

1 **Appendix D: SFWMM Planning Assumptions**

2 **1.0 CERP Existing (2000B3) Condition Assumptions Summary**

3 The assumptions for the 2000 Existing Condition as currently modeled for the ICU are to  
 4 be used for planning purposes only and are presented in the table below.

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6 The 2000B3 existing condition simulation is an improved version of the previously  
 7 posted 2000B2. The 2000B3 inherits most of the assumptions, data and properties from  
 8 the 2000B2. Modifications to the 2000B2 were made to be consistent with the new  
 9 version of the SFWMM (v5.4.3). These changes only affect the way in which structure  
 10 flows in the STAs are simulated. The following table includes assumptions from the  
 11 SFWMM 2000B1 scenario as well as modifications made for the 2000B2 and 2000B3  
 12 model scenarios.

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Feature	Assumptions
	Regional Input Data
Climate	<ul style="list-style-type: none"> <li>▪ The climatic POR is from 1965 to 2000.</li> <li>▪ Rainfall estimates have been revised and updated for 1965-2000.</li> <li>▪ Revised evapotranspiration methods have been used for 1965-2000.</li> </ul>
Topography	<p>Updated November 2001 and September 2003 using latest available information (in NGVD 29 datum).            Nov 2001 update (Documented in November 2001 SFWMD memorandum from M. Hinton to K. Tarboton) includes:</p> <ul style="list-style-type: none"> <li>▪ USGS High Accuracy Elevation data from helicopter surveys collected 1999-2000 for ENP and WCA 3 south of Alligator Alley</li> <li>▪ USGS Lidar data (May 1999) for WCA-3A north of Alligator Alley</li> <li>▪ Lindahl, Browning, Ferrari &amp; Helstrom 1999 survey for RotenbergerWMA</li> <li>▪ STA surveys from 1990s</li> <li>▪ Aerometric Corp. 1986 survey of the 8-1/2 square mile area</li> <li>▪ Includes estimate of EAA subsidence</li> <li>▪ Other data as in SFWMM v3.7</li> <li>▪ FWC survey 1992 for the Holey Land WMA. September 2003 update includes:               <ul style="list-style-type: none"> <li>▪ Reverting to FWC 1992 survey data for Rotenberger WMA</li> <li>▪ DHI gridded data from Kimley-Horn contracted survey of EAA, 2002-2003. Regrided to 2x2 scale for EAA outside of STAs and WMAs.</li> </ul> </li> <li>▪ Updated October 2003 using latest available information:               <ul style="list-style-type: none"> <li>▪ STA3/4 lowered topo values to be consistent with the 2050B1</li> <li>▪ STA5 increased topo value (one cell) to be consistent with 2050B1</li> </ul> </li> <li>▪ New areas of USGS High Accuracy Elevation data have become available and interpolation of data in areas where new data not available was revisited. Topo was modified as follows:</li> </ul>

	Row	Col	Previous Elevation (feet)	Current Elevation (feet)	Comments
	44	25	9.90	9.31	STA-2 (*)
	44	26	11.29	10.65	STA-2 (*)
	24	28	4.93	5.50	
	23	28	4.68	5.50	
	23	11	6.72	6.92	
	23	12	7.04	7.14	
	23	13	7.37	7.57	
	23	14	7.91	7.65	
	7	13	0.00	0.39	
	7	14	0.60	0.82	
	6	13	0.00	0.31	
	6	14	0.50	0.40	
	5	13	0.20	0.59	
	5	14	0.30	0.35	
	4	13	0.00	1.01	
	4	14	0.50	1.27	
	(*)Data modified by SFWMD ECP staff. The above changes make 2000B2 & 2050B2 topo consistent with each other and with the SFWMMv5.4 calibration/verification except where different due to 2050 development (e.g. Mined Lake Belt areas).				
Sea Level	<ul style="list-style-type: none"> <li>Sea level data from six long-term NOAA stations were used to generate a historic record to use as sea level boundary conditions for the 1965 to 2000 evaluation period.</li> </ul>				
Land Use	<ul style="list-style-type: none"> <li>All land use has been updated using most recent FLUCCS data (1995), modified in the LEC urban areas using 2000 aerial photography (2x2 scale). (Documented in August 2003 SFWMD memorandum from J. Barnes and K. Tarboton to J. Obeysekera).</li> </ul>				
Natural Area Land Cover (Vegetation)	Vegetation classes and their spatial distribution in the natural areas comes from the following data: <ul style="list-style-type: none"> <li>Walsh 1995 aerial photography in ENP</li> <li>Rutchey 1995 classification in WCA-3B, WCA-3A north of Alligator Alley and the Miami Canal, WCA-2A &amp; 2B</li> <li>Richardson 1990 data for LNWR</li> <li>FLUCCS 1995 for Big Cypress National Preserve, Holey Land and Rotenberger WMAs and WCA-3A south of Alligator Alley and the Miami Canal. (Documented in August 2003 SFWMD memorandum from J. Barnes and K. Tarboton to J. Obeysekera).</li> </ul>				
	Lake Okeechobee Service Area				
LOSA Basins	<ul style="list-style-type: none"> <li>Lower Istokpoga, S-4, North Lake Shore and Northeast Lake Shore demands and runoff based on AFSIRS modeling.</li> </ul>				
Lake Okeechobee	<ul style="list-style-type: none"> <li>Lake Okeechobee Regulation Schedule WSE according to WSE decision trees.</li> </ul>				

	<ul style="list-style-type: none"> <li>▪ Lake Okeechobee Supply Side management policy for Lake Okeechobee Service Area water restriction cutbacks as per rule 40E-21 and 40E-22 (13.5–11.0 ft. trigger line). A 67% maximum cutback will be implemented.</li> <li>▪ Emergency flood control backpumping to Lake Okeechobee from the EAA.</li> <li>▪ Kissimmee River inflows based on interim schedule for Kissimmee Chain of Lakes using the UKISS model.</li> <li>▪ BMPs runoff reduction assumed to be 0%. BMP Makeup water (Replacement Water Rule) target has an average of 102 KAF per year for the 36-yr period. Actual deliveries can be less due to conveyance limitations, WCAs above schedule and suspension of makeup water deliveries due to SSM.</li> <li>▪ Revised pump capacity for 298 District pump stations sending runoff from the 298 Districts to the Lake. Also, the connectivity between the 298 Districts and the STA’s was revised to make it consistent with improvements made in the 2050B1 simulation.</li> <li>▪ Stage Break Point Line for minimum Lake stage in order to make deliveries to maintain STA depths. Values updated so that the line is approximately 0.5ft below the Supply Side Management Line from Oct–May. The line was original set to–99 for each month.</li> </ul>
Caloosahatchee River Basin	<ul style="list-style-type: none"> <li>▪ Caloosahatchee River Basin irrigation demands and runoff were estimated using the AFSIRS method based on existing planted acreage.</li> <li>▪ Public water supply daily intake from the river is included in the analysis.</li> </ul>
St. Lucie Canal Basin	<ul style="list-style-type: none"> <li>▪ St. Lucie Canal Basin demands estimated using the AFSIRS method based on existing planted acreage.</li> <li>▪ Basin demands include the Florida Power &amp; Light reservoir at Indiantown.</li> <li>▪ Time series of non C-44 basin runoff entering the St. Lucie estuary were updated. These are used in the post processing of results for the St. Lucie Estuary and do not affect simulation results.</li> </ul>
Seminole Brighton Reservation	<ul style="list-style-type: none"> <li>▪ Brighton Reservation demands were estimated using the AFSIRS method based on existing planted acreage.</li> <li>▪ Demands are in agreement with the entitlement quantities as per Table 7, Agreement 41-21 (Nov 92).</li> <li>▪ Supply-side management applies to this agreement.</li> </ul>
Seminole Big Cypress Reservation	<ul style="list-style-type: none"> <li>▪ Big Cypress Reservation irrigation demands and runoff were estimated using the AFSIRS method based on existing planted acreage.</li> <li>▪ The 1 in 5 demand is in agreement with the Seminole Compact (Work Plan = 2606 MGM, Model = 2659 MGM) .</li> <li>▪ Supply-side management applies to the Compact.</li> </ul>
EAA	<ul style="list-style-type: none"> <li>▪ EAA irrigation demands are simulated using climatic data for the 36-year POR and a soil moisture accounting algorithm, with parameters</li> </ul>

	<p>calibrated to match historical regional supplemental deliveries from Lake Okeechobee.</p> <ul style="list-style-type: none"> <li>▪ BMPs assumed to reduce runoff 0% annually.</li> <li>▪ New parameters derived from a revised EAA Calibration/Verification effort were introduced in the 2000B2 &amp; 2050B2 simulations. In the new EAA calibration, soil storage coefficient values were made different among the three major EAA basins. Also, the EAA Calibration and Verification periods were redefined to 1984-1995 and 1979-1983/1996-2000, to be consistent to the calibration of the rest of the system (Everglades and LEC Urban Areas).</li> </ul>
Everglades Construction Project STAs	<ul style="list-style-type: none"> <li>▪ STAS 1W, 5 &amp; 6 operational.</li> <li>▪ STAS 2 complete but not connected to the regional system.</li> <li>▪ Operation of STAs assumes six-inch minimum depth during periods of drought.</li> </ul>
Holey Land WMA	<ul style="list-style-type: none"> <li>▪ As per Memorandum of Agreement between the FWC and the District.</li> </ul>
Rotenberger WMA	<ul style="list-style-type: none"> <li>▪ Interim Operational Schedule as defined in the Operation Plan for Rotenberger (SFWMD Jan 2001).</li> <li>▪ Rotenberger Schedule consistent with 2050B1 &amp; 2050B2 introduced in the 2000B2 simulation. This schedule is lower than the 2000B1 which used an interim (higher) schedule.</li> </ul>
	WCAs
WCA 1 (ARM LNWR)	<ul style="list-style-type: none"> <li>▪ Current C&amp;SF Regulation Schedule. Includes regulatory releases to tide through LEC canals.</li> <li>▪ No net outflow to maintain minimum stages in the LECSA canals (salinity control), if water levels are less than minimum operating criteria of 14 ft. The bottom floor of the schedule (Zone C) is the area below 14 ft. Any water supply releases below the floor will be matched by an equivalent volume of inflow from Lake Okeechobee.</li> </ul>
WCA 2 A&B	<ul style="list-style-type: none"> <li>▪ Current C&amp;SF regulation schedule. Includes regulatory releases to tide through LEC canals.</li> <li>▪ No net outflow to maintain minimum stages in the LECSA canals (salinity control), if water levels in WCA-2A are less than minimum operating criteria of 10.5 ft. Any water supply releases below the floor will be matched by an equivalent volume of inflow from Lake Okeechobee.</li> <li>▪ Structure S10E connecting WCA-1 to the North-Eastern portion of WCA-2A is no longer considered part of the simulated regional system.</li> </ul>
WCA 3 A&B	<ul style="list-style-type: none"> <li>▪ Current C&amp;SF regulation schedule. Includes regulatory releases to tide through LEC canals.</li> <li>▪ No net outflow to maintain minimum stages in the LECSA canals (salinity control), if water levels are less than minimum operating criteria of 7.5 ft in WCA-3A. Any water supply releases below the floor will be matched by an equivalent volume of inflow from Lake Okeechobee.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ WCA-3A Regulatory schedule: 1) Zone D line modified to match the Zone C line near the beginning and end of the year. (Zone D line was original modified to follow IOP) 2) Maximum Desired Stage line for flood control releases to WCA3A was modified to match the Zone D line.</li> <li>▪ In order to simulate increased flow resistance across bridges and culverts underneath the Alligator Alley (I-75) corridor, flow transmissivity across nearby cells located was decreased by a factor of five in the previous 2000B1 and 2050B1 simulations. For the 2000B2 &amp; 2050B2 simulations, this factor was reduced to one, which makes transmissivity the same for all cells.</li> <li>▪ The previous simulations (2000B1 &amp; 2050B1) used anisotropy factors other than one (1.0) for flow resistance in the N-E, E-W direction for the Ridge and Slough 2 land use type. These factors were made equal to one (1.0) for the 2000B2 simulation.</li> </ul>
	LECSA
Public Water Supply and Irrigation	<ul style="list-style-type: none"> <li>▪ Public water supply wellfield pumpages and locations are based on actual pumpage data for calendar year 2000 (includes Miami-Dade County Water and Sewer Department West Wellfield ASR system).</li> <li>▪ Irrigation demands are based upon existing land use and calculated using AFSIRS, reduced to account for landscape and golf course areas irrigated using reuse water and landscape areas irrigated using public water supply.</li> <li>▪ Several iterations were performed, corrections were made, and new data become available in estimating more appropriate values for the following static parameters affecting irrigation on a cell by cell basis in the LEC Urban Areas: <ul style="list-style-type: none"> <li>-FLI: Fraction of landscape irrigation receiving water from Public Water Supply Utility well fields.</li> <li>-FLR: Fraction of landscape irrigation receiving water from treated waste water</li> <li>-FGI: Fraction of golf course irrigation receiving water from treated waste water</li> <li>-BLU: Land use type index (2000B2, one cell)</li> </ul> </li> <li>▪ The input file to the SFWMM providing data on LEC Urban Areas Public Water Supply pumpage was revised for North Palm Beach County.</li> </ul>
Seminole Hollywood Reservation	<ul style="list-style-type: none"> <li>▪ Hollywood Reservation demands are set forth under VI.C of the Water Rights Compact.</li> </ul>
Natural Areas	<ul style="list-style-type: none"> <li>▪ For the Northwest Fork of the Loxahatchee River, the District operates the G-92 structure and associated structures to provide approximately 50 cfs over Lainhart Dam to the Northwest Fork, when the District determines that water supplies are available.</li> <li>▪ Flows to Pond Apple Slough through S-13A are adjusted in the model to approximate measured flows at the structure.</li> </ul>

	<ul style="list-style-type: none"> <li>Flows to Biscayne Bay are simulated through Snake Creek, North Bay, the Miami River, Central Bay and South Bay.</li> </ul>
Canal Operations	<ul style="list-style-type: none"> <li>C&amp;SF system and operating rules in effect in 2000.</li> <li>Includes operations to meet control elevations in the primary coastal canals for the prevention of saltwater intrusion.</li> <li>Includes existing secondary drainage/water supply system.</li> <li>Excludes portions of the South Dade Conveyance System that follow rules for Test 7 Phase 1 water deliveries to ENP, as per Restudy 1995 Existing Condition.</li> <li>G123-Changed location of head water to be consistent with the 2050B1 and 2050B2 simulations. Added canal stage triggers for determination of flood control discharges. Increased Manning's n coefficient for canal flow.</li> <li>L-8 to M-Canal (S2 pump to M-canal)-Pump efficiency changed to one to be consistent with the 2050B1</li> <li>ACMEA &amp; ACMEB-Switched order of ACMEA and ACMEB canals for water supply purposes</li> <li>PLMEC7 &amp; PLMEC4-Corrected PLMEC4 name (PLMEC4 was named incorrectly)</li> <li>C13 canal-Modified input file so the C-13 would be a maintained canal</li> <li>NNRC-Increased Manning's N coefficient for canal flow from 0.26 to 0.46</li> </ul>
	Western Basins and Big Cypress National Preserve
Western Basins	<ul style="list-style-type: none"> <li>Estimated and updated historical inflows from western basins at two locations: G-136 and G-406. The G-406 location represents potential inflow from the C-139 Basin into STA 5. Data for the period 1978-2000 is the same as the data used for the C-139 Basin Rule development. (Documented in June 2002 SFWMD memorandum from L. Cadavid and L. Brion to J. Obeysekera).</li> </ul>
Big Cypress National Preserve	<ul style="list-style-type: none"> <li>Tamiami Trail culverts are not modeled in SFWMM due to the coarse (2x2 mile) model resolution.</li> </ul>
	ENP and Florida Bay
ENP	<ul style="list-style-type: none"> <li>Water deliveries to ENP are based on Test 7 Phase 1 as per Restudy 1995 Existing Condition.</li> </ul>
	Region-wide Water Management and Related Operations
Water Management Rules	<ul style="list-style-type: none"> <li>The existing condition reflects the existing water shortage policies in 2000 as reflected in SFWMD rule 40E-21.</li> <li>The impacts of declarations of water shortages on utility water use reflect assumptions contained in the LEC Regional Water Supply Plan (May 2000).</li> </ul>

1 **2.0 CERP Future Without Project (2050B3) Condition**  
 2 **Summary**

3 The 2050B3 future without project condition represents predicted conditions that will  
 4 exist in South Florida in 2050, without the implementation of CERP projects. In general,  
 5 assumptions in the 2050B3 represent structures, operations, and land use projected to be  
 6 in place in the year 2050. Public water supply demands are those that were projected  
 7 during the development of the CERP (the Restudy), as are agricultural demands in the  
 8 Caloosahatchee River basin.

9  
 10 The 2050 future without project condition is used for planning purposes, and since  
 11 planning by nature is iterative this latest simulation is labeled 2050B3, with the  
 12 expectation that it will be updated as assumptions change over time. It is the 2050 future  
 13 without project condition that is used in planning to measure the benefits of the  
 14 implementation of the CERP.

Feature	Assumptions
	Regional Input Data
Climate	<ul style="list-style-type: none"> <li>▪ The climatic POR is from 1965 to 2000.</li> <li>▪ Rainfall estimates have been revised and updated for 1965-2000.</li> <li>▪ Revised evapotranspiration methods have been used for 1965-2000.</li> </ul> <p>These data are the same as the existing condition.</p>
Topography	<p>Updated November 2001 and September 2003 using latest available information (in NGVD 29 datum). This update includes:          Nov 2001 update (Documented in November 2001 SFWMD memorandum from M. Hinton to K. Tarboton) includes:</p> <ul style="list-style-type: none"> <li>▪ USGS High Accuracy Elevation data from helicopter surveys collected 1999-2000 for ENP and WCA 3 south of Alligator Alley.</li> <li>▪ USGS Lidar data (May 1999) for WCA-3A north of Alligator Alley</li> <li>▪ Lindahl, Browning, Ferrari &amp; Helstrom 1999 survey for Rotenberger WMA. STA surveys from 1990s</li> <li>▪ Aerometric Corp. 1986 survey of the 8.5 square mile area</li> <li>▪ Includes estimate of EAA subsidence</li> <li>▪ Other data as in SFWMM v3.7</li> <li>▪ FWC survey 1992 for the Holey LandWMA</li> </ul> <p>September 2003 update includes</p> <ul style="list-style-type: none"> <li>▪ Reverting to FWC 1992 survey data for Rotenberger WMA</li> <li>▪ DHI gridded data from Kimley–Horn contracted survey of EAA, 2002-2003.</li> <li>▪ Regridded to 2x2 scale for EAA outside of STAs and WMAs.</li> </ul> <p>April 2004 update includes:</p> <ul style="list-style-type: none"> <li>▪ STA-2 lowered as per ECP staff</li> <li>▪ New areas of USGS High Accuracy Elevation data available.</li> </ul>

	<p>These data are the same as the existing condition. No subsidence will be addressed; subsidence in the EAA and other areas may be addressed in the next CERP Update.</p>
Sea Level	<ul style="list-style-type: none"> <li>▪ Sea level data from six long-term NOAA stations were used to generate a historic record to use as sea level boundary conditions for the 1965 to 2000 evaluation period.</li> <li>▪ A sensitivity analysis will be performed utilizing an 0.8 ft. rise in sea level so that the impacts of such a change on the performance of the water management system can be assessed.</li> </ul>
Land Use	<ul style="list-style-type: none"> <li>▪ Lands not developed in the existing condition are assigned land use codes crosswalked from county comprehensive plans (future land use).</li> </ul>
Natural Area Land Cover (Vegetation)	<p>Vegetation classes and their spatial distribution in the natural areas comes from the following data:</p> <ul style="list-style-type: none"> <li>▪ Walsh 1995 aerial photography in ENP</li> <li>▪ Rutchey 1995 classification in WCA-3B, WCA-3A north of Alligator Alley and the Miami Canal, WCA-2A &amp; 2B</li> <li>▪ Richardson 1990 data for LNWR</li> <li>▪ FLUCCS 1995 for Big Cypress National Preserve, Holey Land and Rotenberger WMAs and WCA-3A south of Alligator Alley and the Miami Canal. (Documented in August 2003 SFWMD memorandum from J. Barnes and K. Tarboton to J. Obeysekera).</li> </ul> <p>These data are the same as in the existing condition.</p>
	Lake Okeechobee Service Area
LOSA Basins	<ul style="list-style-type: none"> <li>▪ Lower Istokpoga, S-4, North Lake Shore and Northeast Lake Shore demands and runoff are based on AFSIRS modeling using 2050 land use projections.</li> </ul>
Lake Okeechobee	<ul style="list-style-type: none"> <li>▪ Lake Okeechobee Regulation Schedule WSE according to WSE decision trees.</li> <li>▪ Lake Okeechobee Supply Side Management policy for Lake Okeechobee Service Area water restriction cutbacks as per rule 40E-21 and 40E-22 (as amended in September, 2001) (13.0–10.5 ft. SSM trigger line).</li> <li>▪ Adaptive Protocols are included.</li> <li>▪ Kissimmee River Restoration and Headwaters Revitalization Project is complete.</li> <li>▪ Average annual environmental deliveries to the WCAs equal the annual average BMP Replacement Water Rule volumes (102 ,000 ac-ft/year).</li> </ul>
Caloosahatchee River Basin	<ul style="list-style-type: none"> <li>▪ Caloosahatchee River Basin irrigation demands and runoff were estimated using the AFSIRS method based on Restudy-like land use.</li> <li>▪ Lake Okeechobee water supply deliveries to C-43 agriculture limited to ~ 34 k-acft average annual.</li> <li>▪ Public water supply daily intake from the river is ~10 MGD.</li> </ul>
St. Lucie Canal	<ul style="list-style-type: none"> <li>▪ St. Lucie Canal Basin demands were based on the Indian River</li> </ul>

Basin	<p>Lagoon draft feasibility study future without project condition projected acreages for 2050.</p> <ul style="list-style-type: none"> <li>Basin demands include the Florida Power &amp; Light reservoir at Indiantown.</li> </ul>
Seminole Brighton Reservation	<ul style="list-style-type: none"> <li>Brighton Reservation demands were estimated using the AFSIRS method based on existing planted acreage.</li> <li>While the tribe's work plan estimates demands of 2561.74 MGM, these do not always equate to actual deliveries. Notwithstanding, tribal rights to these quantities are preserved.</li> <li>Supply-side management as per Table 7, Agreement C-4121 (Nov 1992) applies to this agreement.</li> </ul>
Seminole Big Cypress Reservation	<ul style="list-style-type: none"> <li>Big Cypress Reservation irrigation demands and runoff were estimated using the AFSIRS method based on existing planted acreage.</li> <li>The 1 in 5 demand set forth in the Compact work plan equals 2606 MGM.</li> <li>Supply-side management applies to the Compact.</li> </ul>
EAA	<ul style="list-style-type: none"> <li>Everglades Agricultural Area irrigation demands are simulated using climatic data for the 36 year period of record and a soil moisture accounting algorithm, with parameters calibrated to match historical regional supplemental deliveries from Lake Okeechobee.</li> <li>BMPs are assumed to reduce runoff 0% annually.</li> </ul>
Everglades Construction Project STAs	<ul style="list-style-type: none"> <li>All STAs are maintained at a 6" minimum depth.</li> <li>Combined acreage of original STAs (1E through 6) equals 40,643 acres.</li> <li>Additional 1,903 acres to STA-2 and 2,055 acres to STA-5 added</li> </ul>
Holey Land WMA	<ul style="list-style-type: none"> <li>Operations are similar to the existing condition as in the 1995 base simulation for the Lower East Coast Regional Water Supply Plan (LECRWSP, May 2000), as per the memorandum of agreement between the FWC and the SFWMD.</li> </ul>
Rotenberger WMA	<ul style="list-style-type: none"> <li>Interim Operational Schedule as defined in the Operation Plan for Rotenberger (SFWMD July 2002).</li> </ul>
Water Conservation Areas	
WCA 1 (ARM LNWR)	<ul style="list-style-type: none"> <li>Current C&amp;SF Regulation Schedule. Includes regulatory releases to tide through lower east coast (LEC) canals.</li> <li>No net outflow to maintain minimum stages in the LECSA canals (salinity control), if water levels are less than minimum operating criteria of 14 ft. The bottom floor of the schedule (Zone C) is the area below 14 ft. and reads: "No net releases from WCA-1. Any water supply releases below the floor will be matched by an equivalent volume of inflow from Lake Okeechobee."</li> <li>Operations are the same as the existing condition.</li> <li>Structure S10E connecting LNWR to the northeastern portion of WCA-2A is no longer considered part of the simulated regional system.</li> </ul>
WCA 2 A&B	<ul style="list-style-type: none"> <li>Regulation schedule as per 2000 Existing Condition.</li> </ul>
WCA 3 A&B	<ul style="list-style-type: none"> <li>Regulation schedule as per 2000 Existing Condition.</li> </ul>

	<ul style="list-style-type: none"> <li>Structural modifications for L-67 canal conveyance and S-355 structures as in the federally authorized Modified Water Delivery Project. Operations as per the CSOP No-Action Planning Condition (4f).</li> </ul>
	LECSA
Public Water Supply and Irrigation	<ul style="list-style-type: none"> <li>Public water supply demands are the same as Restudy 2050 demands.</li> <li>Wellfield distribution as in the Restudy 2050 future without project condition.</li> <li>Irrigation demands are based on projected land use and calculated in the same manner as the existing condition.</li> <li>Utility aquifer storage and recovery is as in the Restudy 2050.</li> <li>Wastewater reuse has been incorporated in the estimation of landscape irrigation demands for each county.</li> </ul>
Seminole Hollywood Reservation	<ul style="list-style-type: none"> <li>Hollywood Reservation demands are set forth under VI.C of the Water Rights Compact.</li> <li>Tribal sources of water supply include various agreements with municipal service suppliers.</li> </ul>
Natural Areas	<ul style="list-style-type: none"> <li>For the Northwest Fork of the Loxahatchee River, the District operates the G-92 structure and associated structures to provide approximately 50 cfs over Lainhart Dam to the Northwest Fork, when the District determines that water supplies are available.</li> <li>Flows to Pond Apple Slough through S-13A are adjusted in the model to approximate measured flows at the structure.</li> <li>Flows to Biscayne Bay are simulated through Snake Creek, North Bay, the Miami River, Central Bay and South Bay. These data are the same as the existing condition.</li> </ul>
Canal Operations	<ul style="list-style-type: none"> <li>C-11 Water Quality Treatment Critical Project constructed (S-381 Ogee Gated Spillway and Pumping Station S-9A).</li> <li>Western C-4 Structure (S-380) Critical Project constructed.</li> <li>C-4 Flood Mitigation Project includes 440 and 434 +/- acre impoundments to store stormwater from the C-4 Basin.</li> <li>Recently completed S-25B and S-26 pumps will not be modeled since they would be used very rarely during high tide conditions and the SFWMM uses a long-term average daily tidal boundary.</li> <li>Includes operations to meet control elevations in the primary coastal canals for the prevention of saltwater intrusion.</li> <li>Northwest Dade Lake Belt area assumes that the conditions caused by currently permitted mining exist and that the effects of any future mining are fully mitigated by industry.</li> <li>ACME Basin A flood control discharges are sent to C-51, west of the S-155A structure, to be pumped into STA-1E. ACME Basin B flood control discharges are no longer sent into the Loxahatchee National Wildlife Refuge, but instead to C-51 East through the S-155A structure.</li> </ul>
	Western Basins and Big Cypress National Preserve
Western Basins	<ul style="list-style-type: none"> <li>Estimated and updated historical inflows from western basins at two</li> </ul>

	<p>locations: G-136 and G-406. The G-406 location represents potential inflow from the C-139 Basin into STA 5. Data for the period 1978-2000 is the same as the data used for the C-139 Basin Rule development. (Documented in June 2002 SFWMD memorandum from L. Cadavid and L. Brion to J. Obeysekera).</p> <p>Data are the same as the existing condition.</p>
Big Cypress National Preserve	<ul style="list-style-type: none"> <li>▪ No Tamiami Trail culverts are modeled in the SFWMM due to the coarse (2x2 mile) model resolution.</li> </ul>
	ENP and Florida Bay
	<ul style="list-style-type: none"> <li>▪ Structural modifications for L-67 extension canal as in the federally authorized Modified Water Delivery Project.</li> <li>▪ 8.5 SMA as per the federally authorized Alternative 6D of the 8.5 SMA project.</li> <li>▪ C-111 project features as per Restudy 2050 future without project condition.</li> <li>▪ Operations as per the CSOP No-Action Planning Condition (4f).</li> </ul>
	Region-wide Water Management and Related Operations
	<ul style="list-style-type: none"> <li>▪ The future without project condition reflects the existing water shortage policies in 2000 as reflected in SFWMD rule 40E-21 and 40E-22, FAC.</li> </ul> <p>These data are the same as in the existing condition.</p>

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### 3.0 CERPA Future With Project (CERPA) Condition Summary

CERPA is the latest simulation of the CERP (D13R), using version 5.4.3 of the SFWMM. CERPA modeling mimics closely the structural and operational intent of D13R, using the new tool. CERPA contains 2050B3 assumptions, except where modified by CERP projects. It was adapted from the CERP0 scenario with the following differences:

- Expanded STAs associated with the Acceler8 Everglades Construction Project configuration (as in the 2050B3)
- Updated climate forecasts as in 2050B3
- Lake Okeechobee operational lines for ASR injection and deliveries to North of Lake Storage and EAA Reservoir the same as in D13R
- ASR recovery line modified due to changes in the supply side management line
- Offsets, translations, and truncations to NSM targets use same logic as D13R
- C-9 reservoir modeled as a physical feature and ACME Basin B project incorporated
- Updated Caloosahatchee and St. Lucie estuary targets

CERP0 is a simulation of the “with project” condition that incorporates new information into modeling of the CERP with the latest version of the SFWMM (version 5.4). CERP0 uses D13R public water supply demands in the Lower East Coast and “D13R-like” demands in the Caloosahatchee (C-43) Basin.

All modeling specification differences between CERP0 & CERPA, and D13R were arrived at through discussion with RECOVER project leaders and the Interagency Modeling Center (IMC), CERP1 Modeling Team. Modeling specifications not listed here are consistent with those specified for D13R in the Yellow Book. Some of the differences below are non-CERP project changes (e.g., implementation of the WSE schedule for Lake Okeechobee), and are listed separately.

#### Lake Okeechobee operations

- ASR recovery follows new SSM line + ¼’ and is ~ 1’ lower than D13R
- Injection for North of Lake Storage and EAA Reservoir now second in priority; CERP0 & CERPA injection ~ ¼’ higher than D13R; shape of line is parallel to Zone D of WSE
- North of Lake Storage seepage losses assumed to be 50% in CERP0 & CERPA (consistent with LECRWSP) compared to 100% in D13R

#### Other operational adjustments

- Shift in STA 3-4 discharge priorities for hydropattern enhancement
- Flows allowed to Pond Apple Slough
- NSM stage targets based on Sens4 ponding depths and adjusted due to changes in topo; D13R used NSMv4.5 ponding depths
- L-67 weir heights adjusted due to changes in topography to enhance flows to ENP
- WSE operation schedule for CERP0 & CERPA; D13R used Run 25

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Caloosahatchee and St. Lucie basins

- Revised time series hydrologic data created revised demands and runoff and targets for environmental deliveries to the estuaries

Other operational adjustments

- BMP runoff reduction from the EAA calculated to be 0% in CERP0 & CERP1; D13R had 18% runoff reduction
- STAs to maintain six inch minimum depth in times of drought

11 **4.0 CERP Future Without Project (50B3S4) Condition**  
12 **Summary**

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14 The 50B3S4 future without project condition is an alternate version of the 2050B3 future  
15 without project condition. The major differences between the two alternative "without  
16 project" simulations are:

- 2050B3 uses regional operations for the WCA2A, WCA2B, WCA3A, WCA3B and ENP based on the CSOP no action alternative.
- 50B3S4 uses ERDO (similar to the previously posted 2050B0 and 2050B2 scenarios) based on NSMS4 targets to operate WCA2A, WCA2B, WCA3A, WCA3B and ENP