



Savings Clause Evaluation Flood Control/Water Supply

South Florida Water Management District
May 9, 2018



Water Supply Evaluation

- **Three types of water restriction occurrences**
 - **Locally Triggered**
 - **Regionally Triggered (Lake Okeechobee)**
 - **Dry season continuation restrictions**
- **Local triggers**
 - **Based on water levels at specific trigger wells**
 - **Reduce risk of saltwater intrusion**
- **Regional triggers are based on Lake Okeechobee stage**

Water Supply Evaluation

- **Dry season continuation: If water restrictions are triggered, the area stays on restrictions through the end of May**
- **Project does not impact Martin County water suppliers due to location of project features**
- **Project does not impact regional triggers**
- **One groundwater well (PB-789) triggers in Palm Beach County in multiple years**

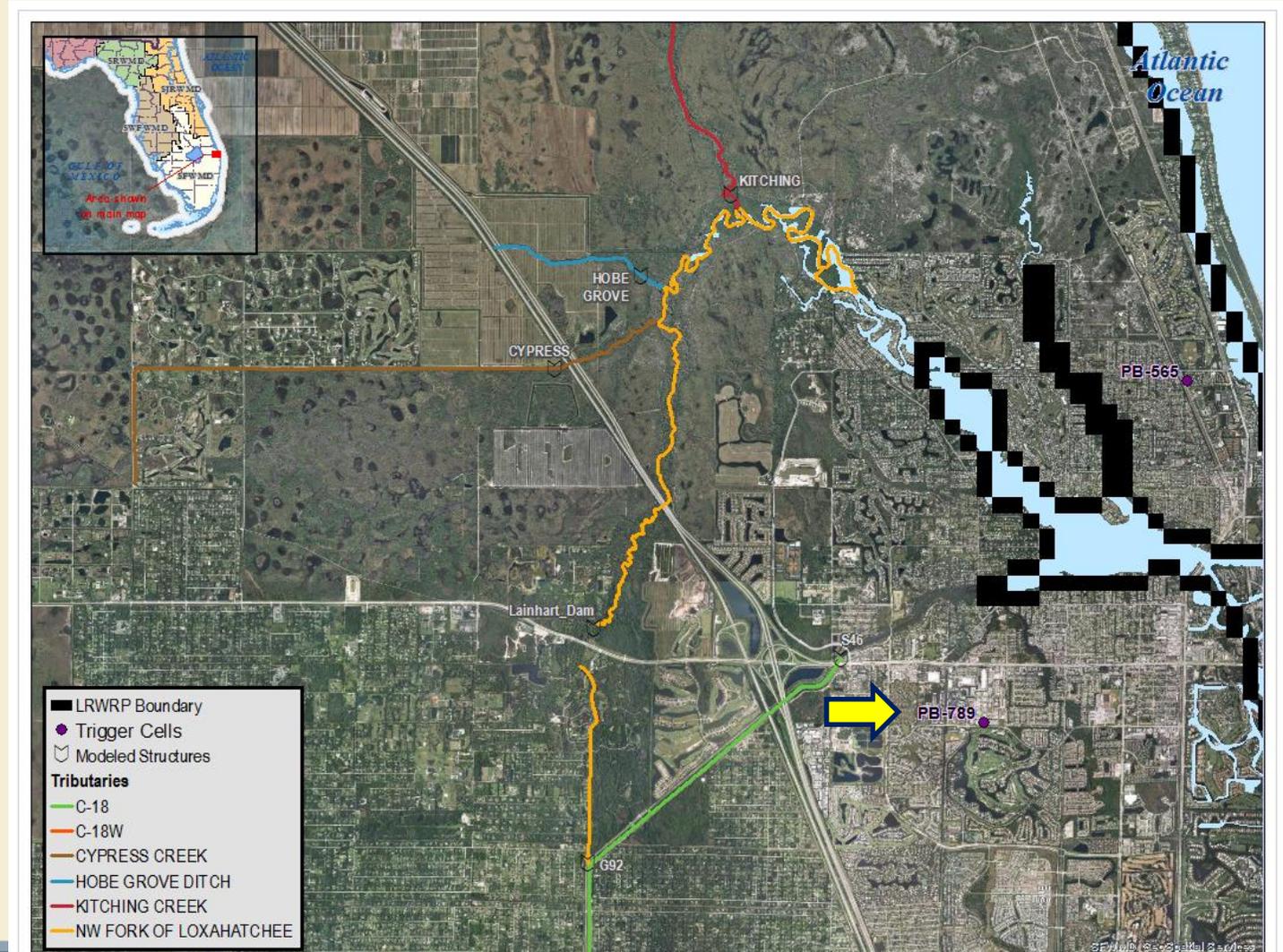
Local Water Restriction Triggers Palm Beach County

OCCURRENCE OF WATER RESTRICTIONS IN THE ALTERNATIVES					
Locally Triggered Restrictions	FWO	Alt. 2	Alt. 5	Alt. 10	Alt. 13
Frequency (3 consecutive months)	2	2	2	1	2
Severity	2	2	2	1	2
Years with 1 or more months	9	9	9	7	10
Months with actual trigger*	16	16	16	14	17
Months dry season continuation	2	2	2	2	2

*All restrictions: Phase 1

Pulling The Trigger

- Well PB-789 is located in Jupiter
- Target: No more than 4 years with 3 or more consecutive months of restrictions
- Triggers for three consecutive months in 2 of 41 years - FWO, Alts. 2, 5 and 13
- Triggers for three consecutive months once in 41 – Alt. 10



Water Supply Evaluation

- **Water Supply does not appear to be a significant constraint for the project**
- **Additional analysis may be required if TSP includes a source shift for city of West Palm Beach drinking water supply**

Flood Impact Evaluation

- **Transects**
- **Profiles**
- **Profile Points**
- **Other Indicators**

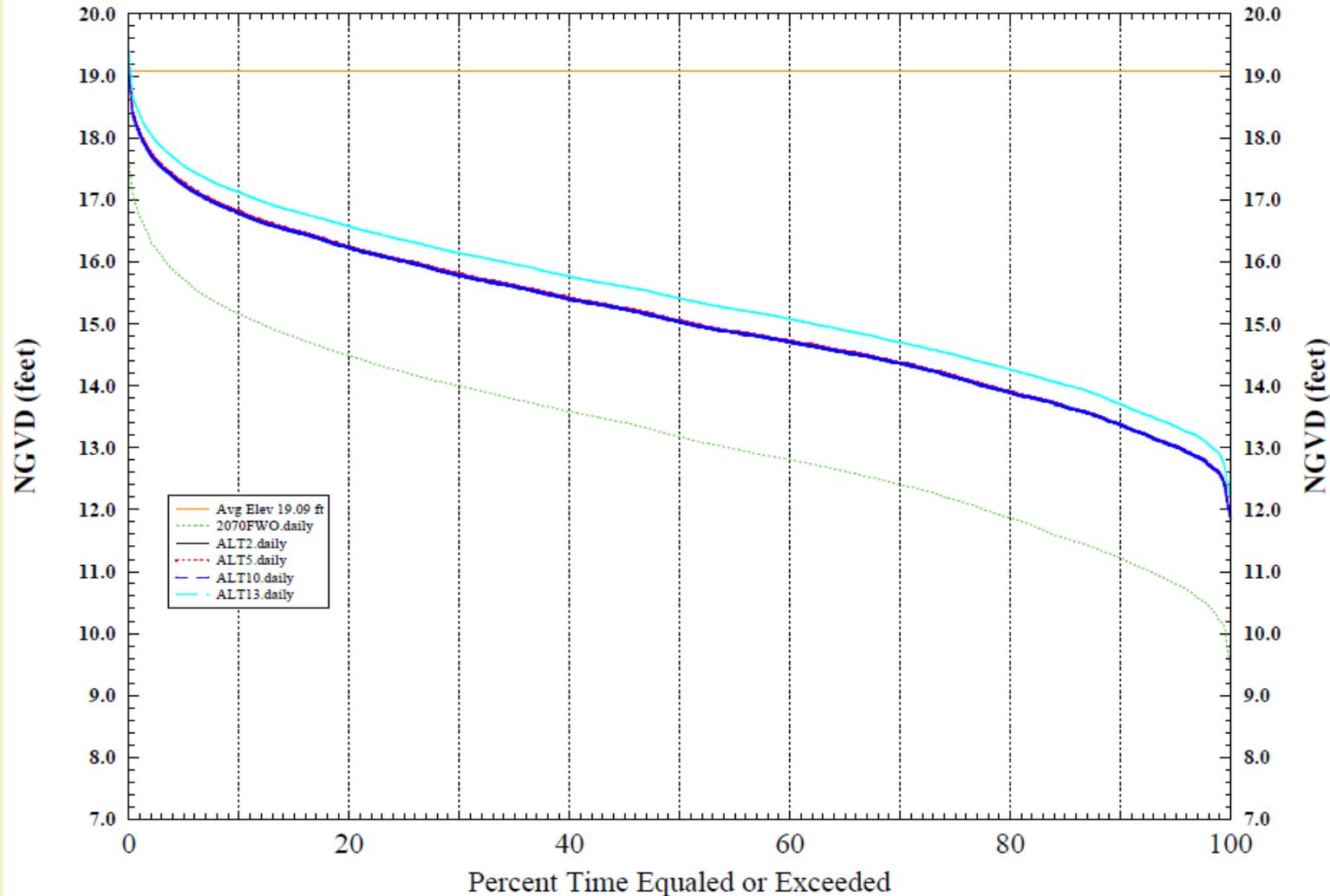
Flood Impact Evaluation

- **Profile Points showed no apparent impact, at least above grade:**
 - **Ranch Colony (Central, Eastern, Western) [W-E]**
 - **SIRWCD [W-E]**
 - **Sweet Bay [North-South]**
 - **The Links Central and East [West-East]**
 - **Hobe St. Lucie Eastern & Western Point [West-East]**
 - **Jupiter Farms Eastern & Western Point [West-East]**

Example Profile Point- No meaningful impact

The Links Eastern Point [West-East]

Daily Stage Duration Curves for Period of Record 1965 - 2005

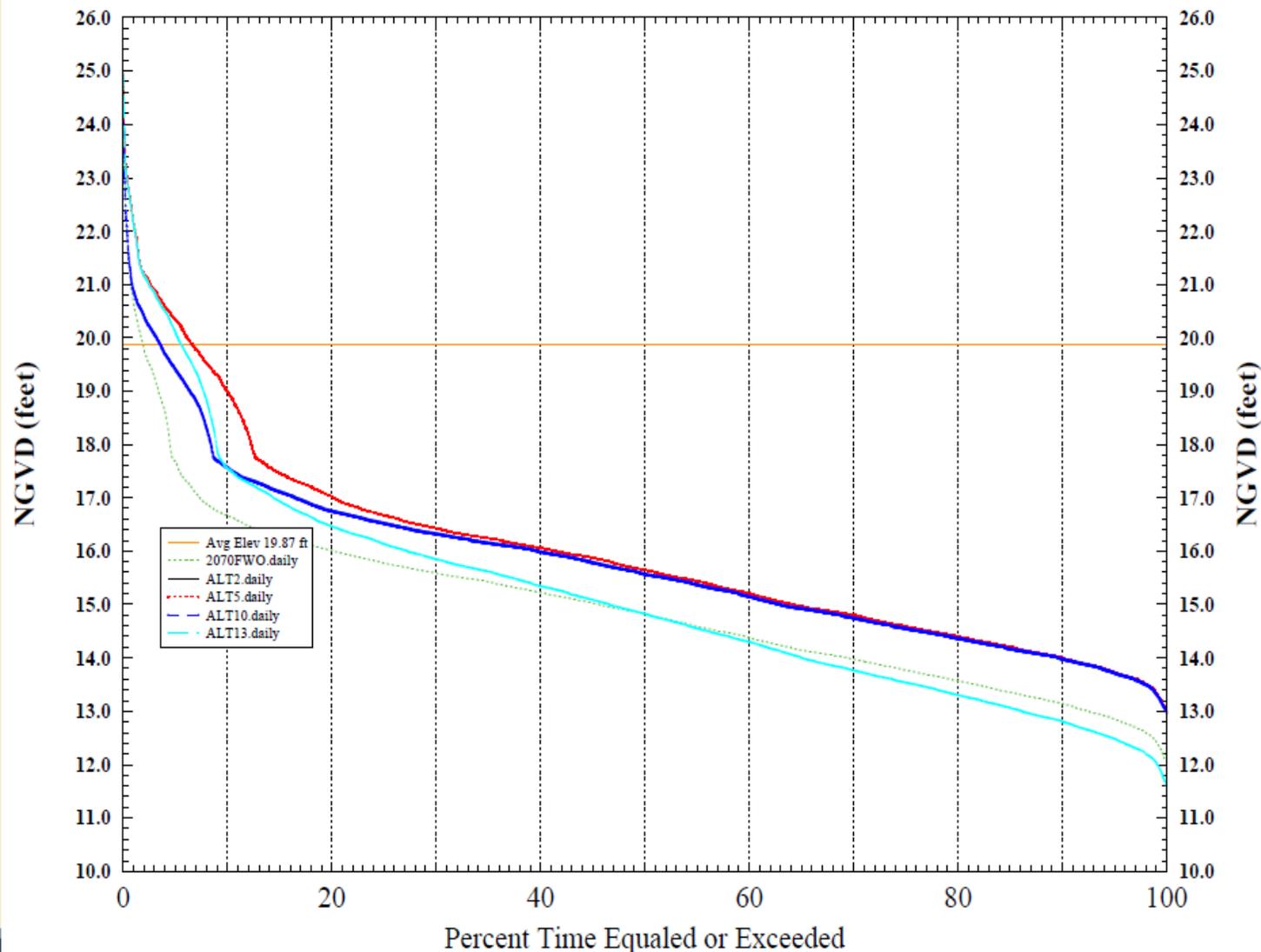


Run date: Thursday, April 5, 2018 10:31:54 AM EDT
For Planning Purposes Only (#539)
Modflow npb SubRegional GW Model

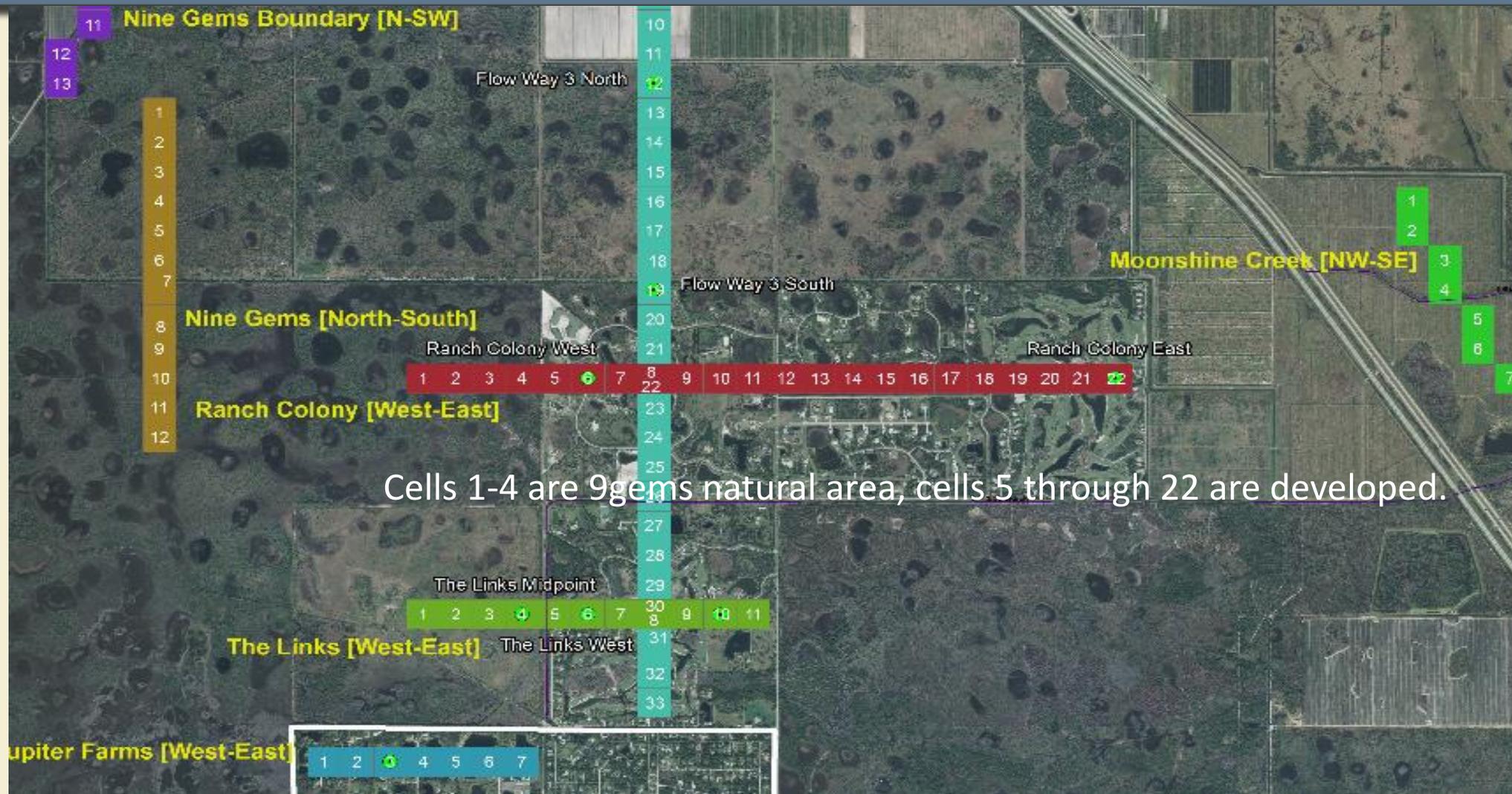
Example Profile Point- needs further assessment

The Links Western Point [West-East]

Daily Stage Duration Curves for Period of Record 1965 - 2005



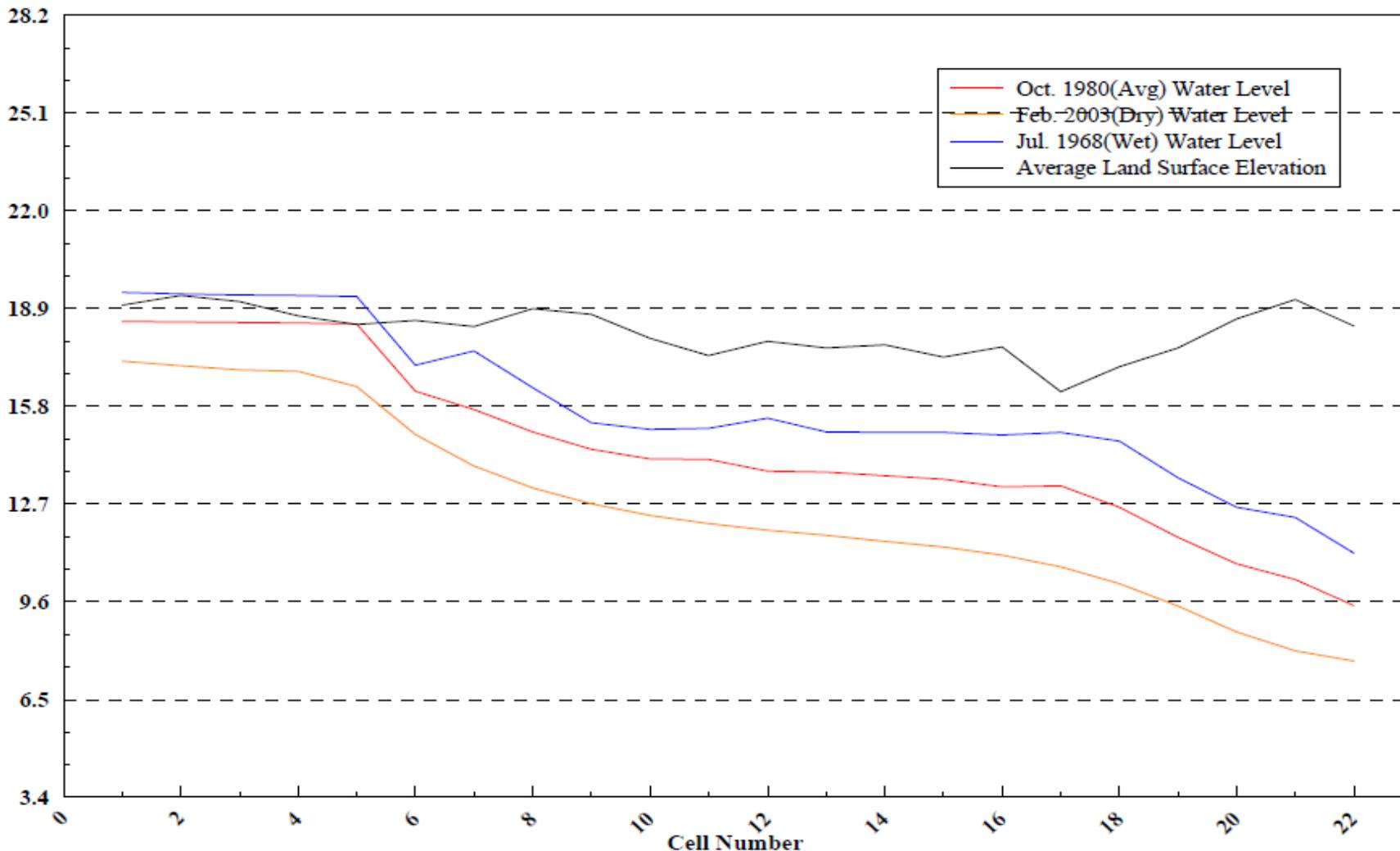
Ranch Colony Profile Cells



Cells 1-4 are 9gems natural area, cells 5 through 22 are developed.

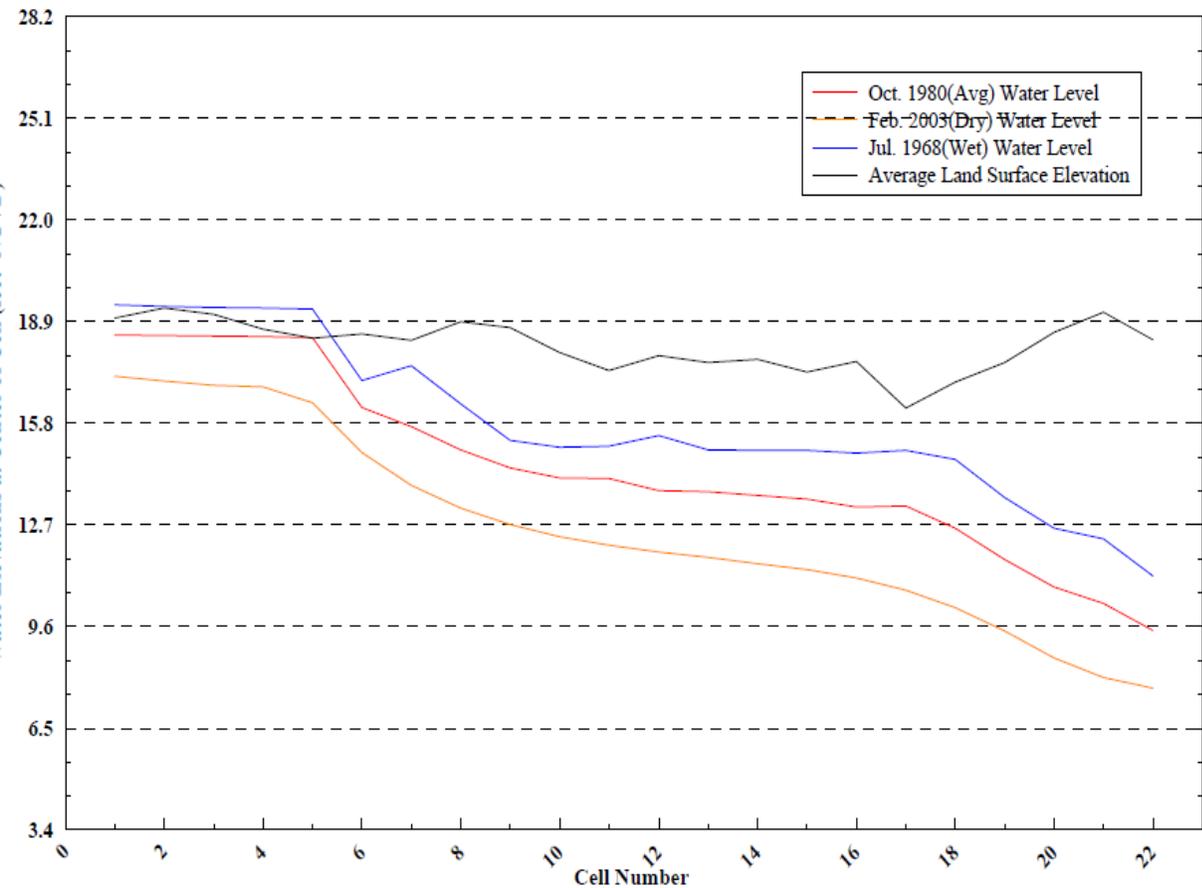
Ranch Colony Profile Cells-Example Comparisons

2070FWO Ranch Colony [West-East]
 Stage Profile Performance Measure Graphic



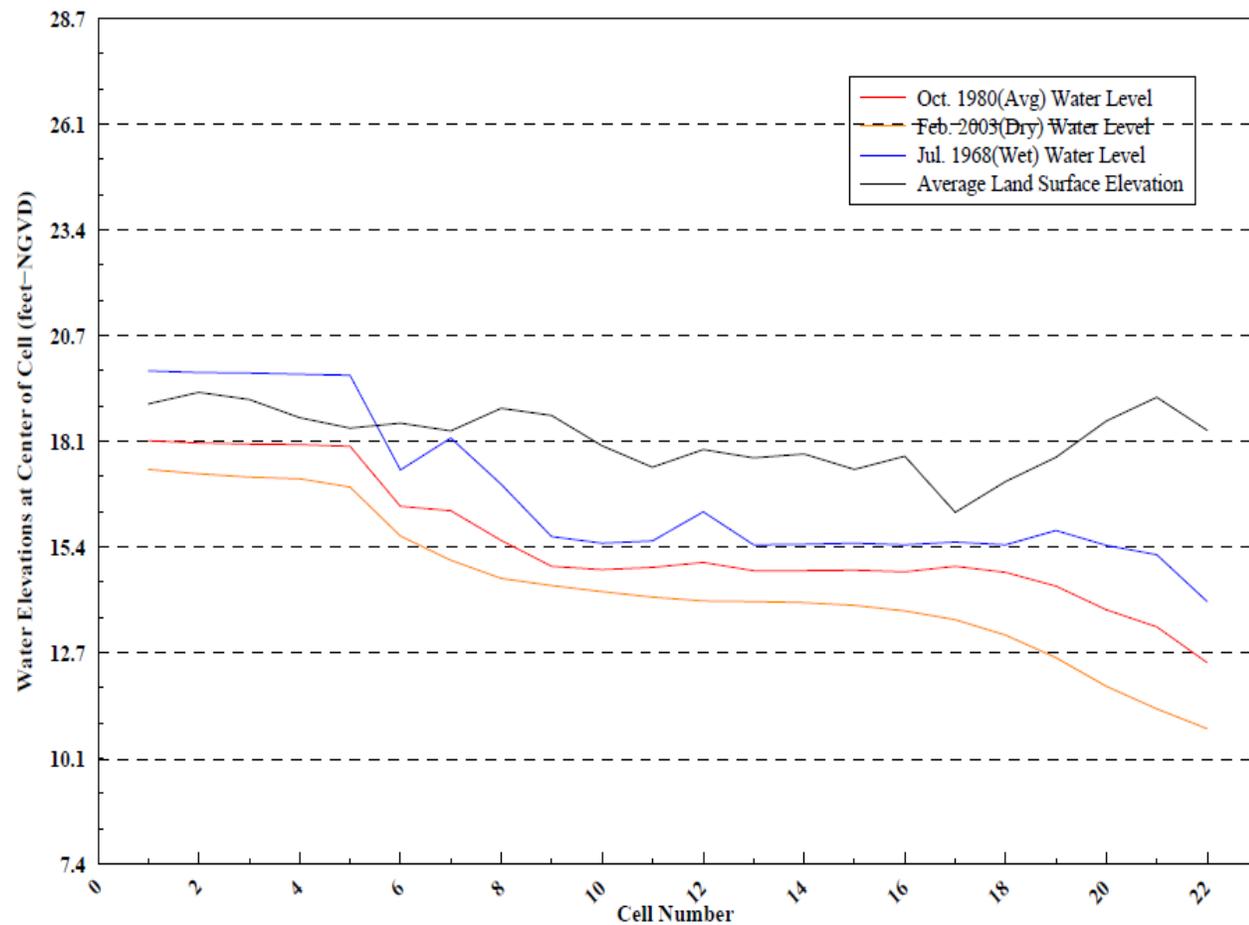
Ranch Colony Profile Cells-Example Comparisons

2070FWO Ranch Colony [West-East]
Stage Profile Performance Measure Graphic



Run date: Thu Apr 5 11:19:00 EST 2018
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NPB Florida Transient Sub-regional Modflow Model

ALT2 Ranch Colony [West-East]
Stage Profile Performance Measure Graphic



Run date: Thu Apr 5 11:22:19 EST 2018
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NPB Florida Transient Sub-regional Modflow Model

Flood Impact Evaluation

- **Other Indicators show little to no change**
 - **IBIS**
 - **Ironhorse**
 - **Jupiter**
 - **Jupiter Farm 1**
 - **Jupiter Farm 2**
- **Transect Flows**
 - **Majority showed minimum differences**
 - **(e.g. 7MG/yr or 0.02cfs)**

Flood Impact Evaluation

- Flood Impacts do not appear to be a significant constraint for the project
- Additional assessment will be conducted on TSP

Flood Impact Evaluation

Regional Water Restriction Triggers (Palm Beach County only)

OCCURRENCE OF WATER RESTRICTIONS IN THE ALTERNATIVES					
Lake Okeechobee Triggered Restrictions	FWO	Alt. 2	Alt. 5	Alt. 10	Alt. 13
Frequency (3 consecutive months)	7	7	7	7	7
Severity (Frequency X Phase of Restriction)	7	7	7	7	7
Years with 1 or more months	7	7	7	7	7
Total months with actual trigger	14	14	14	14	14
Months dry season continuation	28	28	28	28	28

Local Water Restriction Triggers Martin County

OCCURRENCE OF WATER RESTRICTIONS IN THE ALTERNATIVES					
Locally Triggered Restrictions	FWO	Alt. 2	Alt. 5	Alt. 10	Alt. 13
Frequency (3 consecutive months)	5	5	5	5	5
Severity	26	26	26	26	26
Years with 1 or more month of water restriction	6	6	6	6	6
Months with water restrictions triggered*	22	22	22	22	22
Months dry season continuation	0	0	0	0	0
Months of Phase 1 restrictions	18	18	18	18	18
Months of Phase 2 restrictions	3	3	3	3	3
Months of Phase 3 restrictions	1	1	1	1	1