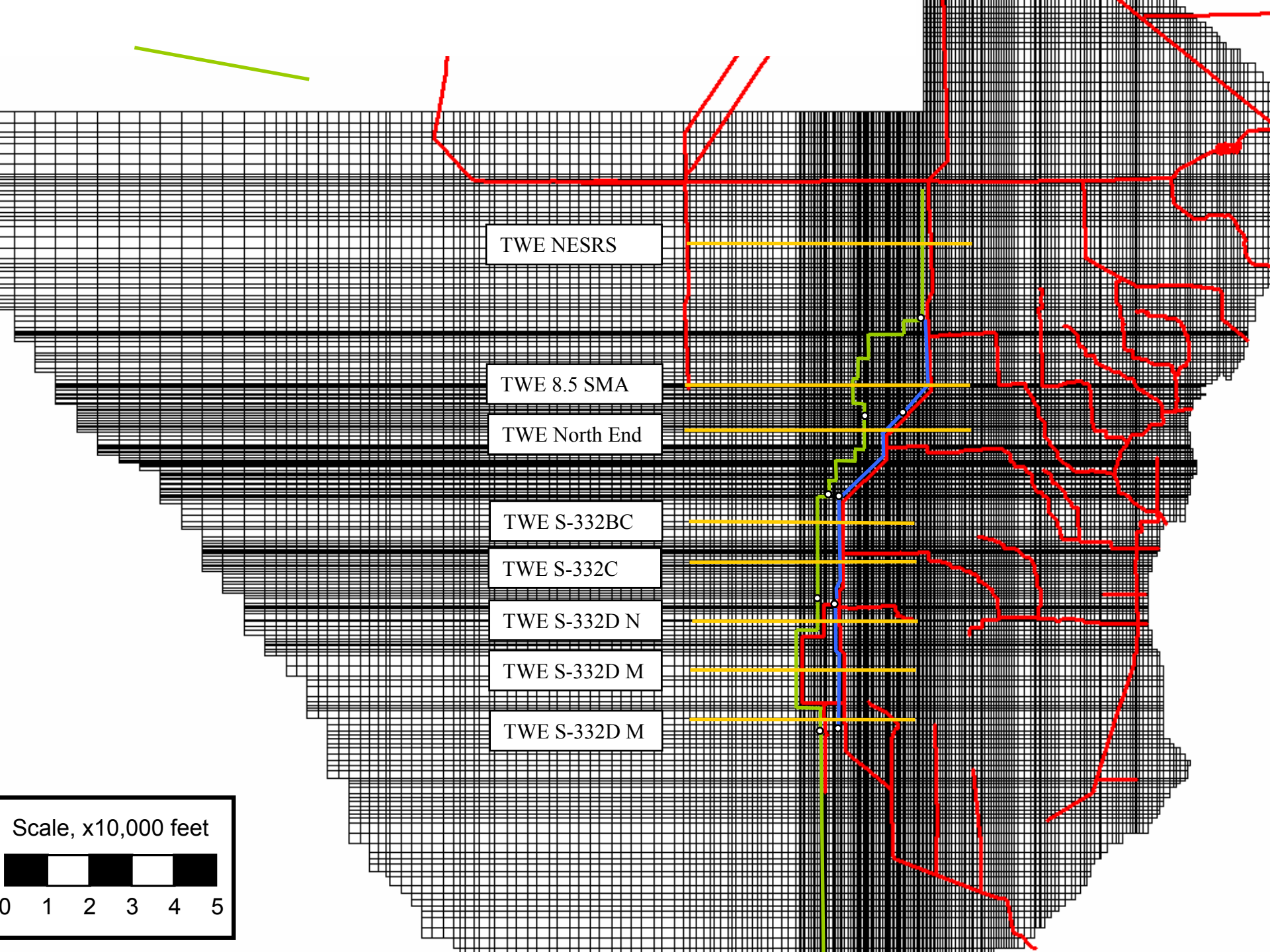


West Book End Run. Formulated solely by ENP staff. The run is supposed to estimate the higher expected stage in the L-29 Canal to allow the design of Tamiami Trail at a level which does not require it to be raised in the future. This run is also suppose to represent the maximum environmental benefits achievable within the authority of the CSOP while maintain the other project purposes.

East Book End Run. This run explores how simpler operations can meet the Flood Damage Reduction goals of the eastern stake holders without substantively diminishing the environmental benefits. Could be implemented but has considerable opportunities for substantive performance improvements on both sides of the levee. For example Implementation of ERDO light



TWE NESRS

TWE 8.5 SMA

TWE North End

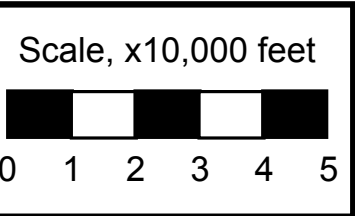
TWE S-332BC

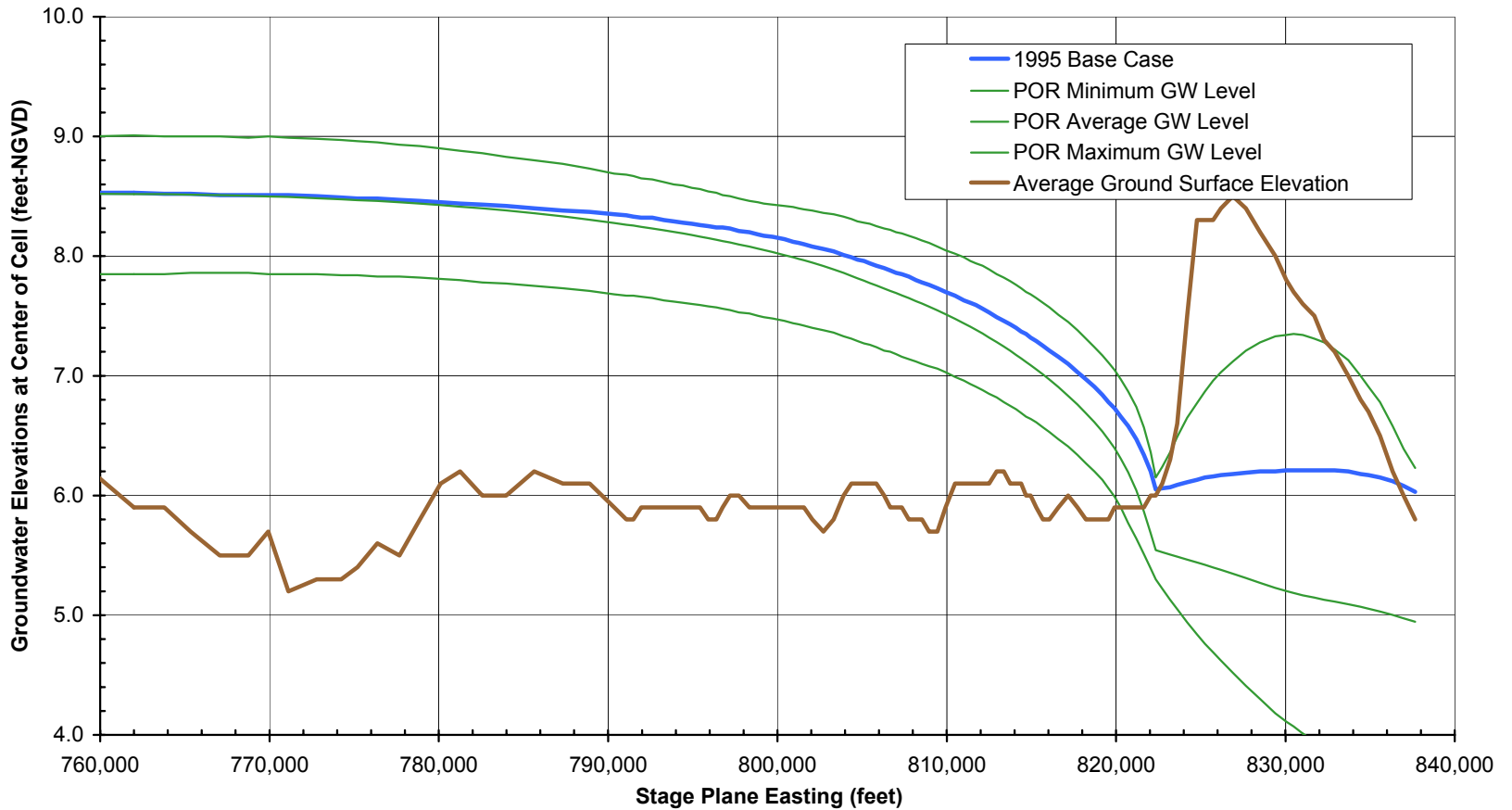
TWE S-332C

TWE S-332D N

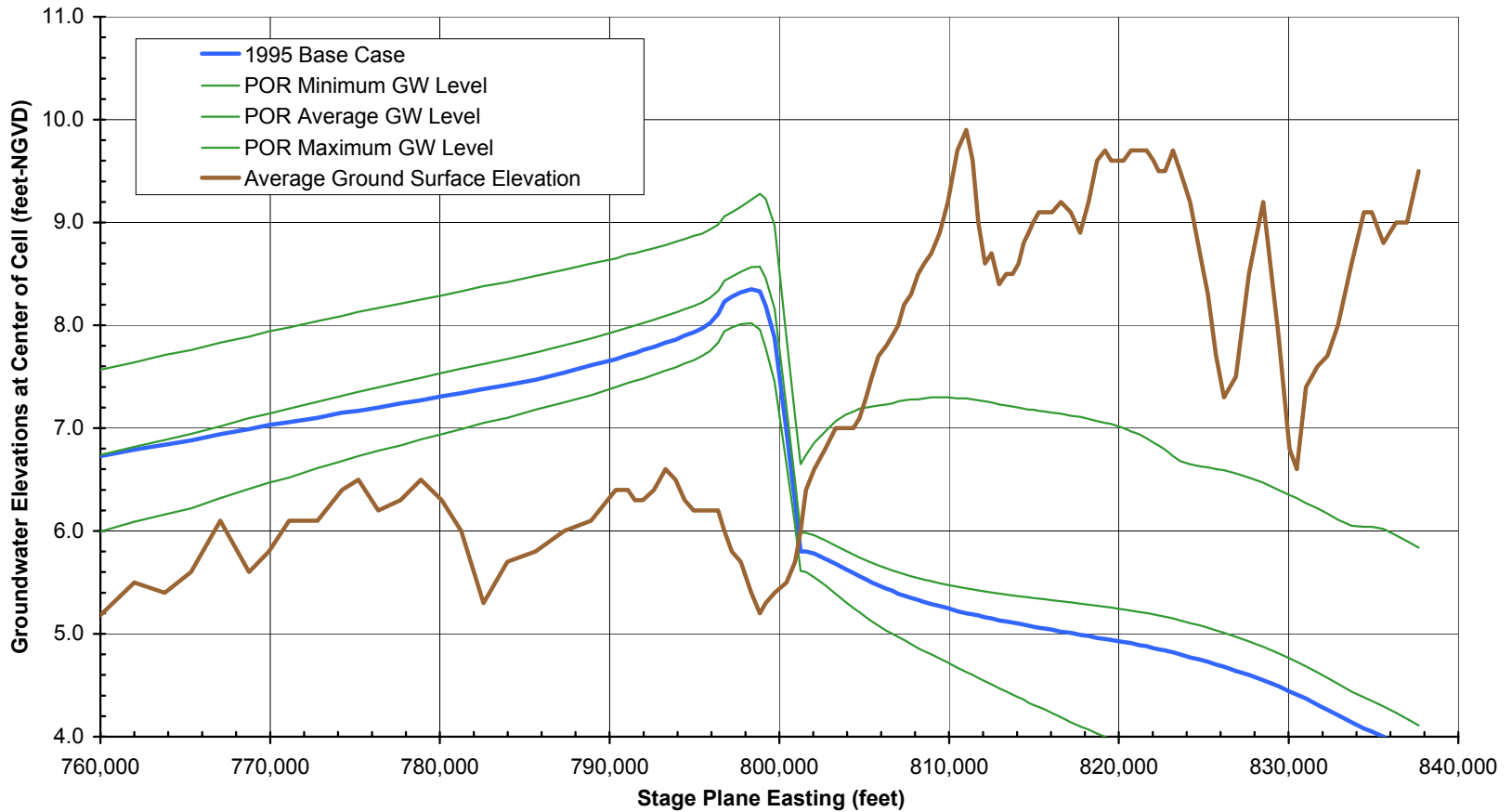
TWE S-332D M

TWE S-332D M





**MODBRANCH Row 51 (State Plane Northing of 502,228 feet for Cross Section)  
 Cross Section of Groundwater Levels Estimated by MODBRANCH - 6/29/1995**



**MODBRANCH Row 140 (State Plane Northing of 436,450 feet for Cross Section)  
 Cross Section of Groundwater Levels Estimated by MODBRANCH - 1/1/1995**

**Combined Structural and Operational Plan for C-111 Canal Project and MWD to ENP  
 SFWMD**

# Correct Seepage Calculations

## Net Seepage L-30 and L-31 (S-335 to G-211)

This includes the seepage returned by S-356

ALT7R: 594,000 acre-feet per year

East Book End Run: 549,000 acre-feet per year

West Book End Run: 626,000 acre-feet per year

It should be noted that collecting the seepage from WCA-3B (via releases from S-335 and pumping into NERSR by S-356) reduces the detrimentally high levels in WCA-3B (surrogate for the historical eastern flow path).

# Correct Seepage Calculations

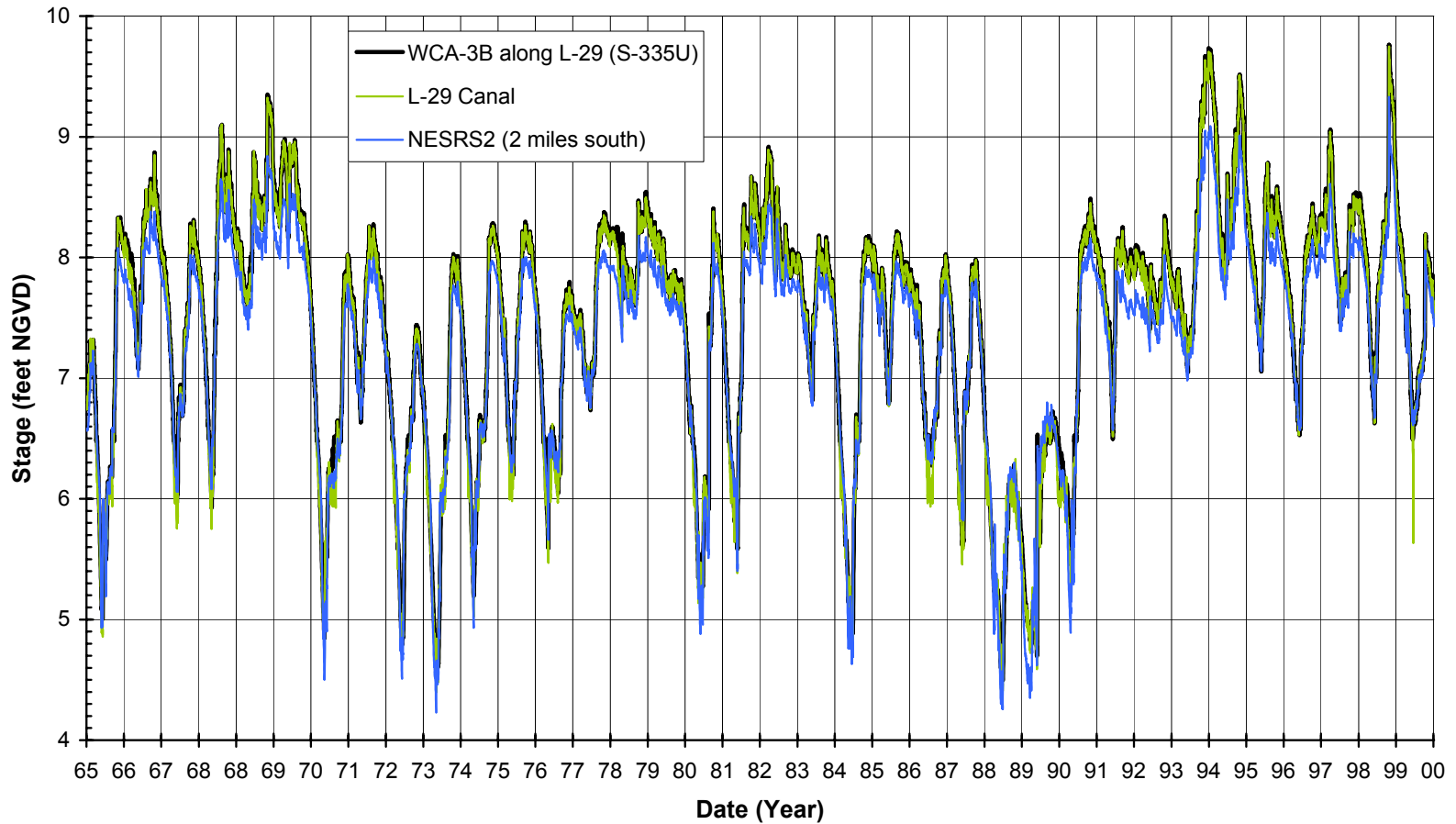
Net Seepage 8.5 miles from Richmond Drive to the Frog Pond (S-332B and S-332C)

This includes the seepage returned by S-332B and S-332C pump stations

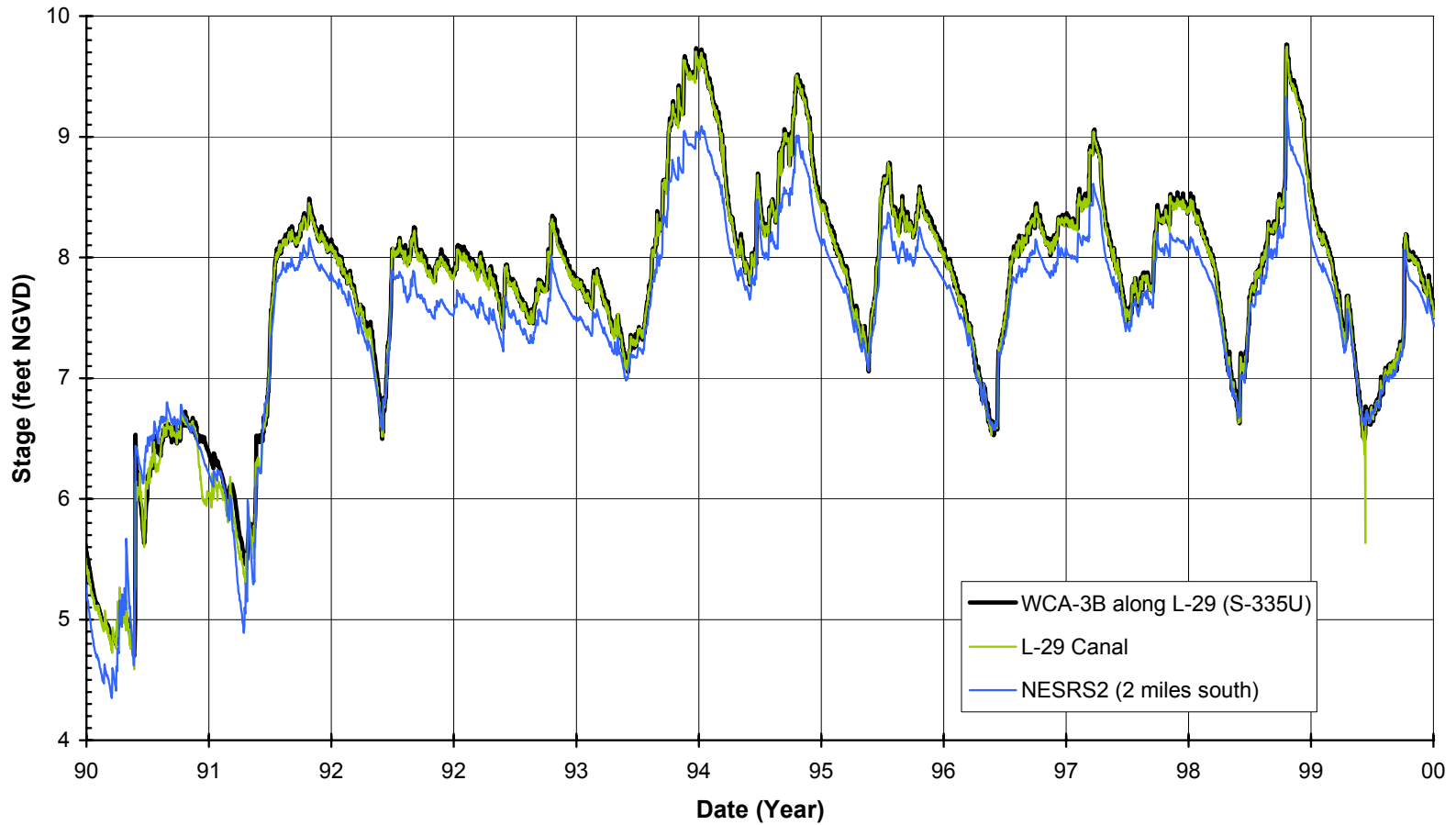
ALT7R: -2,000 acre-feet per year

East Book End Run: 23,000 acre-feet per year

West Book End Run: 83,000 acre-feet per year

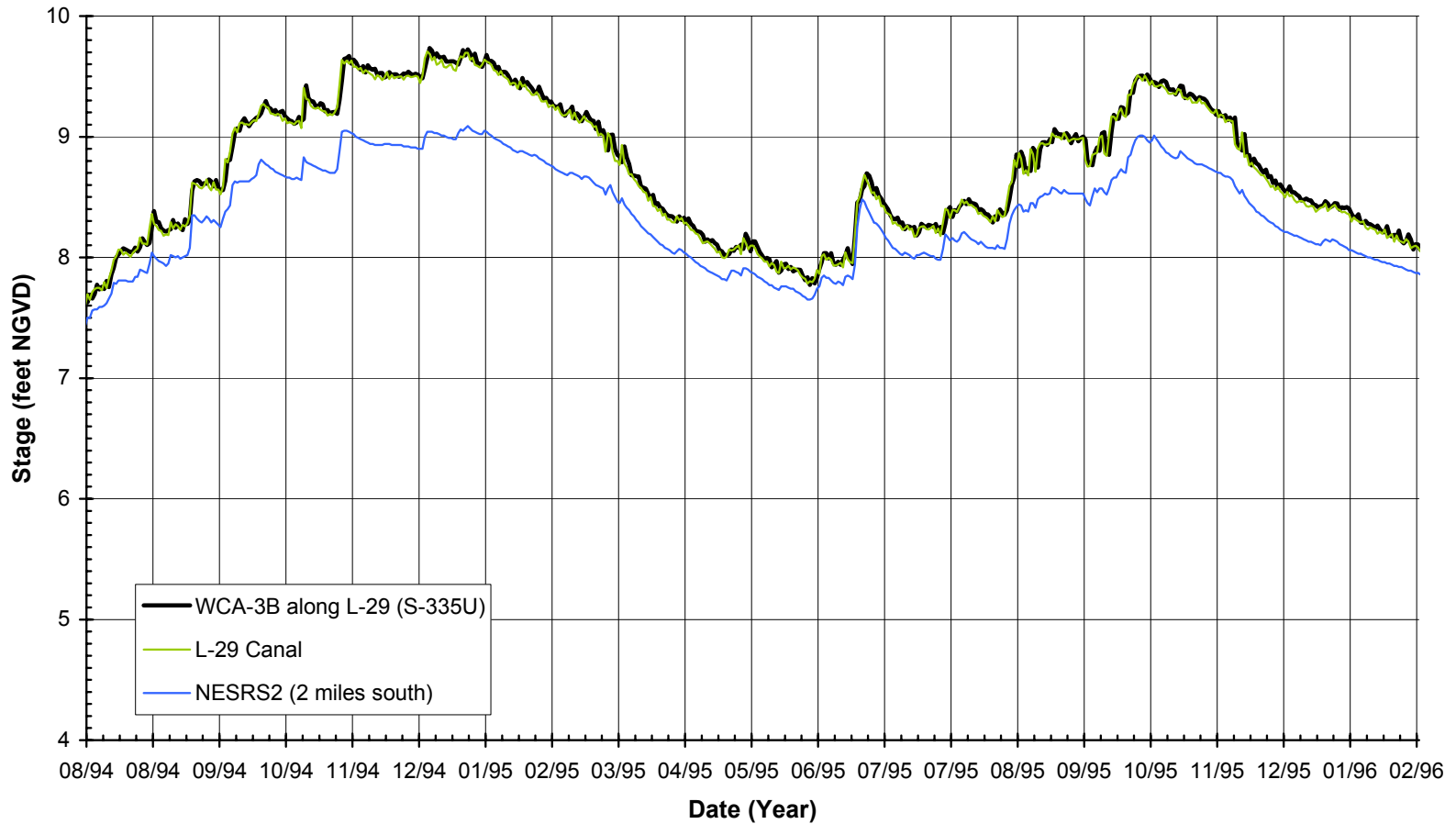


**FIGURE 2**  
**Stages in WCA-3B at S-355U, L-29, and NESRS2 for the West Book End Run**



**FIGURE 2**  
**Stages in WCA-3B at S-355U, L-29, and NESRS2 for the West Book End Run**

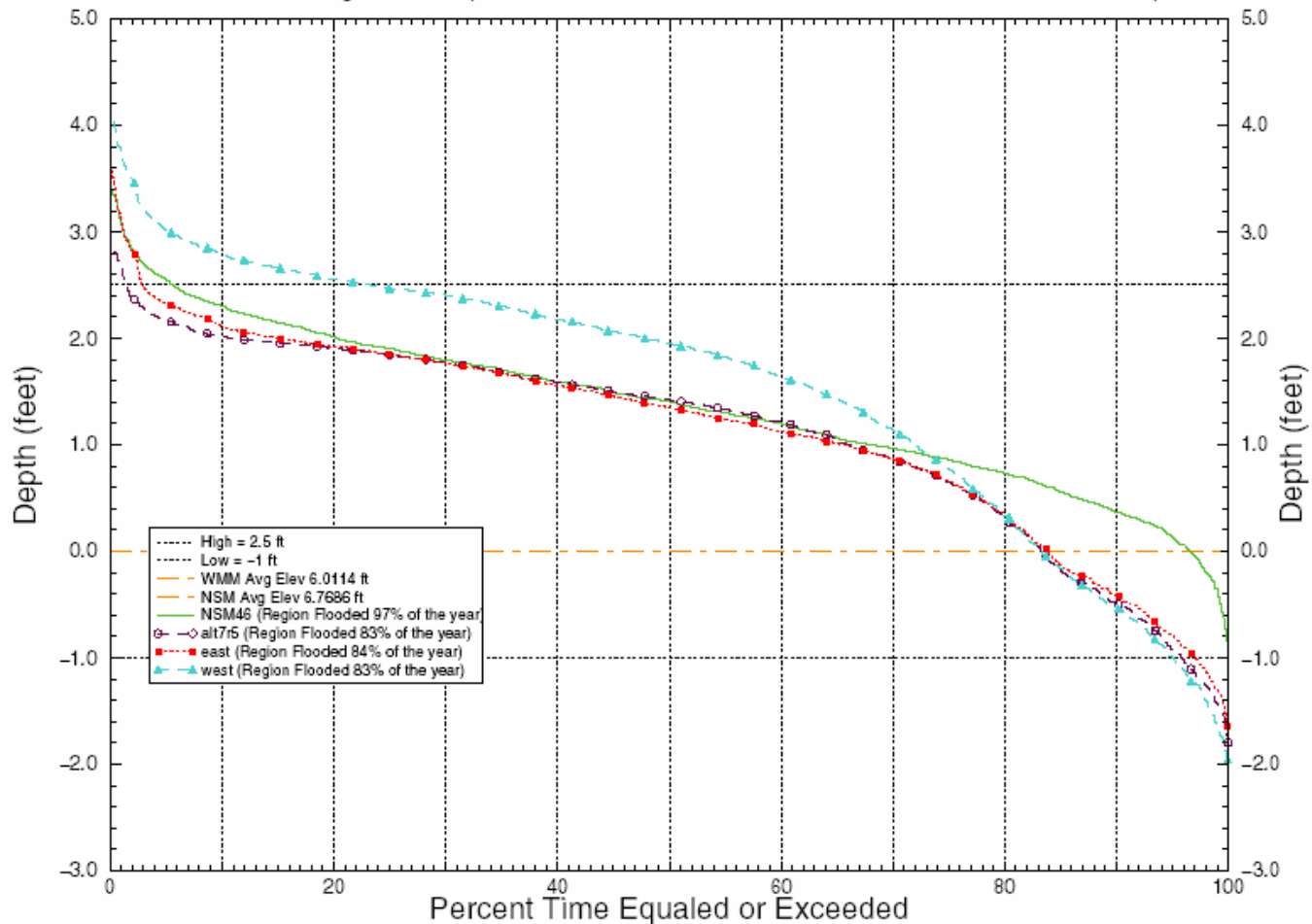
**Combined Structural and Operational Plan for the MWD ENP and C-111 Canal Project**  
**USACE & SFWMD**



**FIGURE 3**  
**Stages in WCA-3B at S-355U, L-29, and NESRS2 for the West Book End Run**

# Normalized Weekly Stage Duration Curves for WCA-3B East

Indicator Region 128 (R23C24-26 R24C25-26 R25C26-26 R26C26-26)

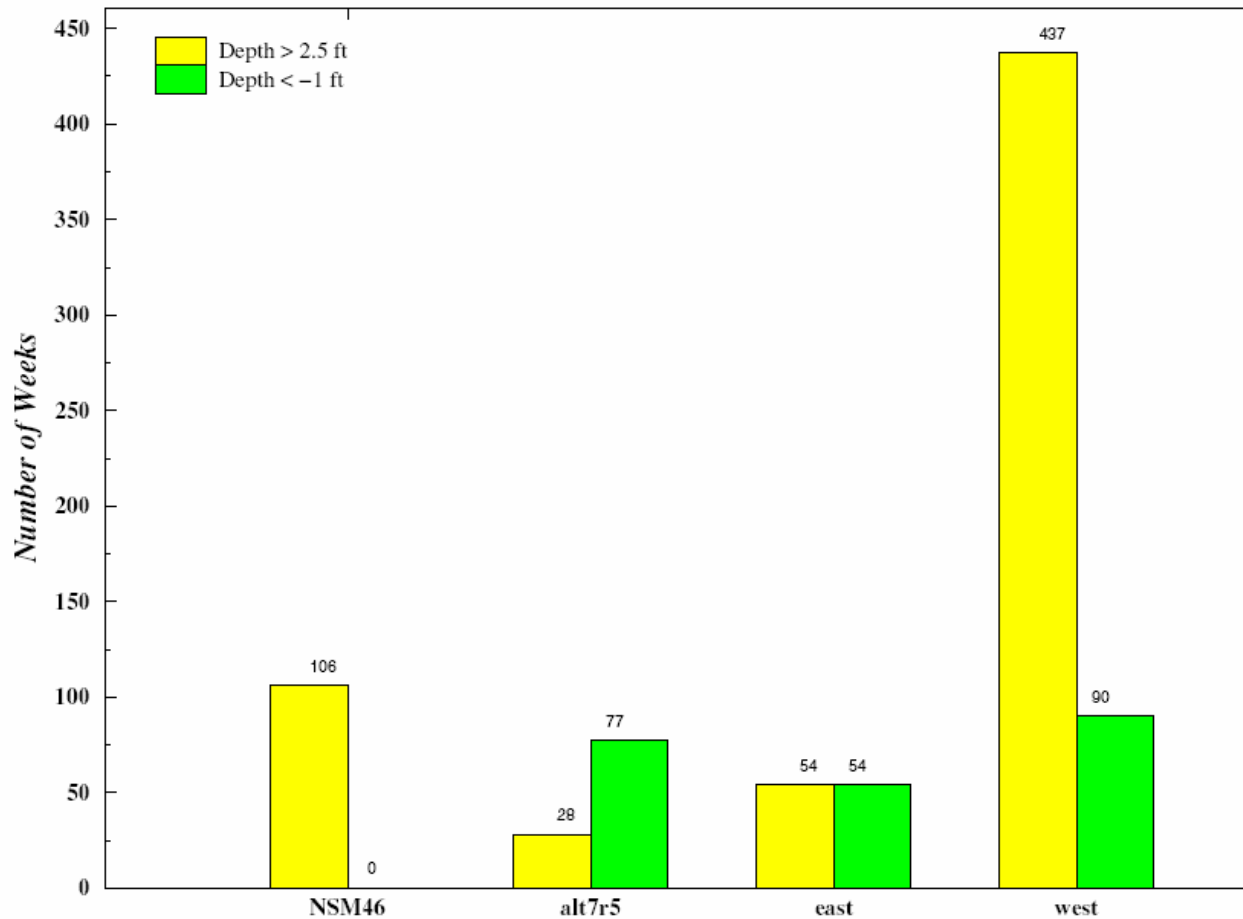


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Tue Jan 4 19:45:40 EST 2005  
For Planning Purposes Only  
SFWMM V5.4.1.1

# Number of Weeks High/Low Water Depth Criteria Exceeded

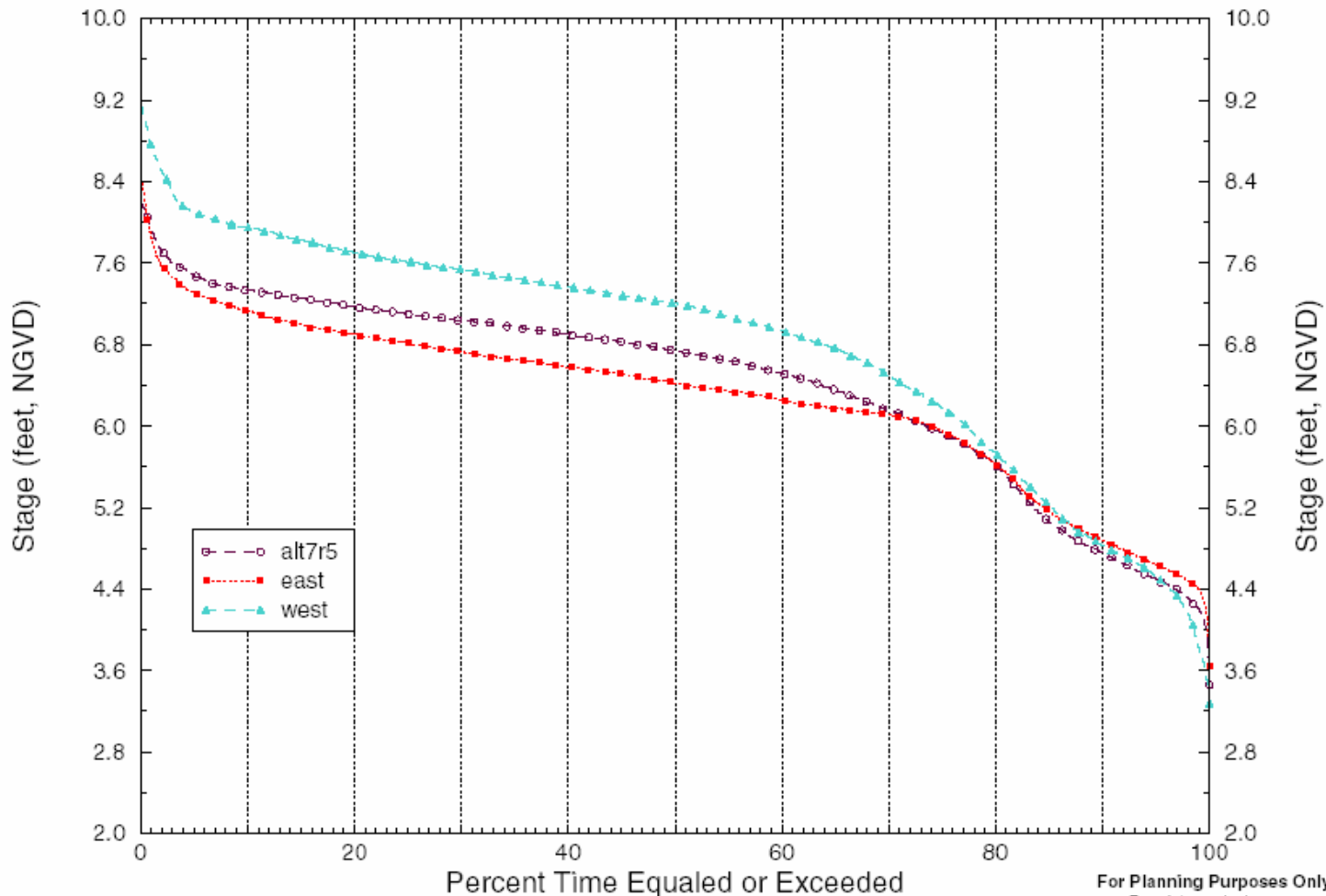
Indicator Region 128 (R23C24-26 R24C25-26 R25C26-26 R26C26-26)



*Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.*

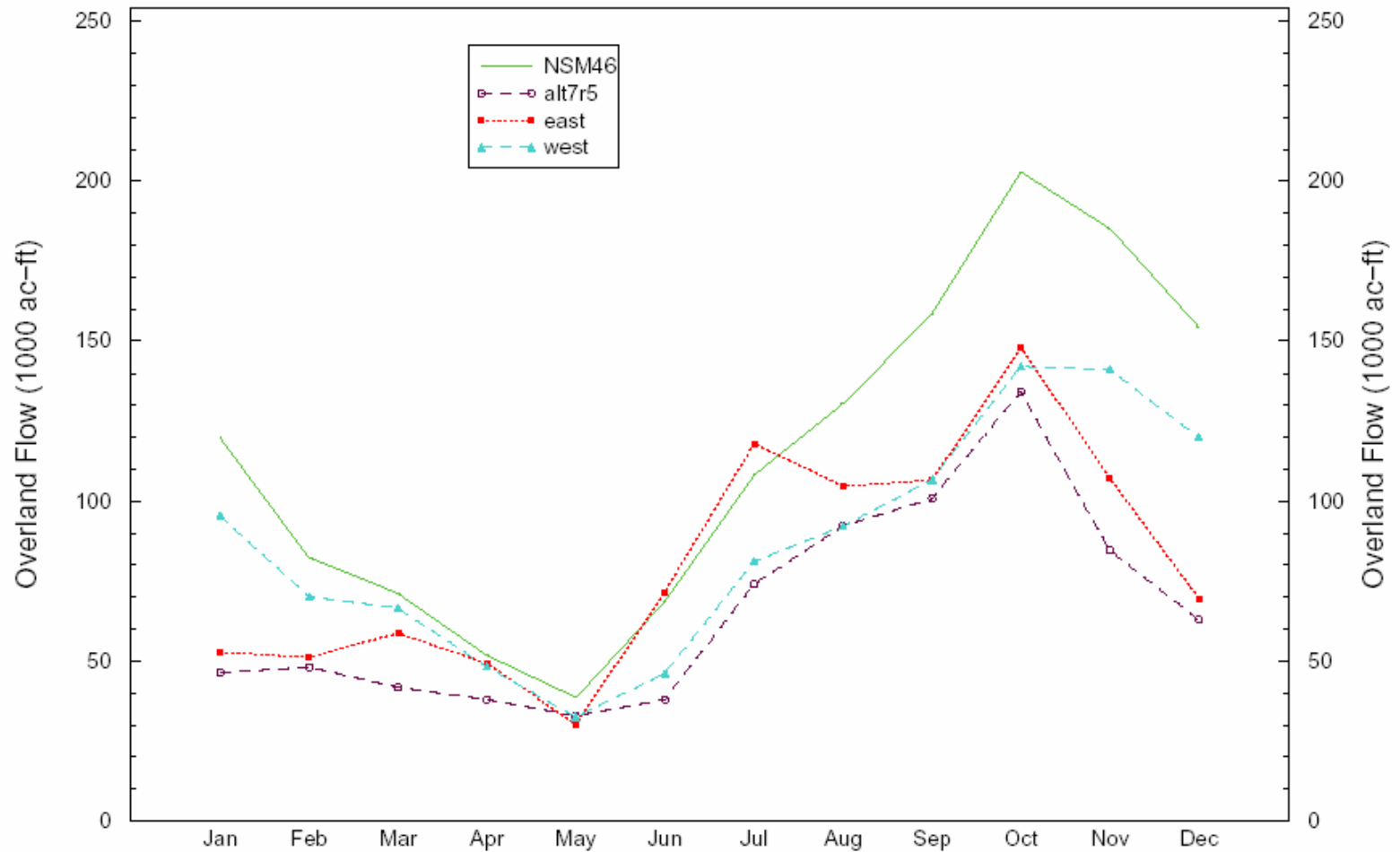
Run date: Tue Jan 4 19:45:40 EST 2005  
For Planning Purposes Only  
SFWMM V5.4.1.1

# Stage Duration Curves for L-30 Canal at S-335



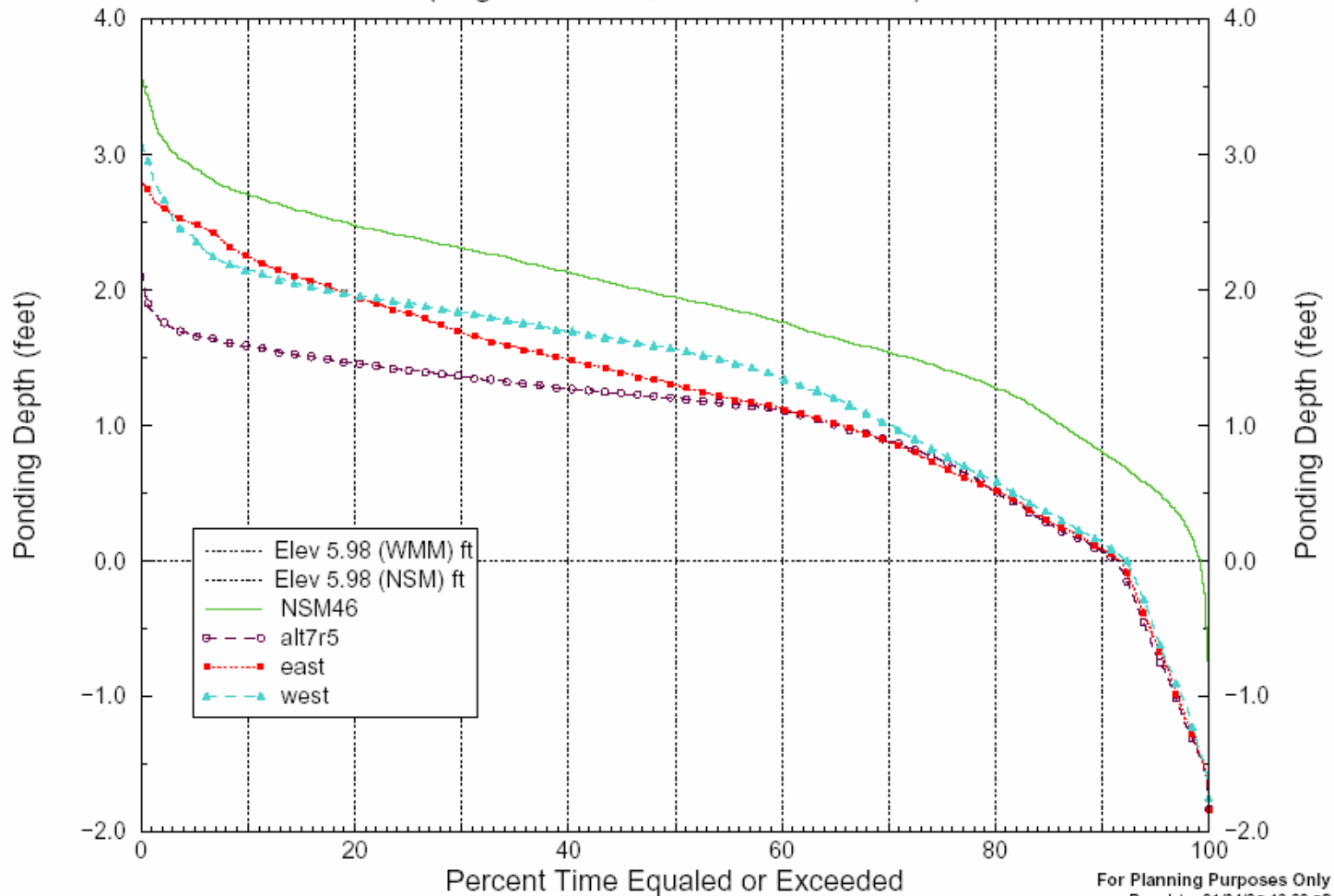
# Average Monthly Overland Flow across Transects 17 & 18 (1965–2000)

Southward flow in Northern ENP (south of Tamiami Trail – east and west of L-67 extension)

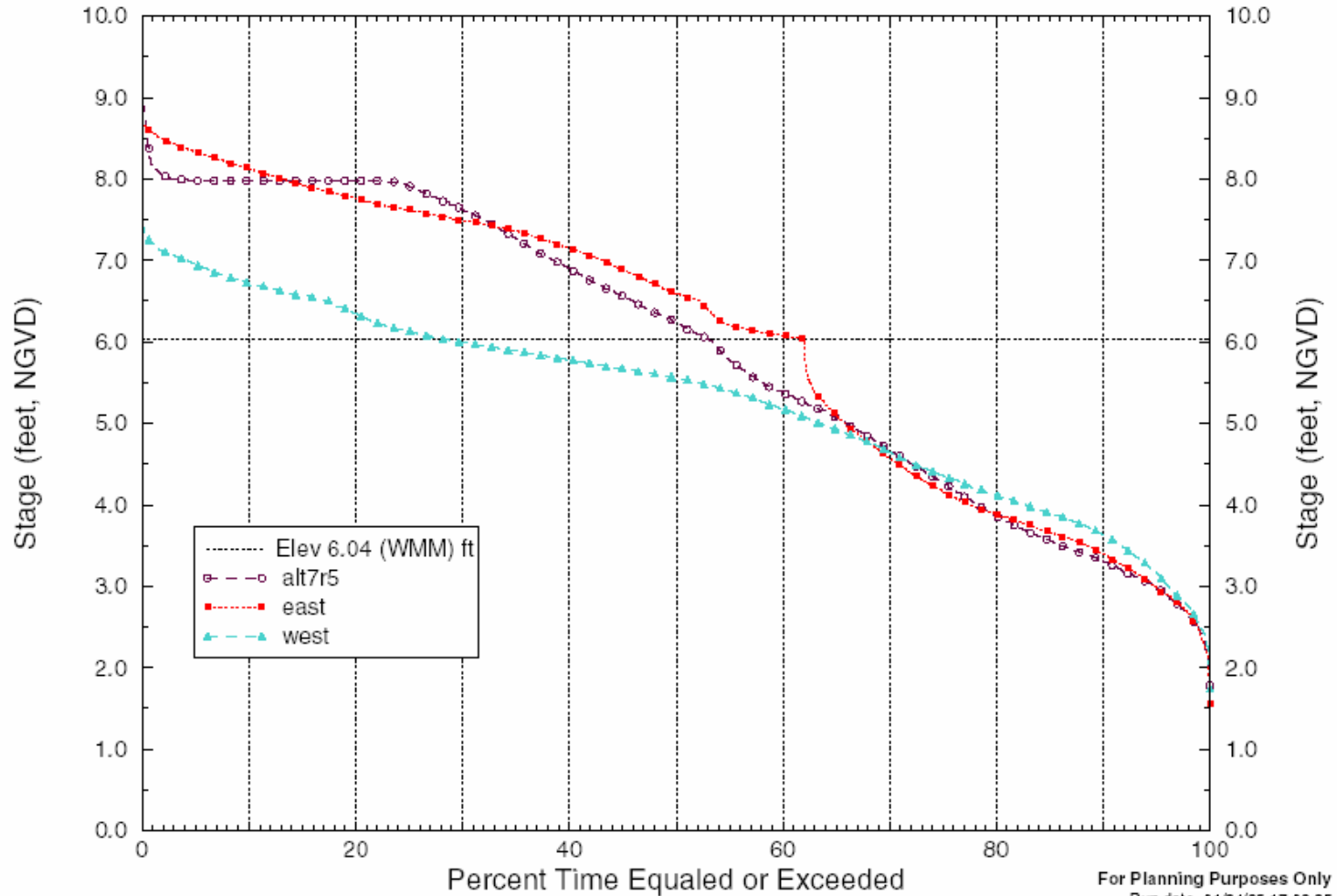


# Normalized Duration Curves for N.E. Shark River Slough

(Gage NESRS-2, Cell Row 21 Col 24)

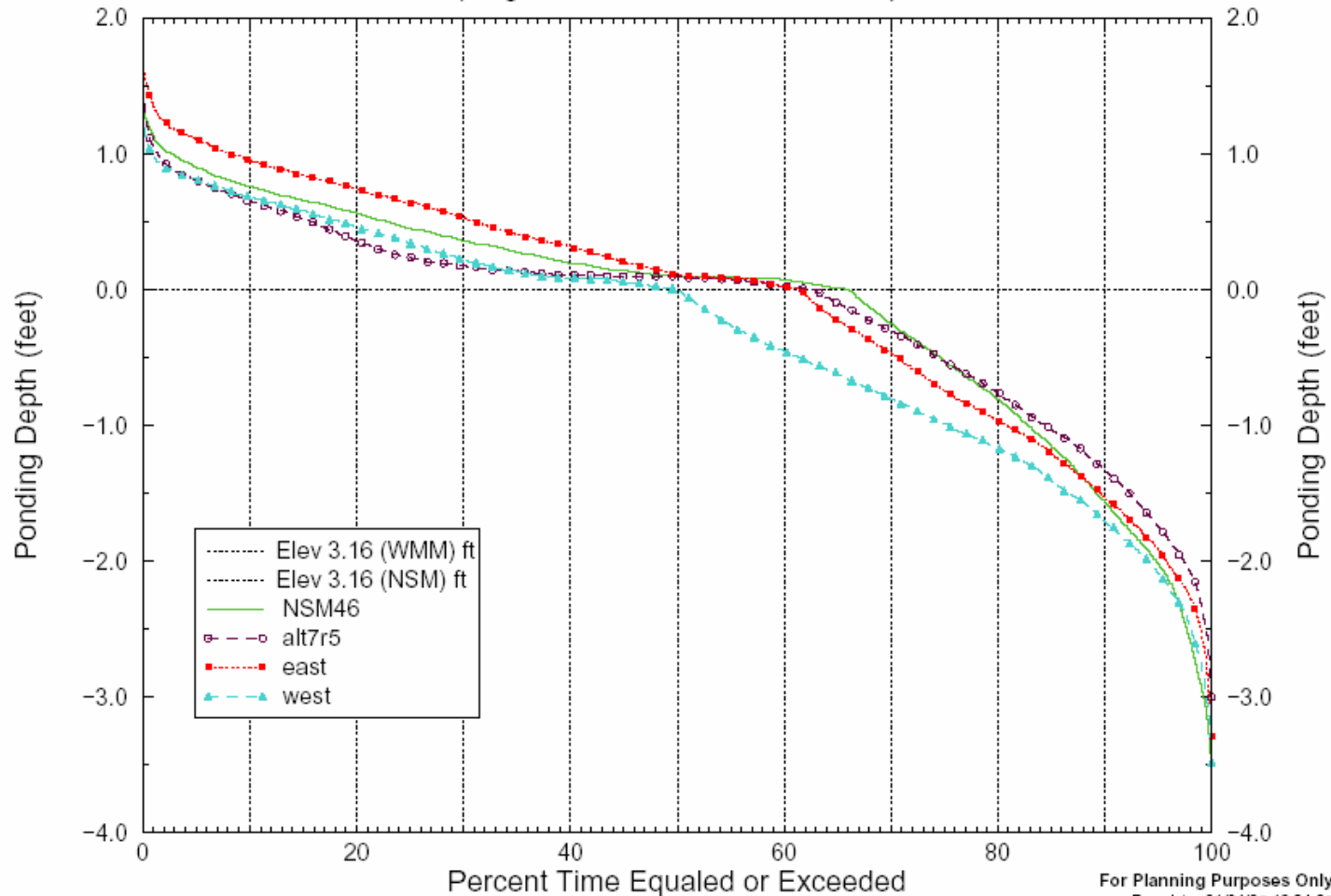


# Stage Duration Curves for S332C Reservoir



# Normalized Duration Curves for Taylor Slough Bridge

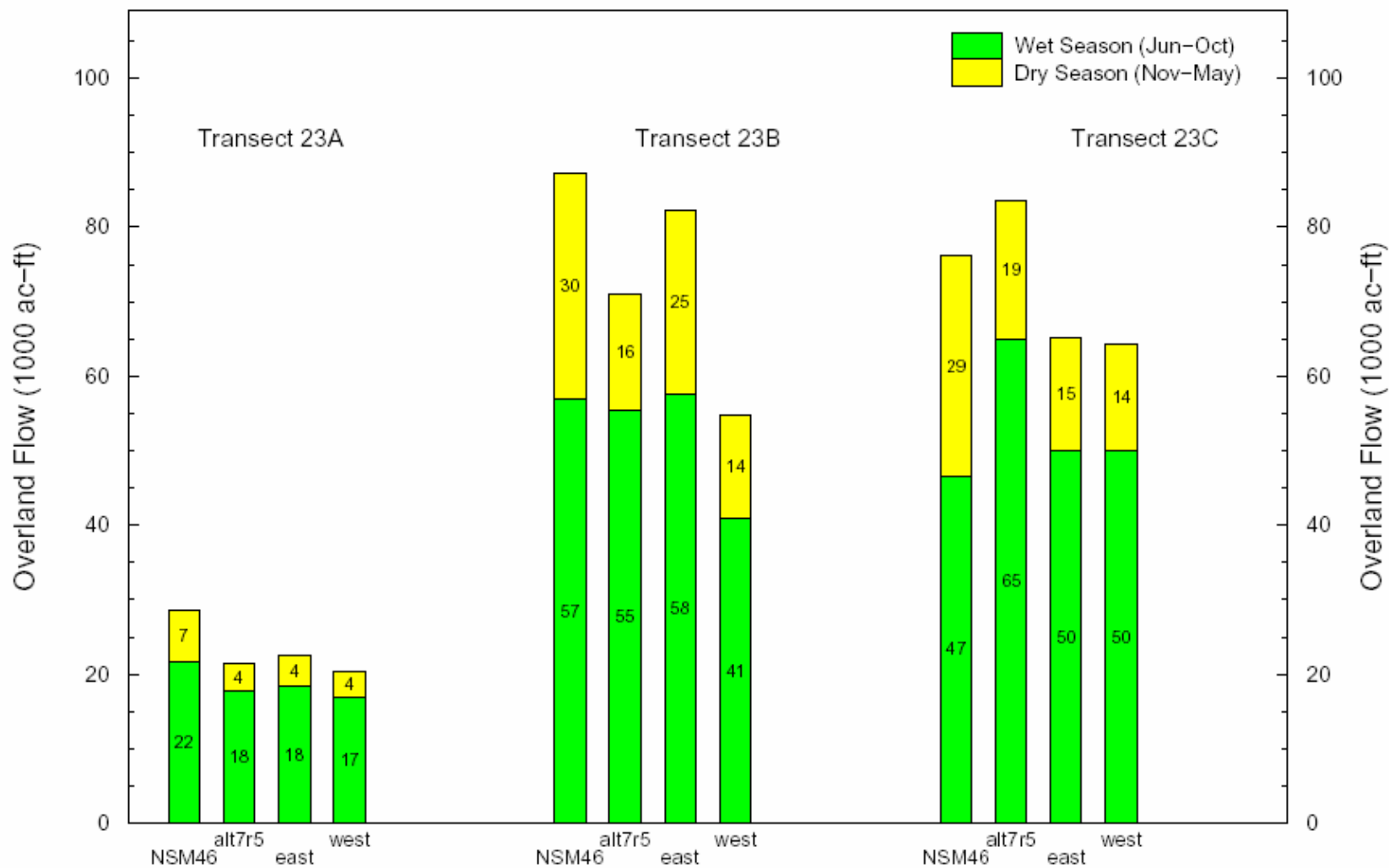
(Gage THSO, Cell Row 09 Col 23)



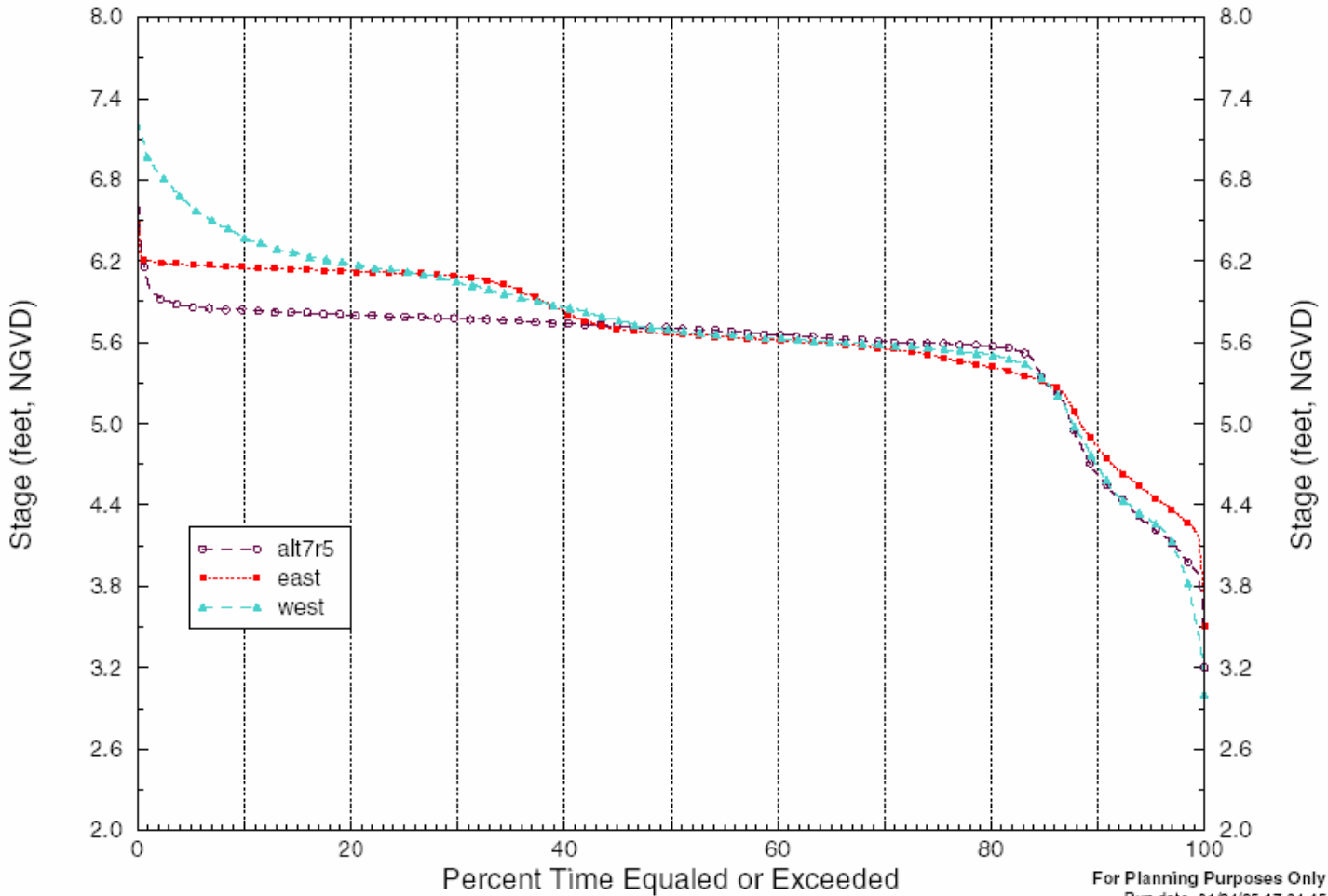
For Planning Purposes Only  
Run date: 01/04/05 18:34:35  
SFWMM V5.4.1.1  
Script used: hyd\_dur.scr, V1.10  
Filename: THSO\_0923\_dai\_stgdur.fig

# Average Annual Overland Flow across Transects 23A, 23B & 23C (1965–2000)

Southward flows in Southern ENP (Craighead Basin, Taylor Slough, & Eastern Panhandle)



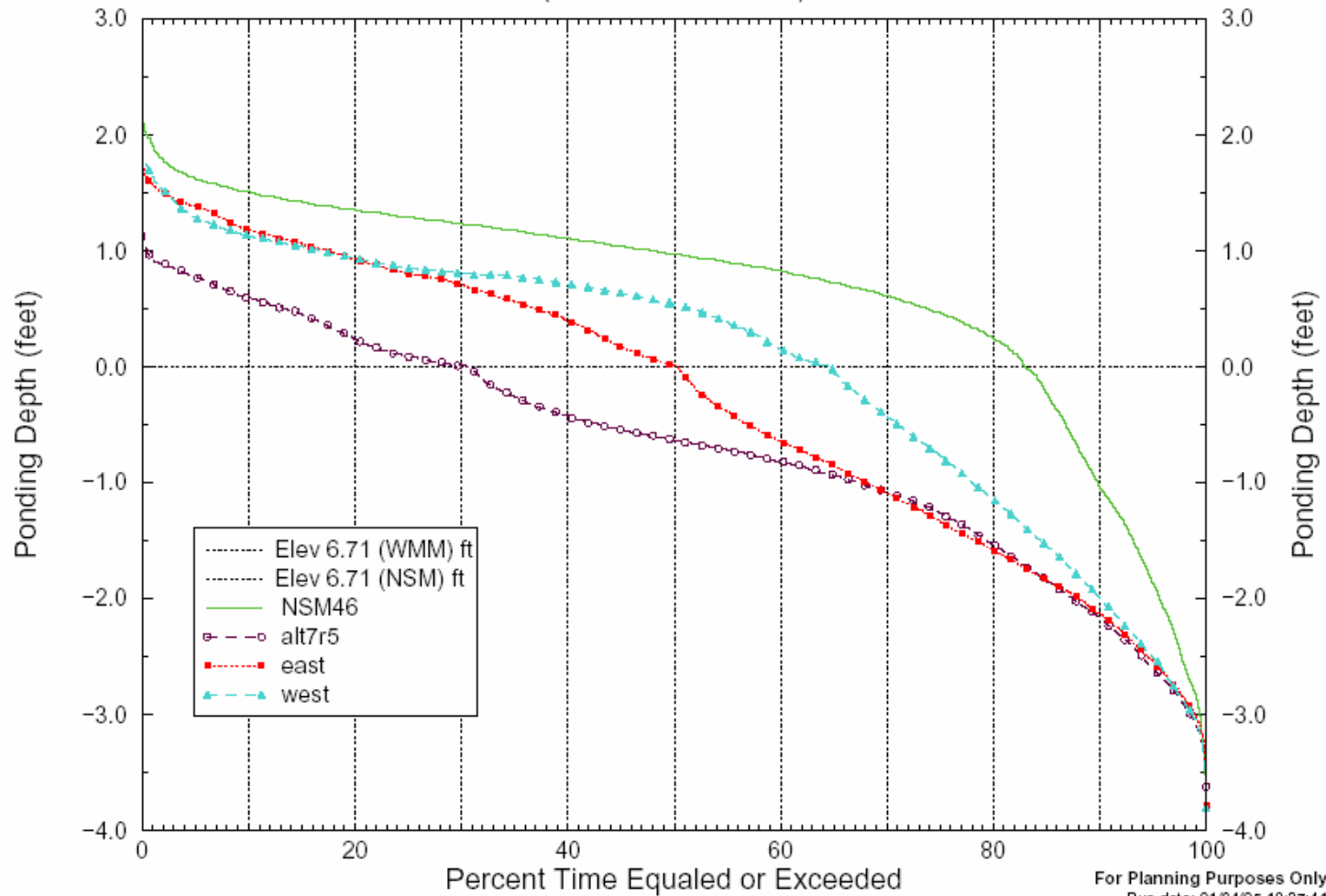
# Stage Duration Curves for L-31N Canal at G-211



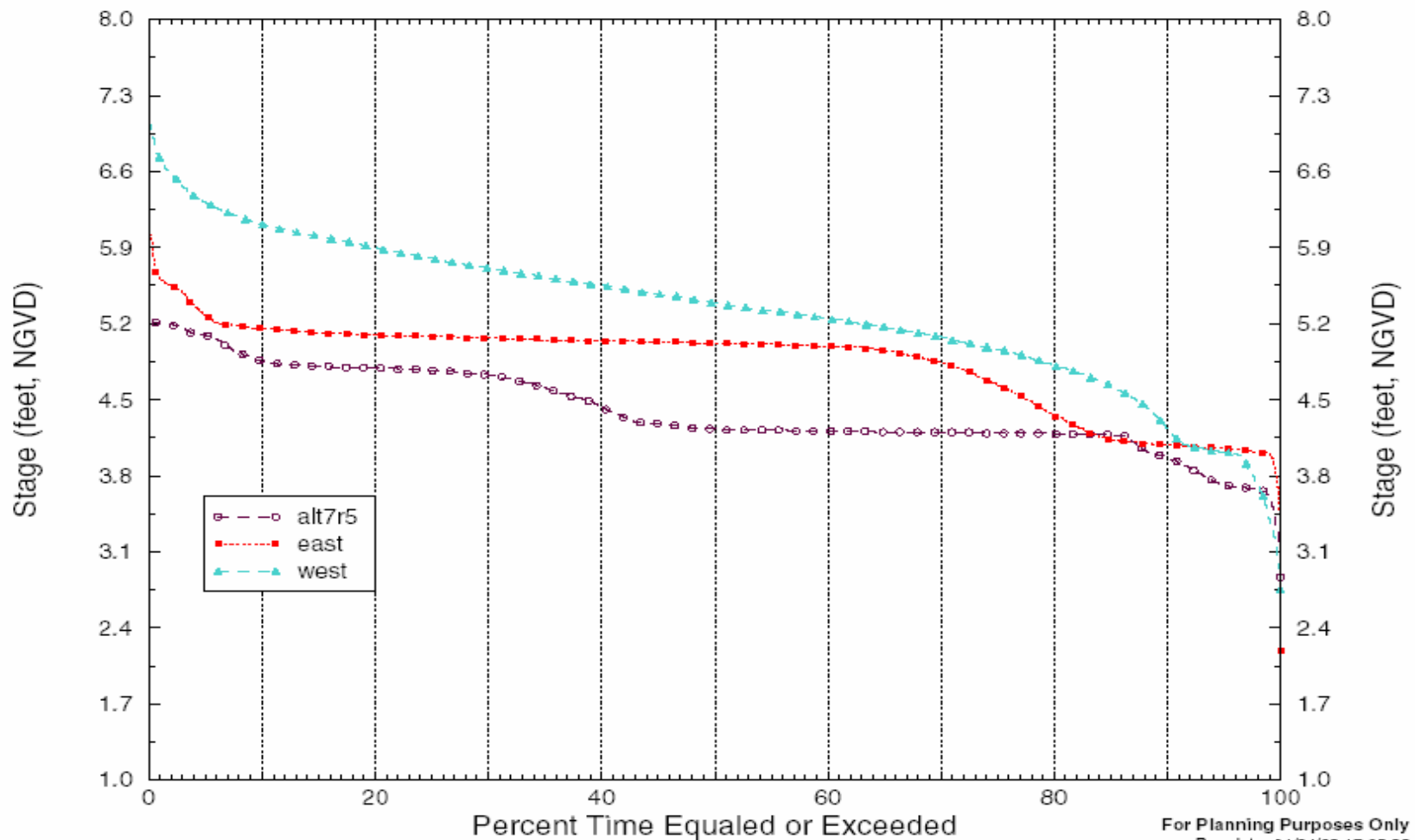
For Planning Purposes Only  
Run date: 01/04/05 17:24:45  
SFWMM V5.4.1.1  
Script used: hyd\_dur.scr, V1.10  
Filename: L-31N\_G-211\_dai\_stgdur.fig

# Normalized Duration Curves for West of 8.5 Square Mile Area

(Cell Row 17 Col 25)

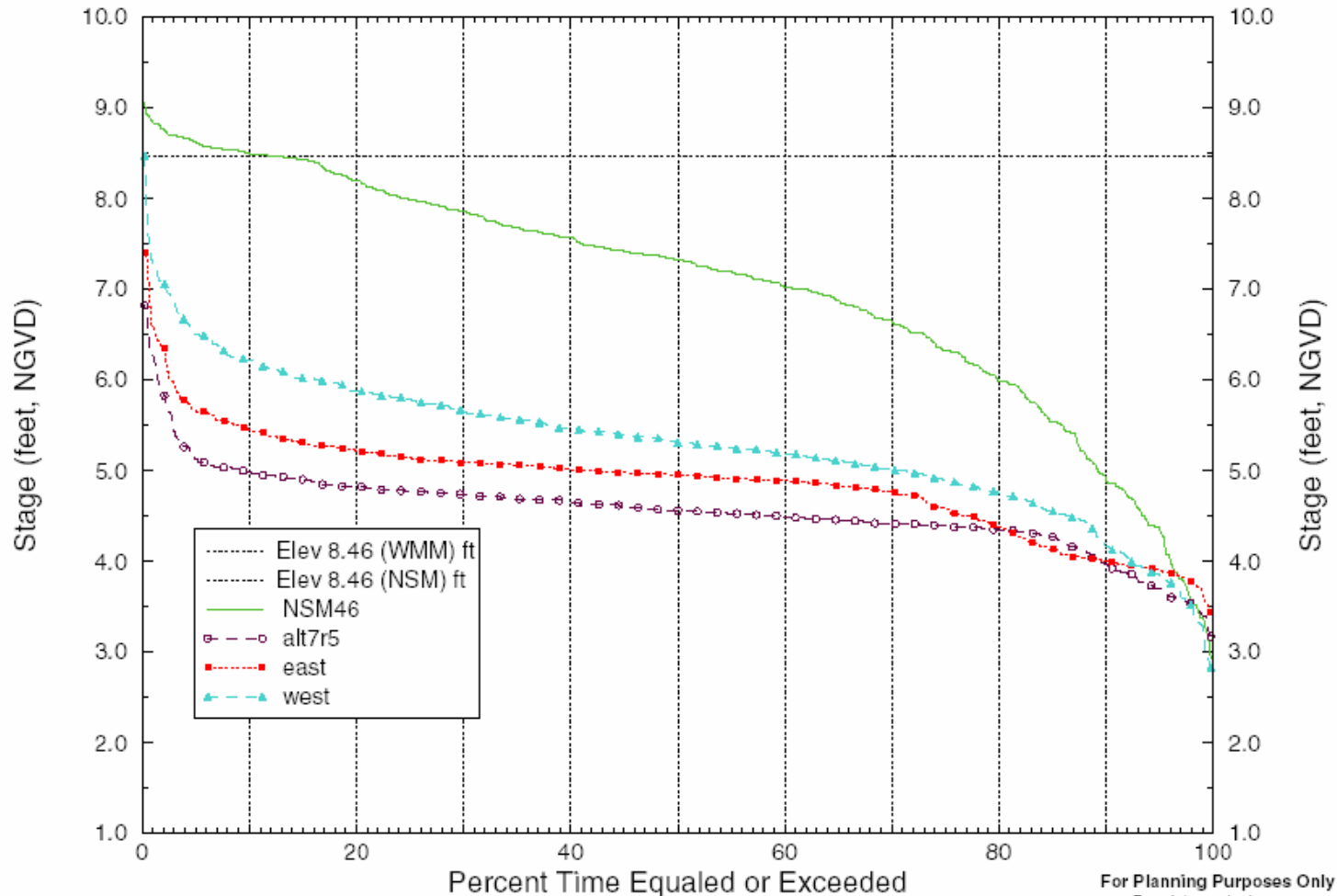


# Stage Duration Curves for L-31N Canal at S-331



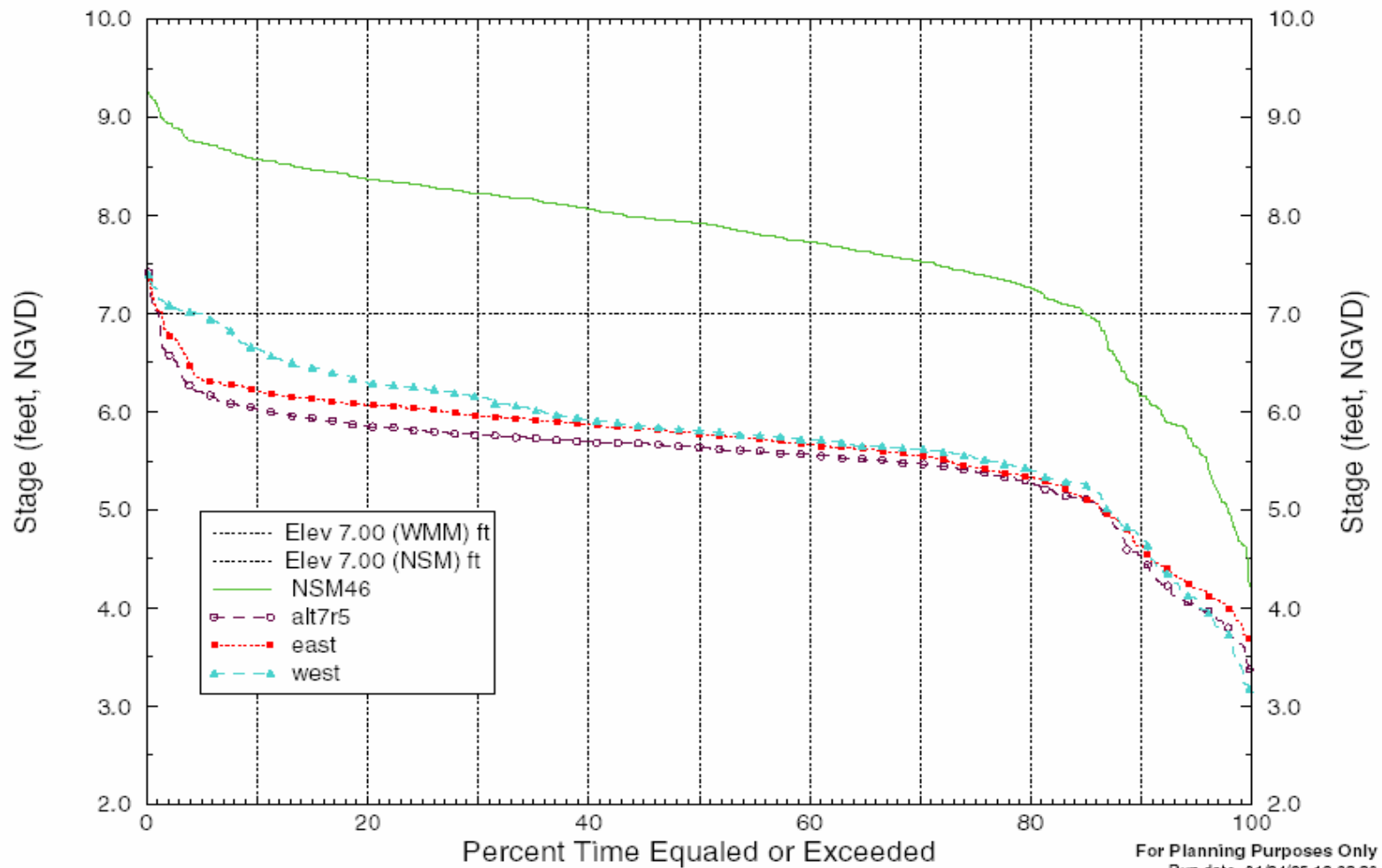
For Planning Purposes Only  
Run date: 01/04/05 17:25:22  
SFWMM V5.4.1.1  
Script used: hyd\_dur.scr, V1.10  
Filename: L-31N\_S-331\_dai\_stgdur.fig

# End of Month Stage Duration Curves for Cell Row 17 Col 27 in the LEC



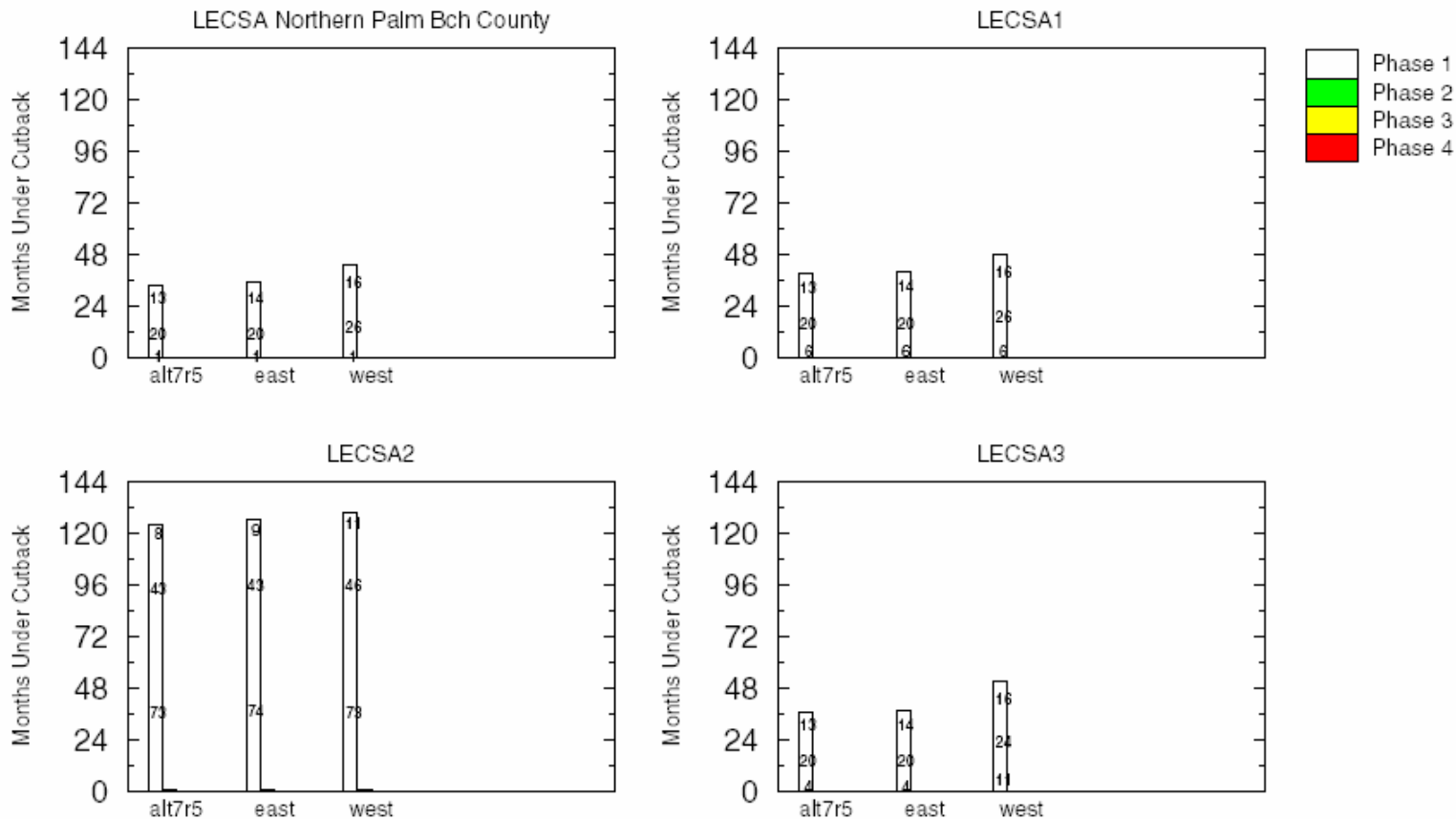
For Planning Purposes Only  
 Run date: 01/04/05 19:23:27  
 SFWMM V5.4.1.1  
 Script used: hyd\_dur.scr, V1.10  
 Filename: 1727\_eom\_stgdur.fig

# End of Month Stage Duration Curves for Cell Row 19 Col 27 in the LEC



For Planning Purposes Only  
 Run date: 01/04/05 19:23:39  
 SFWMM V5.4.1.1  
 Script used: hyd\_dur.scr, V1.10  
 Filename: 1927\_eom\_stgdur.fig

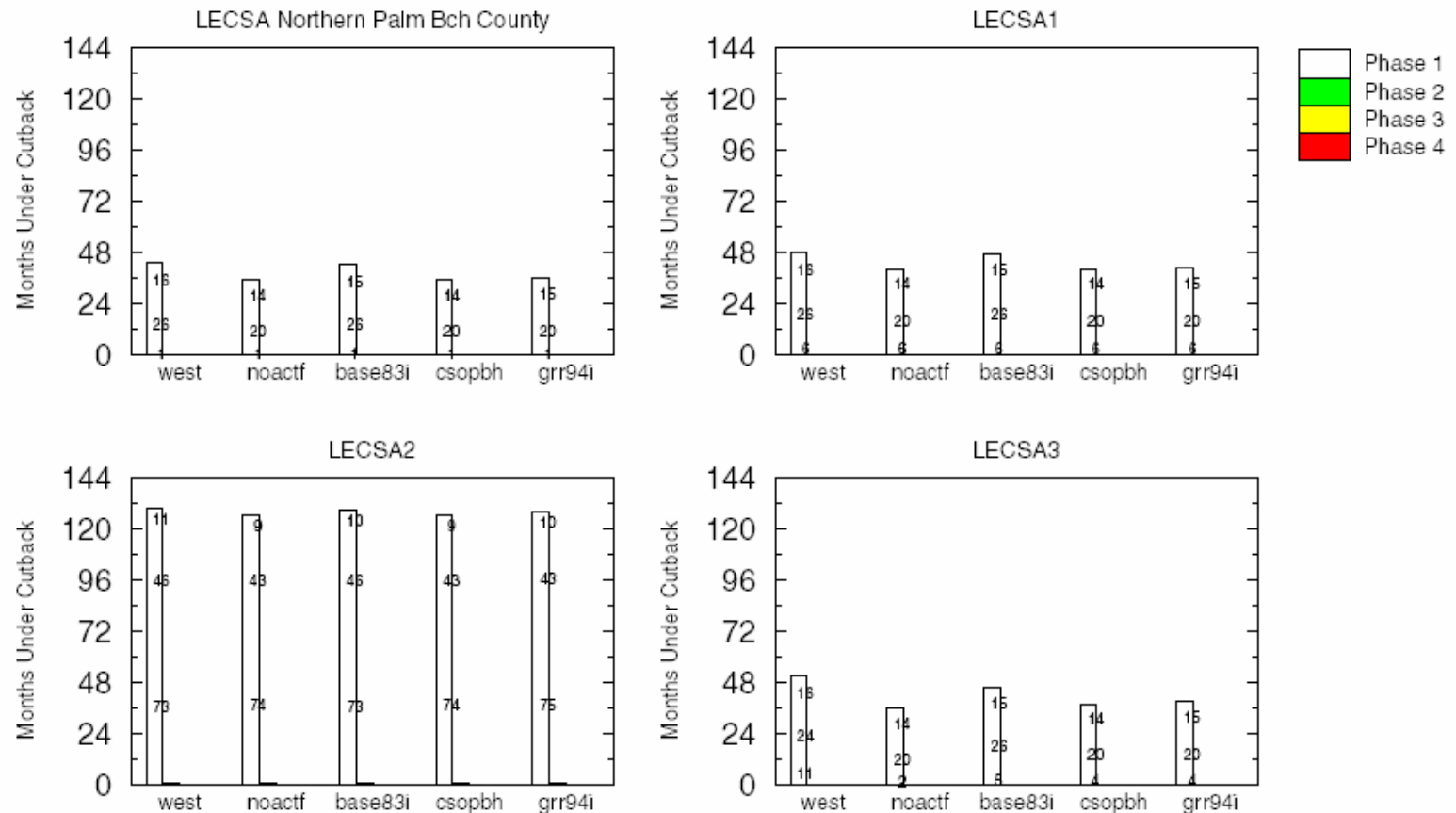
# Number of Months of Simulated Water Supply Cutbacks for the 1965 – 2000 Simulation Period



Note: Phase 1 water restrictions could be induced by a) Lake stage in Supply Side Management Zone (indicated by upper data label), For Planning Purposes Only  
 b) Local Trigger well stages (lower data label), and c) Dry season criteria (indicated by middle data label).  
 Run date: 01/04/05 20:42:53

SFWMM V5.4.1.1  
 Script used: lec\_cutbacks\_mon\_bar.scr, V1.2  
 Filename: lec\_cutbacks\_mon\_bar.fig

# Number of Months of Simulated Water Supply Cutbacks for the 1965 – 2000 Simulation Period



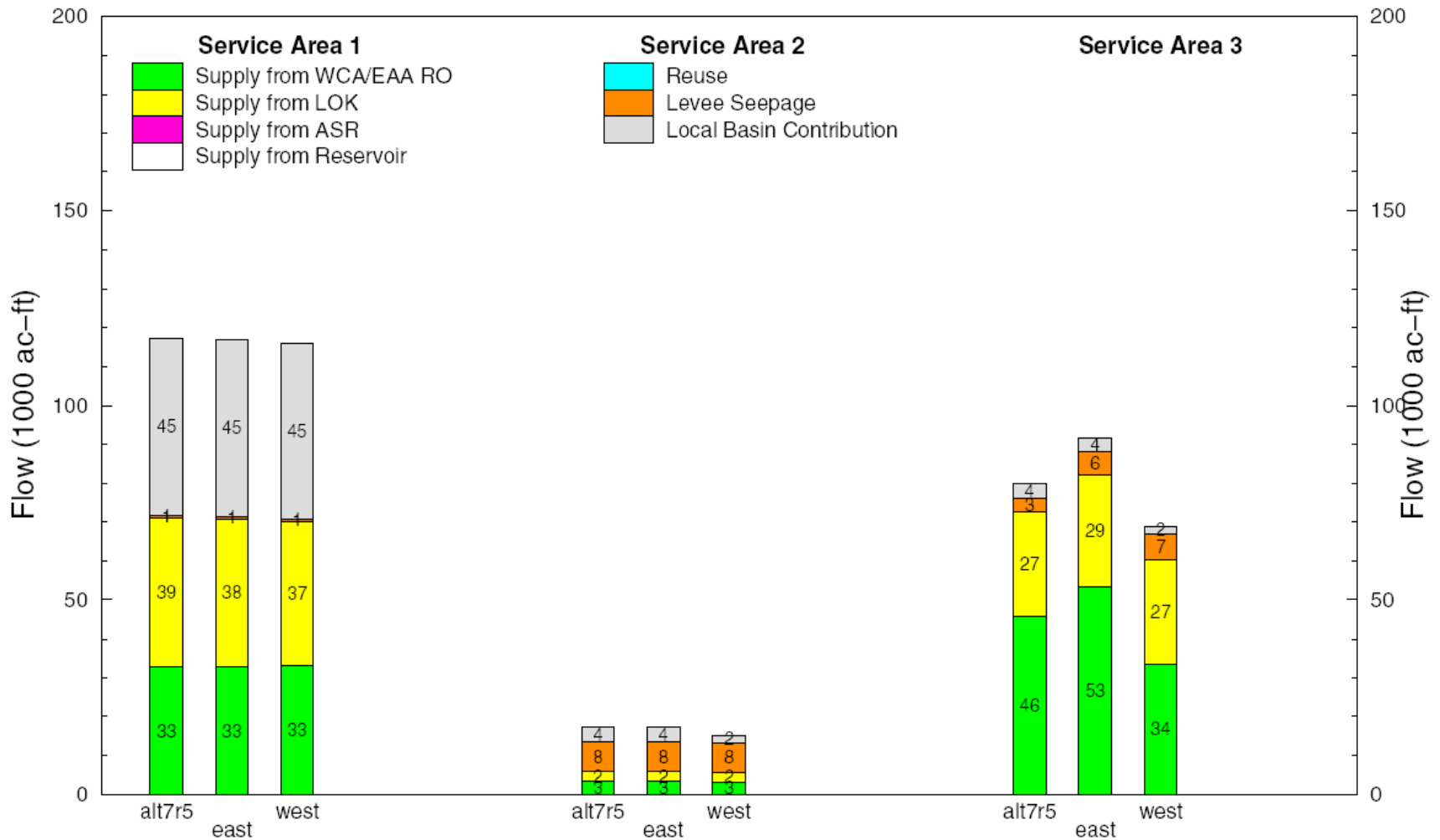
Note: Phase 1 water restrictions could be induced by a) Lake stage in Supply Side Management Zone (indicated by upper data label), For Planning Purposes Only  
b) Local Trigger well stages (lower data label), and c) Dry season criteria (indicated by middle data label).  
Run date: 01/04/05 22:29:35

SFWM V5.4.1.1

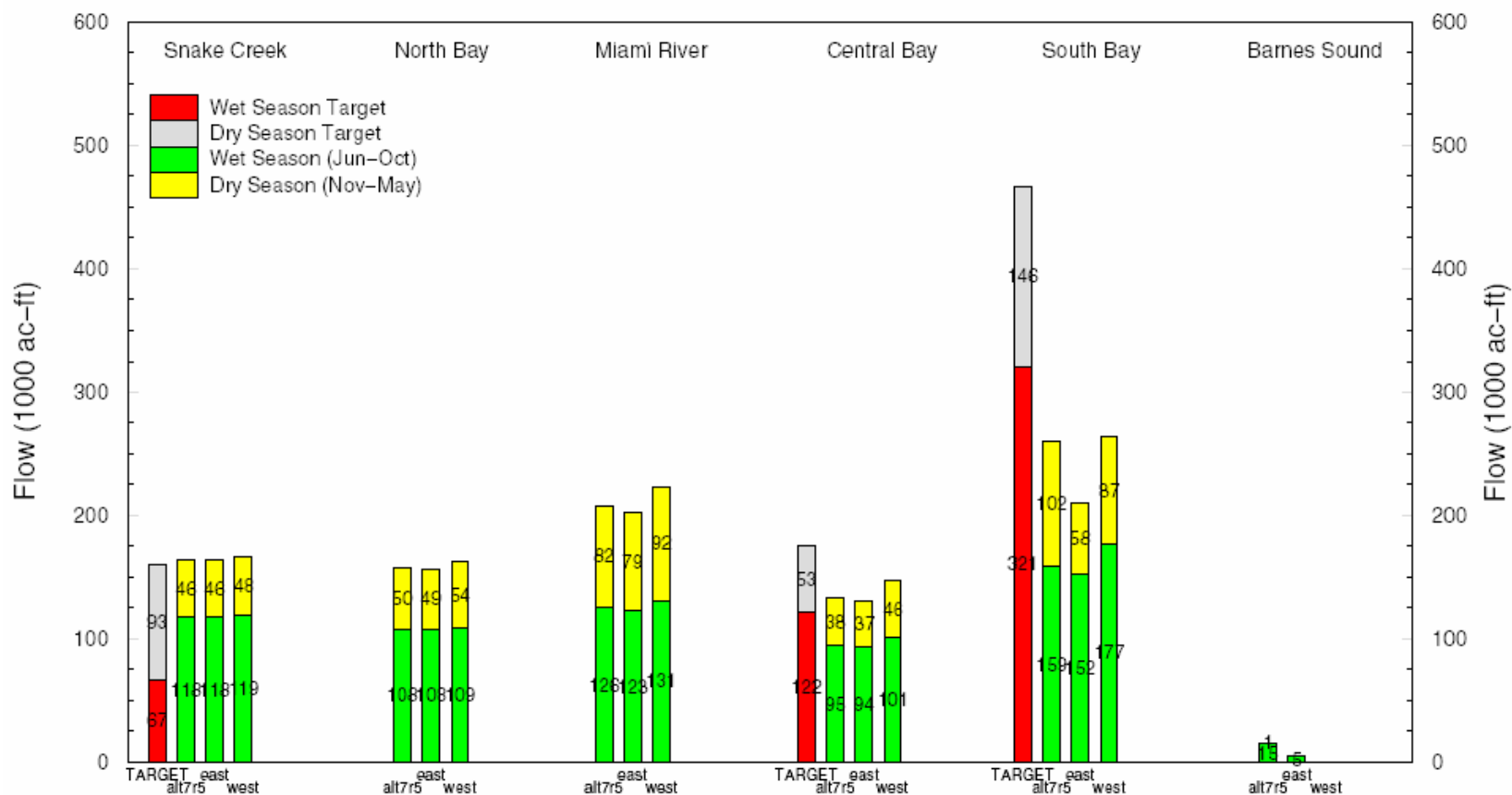
Script used: lec\_cutbacks\_mon\_bar.scr, V1.2

Filename: lec\_cutbacks\_mon\_bar.fig

# Average Annual Regional System Water Supply Deliveries to LEC Service Areas for the 1965 – 2000 simulation



# Simulated Mean Seasonal Structure Flows Discharged into Biscayne Bay for 1965 – 2000



Snake Creek=S29; North Bay=S28+S27; Miami River=S26+S25B+S25; Central=G93+S22; South=S123+S21+S21A+S20F+S20G; Barnes Sound=S197

Targets for Central & South Bay reflect a 30% increase in mean annual dry season flows over the 2000 Base  
 Targets for Snake Creek reflect a minimum monthly flow volume of 13,300 ac-ft multiplied  
 (by 5 months for wet season and by 7 months for dry season) to maintain salinity levels below 20 ppt.

**RECOVER Performance Measure**

For Planning Purposes Only  
 Run date: 01/04/05 20:13:43  
 SFWMM V5.4.1.1  
 Script used: biscayne\_scr, V1.11  
 Filename: biscayne\_flow\_bar.fig