

**AGENDA**  
**St. Lucie River Watershed Protection Plan**  
**Working Team Meeting #9**

**Tuesday, July 22, 2008**  
**1330 - 1630**

**SFWMD Martin/St. Lucie Service Center**  
**780 Southeast Indian Street**  
**Stuart, FL 34997**  
**(772) 223-2600**

**Conference Call Information:**

**Local: 561-682-6700**

**Toll-Free: 866-433-6299**

**MEETING ID# 4332**

1. Introduction and Opening Remarks
2. Coordinating Agencies Update
3. Project Status and Schedule – Plan Development
4. Status of Regional Simulation Modeling
5. Water Quality Spreadsheet Analysis
6. Management Measures and Alternative Development
7. Public Comment Period\*
8. Closing Remarks and Action Items

\* As time permits, brief Public Comment Periods may be held after major discussion items in the agenda

St. Lucie River  
Watershed Protection Plan

***Working Team Meeting #9  
July 22, 2008***

Proposed Schedule



- **Formulation and Evaluation – April through July**
- **DRAFT Plan - October 2008**
- **Final Plan - December 2008**
- **Submit by January 1, 2009**

## Draft Plan Development & Status

|                               |                      |
|-------------------------------|----------------------|
| <b>1.0 Executive Summary</b>  | <b>December</b>      |
| <b>2.0 Introduction</b>       | <b>Completed</b>     |
| <b>3.0 Planning Process</b>   | <b>Completed</b>     |
| <b>4.0 Public Involvement</b> | <b>9/08-10/08</b>    |
| <b>5.0 TMDLs</b>              | <b>FDEP drafting</b> |

## Draft Plan Development & Status

### **6.0 Construction Project**

|   |                                      |
|---|--------------------------------------|
| <b>6.1 Summary of MMs</b>                     | <b>Incorp. working team comments</b> |
| <b>6.2 Water Quantity</b>                     | <b>Incorp. working team comments</b> |
| <b>6.3 Water Quality</b>                      | <b>Incorp. working team comments</b> |
| <b>6.4 Formulation of Alternatives</b>        | <b>Prelim. Draft completed</b>       |
| <b>6.5 Evaluation and Comparison of Alts.</b> | <b>8/1/2008</b>                      |
| <b>6.6 Planned Projects and Actions</b>       | <b>8/8/2008</b>                      |

## Draft Plan Development & Status

**7.0 Pollution Control Program FDACS Drafting**

**8.0 Research & Water Quality Monitoring**

**9/08**

**Ch. 1-2**

**7/25/08- Internal revisions**

**Ch. 3-4**

**8/1/08- Internal revisions**

**Ch 5**

**SFWMD drafting**

**Ch 8**

**9/08**

**9.0 Recommended Projects and Actions**

**8/21/08**

Questions

**[my.sfwmd.gov/northerneverglades](http://my.sfwmd.gov/northerneverglades)**



## Update on Hydrologic Modeling For St. Lucie River Watershed Protection Plan

*John Mitnik, P.E.  
Division Director  
Northern Everglades*

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## ■ Presentation Outline

- **General Model Description and Assumptions**
- **Model Run Assumptions**
- **Performance Measures & Indicators**
- **Other Performance Measures & Indicators**
- **Modeling Results:**
  - **LOWCP P2TP Current Base**
  - **RWPP (Future) Base Run**
  - **RWPP Alternatives 1, 2 & 3**
- **Future Modeling**

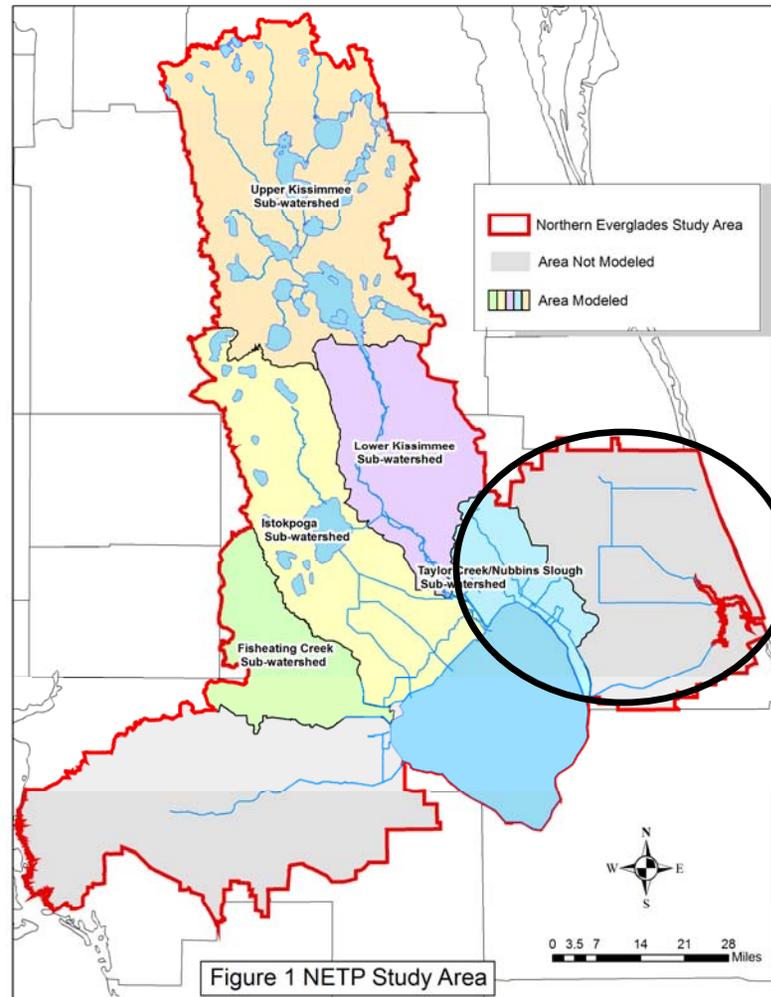
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## General Model Description and Assumptions

- **Regional Simulation Model (RSM) = regional hydrologic simulation tool used to conduct a water budget analysis of the watersheds within the Northern Everglades area**
- **Northern Everglades Regional Simulation Model (NERSM) = specific implementation of node-link version RSM covering the northern extent of the District down to Lake Okeechobee and the Caloosahatchee and St. Lucie River Watersheds**
  - **Model domain:**
    - **Lake Okeechobee Watershed (Upper Kissimmee, Lower Kissimmee, Lake Istokpoga, Fisheating Creek, and Taylor Creek/Nubbin Slough)**
    - **Caloosahatchee Watershed (East and West Caloosahatchee)**
    - **St. Lucie Watershed (C-44, C-24, C-23, Ten Mile Creek, North Fork/South Fork/Basins 4,5, and 6)**
  - **Period of simulation: 1970-2005**
  - **Daily time step**
  - **Lake Okeechobee Regulation Schedule: WSE**

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- **Modeling Domain (LOWCP P2TP)**



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## Model Run Assumptions for Current Base

- **Current Base Condition:**
  - **Represents conditions as they exist in the Northern Everglades Watershed in 2005.**
  - **Assumes no projects as defined by the Comprehensive Everglades Restoration Plan (CERP).**
  - **Lake Okeechobee flood control releases to estuary and Water Conservation Areas are based on the existing WSE regulation schedule.**
  - **Same as in the current base scenario established for the Lake Okeechobee Watershed Construction Project Phase II Technical Plan (LOWCP P2TP)**

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## Model Run Assumptions for RWPP Base

- **RWPP (Future) Base Condition (circa 2015):**
  - **Full Kissimmee River Restoration including Kissimmee River Headwaters Revitalization project**
  - **All Acceler8 projects are in place**
  - **Authorized MODWATERS and C-111 projects**
  - **Northern Everglades LOWCP P2TP preferred alternative with**
    - **Additional level of detail in conceptualizing the Caloosahatchee and St. Lucie River Watersheds**
    - **Fewer boundary conditions to drive the model, e.g. backflows are now simulated relative to water level fluctuations in Lake Okeechobee**
    - **Additional performance indicator (Target Flow Index) to aid in alternative evaluation process for the Caloosahatchee**

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## Model Run Assumptions for RWPP Base (con't)

- **Represents future base conditions plus implementation of projects described in the Lake Okeechobee Watershed Construction Project Phase II Technical Plan**
  - C-44 reservoir & STA operating with 50.25 kaf of effective storage; 9,700 acres; 1,060/1,060 cfs inflow/outflow capacity
  - C-43 reservoir used solely to meet EST05 targets in the Caloosahatchee estuary as in the C43 reservoir Phase I PIR
- **Based on the LOWCP P2TP ALT4 with refinements in the simulation of the St. Lucie River watershed**
  - Additional level of detail in conceptualizing the St. Lucie River sub-watershed into component basins
  - Fewer boundary conditions driving the model, e.g. backflows from C-44 basin are now simulated relative to water level fluctuations in Lake Okeechobee

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## Model Run Assumptions for RWPP Base (con't)

- **Based on the LOWCP P2TP ALT4 with refinements in the simulation of the St. Lucie River watershed**
  - **Addition of Ten-mile Creek Reservoir and STA:**
    - Reservoir/STA footprints: 524 /132 Acres
    - Reservoir/STA operating depths: 13 / 2 ft
  - **Lake Okeechobee is not used in making environmental deliveries to the St. Lucie Estuary.**

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# Performance Measures & Indicators

- **Performance Measures Specific to SLRWPP**
  - An objective of the St. Lucie River Watershed Protection Plan is to reduce frequency and duration of harmful freshwater releases into the St. Lucie Estuary.
    - **Number of Times St. Lucie Estuary High Discharge Criteria Exceeded (mean monthly flows > 2000 & 3000 cfs from 1970 – 2005)**
      - Goal is to reduce the frequency of damaging discharges
      - > 2,000 cfs causes stress to the ecosystem and > 3,000 cfs causes severe damage
      - Targets of no more than twenty-one (21) occurrences between 2,000 and 3,000 cfs and six (6) occurrences over 3,000 cfs are used.
    - **Number of Times Salinity Envelope Criteria NOT met for the St. Lucie Estuary**
      - Goal is to have salinity concentrations that are conducive to estuary ecologic health by maintaining combined local inflows and Lake Okeechobee discharges. Specifically, “the goal is to avoid mean monthly flows less than 350 cfs and 14-day rolling average discharges from exceeding 2,000 cfs.”

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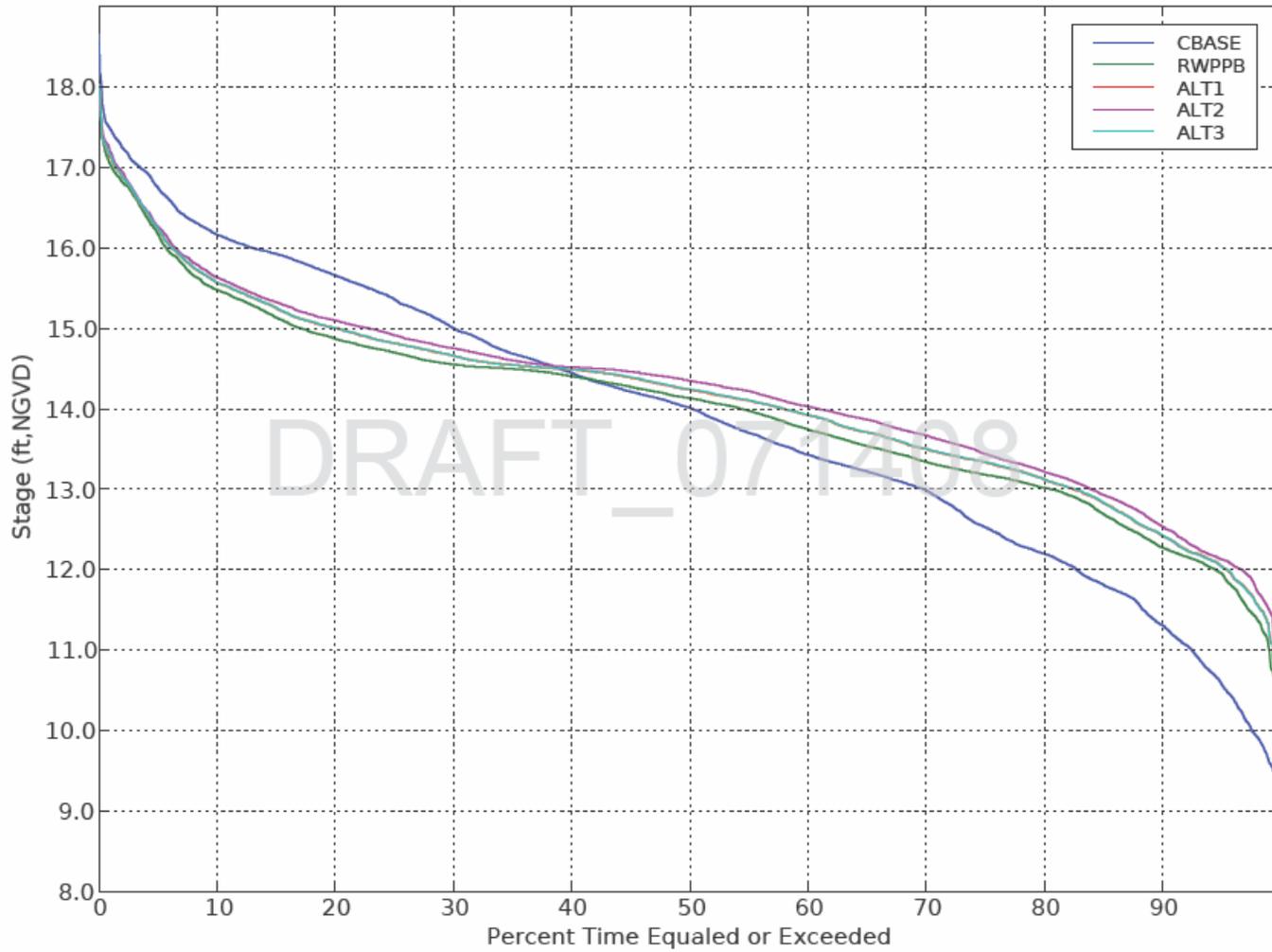
## Other Performance Measures & Indicators

- **Maintain other water-related needs for the other parts of the system; provides a way to evaluate impacts of different alternatives in areas outside the Caloosahatchee River Watershed.**
  - **For Caloosahatchee River Watershed:**
    - **Number of Times Caloosahatchee Estuary High Discharge Criteria Exceeded (mean monthly flows > 2800 & 4500 cfs from 1970 – 2005)**
    - **Number of Times Salinity Envelope Criteria NOT met for the Caloosahatchee Estuary**
    - **Target Flow Index (TFI)**
  - **For Lake Okeechobee:**
    - **Extreme High (17 ft NGVD) and Low Stages ( 10 ft NGVD)**
    - **Stage Envelope (Score Below & Above)**
    - **Minimum Flow and Level**
    - **Stage Duration Curve**
  - **For Lake Okeechobee Service Area (LOSA):**
    - **Mean annual EAA/LOSA supplementation irrigation (4-in-1)**
    - **Demand cutback volumes for 7 water years in the simulation period with the largest cutbacks**

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# Lake Okeechobee

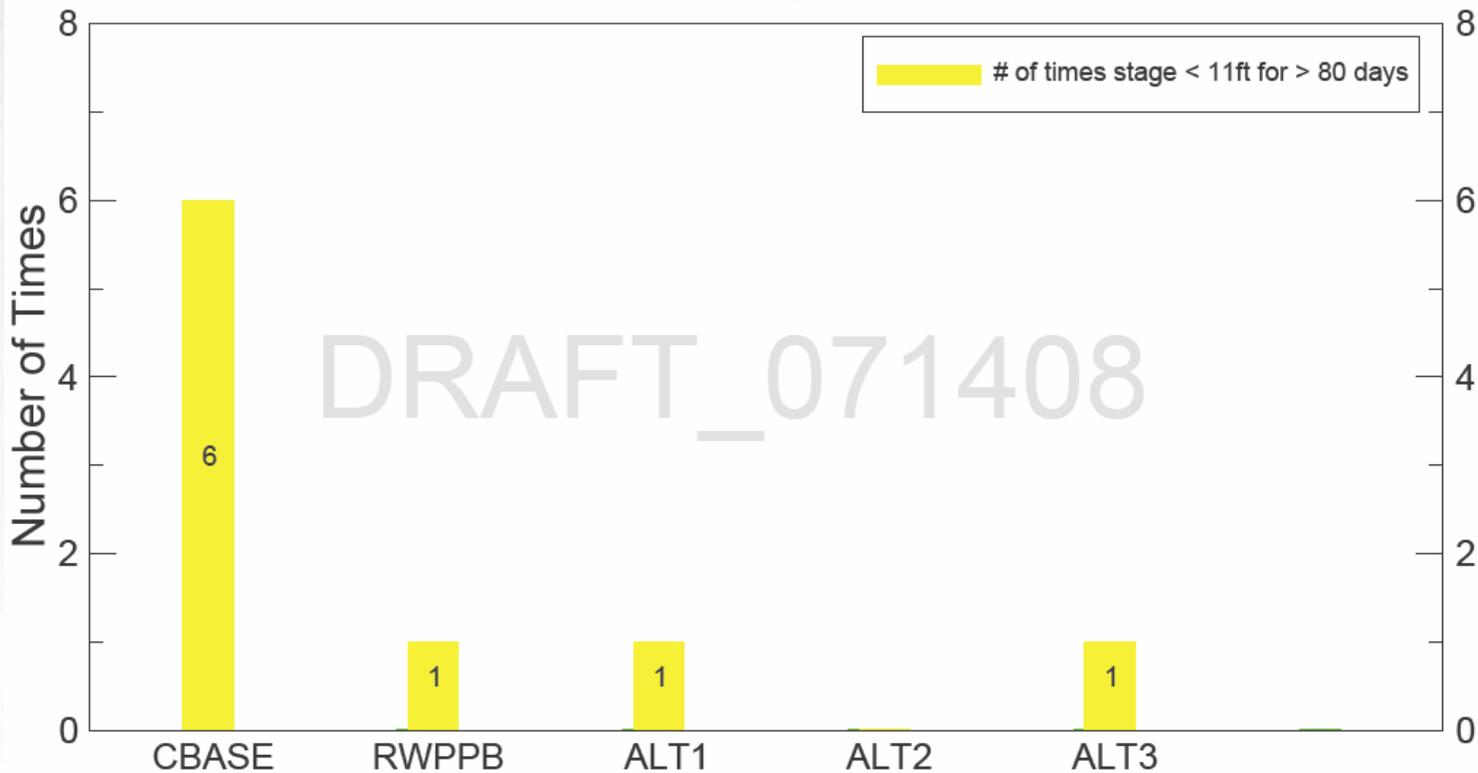
Stage Duration Curve for Lake Okeechobee



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## Lake Okeechobee (con't)

Number of Times LOK Proposed Minimum Water Level & Duration Criteria were Exceeded During the 1970-2005 Simulation



Note:

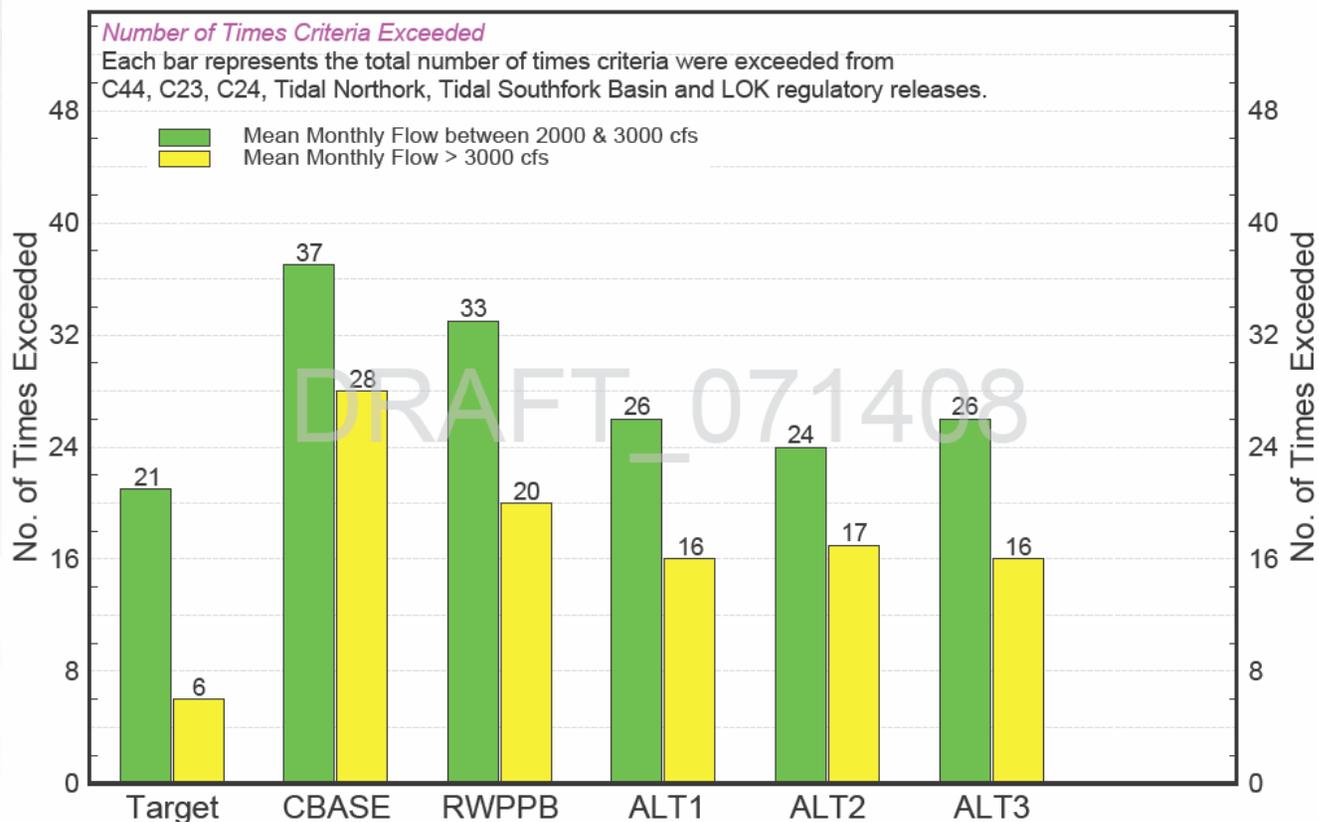
Target: Minimum Level, duration and Return Frequency - Water levels in Lake Okeechobee should not fall below 11ft NGVD for greater than 80 days more often than once every six years (Target derived from 1952-1995 historical stage data for Lake Okeechobee).

*For Planning Purposes Only*  
 Script used: lok\_stage\_events.scr ID450  
 Filename: lok\_minlvl\_bar.agr

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# St. Lucie River Watershed

Number of Times St. Lucie High Discharge Criteria Exceeded  
(mean monthly flows > 2000 cfs from 1970 - 2005)



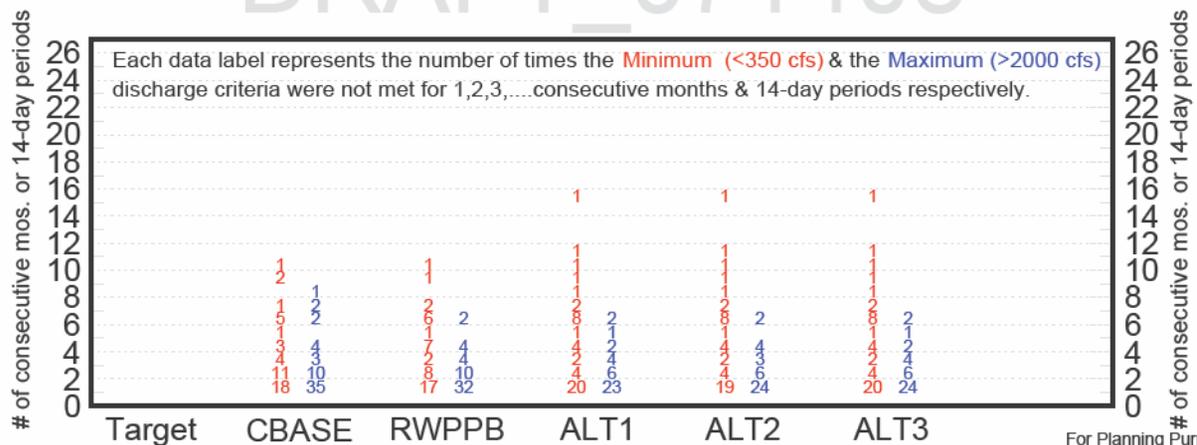
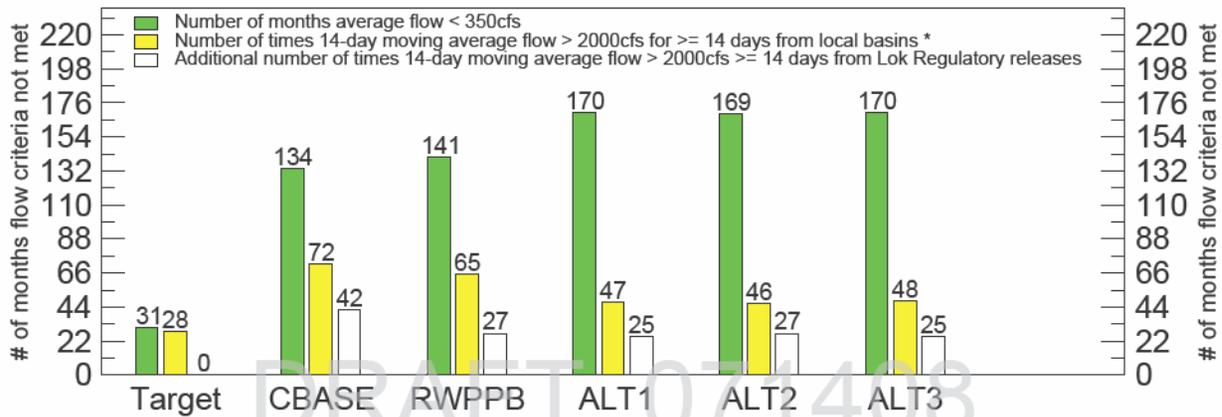
Note: A favorable maximum monthly flow was developed for the estuary (2000 cfs) that will theoretically provide suitable salinity conditions which promote the development of important benthic communities (eg. oysters & shoalgrass). Mean monthly flows above 3000 cfs result in freshwater conditions throughout the entire estuary causing severe impacts to estuarine biota.

For Planning Purposes Only  
Script used: estuary.scr, ID496  
Filename: sluc\_2000\_flow\_bar.out.agr

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# St. Lucie River Watershed (con't)

Number of Times Salinity Envelope Criteria NOT Met for the St. Lucie Estuary (mean monthly flows 1970 - 2005)



For Planning Purposes Only  
 Script used: estuary\_scr.ID496  
 Filename: stluc\_salinity\_flow\_bar.out.agr

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## St. Lucie River Watershed (con't)

- Breakdown of Flows to Estuary By Source (Number of months out of 432 total months of simulation for 1970-2005 period of record)

|                                       | CBASE     | RWPPB     | ALT1      | ALT2      | ALT3      | Operational Target (OPTI-6) |
|---------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------------------------|
| Basins bet. 2000 & 3000 cfs           | 25        | 23        | 17        | 17        | 17        | 17                          |
| LOK bet. 2000 & 3000 cfs              | 1         | 2         | 0         | 0         | 0         | N/A                         |
| Basins + LOK bet. 2000 & 3000 cfs     | 11        | 8         | 9         | 7         | 9         | N/A                         |
| <b>Total bet. 2000 &amp; 3000 cfs</b> | <b>37</b> | <b>33</b> | <b>26</b> | <b>24</b> | <b>26</b> | <b>17</b>                   |

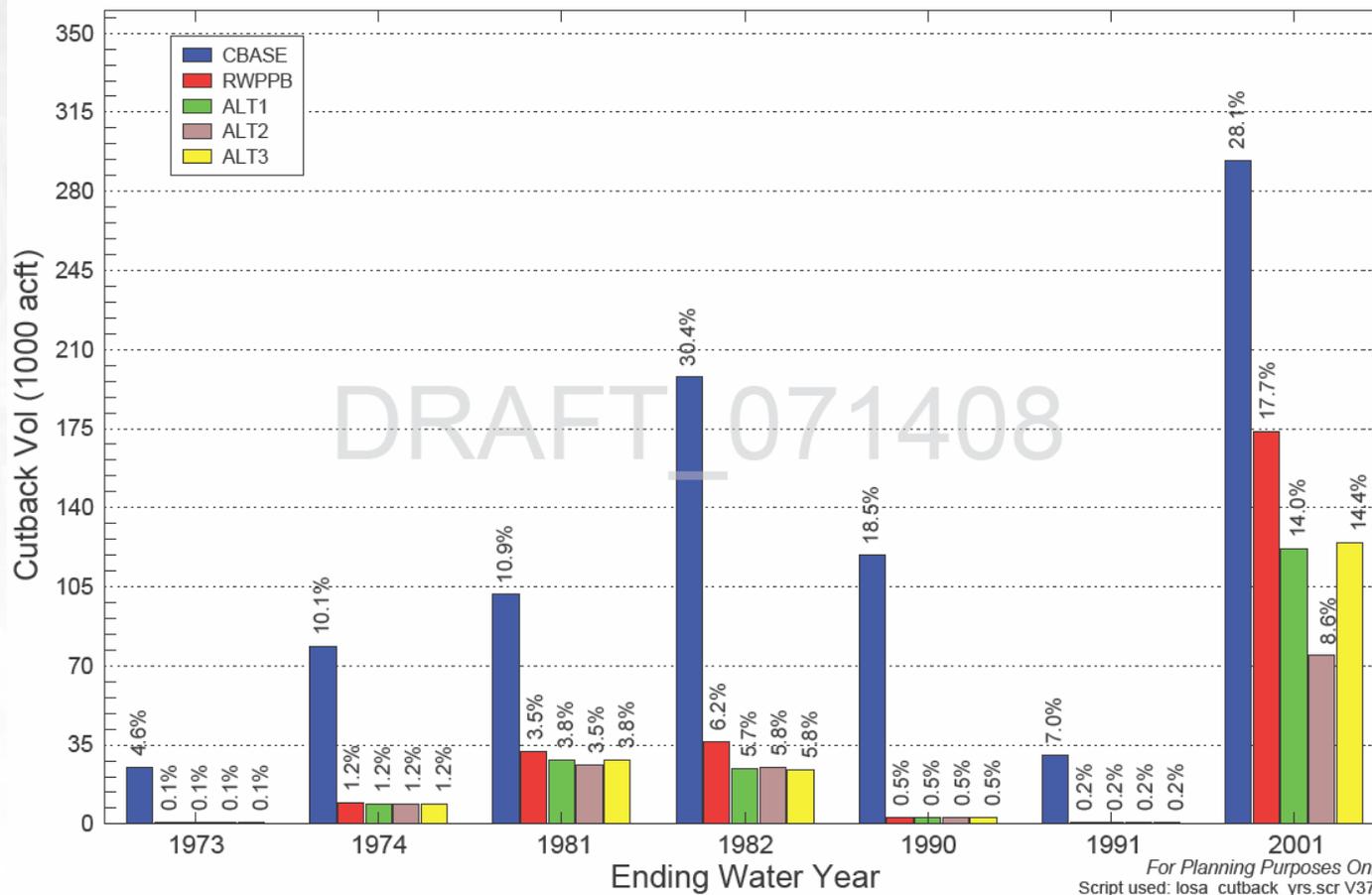
|                            | CBASE     | RWPPB     | ALT1      | ALT2      | ALT3      | Operational Target (OPTI-6) |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------------------------|
| Basins > 3000 cfs          | 13        | 12        | 7         | 8         | 7         | 5                           |
| LOK > 3000 cfs             | 1         | 0         | 0         | 0         | 0         | N/A                         |
| Basins + LOK > 3000 cfs    | 14        | 8         | 9         | 9         | 9         | N/A                         |
| <b>Total &gt; 3000 cfs</b> | <b>28</b> | <b>20</b> | <b>16</b> | <b>17</b> | <b>16</b> | <b>5</b>                    |

|                              | CBASE      | RWPPB      | ALT1       | ALT2       | ALT3       | Operational Target (OPTI-6) |
|------------------------------|------------|------------|------------|------------|------------|-----------------------------|
| <b>Tot. Flow &lt;350 cfs</b> | <b>134</b> | <b>141</b> | <b>170</b> | <b>169</b> | <b>170</b> | <b>196</b>                  |

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# Lake Okeechobee Service Area (con't)

**Water Year (Oct-Sep) LOSA Demand Cutback Volumes**  
for the 7 Years in Simulation Period with Largest Cutbacks



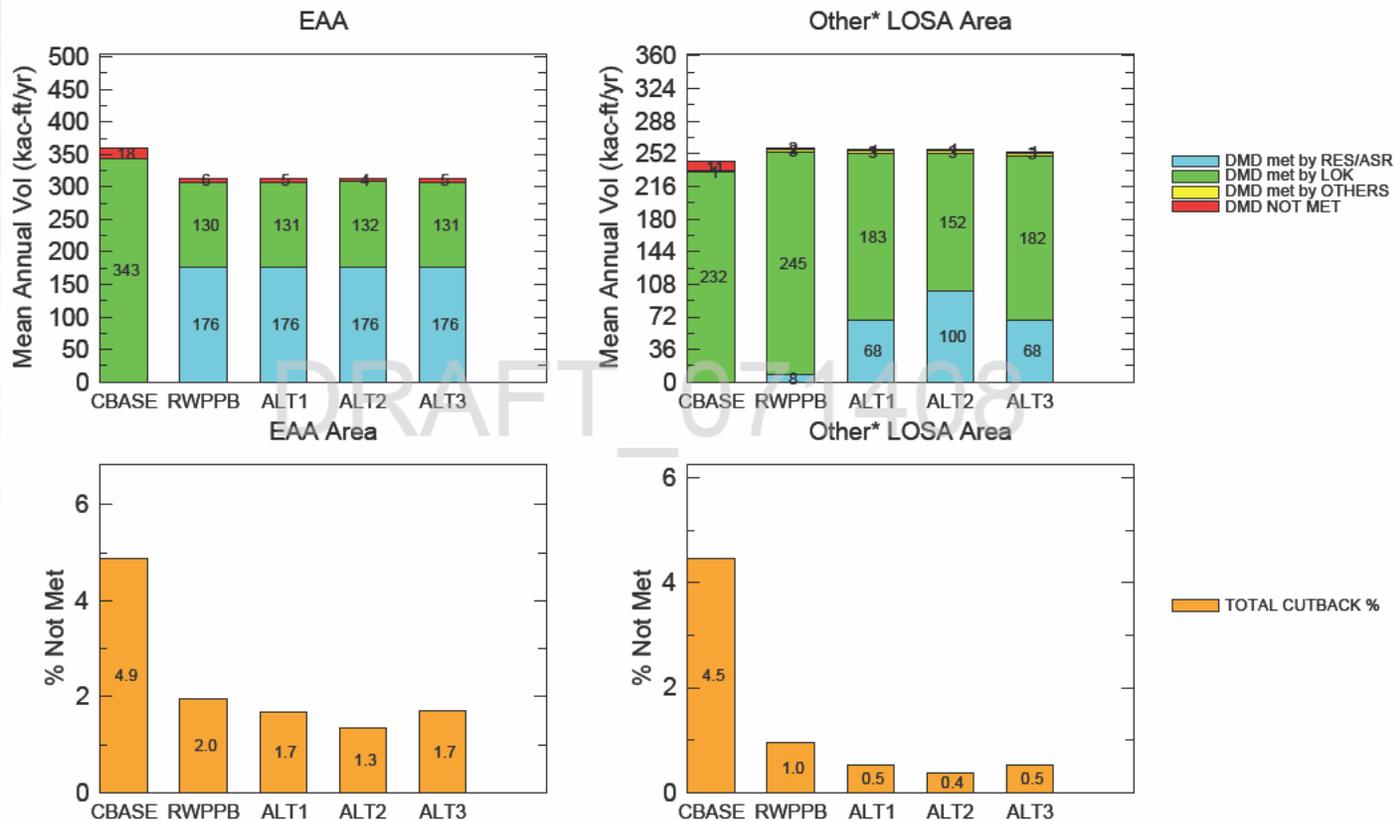
DRAFT 071408

*For Planning Purposes Only*  
Script used: losa\_cutback\_yrs.scr V370  
Filename: losa\_cutback\_yrs\_bar.agr

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# Lake Okeechobee Service Area

## Mean Annual EAA/LOSA Supplemental Irrigation: Demands & Demands Not Met for 1970 - 2005



Other LOSA Areas: S236, S4, L8, C43, C44, North & Northeast Lakeshore, & Lower Istokpoga

For Planning Purposes Only  
Script used: ssm\_4in1.scr, ID327  
Filename: losa\_dmd\_4in1.agr

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## Future Modeling

- **What's next?**
  - **Formulation of ALT4 management measures**
  - **Simulation and evaluation of ALT4 management measures**

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- **Website:**  
[www.sfwmd.gov/northerneverglades](http://www.sfwmd.gov/northerneverglades)
- **Questions?**

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**TABLE TP**  
**Summary of Estimated Total Phosphorus Load Reductions to the St. Lucie Estuary**  
**Working DRAFT**

| (1) Subwatershed | (2) Area (acres) | (3) Current Base Condition                          |   |   | (4) River Watershed Base Condition |                                  |                          |                                     |                                       | (5) Alternative 1             |                      |                         |                      |                     |                      |                        |                      |                               |                       |                                |                          |
|------------------|------------------|---|---|---|------------------------------------|----------------------------------|--------------------------|-------------------------------------|---------------------------------------|-------------------------------|----------------------|-------------------------|----------------------|---------------------|----------------------|------------------------|----------------------|-------------------------------|-----------------------|--------------------------------|--------------------------|
|                  |                  | (3a) Average Annual Discharge (1995-2005) (Acre-ft) | (3b) Average Annual TP Load (1995-2005) (Mtons) | (3c) Average Annual TP Conc. (Calculated) (ppb) | (4a) Load Red. (Mtons)             | (4b) Remain. Discharge (acre-ft) | (4c) Remain. Conc. (ppb) | (4d) Adjusted Remain. Load* (Mtons) | (4e) Base Projects Load Reduction (%) | (5a) Owner Implemented BMPs** |                      | (5b) Cost-Share BMPs*** |                      | (5c) Local Projects |                      | (5d) Regional Projects |                      | (5e) Summary of Alternative 1 |                       |                                |                          |
|                  |                  |   |   |   |                                    |                                  |                          |                                     |                                       | Load Red. (Mtons)             | Remain. Load (Mtons) | Load Red. (Mtons)       | Remain. Load (Mtons) | Load Red. (Mtons)   | Remain. Load (Mtons) | Load Red. (Mtons)      | Remain. Load (Mtons) | Load Red. (Mtons)             | Remain. Conc. - (ppb) | Adjusted Remain. Load* (Mtons) | Alt 1 Load Reduction (%) |
| Basins 4 5 6     | 15,055           | 23,620  | 6.38  | 218.96  | 0.00                               | 23,620                           | 218.96                   | 6.38                                | 0%                                    | 0.40                          | 5.98                 | 0.43                    | 5.55                 | 0.03                | 5.52                 | 0.00                   | 5.52                 | 0.86                          | 189.35                | 5.52                           | 14%                      |
| C-23             | 112,675          | 152,789   | 90.57   | 480.55  | 0.00                               | 152,789                          | 480.55                   | 90.57                               | 0%                                    | 6.88                          | 83.69                | 9.15                    | 74.54                | 0.00                | 74.54                | 38.96                  | 35.58                | 54.99                         | 188.78                | 35.58                          | 61%                      |
| C-24             | 87,706           | 178,853   | 75.73   | 343.25  | 0.00                               | 178,853                          | 343.25                   | 75.73                               | 0%                                    | 6.41                          | 69.32                | 8.52                    | 60.80                | 0.00                | 60.80                | 0.00                   | 60.80                | 14.93                         | 275.57                | 60.80                          | 20%                      |
| C-44&S-153       | 129,719          | 158,194   | 39.69   | 203.38  | 26.10                              | 158,194                          | 81.00                    | 15.81                               | 60%                                   | 2.41                          | 13.40                | 2.90                    | 10.50                | 0.00                | 10.50                | 2.71                   | 7.79                 | 8.02                          | 81.00                 | 15.81                          | 0%                       |
| North Fork       | 119,168          | 126,152   | 43.26   | 278.00  | 4.45                               | 126,152                          | 249.40                   | 38.81                               | 10%                                   | 1.82                          | 36.99                | 1.58                    | 35.42                | 3.15                | 32.27                | 0.57                   | 31.70                | 7.11                          | 203.69                | 31.70                          | 18%                      |
| South Fork       | 49,965           | 59,408  | 20.90   | 285.16  | 0.00                               | 59,408                           | 285.16                   | 20.90                               | 0%                                    | 1.91                          | 18.99                | 2.18                    | 16.81                | 0.21                | 16.60                | 0.00                   | 16.60                | 4.30                          | 226.48                | 16.60                          | 21%                      |
| Lake Okeechobee  | -                | 414,754   | 96.25   | 188.14  | 67.39                              | 170,805                          | 136.96                   | 28.86                               | 70%                                   | 0.00                          | 28.86                | 0.00                    | 28.86                | 0.00                | 28.86                | 0.00                   | 28.86                | 0.00                          | 136.96                | 28.86                          | 0%                       |
| Sub-total****    | 514,287          | 699,016   | 276.51  | 320.69  | 30.55                              | 699,016                          | 285.26                   | 248.18                              | 10%                                   | 19.81                         | 228.37               | 24.77                   | 203.60               | 3.39                | 200.21               | 42.24                  | 157.97               | 90.21                         | 183.21                | 165.99                         | 33%                      |
| Total            | 514,287          | 1,113,771   | 372.76  | 271.33  | 97.95                              | 869,821                          | 256.14                   | 277.04                              | 26%                                   | 19.81                         | 257.23               | 24.77                   | 232.46               | 3.39                | 229.07               | 42.24                  | 186.83               | 90.21                         | 174.13                | 194.85                         | 30%                      |

| (1) Subwatershed | ATL1 Adjusted Remain. Load* (Mtons) | (6) Alternative 2   |                      |                        |                      |                               |                       |                                |                          | (7) Alternative 3   |                      |                        |                      |                               |                       |                                |                          |
|------------------|-------------------------------------|---------------------|----------------------|------------------------|----------------------|-------------------------------|-----------------------|--------------------------------|--------------------------|---------------------|----------------------|------------------------|----------------------|-------------------------------|-----------------------|--------------------------------|--------------------------|
|                  |                                     | (6a) Local Projects |                      | (6b) Regional Projects |                      | (6c) Summary of Alternative 2 |                       |                                |                          | (7a) Local Projects |                      | (7b) Regional Projects |                      | (7c) Summary of Alternative 3 |                       |                                |                          |
|                  |                                     | Load Red. (Mtons)   | Remain. Load (Mtons) | Load Red. (Mtons)      | Remain. Load (Mtons) | Load Red. (Mtons)             | Remain. Conc. - (ppb) | Adjusted Remain. Load* (Mtons) | Alt 2 Load Reduction (%) | Load Red. (Mtons)   | Remain. Load (Mtons) | Load Red. (Mtons)      | Remain. Load (Mtons) | Load Red. (Mtons)             | Remain. Conc. - (ppb) | Adjusted Remain. Load* (Mtons) | Alt 3 Load Reduction (%) |
| Basins 4 5 6     | 5.52                                | 0.00                | 5.52                 | 0.00                   | 5.52                 | 0.00                          | 189.35                | 5.52                           | 14%                      | 0.09                | 5.43                 | 0.00                   | 5.43                 | 0.09                          | 186.26                | 5.43                           | 15%                      |
| C-23             | 35.58                               | 0.00                | 35.58                | 0.00                   | 35.58                | 0.00                          | 188.78                | 35.58                          | 61%                      | 0.00                | 35.58                | 0.00                   | 35.58                | 0.00                          | 188.78                | 35.58                          | 61%                      |
| C-24             | 60.80                               | 0.00                | 60.80                | 0.00                   | 60.80                | 0.00                          | 275.57                | 60.80                          | 20%                      | 0.00                | 60.80                | 30.00                  | 30.80                | 30.00                         | 139.59                | 30.80                          | 59%                      |
| C-44&S-153       | 15.81                               | 0.00                | 15.81                | 0.00                   | 15.81                | 0.00                          | 81.00                 | 15.81                          | 0%                       | 0.00                | 15.81                | 0.00                   | 15.81                | 0.00                          | 81.00                 | 15.81                          | 0%                       |
| North Fork       | 31.70                               | 0.00                | 31.70                | 0.00                   | 31.70                | 0.00                          | 203.69                | 31.70                          | 18%                      | 0.00                | 31.70                | 0.00                   | 31.70                | 0.00                          | 203.69                | 31.70                          | 18%                      |
| South Fork       | 16.60                               | 0.00                | 16.60                | 0.00                   | 16.60                | 0.00                          | 226.48                | 16.60                          | 21%                      | 0.00                | 16.60                | 0.00                   | 16.60                | 0.00                          | 226.48                | 16.60                          | 21%                      |
| Lake Okeechobee  | 28.86                               | 0.00                | 28.86                | 0.00                   | 28.86                | 0.00                          | 136.96                | 28.86                          | 0%                       | 0.00                | 28.86                | 0.00                   | 28.86                | 0.00                          | 136.96                | 28.86                          | 0%                       |
| Sub-total****    | 165.99                              | 0.00                | 165.99               | 0.00                   | 165.99               | 0.00                          | 192.51                | 165.99                         | 33%                      | 0.09                | 165.90               | 30.00                  | 135.90               | 30.09                         | 157.61                | 135.90                         | 45%                      |
| Total            | 194.85                              | 0.00                | 194.85               | 0.00                   | 194.85               | 0.00                          | 181.60                | 194.85                         | 30%                      | 0.09                | 194.76               | 30.00                  | 164.76               | 30.09                         | 153.56                | 164.76                         | 41%                      |

\* When reductions were projected to results in concentrations less than 81 ppb, the remaining load was estimated by multiplying the basin flow by 81 ppb.

\*\* Owner implemented BMPs reduction is adjusted by (1) urban pervious area percentage and (2) the percentage of the BMPs that has already been implemented in citrus (80%), ornamentals/nursery (50%), and row crops (30%).

\*\*\* Cost-share reduction is adjusted by (1) the percentage of urban area in 1988 to current and (2) the percentage of the BMPs that has already been implemented in citrus (80%), ornamentals/nursery (50%), and row crops (30%).

**TABLE TN**  
**Summary of Estimated Total Nitrogen Load Reductions to the St. Lucie Estuary**  
**Working DRAFT**

| (1) Subwatershed | (2) Area (acres) | (3) Current Base Condition                          |   |   | (4) River Watershed Base Condition |                                  |                          |                                     |                                       | (5) Alternative 1             |                      |                         |                      |                     |                      |                        |                      |                               |                     |                                |                          |
|------------------|------------------|---|---|---|------------------------------------|----------------------------------|--------------------------|-------------------------------------|---------------------------------------|-------------------------------|----------------------|-------------------------|----------------------|---------------------|----------------------|------------------------|----------------------|-------------------------------|---------------------|--------------------------------|--------------------------|
|                  |                  | (3a) Average Annual Discharge (1995-2005) (Acre-ft) | (3b) Average Annual TN Load (1995-2005) (Mtons) | (3c) Average Annual TN Conc. (Calculated) (ppm) | (4a) Load Red. (Mtons)             | (4b) Remain. Discharge (acre-ft) | (4c) Remain. Conc. (ppm) | (4d) Adjusted Remain. Load* (Mtons) | (4e) Base Projects Load Reduction (%) | (5a) Owner Implemented BMPs** |                      | (5b) Cost-Share BMPs*** |                      | (5c) Local Projects |                      | (5d) Regional Projects |                      | (5e) Summary of Alternative 1 |                     |                                |                          |
|                  |                  |   |   |   |                                    |                                  |                          |                                     |                                       | Load Red. (Mtons)             | Remain. Load (Mtons) | Load Red. (Mtons)       | Remain. Load (Mtons) | Load Red. (Mtons)   | Remain. Load (Mtons) | Load Red. (Mtons)      | Remain. Load (Mtons) | Alt 1 Load Reduction (Mtons)  | Remain. Conc. (ppm) | Adjusted Remain. Load* (Mtons) | Alt 1 Load Reduction (%) |
| Basins 4 5 6     | 15,055           | 23,620  | 34.43   | 1.18  | 0.00                               | 23,620                           | 1.18                     | 34.43                               | 0%                                    | 4.02                          | 30.41                | 2.43                    | 27.98                | 0.07                | 27.91                | 0.00                   | 27.91                | 6.52                          | 0.96                | 27.91                          | 19%                      |
| C-23             | 112,675          | 152,789   | 329.78  | 1.75  | 0.00                               | 152,789                          | 1.75                     | 329.78                              | 0%                                    | 33.83                         | 295.95               | 19.81                   | 276.14               | 0.00                | 276.14               | 162.22                 | 113.92               | 215.86                        | 0.72                | 135.70                         | 59%                      |
| C-24             | 87,706           | 178,853   | 355.00  | 1.61  | 0.00                               | 178,853                          | 1.61                     | 355.00                              | 0%                                    | 43.22                         | 311.78               | 22.30                   | 289.48               | 0.00                | 289.48               | 0.00                   | 289.48               | 65.52                         | 1.31                | 289.48                         | 18%                      |
| C-44&S-153       | 129,719          | 158,194   | 300.49  | 1.54  | 85.01                              | 158,194                          | 1.10                     | 215.48                              | 28%                                   | 19.03                         | 196.45               | 12.82                   | 183.63               | 0.00                | 183.63               | 10.58                  | 173.05               | 42.43                         | 0.89                | 173.05                         | 20%                      |
| North Fork       | 119,168          | 126,152   | 185.31  | 1.19  | 18.50                              | 126,152                          | 1.07                     | 166.81                              | 10%                                   | 18.82                         | 147.98               | 9.57                    | 138.41               | 9.98                | 128.43               | 2.23                   | 126.20               | 40.60                         | 0.81                | 126.20                         | 24%                      |
| South Fork       | 49,965           | 59,408  | 91.13   | 1.24  | 0.00                               | 59,408                           | 1.24                     | 91.13                               | 0%                                    | 11.40                         | 79.73                | 7.74                    | 72.00                | 0.57                | 71.43                | 0.00                   | 71.43                | 19.70                         | 0.97                | 71.43                          | 22%                      |
| Lake Okeechobee  | -                | 414,754   | 922.00  | 1.80  | 623.91                             | 170,805                          | 1.41                     | 298.09                              | 68%                                   | 0.00                          | 298.09               | 0.00                    | 298.09               | 0.00                | 298.09               | 0.00                   | 298.09               | 0.00                          | 1.41                | 298.09                         | 0%                       |
| Sub-total****    | 514,287          | 699,016   | 1,296.14  | 1.50  | 103.51                             | 699,016                          | 1.38                     | 1,192.63                            | 8%                                    | 130.33                        | 1,062.30             | 74.67                   | 987.63               | 10.62               | 977.01               | 175.03                 | 801.99               | 390.65                        | 0.93                | 823.77                         | 31%                      |
| Total            | 514,287          | 1,113,771   | 2,218.14  | 1.61  | 727.42                             | 869,821                          | 1.39                     | 1,490.72                            | 33%                                   | 130.33                        | 1,360.40             | 74.67                   | 1,285.73             | 10.62               | 1,275.11             | 175.03                 | 1,100.08             | 390.65                        | 1.03                | 1,121.86                       | 25%                      |

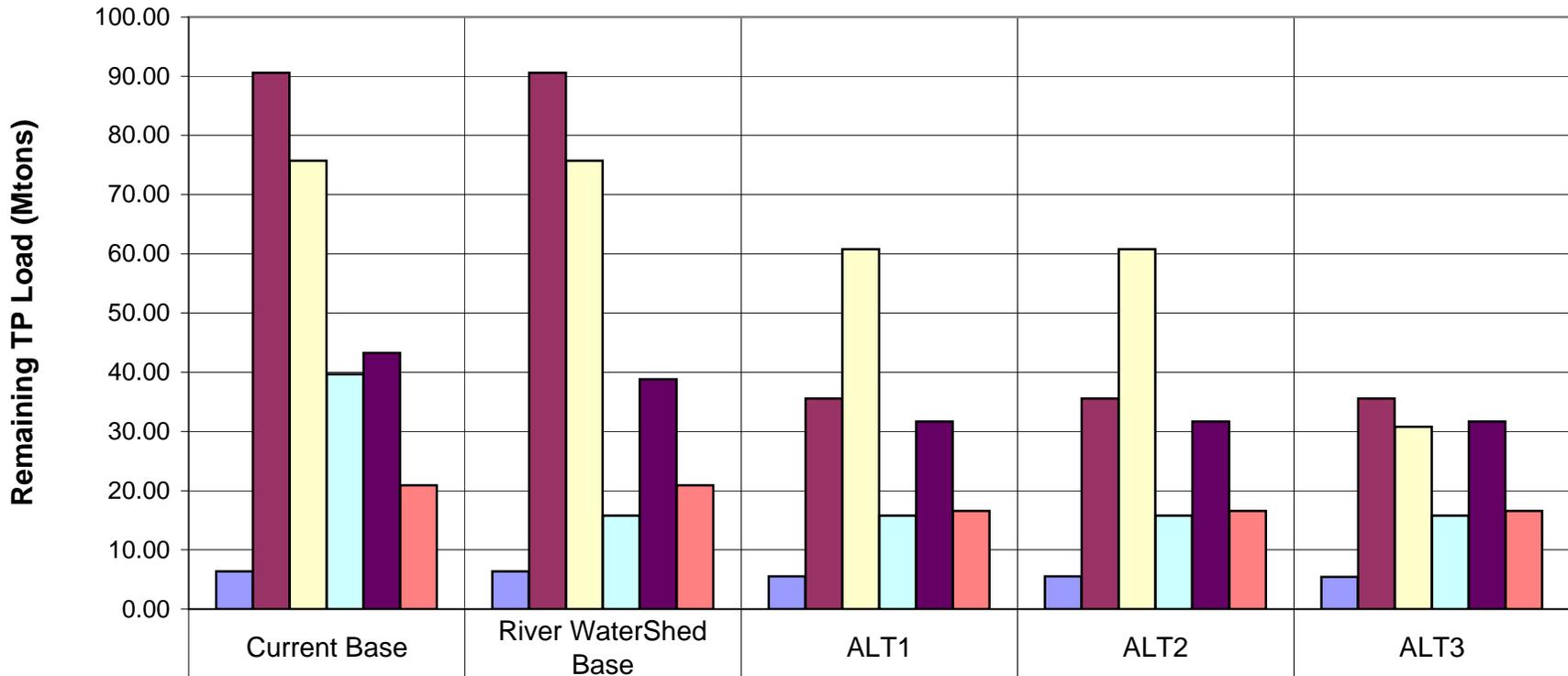
| (1) Subwatershed | ATL1 Adjusted Remain. Load* (Mtons) | (6) Alternative 2   |                      |                        |                      |                               |                     |                                |                          | (7) Alternative 3   |                      |                        |                      |                               |                     |                                |                          |
|------------------|-------------------------------------|---------------------|----------------------|------------------------|----------------------|-------------------------------|---------------------|--------------------------------|--------------------------|---------------------|----------------------|------------------------|----------------------|-------------------------------|---------------------|--------------------------------|--------------------------|
|                  |                                     | (6a) Local Projects |                      | (6b) Regional Projects |                      | (6c) Summary of Alternative 2 |                     |                                |                          | (7a) Local Projects |                      | (7b) Regional Projects |                      | (7c) Summary of Alternative 3 |                     |                                |                          |
|                  |                                     | Load Red. (Mtons)   | Remain. Load (Mtons) | Load Red. (Mtons)      | Remain. Load (Mtons) | Alt 2 Load Reduction (Mtons)  | Remain. Conc. (ppm) | Adjusted Remain. Load* (Mtons) | Alt 2 Load Reduction (%) | Load Red. (Mtons)   | Remain. Load (Mtons) | Load Red. (Mtons)      | Remain. Load (Mtons) | Alt 3 Load Reduction (Mtons)  | Remain. Conc. (ppm) | Adjusted Remain. Load* (Mtons) | Alt 3 Load Reduction (%) |
| Basins 4 5 6     | 27.91                               | 0.00                | 27.91                | 0.00                   | 27.91                | 0.00                          | 0.96                | 27.91                          | 19%                      | 0.23                | 27.68                | 0.00                   | 27.68                | 0.23                          | 0.95                | 27.68                          | 20%                      |
| C-23             | 135.70                              | 0.00                | 135.70               | 0.00                   | 135.70               | 0.00                          | 0.72                | 135.70                         | 59%                      | 0.00                | 135.70               | 0.00                   | 135.70               | 0.00                          | 0.72                | 135.70                         | 59%                      |
| C-24             | 289.48                              | 0.00                | 289.48               | 0.00                   | 289.48               | 0.00                          | 1.31                | 289.48                         | 18%                      | 0.00                | 289.48               | 100.00                 | 189.48               | 100.00                        | 0.86                | 189.48                         | 47%                      |
| C-44&S-153       | 173.05                              | 0.00                | 173.05               | 0.00                   | 173.05               | 0.00                          | 0.89                | 173.05                         | 20%                      | 0.00                | 173.05               | 0.00                   | 173.05               | 0.00                          | 0.89                | 173.05                         | 20%                      |
| North Fork       | 126.20                              | 0.00                | 126.20               | 0.00                   | 126.20               | 0.00                          | 0.81                | 126.20                         | 24%                      | 0.00                | 126.20               | 0.00                   | 126.20               | 0.00                          | 0.81                | 126.20                         | 24%                      |
| South Fork       | 71.43                               | 0.00                | 71.43                | 0.00                   | 71.43                | 0.00                          | 0.97                | 71.43                          | 22%                      | 0.00                | 71.43                | 0.00                   | 71.43                | 0.00                          | 0.97                | 71.43                          | 22%                      |
| Lake Okeechobee  | 298.09                              | 0.00                | 298.09               | 0.00                   | 298.09               | 0.00                          | 1.41                | 298.09                         | 0%                       | 0.00                | 298.09               | 0.00                   | 298.09               | 0.00                          | 1.41                | 298.09                         | 0%                       |
| Sub-total****    | 823.77                              | 0.00                | 823.77               | 0.00                   | 823.77               | 0.00                          | 0.96                | 823.77                         | 31%                      | 0.23                | 823.54               | 100.00                 | 723.54               | 100.23                        | 0.84                | 723.54                         | 39%                      |
| Total            | 1,121.86                            | 0.00                | 1,121.86             | 0.00                   | 1,121.86             | 0.00                          | 1.05                | 1,121.86                       | 25%                      | 0.23                | 1,121.63             | 100.00                 | 1,021.63             | 100.23                        | 0.95                | 1,021.63                       | 31%                      |

\* When reductions were projected to results in concentrations less than 0.72 ppm, the remaining load was estimated by multiplying the basin flow by 0.72 ppm.

\*\* Owner implemented BMPs reduction is adjusted by (1) urban pervious area percentage and (2) the percentage of the BMPs that has already been implemented in citrus (80%), ornamentals/nursery (50%), and row crops (30%).

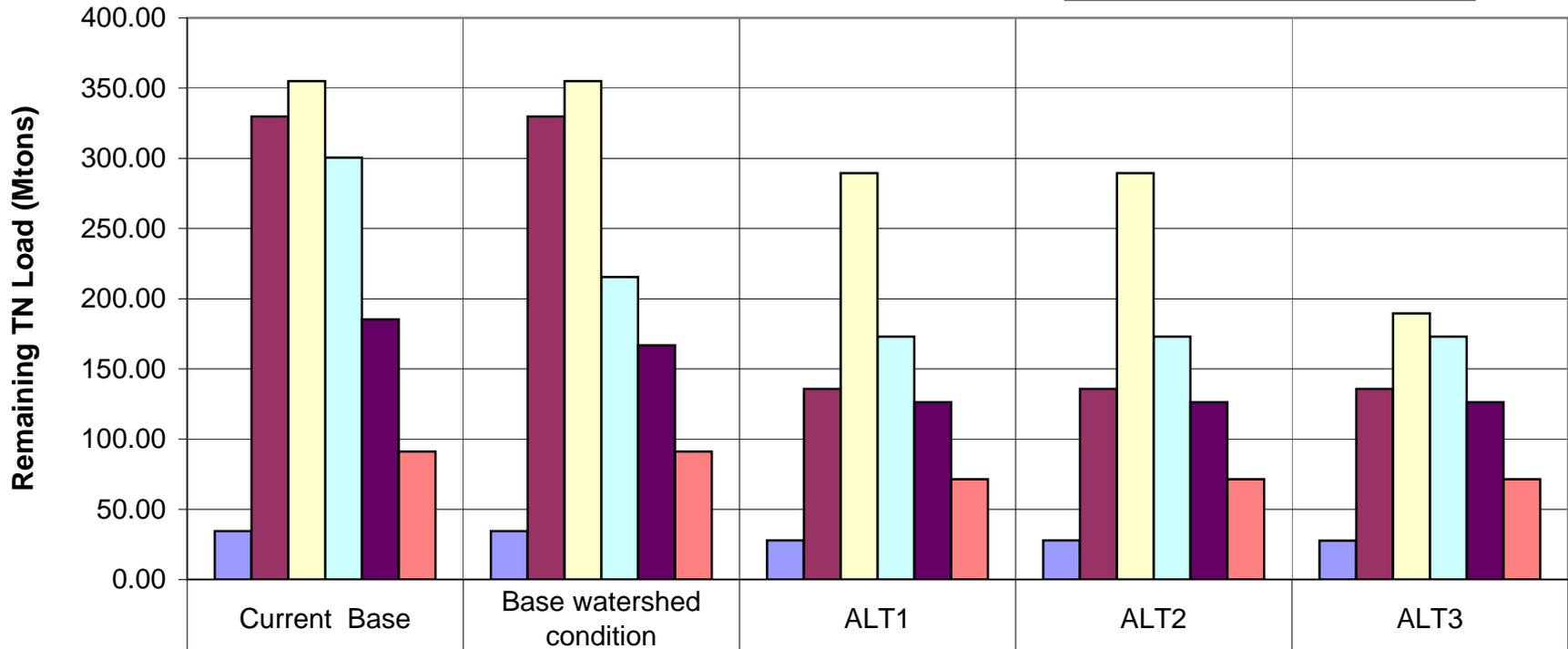
\*\*\* Cost-share reduction is adjusted by (1) the percentage of urban area in 1988 to current and (2) the percentage of the BMPs that has already been implemented in citrus (80%), ornamentals/nursery (50%), and row crops (30%).

### Total Phosphorus Load Results (TP)



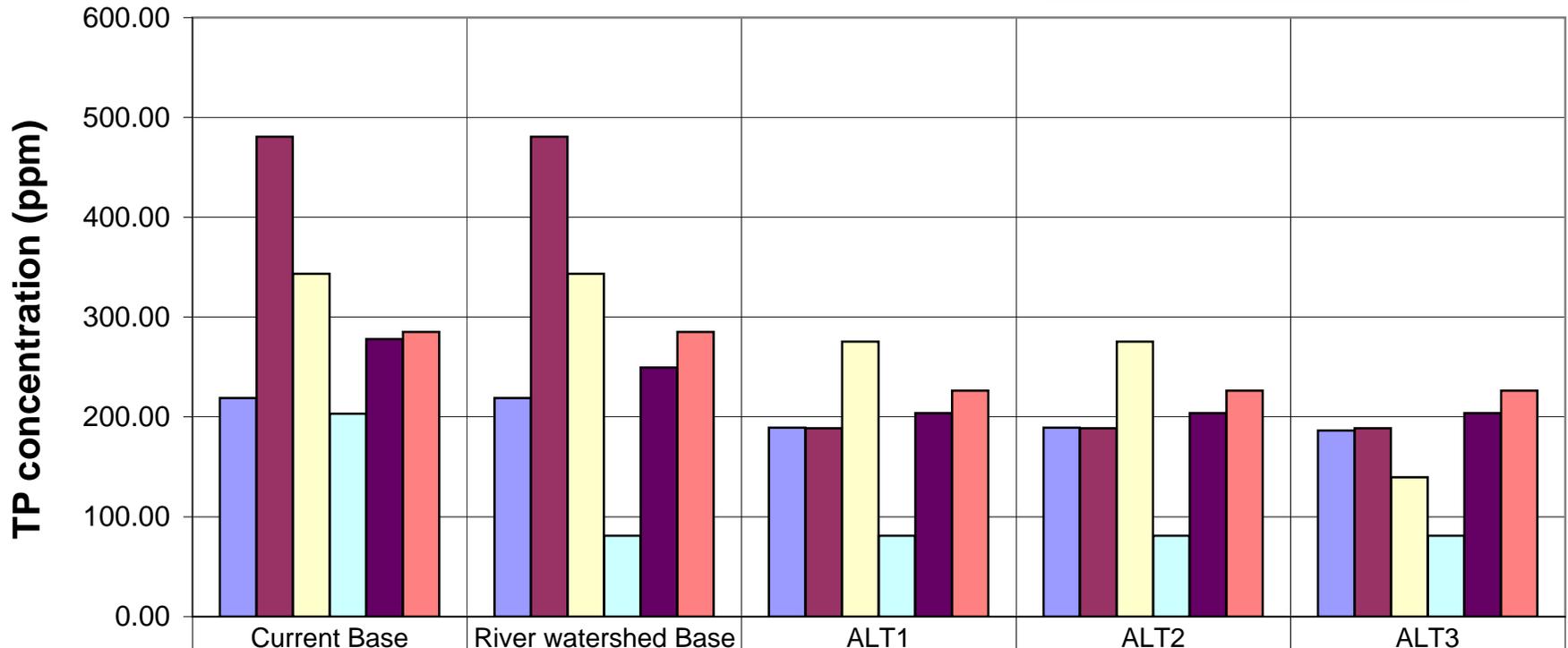
|               |       |       |       |       |       |
|---------------|-------|-------|-------|-------|-------|
| Basin 4 5 & 6 | 6.38  | 6.38  | 5.52  | 5.52  | 5.43  |
| C-23          | 90.57 | 90.57 | 35.58 | 35.58 | 35.58 |
| C-24          | 75.73 | 75.73 | 60.80 | 60.80 | 30.80 |
| C-44&S-153    | 39.69 | 15.81 | 15.81 | 15.81 | 15.81 |
| North Fork    | 43.26 | 38.81 | 31.70 | 31.70 | 31.70 |
| South Fork    | 20.90 | 20.90 | 16.60 | 16.60 | 16.60 |

### Total Nitrogen Load Results (TN)



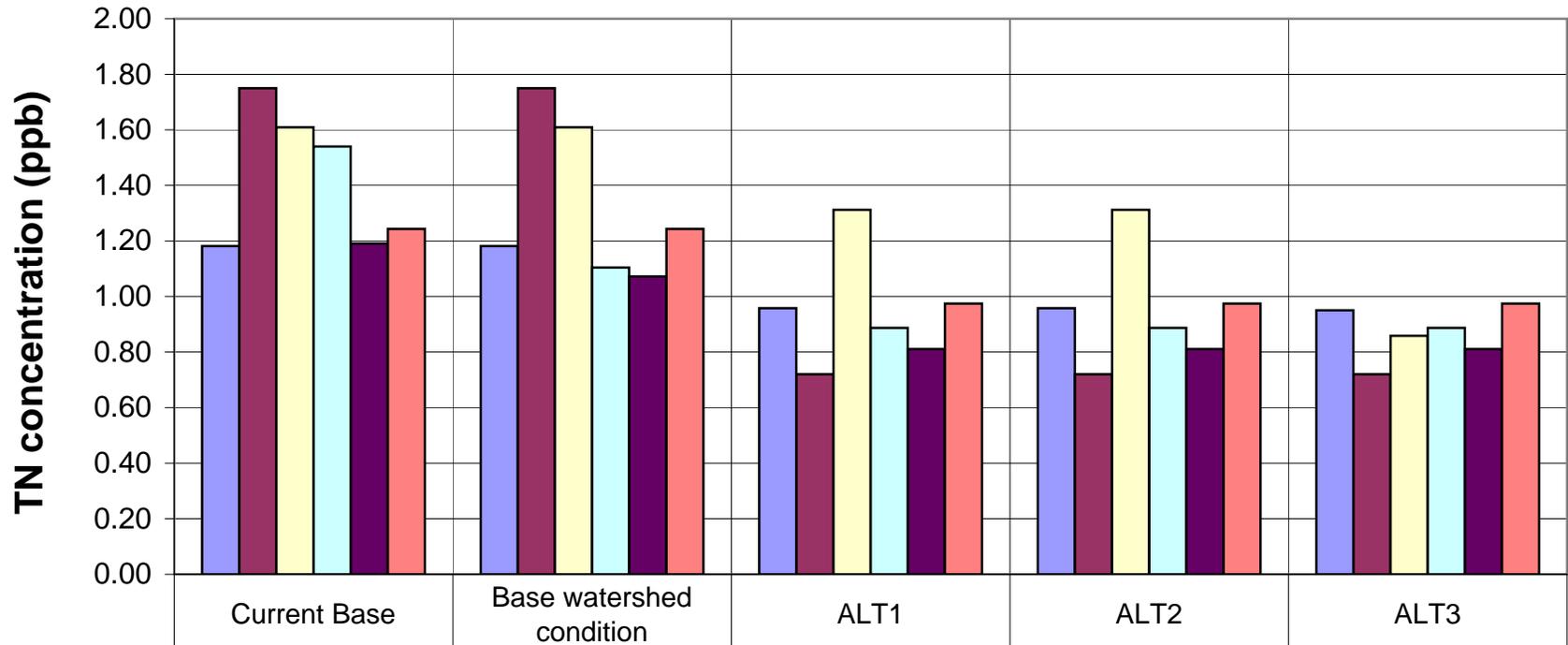
|               | Current Base | Base watershed condition | ALT1   | ALT2   | ALT3   |
|---------------|--------------|--------------------------|--------|--------|--------|
| Basin 4 5 & 6 | 34.43        | 34.43                    | 27.91  | 27.91  | 27.68  |
| C-23          | 329.78       | 329.78                   | 135.70 | 135.70 | 135.70 |
| C-24          | 355.00       | 355.00                   | 289.48 | 289.48 | 189.48 |
| C-44&S153     | 300.49       | 215.48                   | 173.05 | 173.05 | 173.05 |
| North Fork    | 185.31       | 166.81                   | 126.20 | 126.20 | 126.20 |
| South Fork    | 91.13        | 91.13                    | 71.43  | 71.43  | 71.43  |

### TP Concentration Results



|               | Current Base | River watershed Base | ALT1   | ALT2   | ALT3   |
|---------------|--------------|----------------------|--------|--------|--------|
| Basin 4 5 & 6 | 218.96       | 218.96               | 189.35 | 189.35 | 186.26 |
| C-23          | 480.55       | 480.55               | 188.78 | 188.78 | 188.78 |
| C-24          | 343.25       | 343.25               | 275.57 | 275.57 | 139.59 |
| C-44&S153     | 203.38       | 81.00                | 81.00  | 81.00  | 81.00  |
| North Fork    | 278.00       | 249.40               | 203.69 | 203.69 | 203.69 |
| South Fork    | 285.16       | 285.16               | 226.48 | 226.48 | 226.48 |

## TN Concentration Results



|               |      |      |      |      |      |
|---------------|------|------|------|------|------|
| Basin 4 5 & 6 | 1.18 | 1.18 | 0.96 | 0.96 | 0.95 |
| C-23          | 1.75 | 1.75 | 0.72 | 0.72 | 0.72 |
| C-24          | 1.61 | 1.61 | 1.31 | 1.31 | 0.86 |
| C-44&S153     | 1.54 | 1.10 | 0.89 | 0.89 | 0.89 |
| North Fork    | 1.19 | 1.07 | 0.81 | 0.81 | 0.81 |
| South Fork    | 1.24 | 1.24 | 0.97 | 0.97 | 0.97 |

## St. Lucie River Watershed Protection Plan

| Alternative 1 |                          |   |       |             |            |            |
|---------------|--------------------------|---|-------|-------------|------------|------------|
| DRAFT         |                          |   |       |             |            |            |
| MM#           | Sub-Watershed            | Project Feature/Activity  | Level | Alternative | TP (mt/yr) | TN (mt/yr) |
| LO 1          | SLE Watershed            | Agricultural BMPs - Owner Implemented , Funded Cost Share, and Cost Share Future Funding (Combined LO 1, 2, and 49)                       | 1     | 1           | Roll-up    | Roll-up    |
| LO 3          | SLE Watershed            | Urban Turf Fertilizer Rule (LOER)   | 1     | 1           | Roll-up    | Roll-up    |
| LO 4          | SLE Watershed            | Land Application of Residuals   | 1     | 1           | Roll-up    | Roll-up    |
| LO 5          | SLE Watershed            | Florida Yards and Neighborhoods   | 1     | 1           | Roll-up    | Roll-up    |
| LO 7          | SLE Watershed            | ERP Regulatory Program  | 1     | 1           | Roll-up    | Roll-up    |
| LO 8          | SLE Watershed            | NPDES Stormwater Program  | 1     | 1           | Roll-up    | Roll-up    |
| LO 9          | SLE Watershed            | Coastal and Estuarine Land Conservation Program   | 1     | 1           | Roll-up    | Roll-up    |
| LO 12         |                          | Alternative Water Storage (AWS) - Lake Okeechobee and Estuary Recovery  | -     | 1           | n/a        | n/a        |
| LO 12f        |                          | AWS - Indiantown Citrus Growers Association   | 1     | 1           | n/a        | n/a        |
| LO 12j        |                          | AWS - Dupuis  | 4     | 1           | n/a        | n/a        |
| LO 12m        |                          | AWS - Waste Management St. Lucie Site   | 4     | 1           | n/a        | n/a        |
| LO 12q        |                          | AWS - Caulkins  | 4     | 1           | n/a        | n/a        |
| LO 14         | C-44                     | CERP - IRL South: C-44 Reservoir/STA  | B     | 0           | 26.1       | 85.01      |
| LO 15         | SLE Watershed            | St. Lucie River Watershed Works of the District Rule Regulatory Phosphorus Source Control Program   | 2     | 1           | Roll-up    | Roll-up    |
| LO 21         | SLE Watershed            | LO and Estuary Watershed Basin Rule (LOER)  | 3     | 1           | Roll-up    | Roll-up    |
| LO 50         | SLE Watershed            | Agricultural BMPs - Additional Agricultural BMPs  | 1     | 1           | Roll-up    | Roll-up    |
| LO 63         | SLE Watershed            | Wastewater and Stormwater Master Plans  | 4     | 1           | Roll-up    | Roll-up    |
| LO 64         | SLE Watershed            | Unified Statewide Stormwater Rule   | 4     | 1           | Roll-up    | Roll-up    |
| LO 66         | Outside of SLE Watershed | L-8 Reservoir Phase I   | B     | 0           | n/a        | n/a        |
| LO 68         | SLE Watershed            | Comprehensive Planning-Land Development Regulations   | 3     | 1           | Roll-up    | Roll-up    |
| LO 87 Revised |                          | Florida Ranchlands Environmental Services Project- existing, future, and full implementation  |       | 1           | n/a        | n/a        |
| LO 87a_1      | C-25                     | Alderman-Deloney Ranch (C-25 basin)   | 1     | 1           | n/a        | n/a        |
| LO 87c        | SLE Watershed            | Florida Ranchlands Environmental Services Project- full implementation  | 5     | 1           | n/a        | n/a        |
| LO 101        | Outside of SLE Watershed | ECP Diversions  | B     | 0           | n/a        | n/a        |
| LO 102        | Outside of SLE Watershed | EAA Reservoir   | B     | 0           | n/a        | n/a        |
| SLE 02        | North Fork               | White City Drainage Improvements (canals B, C,D, E, F, G) SLE2a and 2b  | 2     | 1           | u          | u          |
| SLE 03        | North Fork               | White City Drainage Improvements (Citrus/Saeger)  | 1     | 1           | 0.01       | 0.03       |
| SLE 06        | North Fork               | Indian River Estates/Savannas Ecosystem Management Project  | 1     | 1           | 0.76       | 0.83       |
| SLE 07        | North Fork               | Platt's Creek Wetland Restoration   | 1     | 1           | 0.03       | 0.11       |
| SLE 09        |                          | Natural Lands in CERP IRL-South Project   |       | 1           | n/a        | n/a        |
| SLE 09a       | C-44, South Fork         | CERP - IRL South: PalMar Complex - Natural Storage and Water Quality Area   | 1     | 1           | 3.43       | 13.39      |
| SLE 09b       | C-23                     | CERP - IRL South: Allapattah Complex - Natural Storage and Water Quality Area   | 1     | 1           | 8.47       | 32.73      |
| SLE 09c       | C-23                     | CERP - IRL South: Cypress Creek/Trail Ridge Complex - Natural Storage and Water Quality Area  | 2     | 1           | 6.49       | 25.29      |
| SLE 11        | Estuary                  | Creation of suitable oyster substrate in the St. Lucie Estuary at Various sites identified in IRL-South PIR (Artificial Habitat Creation) | 1     | 1           | n/a        | n/a        |
| SLE 16        | C-23/C-24                | Improved management of sludge disposal in St. Lucie County through the use of an innovative technology (Plasma-Arc)                       | 1     | 1           | n/a        | n/a        |
| SLE 22        | North Fork               | North River Shores Vacuum Sewer System  | 1     | 1           | 2.18       | 8.57       |
| SLE 24        | C-23, C-24, North Fork   | CERP - IRL South: C-23/24 Reservoir/STA   | 1     | 1           | 24         | 104.2      |
| SLE 26        | North Fork               | CERP - IRL South: Northfork Natural Floodplain Restoration  | 2     | 1           | 0.57       | 2.23       |
| SLE 27        | Estuary                  | CERP - IRL South: Muck Remediation  | 3     | 1           | n/a        | n/a        |
| SLE 28        | South Fork               | Tropical Farms Roebuck Creek Stormwater Quality Retrofit  | 1     | 1           | 0.04       | 0.21       |
| SLE 29        | 4, 5, & 6                | Old Palm City Phase III Stormwater Quality Retrofit   | 1     | 1           | 0.03       | 0.07       |
| SLE 30        | South Fork               | Manatee Pocket Dredging Project   | 1     | 1           | n/a        | n/a        |
| SLE 38        | SLE Watershed            | Urban BMP Program   | 1     | 1           | Roll-up    | Roll-up    |
| SLE 40        | C-23, C-44               | CERP - IRL South: Southern Diversion C-23 to C-44 interconnect  | 1     | 1           | n/a        | n/a        |
| SLE 42        | North Fork               | Jensen Beach Retrofit   | 1     | 1           | 0.01       | 0.03       |
| SLE 43        | North Fork               | Leilani Hts/ Warner Creek Retrofit - Phase 1, 2 & 3   | 1     | 1           | 0.16       | 0.41       |
| SLE 44        | South Fork               | Manatee Creek Water Quality Retrofit; PhII & PhIII; New Monrovia, Dixie Park  | 1     | 1           | 0.08       | 0.2        |
| SLE 45        | North Fork               | 10 Mile Creek - Reservoir and STA   | B     | 0           | 4.45       | 18.5       |
| SLE 52        | North Fork               | E-8 Canal Storm Water Retrofit  | 1     | 1           | u          | u          |
| SLE 53        | South Fork               | Frazier Creek Water Quality   | 1     | 1           | 0          | 0.02       |
| SLE 54        | South Fork               | Haney Creek Wetland Restoration   | 1     | 1           | u          | u          |
| SLE 55        | South Fork               | Poppleton Creek   | 1     | 1           | 0.09       | 0.16       |

Roll-up - benefit included in BMP reductions

u - undetermined

n/a - located within estuary or outside of local watershed

## St. Lucie River Watershed Protection Plan

| <b>Alternative 2 - Water Storage</b>  |               |                          |       |             |            |            |
|---|---------------|--------------------------|-------|-------------|------------|------------|
| <b>DRAFT</b>  |               |                          |       |             |            |            |
| MM#   | Sub-Watershed | Project Feature/Activity | Level | Alternative | TP (mt/yr) | TN (mt/yr) |
| No Specific Water Storage Features are sited within the St. Lucie Watershed for Alternative |               |                          |       |             |            |            |

| <b>Alternative 3 - Water Quality</b> |                               |  |       |             |            |            |
|--------------------------------------|-------------------------------|--|-------|-------------|------------|------------|
| <b>DRAFT</b>                         |                               |  |       |             |            |            |
| MM#                                  | Sub-Watershed                 | Project Feature/Activity   | Level | Alternative | TP (mt/yr) | TN (mt/yr) |
| <b>SLE 13</b>                        | SLE Watershed                 | On-site Sewage Treatment and Disposal System (OSTDS) inspection and pump-out program           | 4     | 3           | u          | u          |
| <b>SLE 18</b>                        | TBD                           | Additional Reservoir Storage and WQ Treatment Areas  | -     |             |            |            |
| SLE 18b                              | C-24                          | C-23/C-24 Water Quality Treatment Project  | 5     | 3           | 30         | 100        |
| <b>SLE 19</b>                        | SLE Watershed                 | Conversion of existing canals into "linear wetland treatment areas"                            | 4     | 3           | u          | u          |
| <b>SLE 31</b>                        |                               | Stormwater Baffle Box Retrofit - City of Stuart  | 1     | 3           | u          | u          |
| <b>SLE 32</b>                        | 4, 5, & 6                     | Danforth Creek Stormwater Quality Retrofit   | 3     | 3           | 0.01       | 0.03       |
| <b>SLE 33</b>                        | North Fork                    | North St. Lucie River Water Control District Stormwater Retrofit; Structures 81-1-2 and 85-1-2 | 1     | 3           | u          | u          |
| <b>SLE 35</b>                        | 4, 5, & 6                     | All American Boulevard Ditch Retrofit  | 3     | 3           | 0.08       | 0.2        |
| <b>SLE 41</b>                        | South Fork, 4-5-6, North Fork | Martin County Baffle Boxes   | 4     | 3           | u          | u          |
| <b>SLE 46</b>                        | SLE Watershed                 | Small Acreage Manure Management  | 3     | 3           | u          | u          |
| <b>SLE 48</b>                        | Estuary                       | Danforth Creek Muck Removal Dredging project   | 2     | 3           | n/a        | n/a        |
| <b>SLE 49</b>                        | Estuary                       | Warner Creek Muck Removal Dredging Project   | 2     | 3           | n/a        | n/a        |
| <b>SLE 50</b>                        | Estuary                       | Hidden River Muck Removal Dredging Project   | 2     | 3           | n/a        | n/a        |

u - unable to quantify load reduction estimate

n/a - located within estuary

**St. Lucie River Watershed Protection Plan - Alternative 4 (DRAFT - 07/21/2008)**

| MM#           | Sub-Watershed                 | Project Feature/Activity  | Level | Alternative | TP (mt/yr) | TN (mt/yr) |
|---------------|-------------------------------|---|-------|-------------|------------|------------|
| LO 1          | SLE Watershed                 | Agricultural BMPs - Owner Implemented , Funded Cost Share, and Cost Share Future Funding (Combined LO 1, 2, and 49                        | 1     | 1           | Roll-up    | Roll-up    |
| LO 3          | SLE Watershed                 | Urban Turf Fertilizer Rule (LOER)   | 1     | 1           | Roll-up    | Roll-up    |
| LO 4          | SLE Watershed                 | Land Application of Residuals   | 1     | 1           | Roll-up    | Roll-up    |
| LO 5          | SLE Watershed                 | Florida Yards and Neighborhoods   | 1     | 1           | Roll-up    | Roll-up    |
| LO 7          | SLE Watershed                 | ERP Regulatory Program  | 1     | 1           | Roll-up    | Roll-up    |
| LO 8          | SLE Watershed                 | NPDES Stormwater Program  | 1     | 1           | Roll-up    | Roll-up    |
| LO 9          | SLE Watershed                 | Coastal and Estuarine Land Conservation Program   | 1     | 1           | Roll-up    | Roll-up    |
| LO 12         |                               | Alternative Water Storage (AWS) - Lake Okeechobee and Estuary Recovery  | -     | 1           | n/a        | n/a        |
| LO 12f        |                               | AWS - Indiantown Citrus Growers Association   | 1     | 1           | n/a        | n/a        |
| LO 12j        |                               | AWS - Dupuis  | 4     | 1           | n/a        | n/a        |
| LO 12m        |                               | AWS - Waste Management St. Lucie Site   | 4     | 1           | n/a        | n/a        |
| LO 12q        |                               | AWS - Caulkins  | 4     | 1           | n/a        | n/a        |
| LO 14         | C-44                          | CERP - IRL South: C-44 Reservoir/STA  | B     | 0           | 26.1       | 85.01      |
| LO 15         | SLE Watershed                 | St. Lucie River Watershed Works of the District Rule Regulatory Phosphorus Source Control Program   | 2     | 1           | Roll-up    | Roll-up    |
| LO 21         | SLE Watershed                 | LO and Estuary Watershed Basin Rule (LOER)  | 3     | 1           | Roll-up    | Roll-up    |
| LO 50         | SLE Watershed                 | Agricultural BMPs - Additional Agricultural BMPs  | 1     | 1           | Roll-up    | Roll-up    |
| LO 63         | SLE Watershed                 | Wastewater and Stormwater Master Plans  | 4     | 1           | Roll-up    | Roll-up    |
| LO 64         | SLE Watershed                 | Unified Statewide Stormwater Rule   | 4     | 1           | Roll-up    | Roll-up    |
| LO 66         | Outside of SLE Watershed      | L-8 Reservoir Phase I   | B     | 0           | n/a        | n/a        |
| LO 68         | SLE Watershed                 | Comprehensive Planning-Land Development Regulations   | 3     | 1           | Roll-up    | Roll-up    |
| LO 87 Revised |                               | Florida Ranchlands Environmental Services Project- existing, future, and full implementation  |       | 1           | n/a        | n/a        |
| LO 87a_1      | C-25                          | Alderman-Deloney Ranch (C-25 basin)   | 1     | 1           | n/a        | n/a        |
| LO 87c        | SLE Watershed                 | Florida Ranchlands Environmental Services Project- full implementation  | 5     | 1           | n/a        | n/a        |
| LO 101        | Outside of SLE Watershed      | ECP Diversions  | B     | 0           | n/a        | n/a        |
| LO 102        | Outside of SLE Watershed      | EAA Reservoir   | B     | 0           | n/a        | n/a        |
| SLE 02        | North Fork                    | White City Drainage Improvements (canals B, C,D, E, F, G) SLE2a and 2b  | 2     | 1           | u          | u          |
| SLE 03        | North Fork                    | White City Drainage Improvements (Citrus/Saeger)  | 1     | 1           | 0.01       | 0.03       |
| SLE 06        | North Fork                    | Indian River Estates/Savannas Ecosystem Management Project  | 1     | 1           | 0.76       | 0.83       |
| SLE 07        | North Fork                    | Platt's Creek Wetland Restoration   | 1     | 1           | 0.03       | 0.11       |
| SLE 09        |                               | Natural Lands in CERP IRL-South Project   |       | 1           | n/a        | n/a        |
| SLE 09a       | C-44, South Fork              | CERP - IRL South: PalMar Complex - Natural Storage and Water Quality Area   | 1     | 1           | 3.43       | 13.39      |
| SLE 09b       | C-23                          | CERP - IRL South: Allapattah Complex - Natural Storage and Water Quality Area   | 1     | 1           | 8.47       | 32.73      |
| SLE 09c       | C-23                          | CERP - IRL South: Cypress Creek/Trail Ridge Complex - Natural Storage and Water Quality Area  | 2     | 1           | 6.49       | 25.29      |
| SLE 11        | Estuary                       | Creation of suitable oyster substrate in the St. Lucie Estuary at Various sites identified in IRL-South PIR (Artificial Habitat Creation) | 1     | 1           | n/a        | n/a        |
| SLE 13        | SLE Watershed                 | On-site Sewage Treatment and Disposal System (OSTDS) inspection and pump-out program  | 4     | 3           | u          | u          |
| SLE 16        | C-23/C-24                     | Improved management of sludge disposal in St. Lucie County through the use of an innovative technology (Plasma-Arc)                       | 1     | 1           | n/a        | n/a        |
| SLE 18        | TBD                           | Additional Reservoir Storage and WQ Treatment Areas   | -     |             |            |            |
| SLE 18b       | C-24                          | C-23/C-24 Water Quality Treatment Project   | 5     | 3           | 30         | 100        |
| SLE 19        | SLE Watershed                 | Conversion of existing canals into "linear wetland treatment areas"   | 4     | 3           | u          | u          |
| SLE 22        | North Fork                    | North River Shores Vacuum Sewer System  | 1     | 1           | 2.18       | 8.57       |
| SLE 24        | C-23, C-24, North Fork        | CERP - IRL South: C-23/24 Reservoir/STA   | 1     | 1           | 24         | 104.2      |
| SLE 26        | North Fork                    | CERP - IRL South: Northfork Natural Floodplain Restoration  | 2     | 1           | 0.57       | 2.23       |
| SLE 27        | Estuary                       | CERP - IRL South: Muck Remediation  | 3     | 1           | n/a        | n/a        |
| SLE 28        | South Fork                    | Tropical Farms Roebuck Creek Stormwater Quality Retrofit  | 1     | 1           | 0.04       | 0.21       |
| SLE 29        | 4, 5, & 6                     | Old Palm City Phase III Stormwater Quality Retrofit   | 1     | 1           | 0.03       | 0.07       |
| SLE 30        | South Fork                    | Manatee Pocket Dredging Project   | 1     | 1           | n/a        | n/a        |
| SLE 31        |                               | Stormwater Baffle Box Retrofit - City of Stuart   | 1     | 3           | u          | u          |
| SLE 32        | 4, 5, & 6                     | Danforth Creek Stormwater Quality Retrofit  | 3     | 3           | 0.01       | 0.03       |
| SLE 33        | North Fork                    | North St. Lucie River Water Control District Stormwater Retrofit; Structures 81-1-2 and 85-1-2  | 1     | 3           | u          | u          |
| SLE 35        | 4, 5, & 6                     | All American Boulevard Ditch Retrofit   | 3     | 3           | 0.08       | 0.2        |
| SLE 38        | SLE Watershed                 | Urban BMP Program   | 1     | 1           | Roll-up    | Roll-up    |
| SLE 40        | C-23, C-44                    | CERP - IRL South: Southern Diversion C-23 to C-44 interconnect  | 1     | 1           | n/a        | n/a        |
| SLE 41        | South Fork, 4-5-6, North Fork | Martin County Baffle Boxes  | 4     | 3           | u          | u          |
| SLE 42        | North Fork                    | Jensen Beach Retrofit   | 1     | 1           | 0.01       | 0.03       |
| SLE 43        | North Fork                    | Leilani Hts/ Warner Creek Retrofit - Phase 1, 2 & 3   | 1     | 1           | 0.16       | 0.41       |
| SLE 44        | South Fork                    | Manatee Creek Water Quality Retrofit; PhII & PhIII; New Monrovia, Dixie Park  | 1     | 1           | 0.08       | 0.2        |
| SLE 45        | North Fork                    | 10 Mile Creek - Reservoir and STA   | B     | 0           | 4.45       | 18.5       |
| SLE 46        | SLE Watershed                 | Small Acreage Manure Management   | 3     | 3           | u          | u          |
| SLE 48        | Estuary                       | Danforth Creek Muck Removal Dredging project  | 2     | 3           | n/a        | n/a        |
| SLE 49        | Estuary                       | Warner Creek Muck Removal Dredging Project  | 2     | 3           | n/a        | n/a        |
| SLE 50        | Estuary                       | Hidden River Muck Removal Dredging Project  | 2     | 3           | n/a        | n/a        |
| SLE 52        | North Fork                    | E-8 Canal Storm Water Retrofit  | 1     | 1           | u          | u          |
| SLE 53        | South Fork                    | Frazier Creek Water Quality   | 1     | 1           | 0          | 0.02       |
| SLE 54        | South Fork                    | Haney Creek Wetland Restoration   | 1     | 1           | u          | u          |
| SLE 55        | South Fork                    | Poppleton Creek   | 1     | 1           | 0.09       | 0.16       |

Note that while these Management Measures were evaluated as specific types of facilities during the planning exercise, more detailed planning and design will better define the specific types of facilities that are needed to achieve the project benefits