



# **CSOP**

## **MODEL EVALUATION AND RECOMMENDATIONS**

Revised on May 9, 2005

## **PURPOSE OF THE PRESENTATION**

- **REVIEW THE 2X2 MODEL RESULTS FOR THE EAST AND WEST BOOKENDS, ALTERNATIVE 3 AND ALTERNATIVE 4.**
- **FOCUS: CHECK FOR POSSIBLE IMPACTS TO FLOOD LEVELS OF SERVICE (LOS) IN DEVELOPED AREAS (URBAN AND AGRICULTURAL).**
- **DEVELOP RECOMENDATIONS TO PREVENT LOSS OF FLOOD LEVEL OF SERVICE FOR ALTERNATIVE 5.**

# **AVAILABLE MODEL RESULTS**

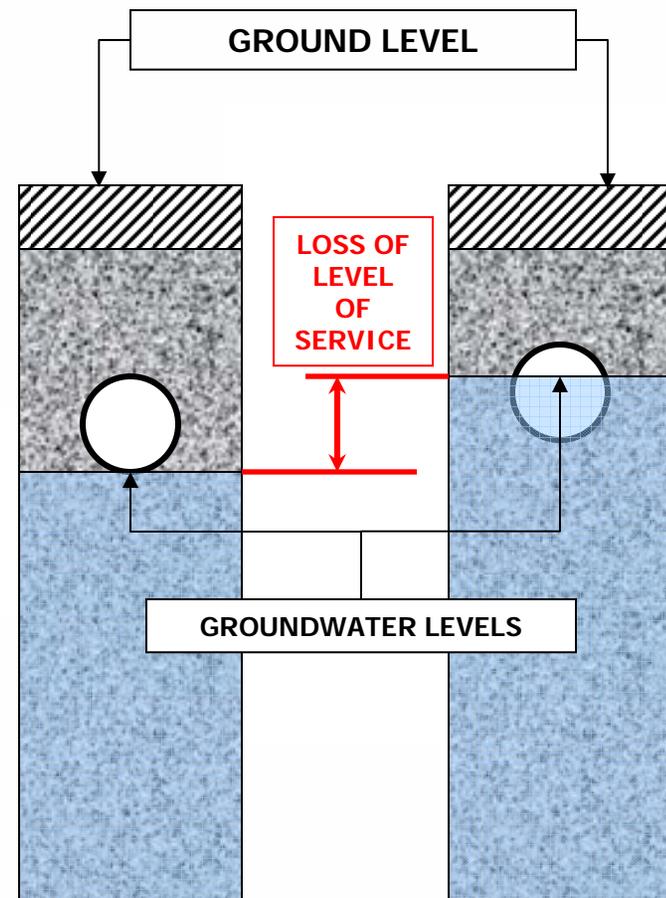
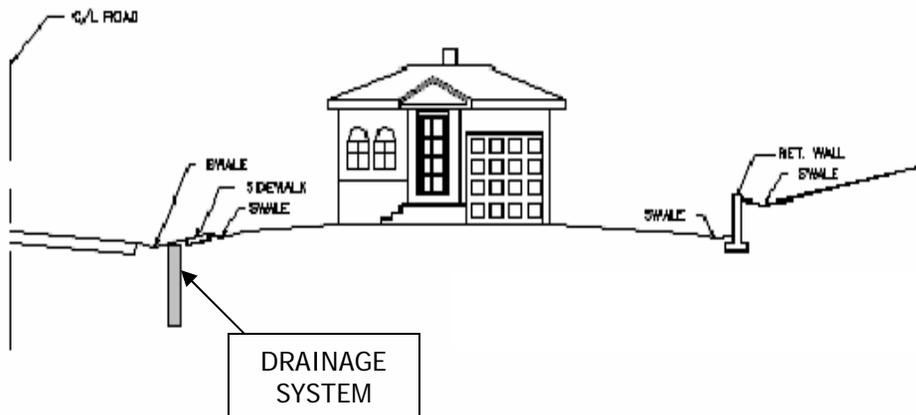
POSTED AT CSOPWEB – May 3, 2005

ALTERNATIVE 1 (EAST BOOKEND), ALTERNATIVE 2(WEST BOOKEND), ALTERNATIVE 3,  
ALTERNATIVE 4 AND ALTERNATIVE 7R5(EXISTING CONDITIONS)

- **ANY MODEL IS LIMITED BY THE QUALITY OF THE DATA AVAILABLE AND ASSUMPTIONS MADE.**
- **AS A RESULT ONLY A COMPARATIVE ANALYSIS WAS CONDUCTED, BY EVALUATING EACH ALTERNATIVE PERFORMANCE AGAINST ALTERNATIVE 7R5 (EXISTING CONDITIONS RUN).**
- **THIS COMPARATIVE PROCESS REDUCES THE INFLUENCE OF THE MODEL UNCERTAINTIES IN THE DECISION MAKING PROCESS.**

## HOW GROUNDWATER LEVELS AFFECT DRAINAGE PERFORMANCE

- TYPICAL DRAINAGE SYSTEM
- 3 TO 4 MILLION LINEAR FEET OF DRAINAGE NETWORK CANNOT BE RETROFITTED

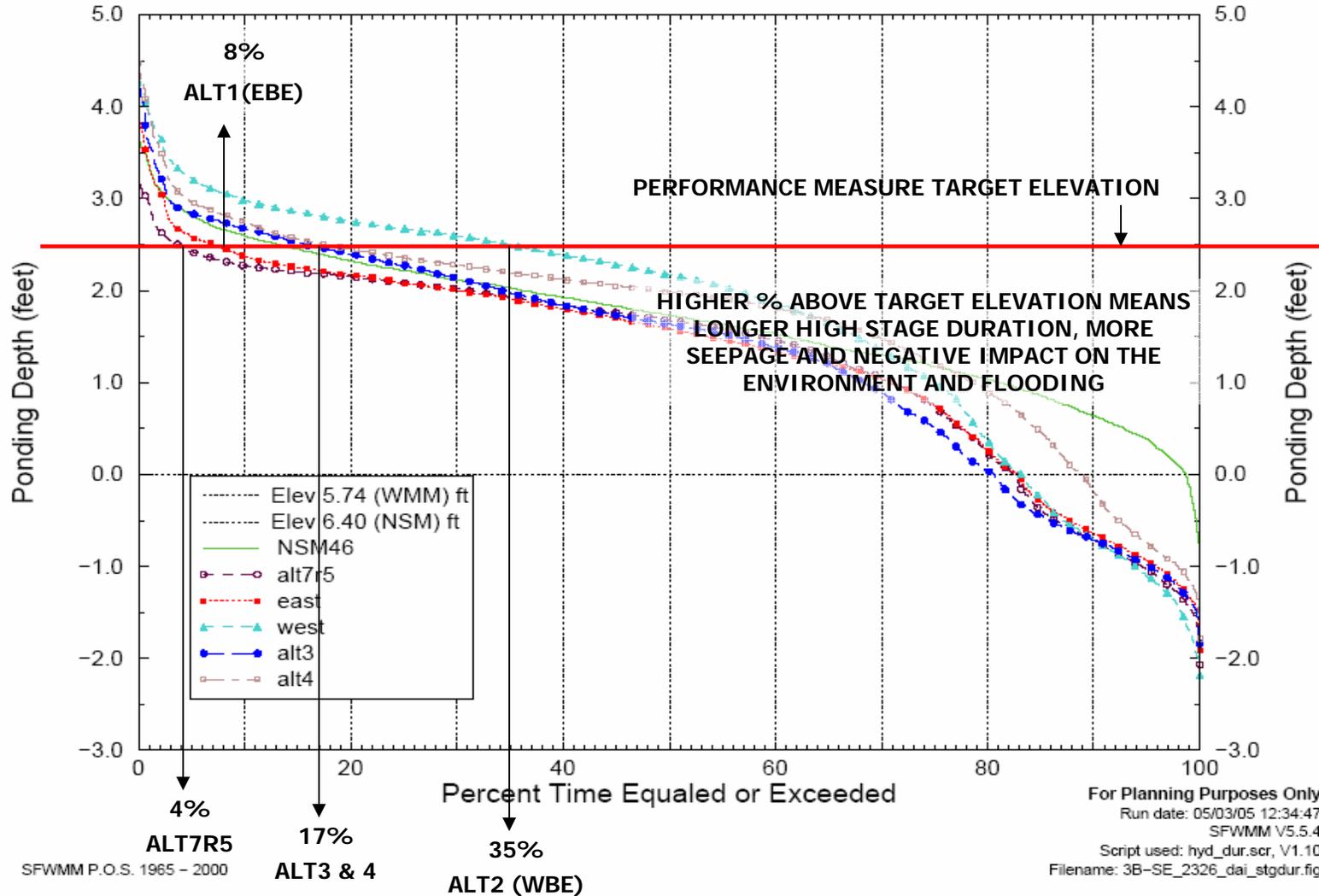




# STAGES ON WCA-3B – DEPTH 2.5 FEET

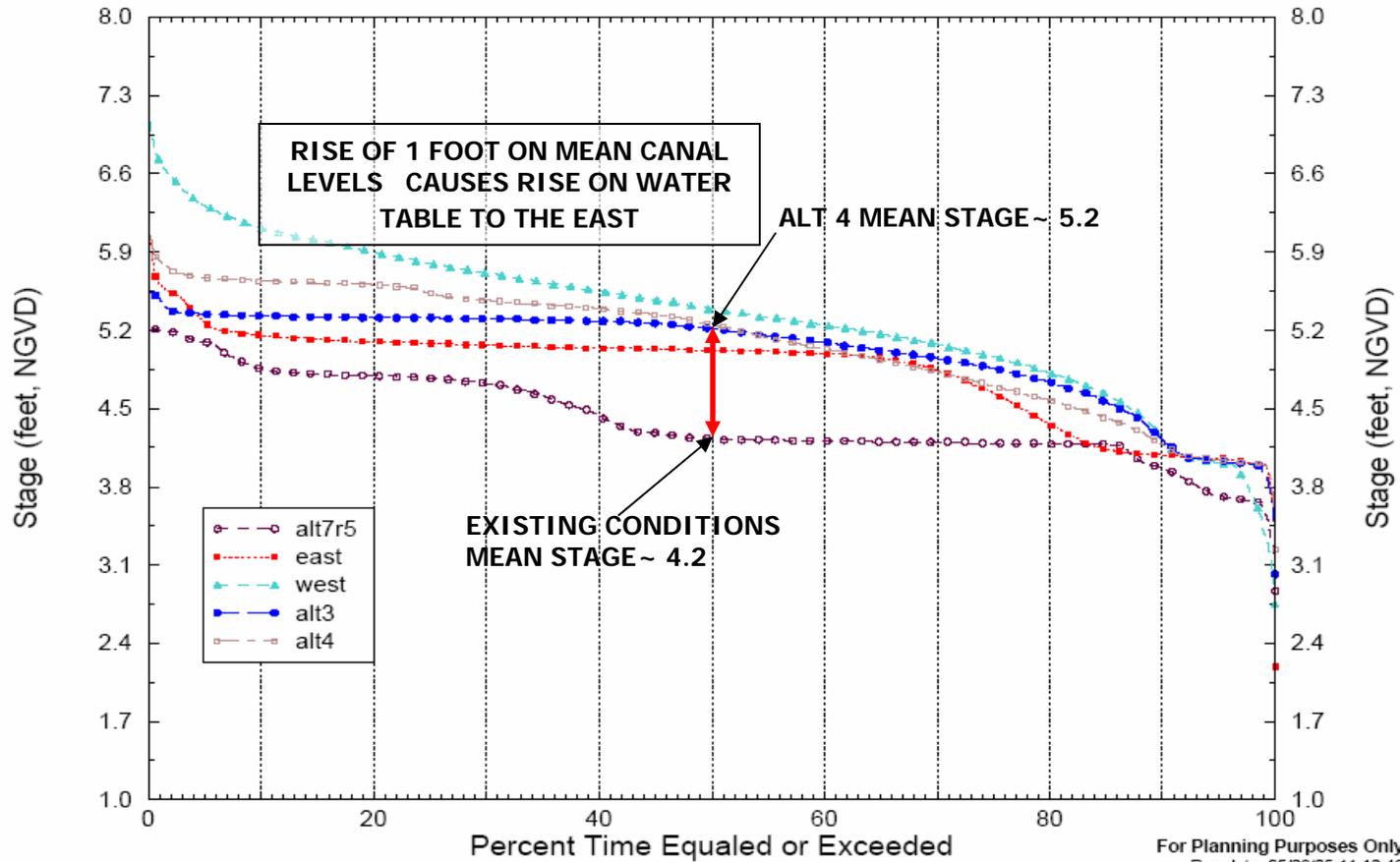
## Normalized Duration Curves for South End of WCA-3B

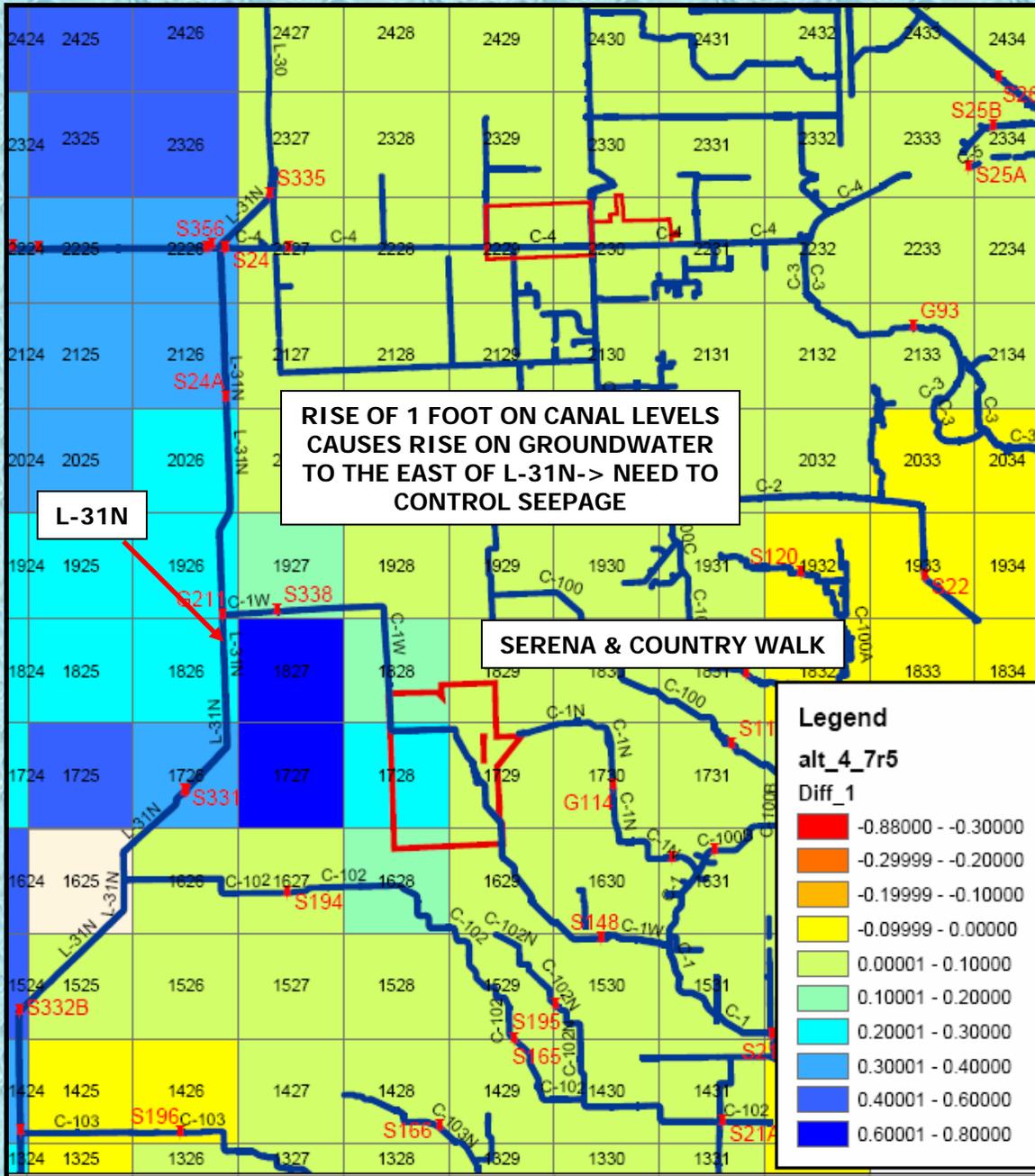
(Gage 3B-SE, Cell Row 23 Col 26)



# RISE ON L-31N CANAL STAGES - ALTERNATIVE 4 – S-331

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





**SERENA AREA AND COUNTRY WALK 2X2 RESULTS WATER TABLE STAGE DIFFERENCE**

**ALTERNATIVE 4 – ALT 7R5**

**IN THE SERENA & COUNTRY WALK AREA, THERE IS A TENDENCY FOR INCREASE OF GROUNDWATER LEVELS WHEN COMPARED TO ALT7R5 (“EXISTING CONDITIONS”)**

**NOTE ON LEGEND:**  
POSITIVE NUMBERS MEAN INCREASE ON WATER LEVELS WHEN COMPARED TO MODELED EXISTING CONDITIONS (ALT7R5)

## **ALTERNATIVE 4 - CONCLUSIONS**

- **IN URBAN AREAS (SERENA LAKES AND COUNTRY WALK) GROUNDWATER LEVELS INCREASE APPROXIMATELY 2 INCHES WHEN COMPARED TO ALTERNATIVE 7R5 ("EXISTING CONDITIONS").**
- **MODEL OUTPUT INDICATES POTENTIAL FOR HIGHER GROUNDWATER LEVELS EAST OF THE L-30, L-31N AND L-31W CANALS. THEREFORE THIS ALTERNATIVE IS SLIGHTLY WORSE IN TERMS OF FLOODING THAN ALTERNATIVE 3, WORSE THAN EAST BOOKEND (ALTERNATIVE 1) BUT IS AN IMPROVEMENT WHEN COMPARED TO WEST BOOKEND (ALTERNATIVE 2).**
- **A 1-FOOT RISE ON THE CANAL LEVELS ON THE L-31N CANAL BETWEEN G-211 AND S-331, WHEN COMPARED TO EXISTING CONDITIONS (ALT7R5), CAN RESULT IN FLOODING TO THE EAST, DUE TO SEEPAGE RESULTING IN HIGHER GROUNDWATER STAGES.**
- **MODEL RUNS INDICATE THAT UNACCEPTABLE HIGH WATER LEVELS OCCUR 17% OF THE TIME IN THE WCA 3B, IN THE VICINITY OF THE L-30N CANAL; UNDER ALT7R5 (EXISTING CONDITIONS) THOSE LEVELS OCCUR 4% OF THE TIME.**

## **ALTERNATIVE 5 – WISH LIST FOR MODELING**

- **ADEQUATE CONVEYANCE CAPACITY UNDER TAMiami TRAIL TO INCLUDE EVALUATION TO INCREASE S-356 PUMP STATION CAPACITY, TO REDUCE HIGH STAGES IN WCA-3B**
- **CONTROL FOR SEEPAGE IS NEEDED TO PREVENT LOSS OF LEVEL OF SERVICE TO THE EAST, FROM S-335 TO S-331, PERHAPS INCLUDING MODIFICATION OF S-331'S OPERATIONAL CRITERIA TO AVOID HIGH STAGES IN THE L-31 CANAL**
- **PASSIVE CONTROL STRUCTURES ARE NEEDED ON L-67 CANAL TO AVOID EXTREME HIGH STAGES IN WCA-3B**
- **NO FLOOD IMPACTS TO URBAN/AGRICULTURAL AREAS**

## **CLOSING STATEMENT**

**DUE TO MODEL LIMITATIONS AND THE POTENTIAL FOR FLOOD IMPACTS, MIAMI-DADE DERM REQUESTS THAT THE CSOP STRUCTURES BE PLACED IN OPERATION AFTER DETERMINATION OF OPTIMUM STAGES, BASED ON FIELD TESTS, TO MAXIMIZE BENEFITS FOR THE ENP WITHOUT IMPACTS TO FLOOD LEVELS OF SERVICE IN URBAN AREAS**