INTRODUCTION

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- Welcome to this 15 August 2017 PDT meeting for the Lake Okeechobee Watershed Restoration Project
- Attendance – CERP Team and Public
- Housekeeping Items:
  - Please keep phones on mute unless you are talking
  - Please state your name and who you are representing before making a statement or asking a question
  - REMINDER: This is a CERP PDT meeting and follows FACA Requirements as outlined in CGM 011.02. A Public Comment period has been established at the end of our agenda.
- Agenda Overview

AGENDA

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1.	Introduction (Tim Gysan, USACE)	10:00 – 10:10
2.	Schedule overview (Tim Gysan, USACE)	10:10 – 10:15
3.	Overview of SFWMD planning workshops (Michelle Ferree, SFWMD)	10:15 – 10:25
4.	CEICA Overview of Phase 1 (Marty Harm, USACE)	10:25 – 10:40
5.	Wetland alternative selection (Lisa Aley, USACE)	10:40 – 10:50
6.	Updated WS performance measure (Kris Esterson, SFWMD)	10:50 – 11:00
7.	WQ analysis (Tom James, SFWMD)	11:00 – 11:15
8.	Next Steps (Tim Gysan, USACE)	11:15 – 11:25
9.	Public Comment Period	11:25 – 11:40
10.	Closing Statements	11:40 – 11:45

LOWRP 90 DAY LOOK AHEAD

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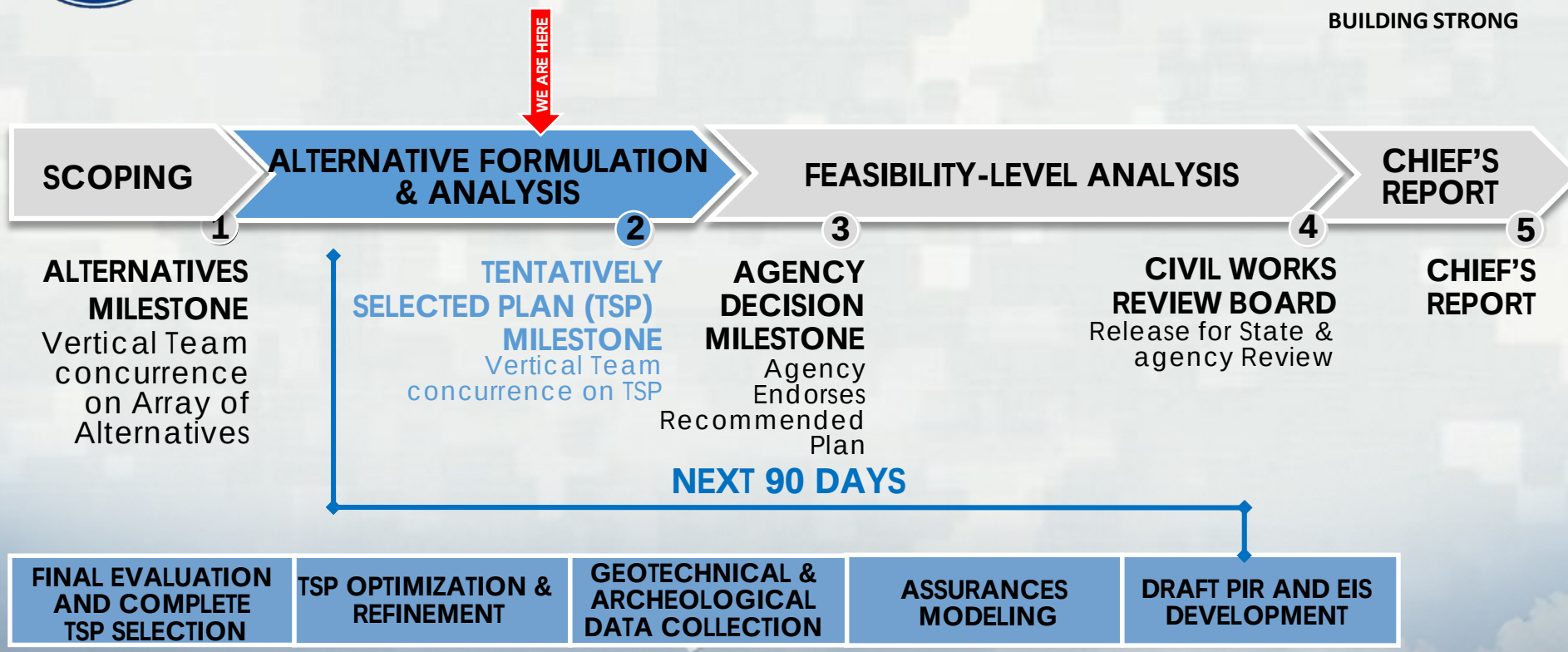

*** Schedule to be revised during evaluation of STOF proposed plan**

LOWRP Upcoming Schedule

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- TSP Selection PDT Meeting – August 15, 2017*
- ATR of Pre-Draft PIR – September 11, 2017
- Complete Sections of Draft PIR and EIS – October 27, 2017*
- Draft PIR and EIS DQC/TRB – November 13 through December 8, 2017*
- TSP Milestone Meeting – January 25, 2018*
- Agency & Public Review/ NEPA Comment Period – February 27 through April 13, 2018*

* - Dates to be revised during evaluation of STOF proposed plan

PUBLIC WORKSHOPS

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- Planning workshops were held on 7/27 (Okeechobee Service Center) and 7/28 (SFWMD Headquarters)
- Topics discussed:
  - Final Array of Alternatives
  - Project Siting and Refinement Considerations
  - Modeling Results and Optimization Strategies
  - Habitat Unit Calculations and Results
  - Incremental Cost Analysis
  - Evaluation Criteria
  - Cultural Resource Surveys and Geotechnical Exploration

WHAT WE'VE HEARD

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Summary of comments received from Public Workshops on 7/27/17 and 7/28/17

Safety concerns, seepage, flooding, groundwater contamination, and emergency response
- Local government
- Local landowners

Water quality concerns and algal bloom concerns
- Local landowners
- Local government
- Sierra Club
- Florida Oceanographic

Support for water quality treatment features
- Sierra Club

Concern of the impact of project on endangered species including bald eagles and caracara
- Local landowners

Aquifer Storage and Recovery (ASR) uncertainties
- Sierra Club
- Everglades Foundation

Support for Deep Injection Wells (DIWs)
- United Waterfowlers of Florida
- Florida Department of Agriculture and Consumer Services (FDACS)
- Sugar Cane Growers Cooperative
- Okeechobee Board of Commissioners

WHAT WE'VE HEARD

BUILDING STRONG

Summary of comments received from Public Workshops on 7/27/17 and 7/28/17 (cont.)

Reduce inflows into Lake Okeechobee and put in additional storage projects to the north, Central Florida Water Initiative areas

- Local government
- Local landowners
- Sierra Club
- Florida Farm Bureau

Water supply concerns

- State representatives
- Local landowners

Concerns if the proposed project alternative locations are technically feasible

- Local landowners
- FDACS

Concerns regarding land acquisition, local construction projects, planned land development

- Local landowners

WHAT WE'VE HEARD

BUILDING STRONG

Summary of comments received from Public Workshops on 7/27/17 and 7/28/17 (cont.)

Lake Okeechobee operational considerations including optimizing the regulation schedule and concerns with lake stage > 17.25 ft

- Audubon Florida
- Sanibel-Captiva Conservation Foundation
- Sierra Club
- United Waterfowlers of Florida

Concerns on scoring the LOWRP alternatives

- Audubon Florida

State and Federal projects need to be planned together

- Audubon Florida

Support for Northern Everglades Payment for Environmental Services Program including water farming

- Local landowners

WHAT WE'VE HEARD

BUILDING STRONG

Summary of comments received from Public Workshops on 7/27/17 and 7/28/17 (cont.)

Feedback from landowners in the reservoir footprint

- K42 - No willing sellers
- K05 – Some willing sellers, some unwilling sellers, some undecided

LOWRP website

- Presentations and videos from workshops
- Final Array of Alternatives handout
- Parcel ownership map

www.sfwmd.gov/lowrp

ECONOMIC ANALYSIS

RESERVOIR/ASR ALTERNATIVES

	ALTERNATIVES			
	2c	1b	2b	2a
Total Implementation Cost	**$1,405,000,000**	**$1,836,000,000**	**$2,490,000,000**	**$3,136,000,000**
Lake O Annual Lift	2,847	5,598	6,668	8,179
Estuary Annual Lift	2,204	4,654	4,654	5,367
Combined Annual Lift	**5,051**	**10,252**	**11,322**	**13,545**
Cost Effective	Yes	Yes	Yes	Yes

ECONOMIC ANALYSIS

RESERVOIR/ASR ALTERNATIVES

Alternatives				
	2c	1b	2b	2a
Total Implementation Cost	**$1,405,000,000**	**$1,836,000,000**	**$2,490,000,000**	**$3,136,000,000**
Total Benefits	**5,051**	**10,252**	**11,322**	**13,545**
Cost Per Habitat Unit	$278,000	$179,000 *	$220,000	$232,000

***Alternative 1b is the alternative that costs the least per unit of output.**

Is there a benefit to a larger plan ,

Alternatives		
	1b to 2b	1b to 2a
Increase in cost	$654,000,000	$1,300,000,000
Percent increase in Cost	26%	71%
Increase in Environmental Benefits	10% (No difference in Estuary Benefits)	32%
Decrease in Water Supply Cutbacks	4.5%	1%

WETLAND PLAN SELECTION

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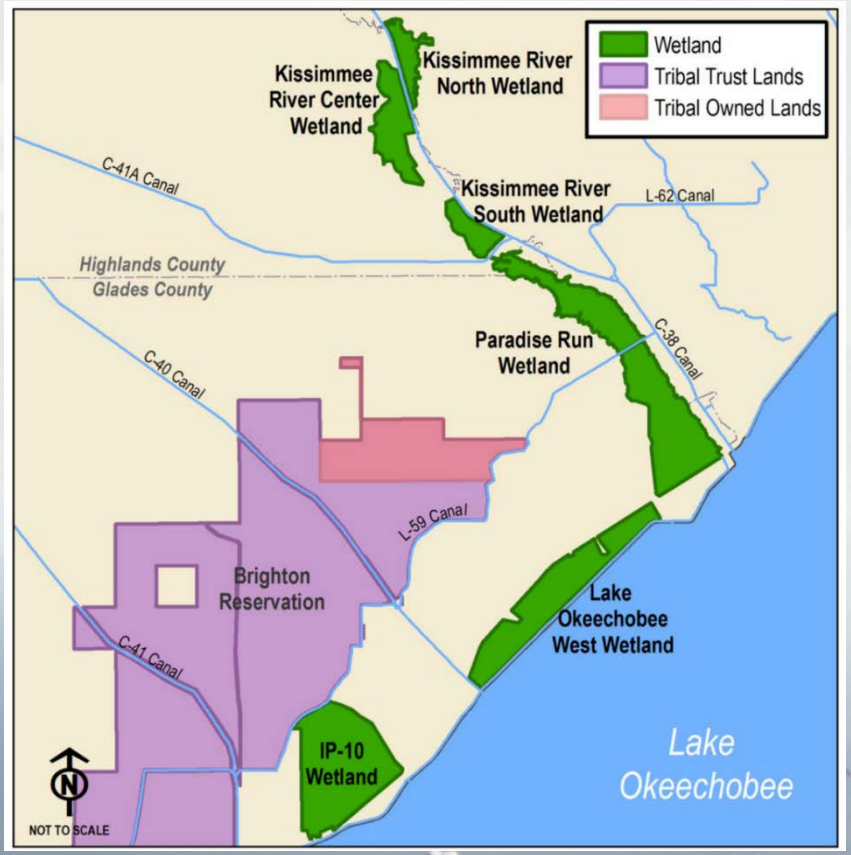
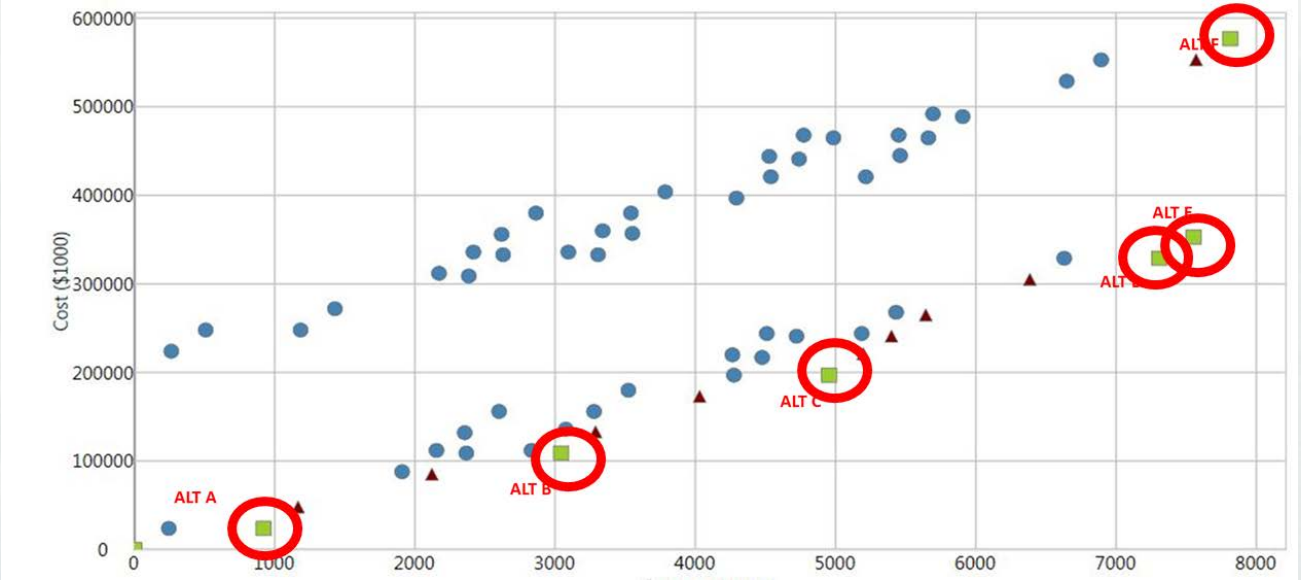


6 Wetland Restoration Sites

- **Kissimmee River North (~550 acres):** divert water from C-38 via submerged weir and degrade spoil mound
- **Kissimmee River Center (~1,200 acres):** divert water from C-38 via submerged weir and excavate historic river channel
- **Kissimmee River South (~550 acres):** divert water from C-38 via submerged weir
- **Paradise Run (~4,100 acres):** Pump water into site via C-41A downstream of S-84 and excavate historic river channel, overflow weir through L-59 berms
- **IP-10 (~3,500 acres):** Pump water though L-60 canal and construct perimeter berm
- **Lake Okeechobee West (~2,800 acres):** Weir in L-48 to inundate wetland area and construct perimeter berm

WETLAND PLAN SELECTION

BUILDING STRONG



PROCESS: USACE computer modeling tool used to evaluate every possible combination of wetland alternatives at varying scales- red circles above are 'Best Buy Alternatives' that maximize ecologic lift per cost

RESULT: these 6 best buy alternatives are carried forward for further consideration

WETLAND PLAN SELECTION

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Phase 2 Wetland Alternatives				
Wetland Alternative ID	Wetland Component(s)	Total Acres	Total ROM Cost	Incremental Cost per Habitat Unit
Alternative A	Kissimmee River Center #2	~1,200	$24,000,000	$998
Alternative B	Kissimmee River Center #2 Paradise Run	~5,300	$109,000,000	$1,359
Alternative C	Kissimmee River Center #2 Paradise Run Lake Okeechobee West	~8,100	$197,000,000	$1,509
Alternative D	Kissimmee River Center #2 Paradise Run Lake Okeechobee West IP-10	~11,600	$329,000,000	$1,708
Alternative E	Kissimmee River Center #2 Paradise Run Lake Okeechobee West IP-10 Kissimmee River South #2	~12,200	$353,000,000	$1,774
Alternative F	Kissimmee River Center #2 Paradise Run Lake Okeechobee West IP-10 Kissimmee River South #2 Kissimmee River North	~12,700	$577,000,000	$2,225

Wetland alternative with lowest cost increment that meets 3,500 acre target

UPDATED WATER SUPPLY PERFORMANCE MEASURE

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RECOVER Water Supply PM: Frequency and severity of water restrictions for the Lake Okeechobee Service Area (LOSA)*

Size of Largest Monthly Cutback During Water Year	Severity Score
cutback < 18,000 ac-ft	0
18,000 ac-ft <= cutback < 50,000 ac-ft	1
50,000 ac-ft <= cutback < 100,000 ac-ft	2
100,000 ac-ft <= cutback < 150,000 ac-ft	3
cutback >= 150,000 ac-ft	4
Final Severity Score	**Sum for each year over evaluation period**

Simulation	Period of Record	Cutback Total (kaf)*	Severity Score
Existing Condition	1965-2005	857	13
Future Without Project	1965-2005	707	12
ALT1B	1965-2005	389	4
ALT2A	1965-2005	382	2
ALT2B	1965-2005	365	4
ALT2C	1965-2005	484	6
*Computed using monthly cutbacks > 18k			

*In the LOSA water restrictions primarily affect agricultural water users. Economic losses associated with water shortages depend not only on the number of water shortages, but also on the severity and duration of the water restrictions. The longer the restrictions are in place and the more severe the cutbacks, the more likely it is that crop yields will be reduced and the greater the expenses that are required by users to manage the water shortages

WATER SUPPLY
Savings Clause Screening

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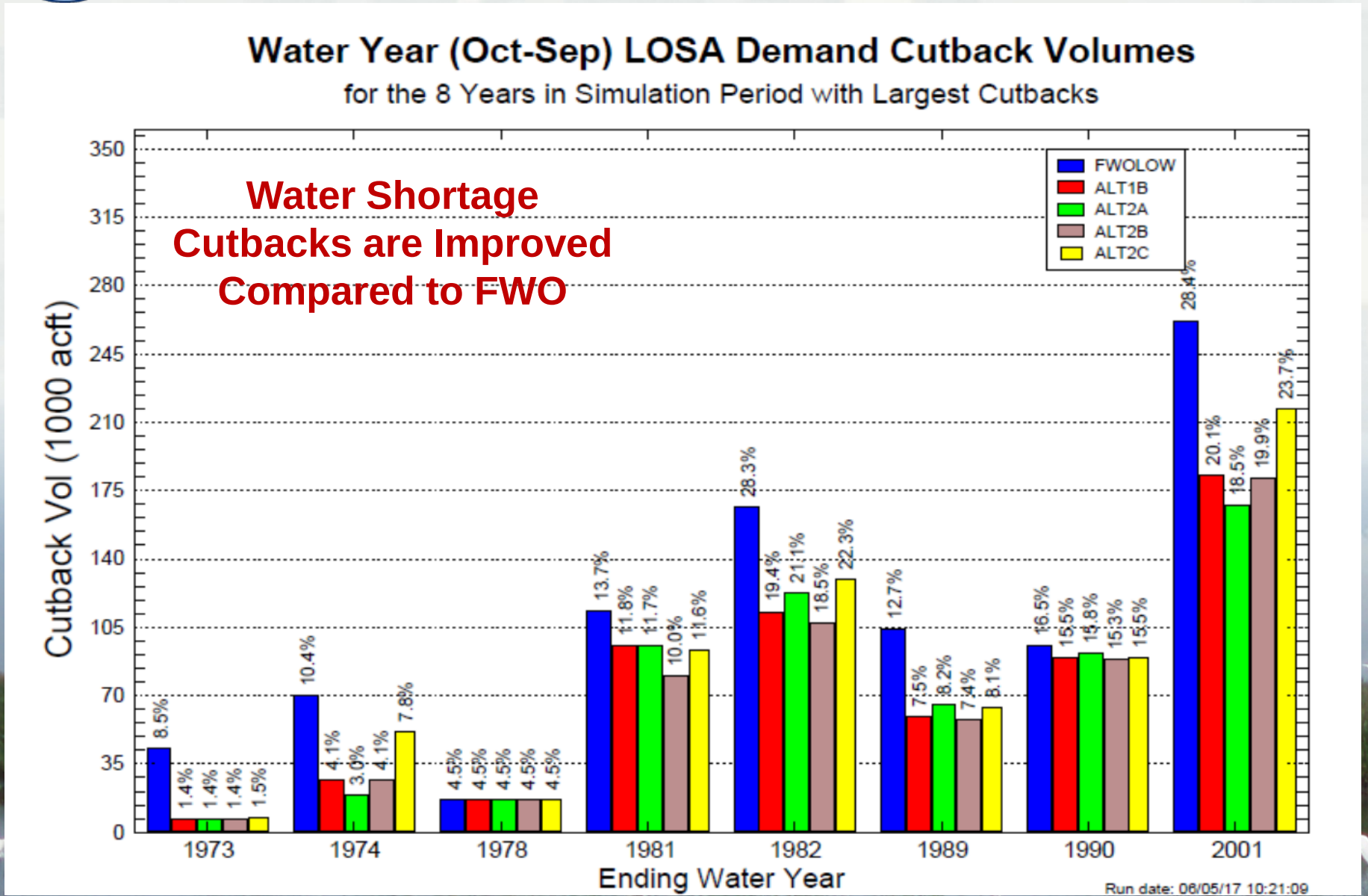
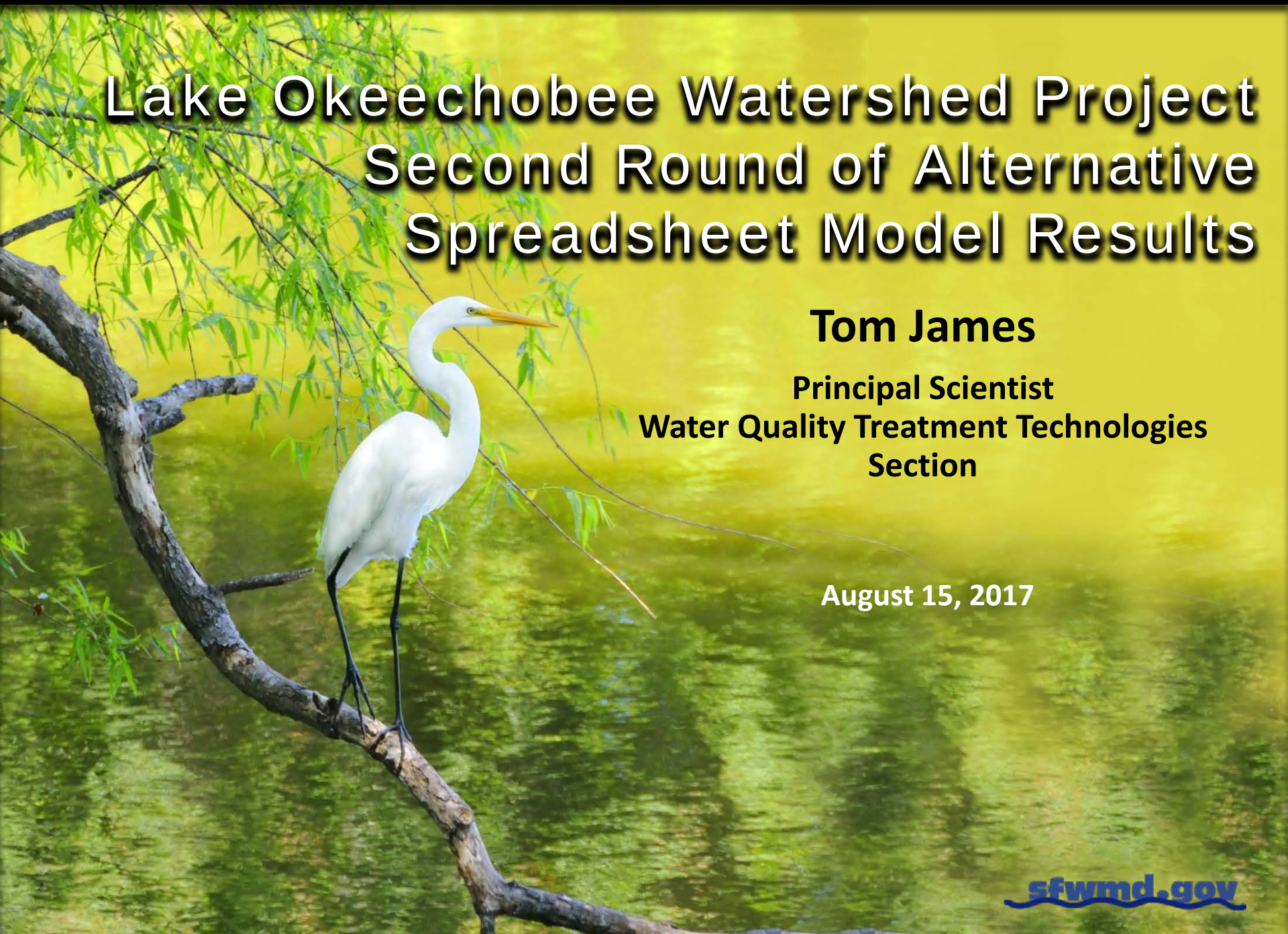
- Implementation of CERP cannot cause elimination or transfer of existing legal sources until source of comparable quantity and quality is available.

- PDT should conduct Savings Clause screening analysis during formulation and evaluation phase *-currently underway*

- Final Savings Clause analysis will be completed once TSP is identified.

WATER SUPPLY
Savings Clause Screening





Lake Okeechobee Watershed Project Second Round of Alternative Spreadsheet Model Results

Tom James

Principal Scientist
Water Quality Treatment Technologies Section

August 15, 2017

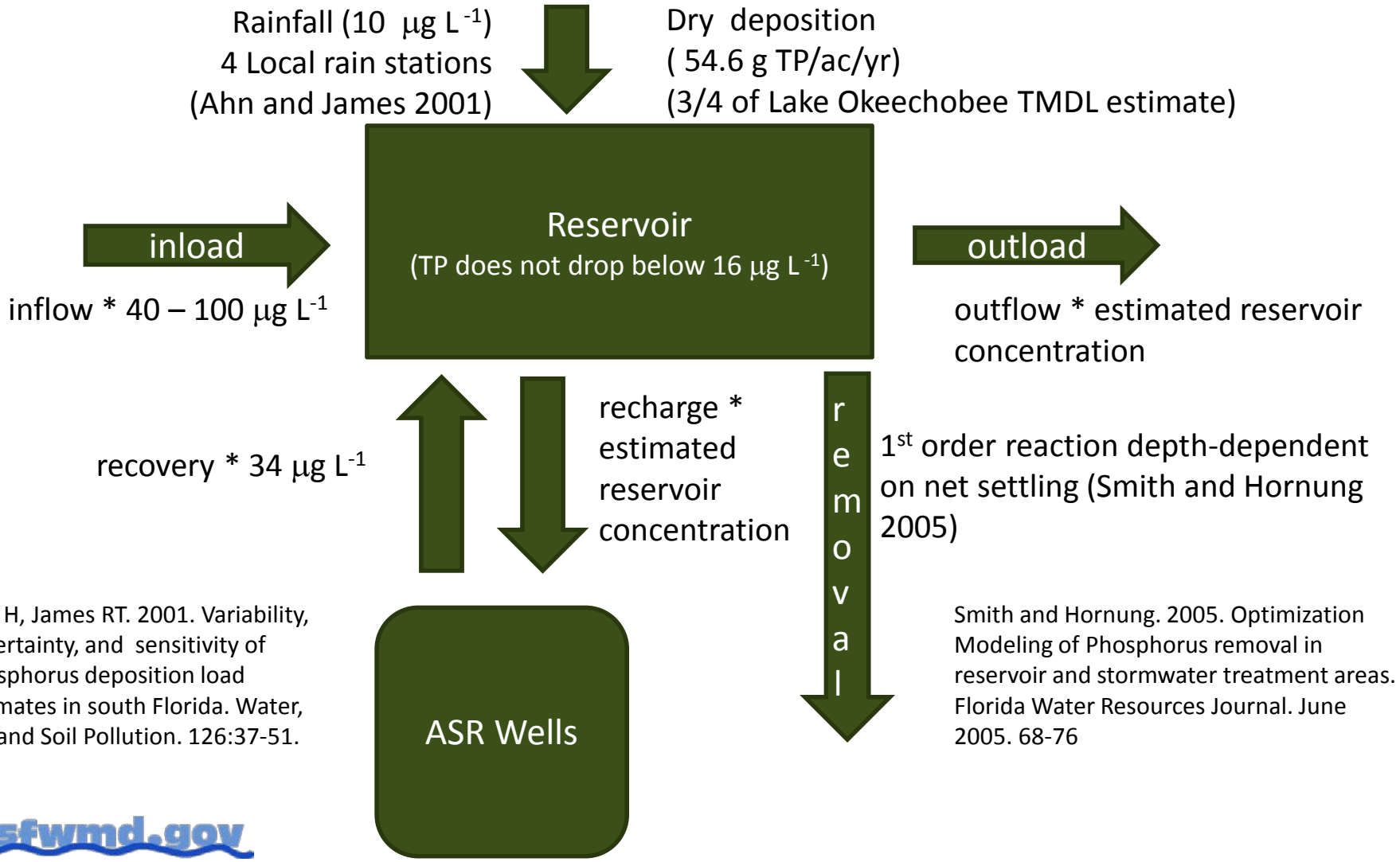
sfwmd.gov

P Load Spreadsheet Model

- Keep it simple and conservative
- Daily time step (RESOPS Daily flows)
- Baseline concentration
  - Will compare results using a range of values from 40 to 100 μg TP L^{-1}
- Recovery concentration estimate
  - Based on measurements from Kissimmee ASR Pilot project
  - Conservative value of 34 μg TP L^{-1} (e. g. mean + 2 standard deviations)
- Concentration of water in reservoir cannot go below 16 μg L^{-1}
  - 75th percentile of aerobic Equilibrium Phosphorus Concentration estimates reported in

    Belmont MA, White JR, Reddy KR. 2009. Phosphorus Sorption and Potential Phosphorus Storage in Sediments of Lake Istokpoga and the Upper Chain of Lakes, Florida, USA. Journal of Environmental Quality. 38:987-996
- Settling rate 1 m/yr (accounts for sediment resuspension)

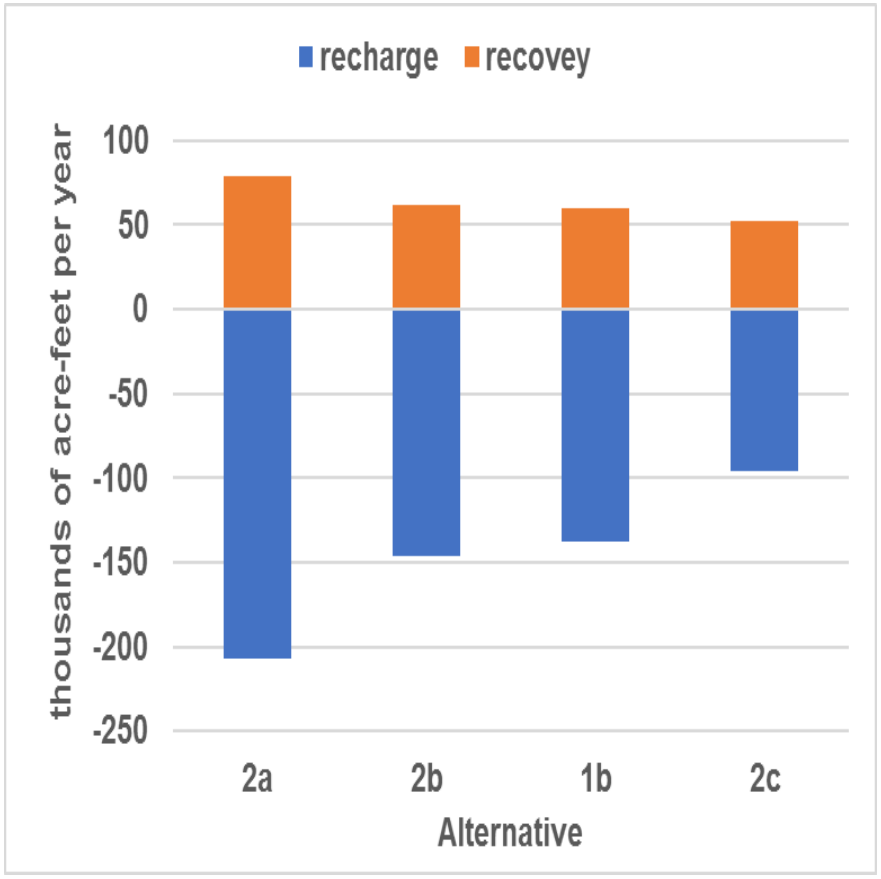
Reservoir modeling (TP)

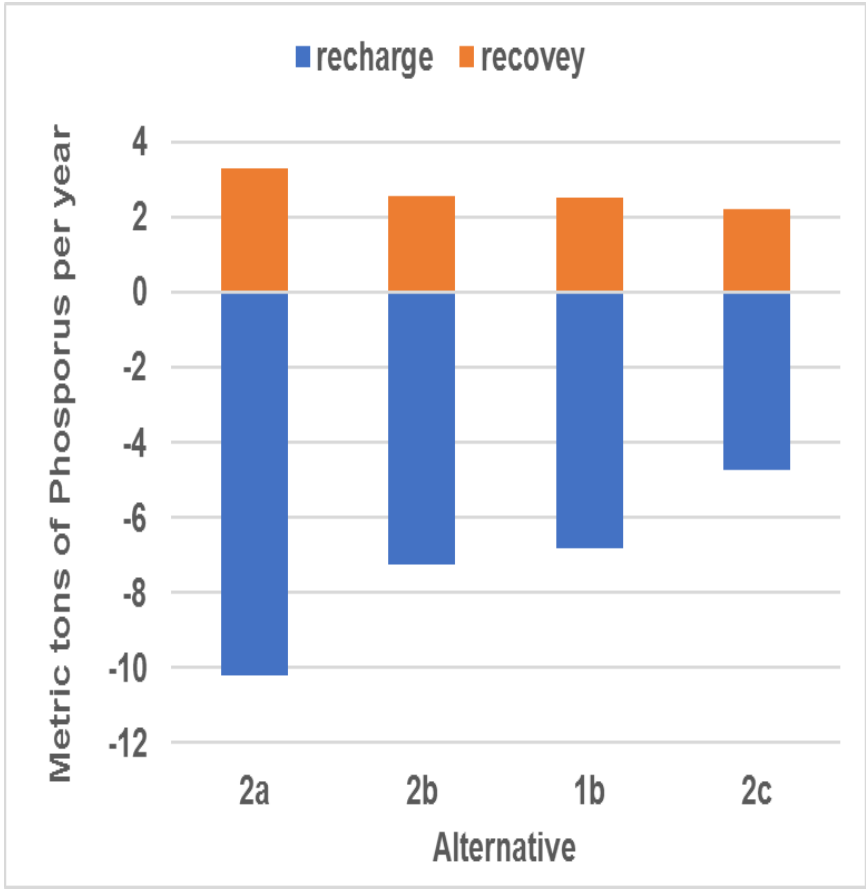


Ahn H, James RT. 2001. Variability, uncertainty, and sensitivity of phosphorus deposition load estimates in south Florida. Water, Air, and Soil Pollution. 126:37-51.

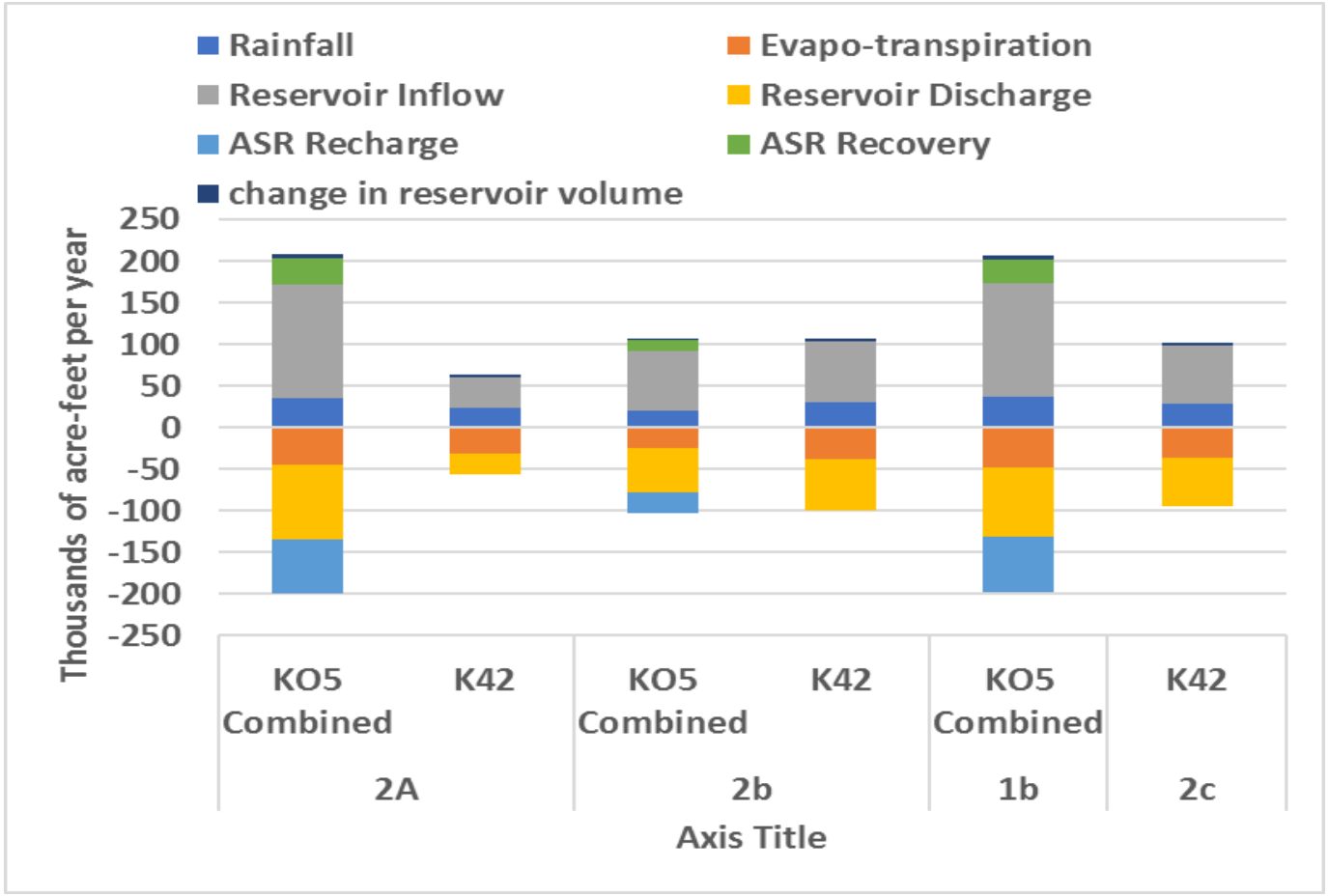
Smith and Hornung. 2005. Optimization Modeling of Phosphorus removal in reservoir and stormwater treatment areas. Florida Water Resources Journal. June 2005. 68-76

Independent ASR Wells

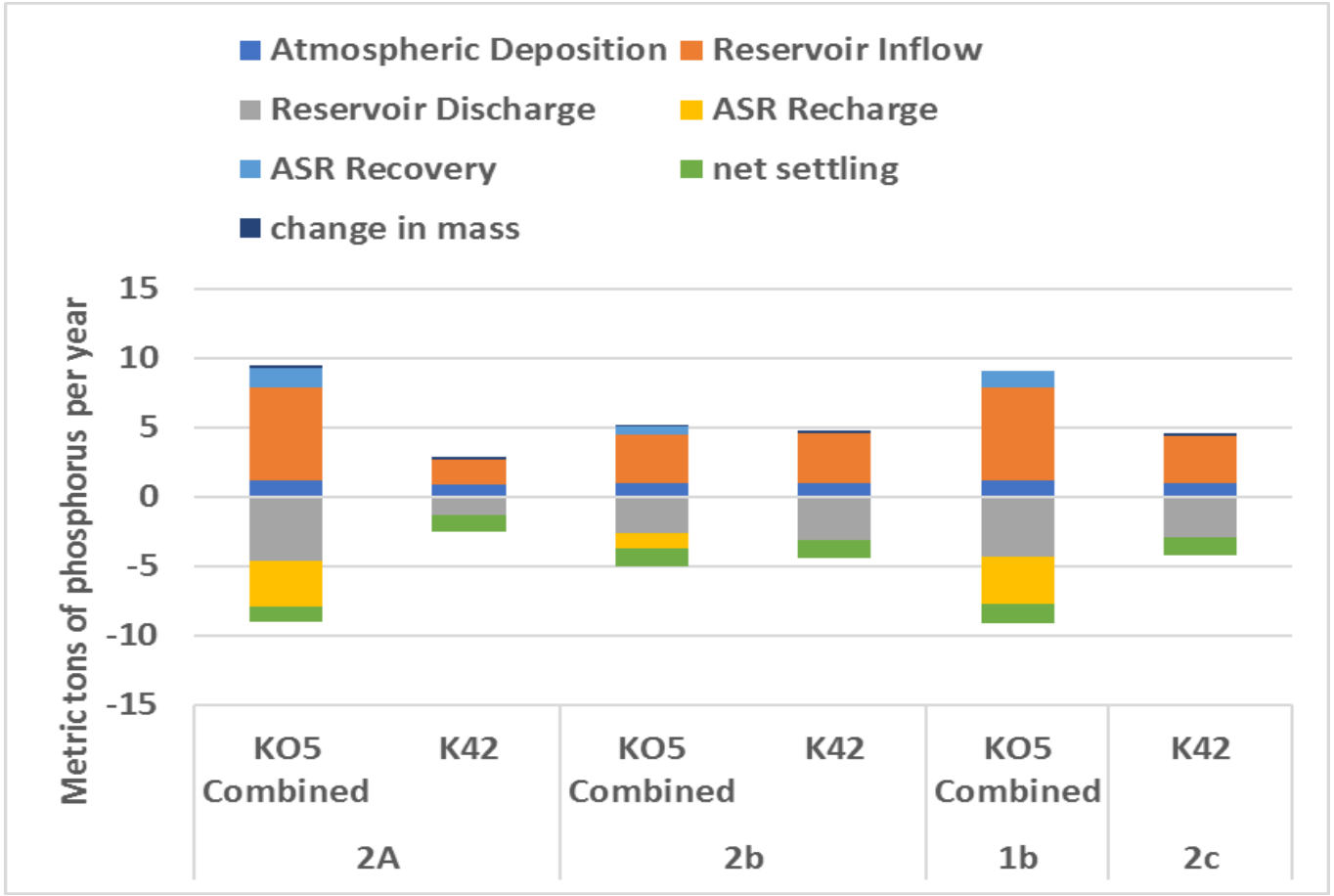




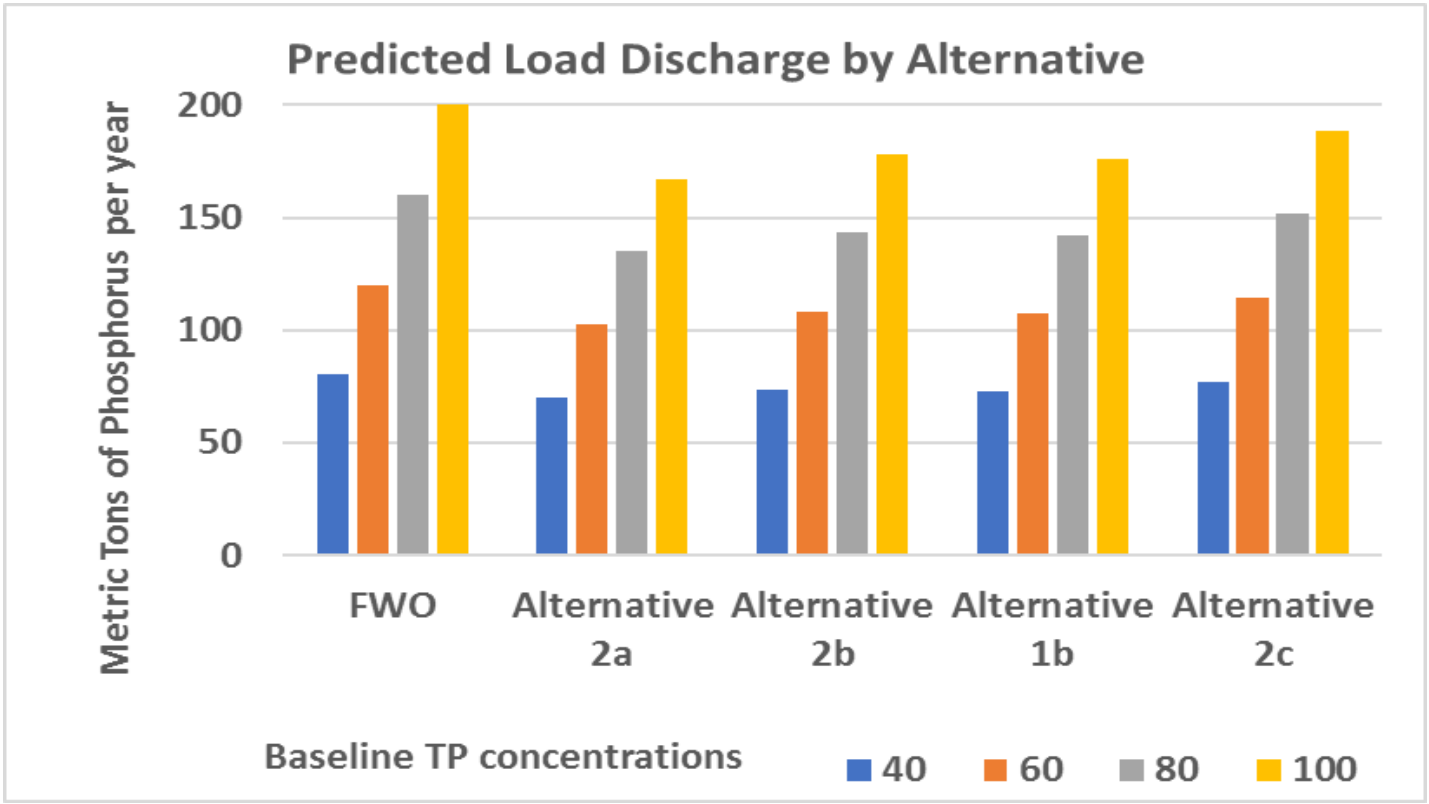
Reservoir (Volumes)



Reservoir Loads

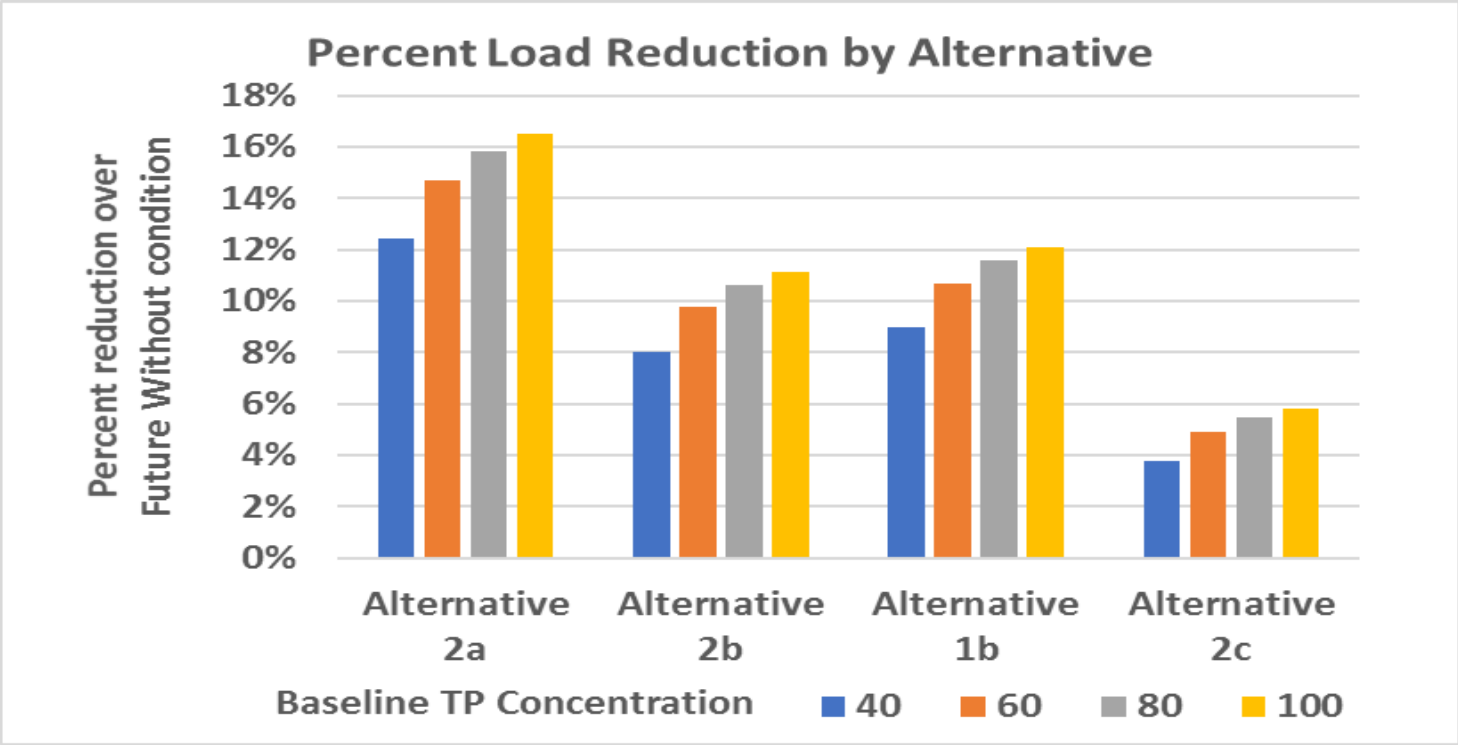


Sensitivity Analysis



All alternatives for all baseline concentrations reduce total discharge load to the lake in comparison to the Future Without Project Condition

Sensitivity Analysis



All alternatives for all baseline concentrations reduce total discharge load to the lake in comparison to the Future Without Project Condition

Summary

- ASR removes flow and load from the system
- Reservoirs also remove some load
- ASR removes more load than reservoirs
- All alternatives reduce loads to lake
- Load reduction is between 4 and 16%

NEXT STEPS

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- USACE and SFWMD to complete evaluation of STOF proposed plan
- Updated Phase I (storage) alternative information to be sent to PDT
- New face to face PDT meeting to be scheduled to select Phase I (storage) TSP