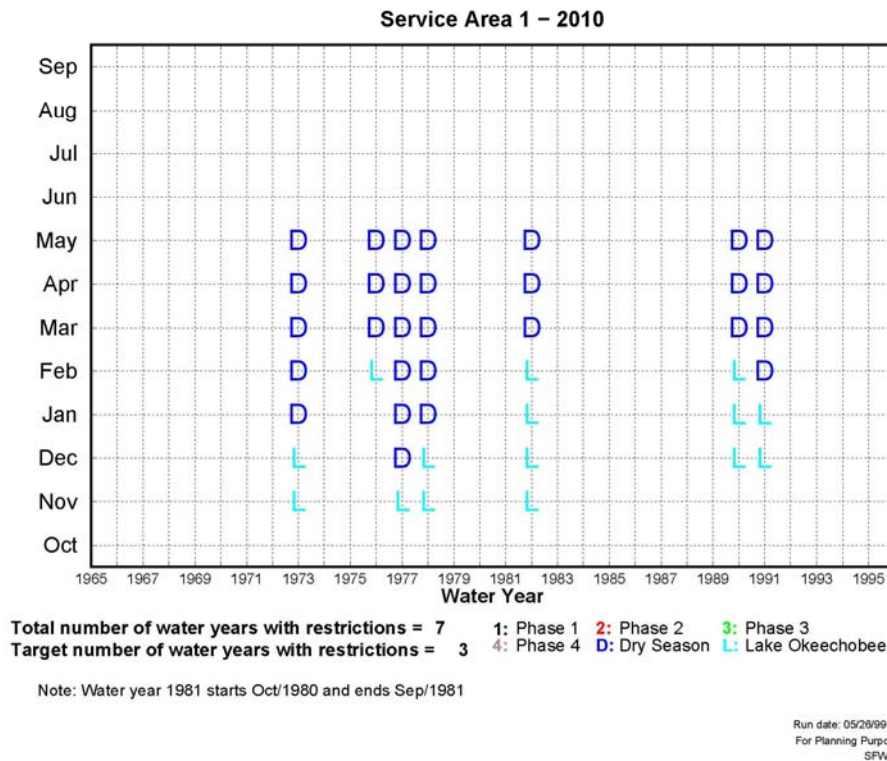
The South Florida Water Management Model (SFWMM) simulates a 31-year period (1965 to 1995) for each future condition, which includes simulation of the South Florida Water Management District's Water Shortage Plan (Chapter 40E-21, F.A.C.). The key results are presented in the Frequency of Water Restrictions Graphic (Figure 5.2.1), which is a table indicating the months (rows) within each year (column) when simulated water shortages occur. Years are "water years", October to September, to correspond to crop cycles and South Florida's wet and dry seasons. Shortages occur in the Lower East Coast Service Area either because the Supply-Side Management Policy or the Water Shortage Policy has been implemented. This graphic tracks the implementation of both policies. It also tracks months when water shortages would be likely to occur due to implementation of dry season policies by the South Florida Water Management District's Governing Board. Water restrictions are usually continued until the start of the wet season. Since some of these shortages are due to local conditions and are beyond the reach of the regional water system, water restriction years that do not have two or more months caused directly by the Supply-Side Management Policy or the Water Shortage Policy will not be considered a regionally significant water shortage and can be managed on a utility by utility basis.

Separate evaluations are completed for each of the four Lower East Coast Service Areas: Northern Palm Beach County, Service Area 1, Service Area 2, and Service Area 3. Service Area 1 is essentially central and southern Palm Beach County. Service Area 2 includes Broward County and a small portion of northern Miami-Dade County as well as the

Seminole’s Hollywood reservation. Service Area 3 contains Miami-Dade and Monroe Counties.

Additional information is required. This information includes daily stage hydrographs of the cells corresponding to the trigger well locations, Lake Okeechobee weekly stage hydrograph, water year summary of Lower East Coast Service Area water restriction events, regional water deliveries to the Lower East Coast, and average annual Lake Okeechobee inflows and outflows report.

### Frequency of Water Restrictions for the 1965 – 1995 Simulation Period



**Figure 5.2.1.** Frequency of Water Restrictions Graphic for the Lower East Coast Service Area

#### What are the predictions for five-year increments?

Four simulations were included: baseline (1995 Base), 2010 interim, 2015 interim, and full CERP implementation (D13R). The frequencies of water shortages for each simulation are presented in Table 5.2.1. The duration and severity of water shortages are presented in Table 5.2.2.

**Table 5.2.1.** Number of years in a 31-year simulation with water shortages in the Lower East Coast Service Area

	<b>North Palm Beach County</b>	<b>Service Area 1</b>	<b>Service Area 2</b>	<b>Service Area 3</b>	<b>Average</b>
1995 Base	11	13	23	9	14
2010	7	7	11	11	9
2015	5	5	10	8	7
D13R	2	2	5	4	3

**Table 5.2.2.** Duration and severity of water shortages in the Lower East Coast Service Area

	<b>Duration (highest total number of months among 4 service areas)</b>	<b>Severity (months &gt; phase 1)</b>
1995 Base	93	2
2010	52	0
2015	42	0
D13R	21	0

2010

Overall, the 2010 performs slightly better than the 1995 Base in providing a 1-in-10 level of service and in minimizing the number of months with water supply cutbacks. The water shortages that do occur are Phase 1 water shortages. Service Area 3 is the exception, with the frequency and duration of water shortages increasing slightly in 2010.

2015

The 2015 performance shows improvement in all service areas. The number of locally-triggered Phase 1 water restrictions was similar to the 1995 Base and 2010 performance, while both the number of lake-triggered and dry season criteria-triggered restrictions decreased by five months each.

D13R

The D13R performance shows improvement in all service areas. No locally-triggered Phase 1 water restrictions occur in either North Palm Beach County or Service Area 1, while those that occur in Service Area 2 and 3 are most likely a result of local conditions and not changes in regional water supplies. Plus, these locally triggered restrictions are short in duration - one or two months.

**How will we track whether the targets established for this indicator have been achieved?**

The number of times and duration when water supply restrictions are imposed will be analyzed to determine if water supply demands were met. If they were not met, the severity of the drought associated with the restrictions will be determined.

**What additional work is needed to improve this interim target?**

No additional work is needed at this time.

**References**

Chapter 40E-21 F.A.C. Water Shortage Plan. Florida Administrative Code.

Section 373.0361, F.S. Regional Water Supply Planning. In: Title XXVIII: Natural Resources; Conservation, Reclamation, and Use, Chapter 373: Water Resources, Florida Statutes.

Section 373.175, F.S. Declaration of Water Shortage; Emergency Orders. In: Title XXVIII: Natural Resources; Conservation, Reclamation, and Use, Chapter 373: Water Resources, Florida Statutes.