

# South Florida Ecosystem Restoration

**Presented by:**

**Kim Taplin**

Strategic Program Manager

Jacksonville District

U.S. Army Corps of Engineers

August 20, 2015

Working Group Sponsored Public Workshop



US Army Corps of Engineers  
**BUILDING STRONG**

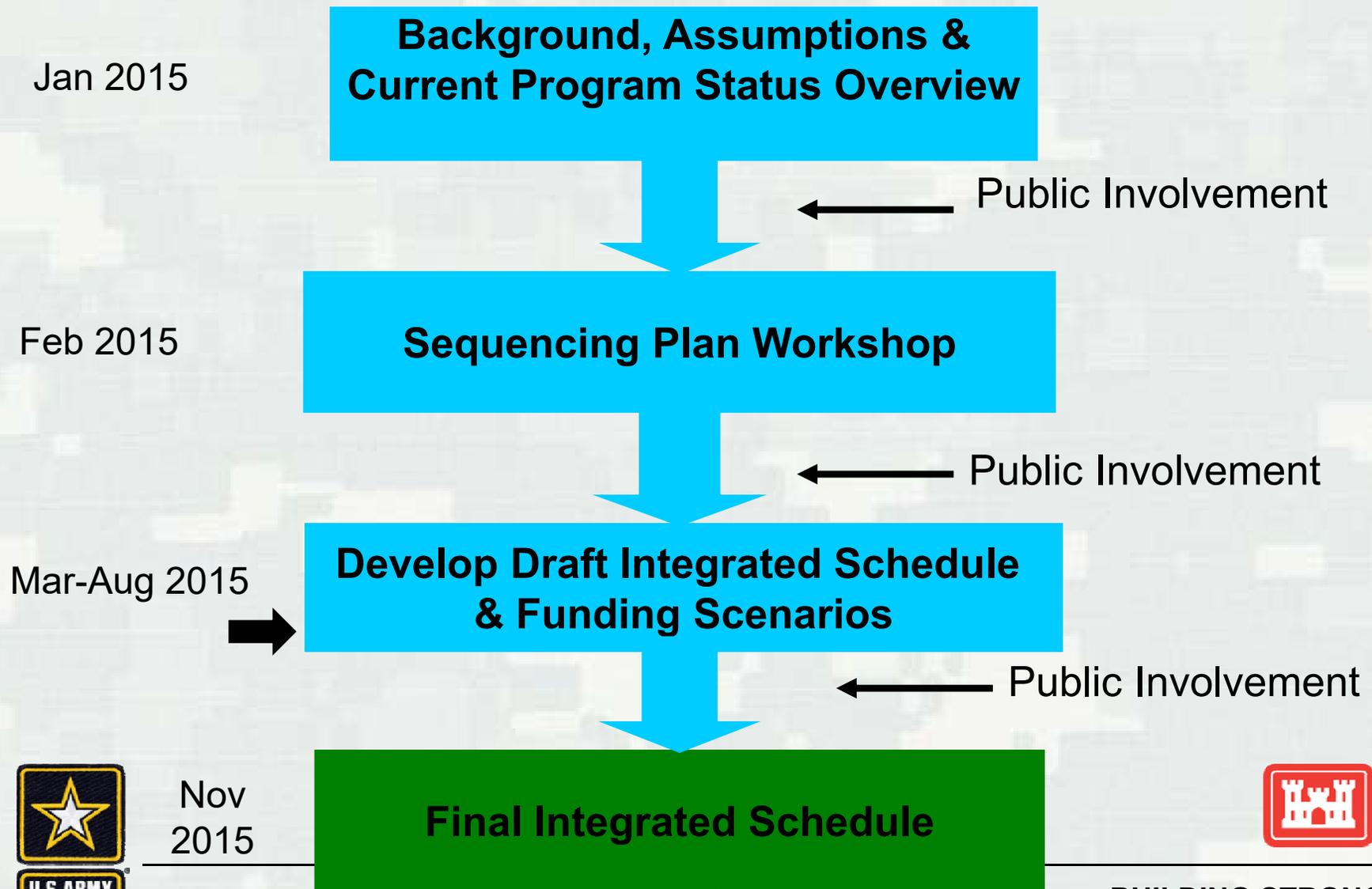


# Purpose of Today's Workshop

- Review Process for IDS Update
- Review of Stakeholder Input (Themes)
- Analysis of Sequencing Plan Themes
  - ▶ Discussion
- Next Steps



# Integrated Delivery Schedule Process



# Draft IDS Worksheet

Project	Yellow Book Code	Fiscal Year															
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Federal Construction Cost			105	102	70	59	4	1	20	10	6	0	0	0	0	0	0
Non-Federal Construction Cost			66	90	45	2	2	1	1	1	1	0	0	0	0	0	0
Total Construction Cost			171	192	115	61	6	2	21	11	7	0	0	0	0	0	0
Modified Water Deliveries to Everglades National Park*																	
Herbert Hoover Dike*																	
Seminole Big Cypress*	OPE																
Restoration Strategies*																	
Tamiami Trail Next Steps Phase 1*																	
Kissimmee River Restoration																	
West Palm Beach Canal/STA-1E																	
C-111 South Dade																	
Picayune Strand Restoration	OPE																
Merritt Pump Station																	
Faka Union Pump Station																	
Manatee Mitigation and Flood Protection Features																	
Miller Pump Station																	
Remaining Features - Road removal and canal backfill																	
Site 1 Impoundment - Phase 1	M_P1																
Indian River Lagoon-South																	
C-44 Intake Canal	B																
C-44 Reservoir	B																
C-44 STA & Pump Station	B																
Decomp Physical Model	QQ_P1																
Caloosahatchee River (C-43) West Basin Storage Reservoir - Phase 1	D_P1																
Broward County Water Preserve Areas: C-11 Impoundment	Q																
Loxahatchee River Watershed Restoration Project	X, Y, K, GGG, OPE																

- .....● Operational Testing and Monitoring Period
- Design
- . - . ● Planning
- Construction

Blue = Non-Federal

Black = Federal

\* Funded through other program authorities or by other entities.

Non-CERP and Foundation Project

CERP - Authorized, appropriated, PPA executed

CERP - Authorized, requires PPA

CERP Planning Phase - Requires authorization

# CERP Project List Example

Project Name	Yellow Book Code	Purpose	Areas of Benefit							
			Lower East Coast	Lake O	Loxahatchee	WCAs	ENP/Fl Bay	SLE	CE	Biscayne Bay
Big Cypress/L-28 Interceptor	CCC	Alleviates over drainage in Northeast Big Cypress, Kissimmee Billy and Mullet Slough area and ensure that inflows meet applicable water quality standards.				x				
Biscayne Bay Coastal Wetlands - Phase 2	FFF_P2	Redistributes freshwater flow and minimizes point source discharges by re-establishing connectivity between coastal and adjacent wetlands.								x
Biscayne Bay Coastal Wetlands Phase 1: Culter Wetlands	FFF_P1	Redistributes freshwater flow and minimizes point source discharges by re-establishing connectivity between coastal and adjacent wetlands.								x
Biscayne Bay Coastal Wetlands Phase 1: L-31 East Flowway	FFF_P1	Redistributes freshwater flow and minimizes point source discharges by re-establishing connectivity between coastal and adjacent wetlands.								x
Broward County Secondary Canal System	CC	Recharges wellfields in central and southern coastal Broward County, stabilizes the salt water interface and reduces storm water discharges to tide.	x							
C-111 Spreader Canal Eastern Project	WW	Reduces wet season flows in C-111, improve deliveries to Model Lands and Southern Glades and decreases potential flood risk in the lower south Miami-Dade area.					x			
C-111 Spreader Canal Western Project	WW	Reduces wet season flows in C-111, improve deliveries to Model Lands and Southern Glades and decrease potential flood risk in the lower south Miami-Dade area.					x			
C-4 Control Structure (Eastern)	T	Reduces regional system deliveries, increases recharge nearby in several coastal wellfields and control water levels in the C-4 Canal at higher elevation to reduce seepage losses from the Pennsuco Wetlands and areas to the west of the structure.				x	x			
C-43 West Basin Storage and ASR - Phase 2	D_P2	Captures basin runoff and releases from Lake Okeechobee, added water supply benefits, attenuates peak flow and provides environmental water supply deliveries to the Caloosahatchee estuary.		x						x
C-9 Stormwater Treatment Area/Impoundment	R	Provides treatment of runoff stored in North Lake Belt Storage Area, groundwater recharge within the basin and seepage control of WCA3 and buffer areas to the west.	x							
Caloosahatchee Backpumping with Stormwater Treatment	DDD	Captures excess C-43 Basin runoff to augment the regional system.								x
Central Everglades Planning Project - PPA New Water	G_P1, H_P1, V	Redirects damaging estuary discharges from Lake Okeechobee south to improve the flow, timing and distribution (QQTd) of water through and conditions within the Everglades.				x	x	x	x	
Central Everglades Planning Project - PPA North	H_P1, QQ_P1, II	Redirects damaging estuary discharges from Lake Okeechobee south to improve the flow, timing and distribution (QQTd) of water through and conditions within the Everglades.				x	x	x	x	



# Sequencing Plan Exercise



# Public Sequencing Plan Examples

## Integrated Delivery Schedule Sequencing Plan Summary Sheet

**Sequencing Plan Name:** Establish a Unique and Descriptive Name of the Proposed Sequencing Plan.  
*Maximizing Ecological Benefits & Economic Return*

**Author of the Sequencing Plan:** Identify the name of the Author(s) that developed the Sequencing Plan during the exercise and identify spokesperson if applicable.

**Anticipated Benefits:** Identify geographic, ecological, hydrological, and/or economic benefits of your sequencing plan.

*This plan focuses on projects + the region to deliver widespread benefits from the Northern Estuaries Everglades and Biscayne National Park*

### Priorities for Concurrent Progress

**Sequencing Plan:** Identify projects in your recommended order of sequencing. (i.e. what projects show go below the black line on the Draft IDS Worksheet)

1. Planning & Design
  - EAA Reservoir Phase 1 & 2
  - BBCW Phase 1 & 2 (including 1A)
  - CIII Spreader remainder of West (198)
  - Remainder of IRL South
- 2.
- 3.
- 4.
5. Construction
  - Broward WPA
  - C43 (portion not funded)
  - CEPP (once authorized)
- 6.

## Integrated Delivery Schedule Sequencing Plan Summary Sheet

**Sequencing Plan Name:** "Not Just Our Pet Pig": Northern Estuaries Protection and Everglades Benefits Sequencing Plan

**Author of the Sequencing Plan:** Identify the name of the Author(s) that developed the Sequencing Plan during the exercise and identify spokesperson if applicable.

**Anticipated Benefits:** Identify geographic, ecological, hydrological, and/or economic benefits of your sequencing plan.

**Geographic:** reaching an overarching goal for Everglades restoration, sustainable wading bird population, provide water supply for agriculture, and ability to send water to the ENP.

The following is an excerpt from the IRL-S PIR which supports geographic benefits of our sequencing plan. Although through write up we have relied heavily on our familiarity with the IRL-S, should be noted that this type of information is available for all listed in our sequencing plan.

"Further, scientists have identified the large spatial extent of one of the defining physical characteristics of the pre-drainage the south Florida wetlands, in combination with the complex multiple populations of plants and animals to thrive and persist the pre-drainage area in south Florida made it possible for the support genetically viable numbers and sub-populations of species ranges and/or narrow habitat requirements; • provide the aquatic large numbers of higher vertebrate animals in a naturally nutrient rich environment; • sustain habitat diversity despite natural disturbances. The ability to recover from disturbances decreases as the available habitat diversity, the amount of seasonal refugia, and the number of refugia also decrease (USACE, 1999). In south Florida roughly 50 percent of the pre-drainage

## Integrated Delivery Schedule Sequencing Plan Summary Sheet

**Sequencing Plan Name:** Establish a Unique and Descriptive Name of the Proposed Sequencing Plan. *Central Flow*

**Author of the Sequencing Plan:** Identify the name of the Author(s) that developed the Sequencing Plan during the exercise and identify spokesperson if applicable.

**Anticipated Benefits:** Identify geographic, ecological, hydrological, and/or economic benefits of your sequencing plan.

- Focus on implementing CEPP as quickly as possible with additional storage to relieve N. Estuaries + benefit Central Zone + Southern Estuaries + gain flexibility to adapt to climate change
- Control seepage E of WATS ENP + WATS to enable higher stages in the Everglades
- Continue progress on BBCW, CIII Spreader, Decomp

**Sequencing Plan:** Identify projects in your recommended order of sequencing. (i.e. what projects show go below the black line on the Draft IDS Worksheet)

1. CEPP : (a) South, (b) North, (c) New Water
  2. Storage : (a) HH benefits per reach (Interim LOS change)
  3. (b) Lake Okechobee Watershed
  4. Seepage Mgmt : (a) ENP Seepage management, (b) 3A/3B Seepage management, CII
  5. To maximize ecological benefits : (a) complete CIIISW, (b) complete BBCW Ph. I, (c) After CEPP, complete remaining Decomp
  6. (d) PIRs for CIIISC Eastern + BBCW Phase 2
- Addendum from D. Rodrick : In finite L-28 interceptor project to address wetland water quality (L-2 only)*



# Sub-set of CERP Projects Included by Workshop Participants

- BCWPA
- BBCW P1&P2
- C111SC P1&P2
- C-43
- CEPP
- Decomp
- EAA P1&P2
- ENP Seepage Management
- IRL-S C23/24, C25
- IRL-S Natural Lands
- L-28 Interceptor
- Lake Belt Storage
- LO ASR
- Lox River
- LOW
- Strazzulla (OPE)
- Operational Changes
  - Lake Istokpoga Regulation Schedule
  - HL & RTB
  - Revise LORS



# Assessment of Workshop Participants Sequencing Plans



# Complete Existing Projects & Plan Ahead

Max Ecological Benefits & Economic Returns	Run 1 - FWF	Focus on The Heart	Store/Treat/Move Water South & Manage Estuaries
BCWPA-C11	BCWPA-C11	BCWPA_C11	C-43
C-43	C-43	C-111SC_P1	BCWPA_C11
CEPP-South	BBCW_P1	C-43	BBCW_P1
CEPP- North	CEPP South	BBCW_P1	BBCW_P2
CEPP New Water	CEPP North	CEPP South	C-111 SC_P1
EAA P1&P2	CEPP New Water	CEPP North	C-111 SC_P2
BBCW_P1	EAA_P1&P2	CEPP New Water	CEPP South
BBCW_P2	BCWPA-C9/3A/B	C-111SC_P2	CEPP North
C-111SC_P1		EAA_P1&P2	CEPP New Water
C-111SC_P2		IRL-S C23/24	Storage, Treat N, S & Lake O
IRL-S C23/24		IRL-S C25	BCWPA-C9/3A/B
IRL-S C25		BBCW_P2	
BCWPA-C9/3A/B		BCWPA-C9/3A/B	

**Construction:** BCWPA\_C11, C-43, BBCW\_P1, CEPP South, CEPP North, CEPP New Water, C-111SC\_P1, IRL-S C23/24, ILR-S C25, BCWPA\_C-9/3A/3B

**Planning:** C-111SC\_P2, EAA P1&P2/ASR, BBCW\_P2, LOW/ASR



# Greater Everglades & Storage

Protect & Enhance Existing Natural Systems	NOW!	Central Flow
CEPP South	CEPP South	CEPP South
BCWPA_C11	C-111SC_P1	CEPP North
More STAs	BBCW_P1	CEPP New Water
EAA_P1&P2	LOW	Rev. LORS
C-43	CEPP New Water	LOW
Decomp	CEPP North	EAA_P1&P2
Strazulla	C-43	ENP Seepage Mngmnt
Rev LORS		BCWPA_Seep Mngmnt
BCWPA-C9/3A/B		C-111SC_P1
C111SC_P2		Decomp
CEPP North		C-111SC_P2
CEPP New Water		BBCW_P2
BBCW_P1		
LOW		
Lox River		

**Construction: BCWPA-C11, C-111SC\_P1, CEPP South, CEPP North, CEPP New Water, C-43, BBCW\_P1**

**Planning: LOW/ASR, EAA\_P1&P2/ASR, Decomp, Rev LORS, Lox River, C-111SC\_P2, BBCW\_P2**



# Focus on Storage

Keeping Promises	Early Benefits & Critical Infrastructure	Keepin Promises - Principle & Projects	Greater Everglades Northern Estuaries Project
EAA_P1&P2 L-28 Interceptor Rev. LORS HL & RTB Lox River Lake Istokpoga	EAA_P1&P2 CEPP New Water CEPP North BCWPA_C11 C-43 BBCW_P1 C111SC_P1	EAA_P1&P2 L-28 Interceptor Rev. LORS Lake Istokpoga	EAA P1&P2 LOW HL & RTB Lake O ASR
	LOW Lox River Rev LORS		CEPP North CEPP South CEPP New Water Rev LORS

**Construction: BCWPA-C11, C-43, CEPP South, CEPP North, CEPP New Water, BBCW\_P1, C-111SC\_P1**

**Planning: EAA\_P1&P2, L-28 Interceptor, LOW/ASR, HL&RTB, Rev LORS**



# Spatial Extent, Estuaries, Restore Flow South

New Source for BBCW Phase 2	Keeping Promises - Principles & Projects 2	Low Hanging Fruit, Estuarine Friendly & More Water South	Not Just Our Pet Pig - Northern Estuaries Protection & Everglades Regional Benefits	Estuary Health (Increasing Storage North of Lake O)
Lake Belt Storage	EAA_P1&P2	BBCW_P1	C-43	IRL-S Natural Land
BBCW_P1	IRL-S Natural Land	BBCW_P2	IRL-S C23/24	IRL_S C23/C24
BBCW_P2	C-43	Rev LORS	IRL-S Natural Land	IRL_S C25
C-111SC_P2	CEPP South	C-111SC_P1	Lake O ASR	C-43
C-111SC_P1	CEPP North	CEPP New Water	CEPP North	Lake O ASR
	CEPP New Water	EAA_P1	CEPP South	EAA_P1&P2
	L-28 Interceptor	EAA_P2	EAA_P1&P2	CEPP South
	Lox River	IRL-S Natural Land	LOW	CEPP North
	Rev LORS	Reservoir Miami	Lox River	CEPP New Water
	HL&RTB	IRL-S C23/C24	BBCW_P2	LOW
	IRL-S C-23/24	IRL-S C25	BBCW_P1	

**Construction:** IRL Natural Lands, BBCW\_P1, C-43, IRL-S C23/24, C-111SC\_P1, CEPP South, CEPP North, CEPP New Water

**Planning:** BBCW\_P2, EAA\_P1&P2/ASR, C-111SC\_P2, LOW/ASR, Lox River



# What we've done since.....

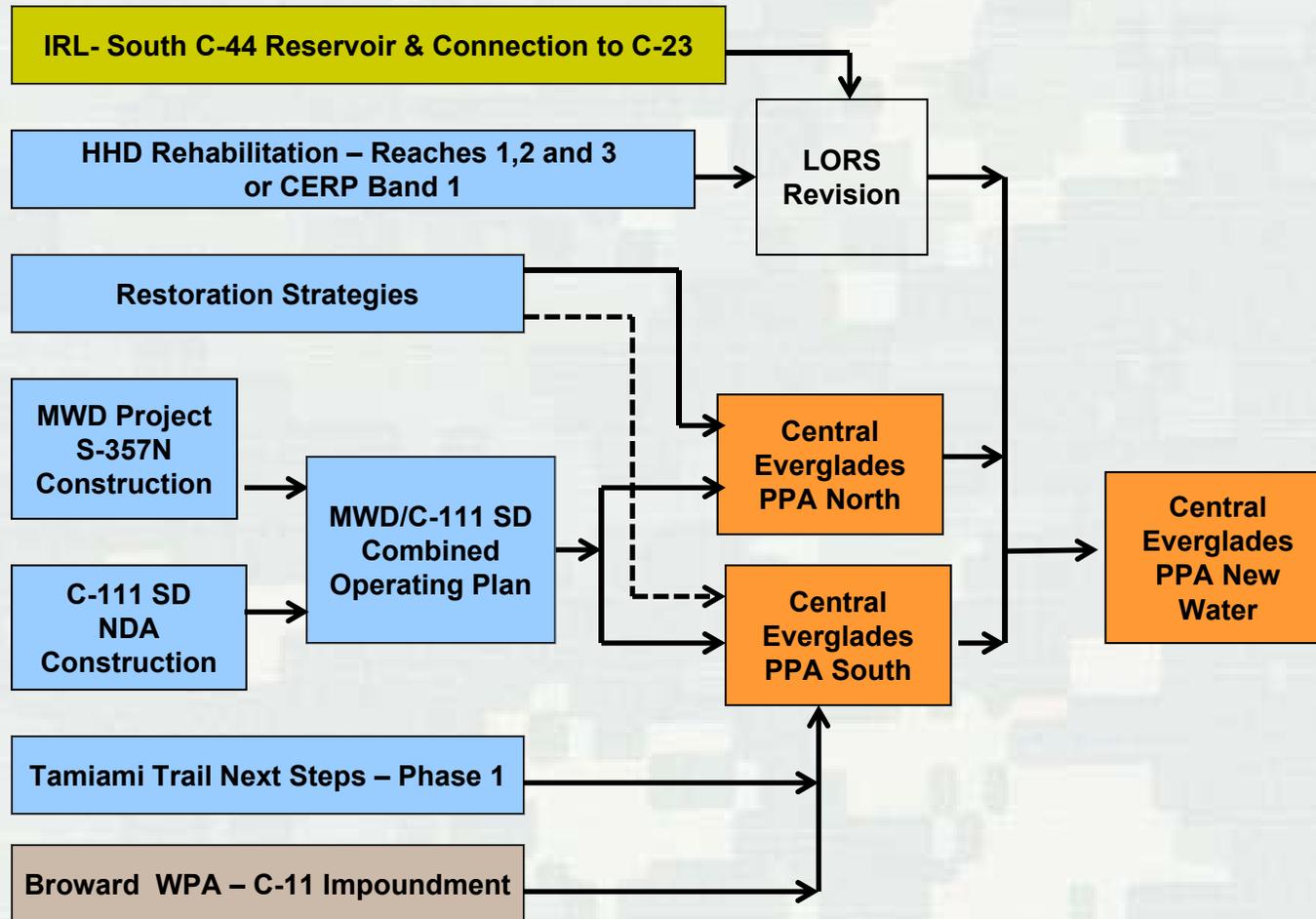
- With clarification provided at the March workshop, staff assessed the four Sequencing Plan Themes:
  - ▶ Considered project dependencies, constraints
  - ▶ Applied assumptions:
    - Federal process for planning, authorization, design
    - Construction durations



# Considerations for Sequencing Plan Development

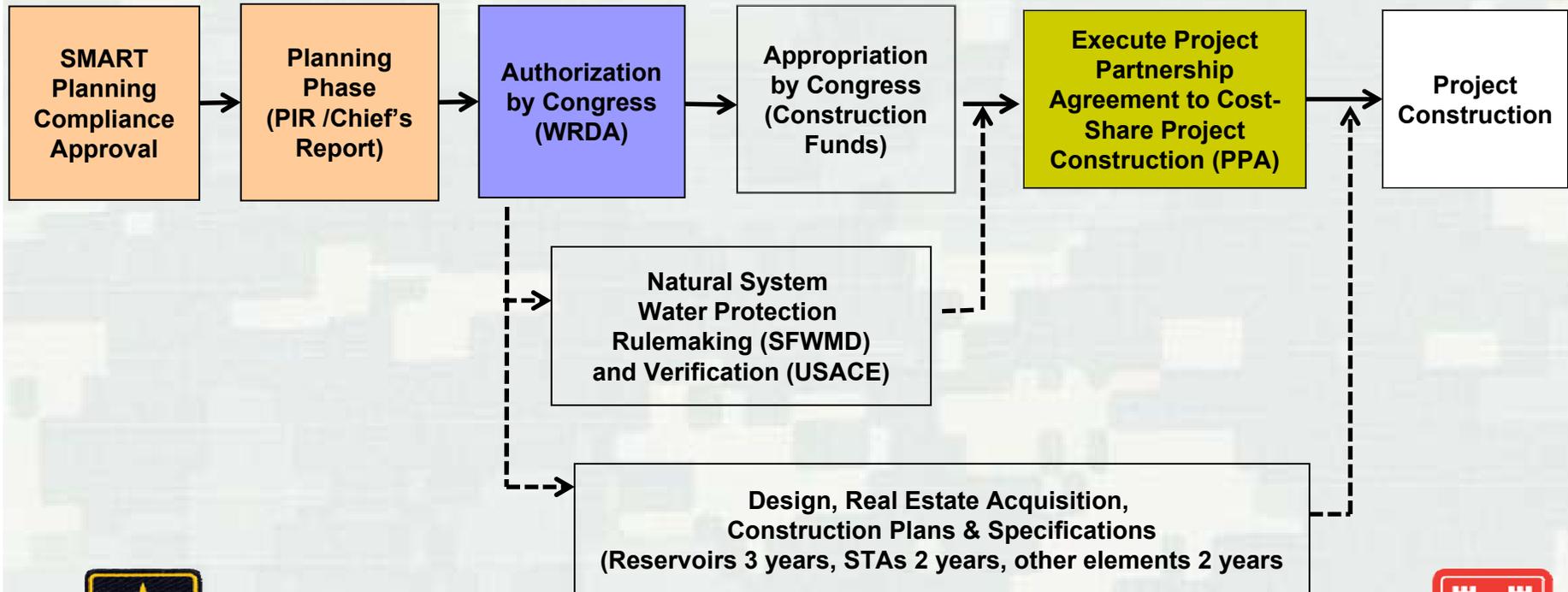


# Project Dependencies



# Federal Process Assumptions - new

SMART Planning Compliance Approval (6 mo – 1 YR)	3 Years PIR/Chief's Report \$3M	Assume WRDA Bill every 2 years	3 Years from Authorization for Appropriation, Real Estate Acquisition & Execution of PPA	Reservoirs 4 Years STAs 3 Years Other 2 Years
--	--	---	--	---



# Theme 1 – Complete Existing Projects & Plan Ahead

Project	Yellow Book Code	2015-2035																				
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Federal Construction Cost		39	135	132	170	188	85	130	77	93	133	134	133	146	148	148	171	183	183	162	94	94
Non-Federal Construction Cost		43	139	193	193	43	52	19	1	1	0	1	54	59	59	161	161	123	123	123	123	0
Total Construction Cost		82	274	325	363	231	136	148	78	94	133	135	187	205	207	310	333	306	306	285	217	94
Modified Water Deliveries to Everglades National Park*		●○○○	○○○○	○○○○	○○○●																	
Herbert Hoover Dike*		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Seminole Big Cypress*	OPE	●	●																			
Restoration Strategies*		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tamiami Trail Next Steps Phase 1*		●●●●●	●●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kissimmee River Restoration		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
West Palm Beach Canal/STA-1E		●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-111 South Dade		●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Picayune Strand Restoration	OPE																					
Merritt Pump Station		●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Faka Union Pump Station		—	—	●○○○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manatee Mitigation and Flood Protection Features		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Miller Pump Station		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remaining Features - Road removal & canal backfill		●	●●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Site 1 Impoundment	M																					
Phase 1																						
Indian River Lagoon-South																						
C-44 Intake Canal	B	●○○○	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-44 Reservoir	B	●●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-44 STA & Pump Station	B	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-23/24 Reservoir North	B							●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
C-23/24 Reservoir South	B																					
C-23/24 STA	B							●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
C-25 Reservoir	B																					
C-25 STA	B																					
Natural Lands	B																					
Decomp Physical Model	Q	●○○○	○○○	●																		
Caloosahatchee River (C-43) West Basin Storage																						
Pump Station & Cell 1	D	●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cell 2	D			●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Broward County Water Preserve Areas																						
C-11 Impoundment	Q		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
WCA 3A&3B Seepage Management	O																					
C-9 Impoundment	R																					
Biscayne Bay Coastal Wetlands Phase 1	FFF, OPE																					
L-31 East Flowway																						
Cutler Wetlands																						
C-111 Spreader Canal Western Project	WW																					
Central Everglades Planning Project																						
PPA South	AA, FF, H, QQ																					
PPA North	QQ, II, G																					
PPA New Water	V																					
Loxahatchee River Watershed Restoration Project	X, Y, K	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
C-111 Spreader Canal Eastern Project	WW	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
EAA Storage Phase 1 & 2, ASR	G, GG	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Biscayne Bay Coastal Wetlands Phase 2	FFF, OPE																					
Lake Okeechobee Watershed, ASR	A, W, GG, OPE	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●

xxxx SMART Planning Compliance Approval  
 ●○○○ Planning  
 ●●●●● Design, PPA Execution, Real Estate Acquisition  
 ● Construction  
 ●○○○● Operational Testing and Monitoring Period  
 Foundation Projects  
 Generation 1 Projects  
 Generation 2 Projects  
 Planning Phase - Not Authorized  
 Blue = Non-Federal  
 Black = Federal  
 \* Funded through other program authorities or by other entities

# Theme 4 - Spatial Extent, Estuaries, Restore Flow South

Project	Yellow Book Code	2015-2035																				
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Federal Construction Cost		39	135	132	169	189	106	151	98	114	196	199	197	210	212	212	171	183	183	162	94	94
Non-Federal Construction Cost		43	37	206	206	161	120	120	102	85	84	85	87	59	59	161	161	123	123	123	123	0
Total Construction Cost		82	172	340	378	350	226	270	200	199	281	283	284	269	271	373	333	306	306	285	217	94
Modified Water Deliveries to Everglades National Park*		●○○○	○○○○	○○○○	○○○●																	
Herbert Hoover Dike*		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Seminole Big Cypress*	OPE	●	●																			
Restoration Strategies*		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tamiami Trail Next Steps Phase 1*		●●●●●	●●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kissimmee River Restoration		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
West Palm Beach Canal/STA-1E		●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-111 South Dade		●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Picayune Strand Restoration	OPE																					
Merritt Pump Station		●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Faka Union Pump Station		—	●○○○	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manatee Mitigation and Flood Protection Features		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Miller Pump Station		●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remaining Features - Road removal & canal backfill		●	●●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Site 1 Impoundment	M																					
Phase 1																						
Indian River Lagoon-South																						
C-44 Intake Canal	B	●○○	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-44 Reservoir	B	●●●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-44 STA & Pump Station	B	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C-23/24 Reservoir North	B									●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
C-23/24 Reservoir South	B									●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
C-23/24 STA	B									●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
C-25 Reservoir	B																					
C-25 STA	B																					
Natural Lands	B			●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Decomp Physical Model	Q	●○○○	○○○	●																		
Caloosahatchee River (C-43) West Basin Storage																						
Pump Station & Cell 1	D	●●●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cell 2	D																					
Broward County Water Preserve Areas																						
C-11 Impoundment	Q		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
WCA 3A&3B Seepage Management	O																					
C-9 Impoundment	R																					
Biscayne Bay Coastal Wetlands Phase 1																						
L-31 East Flowway	FFF, OPE				●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Cutler Wetlands	FFF, OPE																					
C-111 Spreader Canal Western Project	WW_P1				●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Central Everglades Planning Project																						
PPA South	AA, FF, H, QQ																					
PPA North	QQ, II, H																					
PPA New Water	G, H, V																					
Loxahatchee River Watershed Restoration Project	X, Y, K																					
Biscayne Bay Coastal Wetlands Phase 2	FFF, P2																					
EAA Storage Phase 1 & 2, ASR	G, GG																					
C-111 Spreader Canal Eastern Project	WW_P2																					
Lake Okeechobee Watershed, ASR	A, W, GG, OPE																					

xxxx SMART Planning Compliance Approval  
 ● Planning  
 ●●●● Design, PPA Execution, Real Estate Acquisition  
 ● Construction  
 ●●●● Operational Testing and Monitoring Period  
 Foundation Projects  
 Generation 1 Projects  
 Generation 2 Projects  
 Planning Phase - Not Authorized  
 Blue = Non-Federal  
 Black = Federal  
 \* Funded through other program authorities or by other entities

# Themes 1 & 4 similar, except:

- Both themes include build-out of CERP Generation 1, 2 and CEPP projects with the exception that only Theme 4 includes IRL-S Natural lands
  - ▶ Theme 4 includes IRL-S Natural Lands as priority effort in 2017
    - Pushes C-43 Cell 1 start out to 2020
    - Pushes C-43 Cell 2 start out to 2023
- Planning efforts are the same, but the priorities are different:
  - ▶ Theme 1: LRWRP => C-111SCE => EAA 1&2/ASR => BBCW Ph2 => LOW/ASR
  - ▶ Theme 4: BBCW Ph2 => EAA 1&2/ASR => C-111SCE => LOW/ASR => LRWRP



# Theme 2 - Greater Everglades & Storage

Project	Yellow Book Code	2015-2035																				
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Federal Construction Cost		39	135	132	164	164	54	54	2	36	36	36	121	120	120	119	0	0	0	0	0	0
Non-Federal Construction Cost		43	139	198	198	76	72	1	2	1	1	1	2	64	91	90	185	185	185	185	0	0
Total Construction Cost		82	273	329	362	240	126	55	4	37	37	37	122	184	211	210	185	185	185	185	0	0
Modified Water Deliveries to Everglades National Park*		●○○○	○○○○	○○○○	○○○○	○○○○																
Herbert Hoover Dike*		●																				
Seminole Big Cypress*	OPE	●																				
Restoration Strategies*		=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Tamiami Trail Next Steps Phase 1*		=====	=====	●	=====	=====	=====	●														
Kissimmee River Restoration		●																				
West Palm Beach Canal/STA-1E		●	●																			
C-111 South Dade		●●●●	●																			
Picayune Strand Restoration	OPE																					
Merritt Pump Station		●	●																			
Faka Union Pump Station			●○○○																			
Manatee Mitigation and Flood Protection Features		●	=====	=====	●																	
Miller Pump Station		●				●○○○	●															
Remaining Features - Road removal & canal backfill		●	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Site 1 Impoundment	M																					
Phase 1																						
Indian River Lagoon-South																						
C-44 Intake Canal	B	●○○○																				
C-44 Reservoir	B	=====	●	=====	=====	=====	●															
C-44 STA & Pump Station	B	●	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
C-23/24 Reservoir North	B																					
C-23/24 Reservoir South	B																					
C-23/24 STA	B																					
C-25 Reservoir	B																					
C-25 STA	B																					
Natural Lands	B																					
Decomp Physical Model	Q	●○○○	○○○○	●																		
Caloosahatchee River (C-43) West Basin Storage																						
Pump Station & Cell 1	D	●●●●	●	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Cell 2	D			●	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Broward County Water Preserve Areas																						
C-11 Impoundment	Q		●	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
WCA 3A&3B Levee/S-356	O		●	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
C-9 Impoundment	R																					
Biscayne Bay Coastal Wetlands Phase 1																						
L-31 East Flowway	FFF,OPE																					
Cutler Wetlands	FFF,OPE																					
C-111 Spreader Canal Western Project	WW																					
Central Everglades Planning Project																						
PPA South	AA, FF, H, QQ																					
PPA North	QQ, II, G																					
PPA New Water	V																					
Loxahatchee River Watershed Restoration Project	X, Y, K																					
Lake Okeechobee Watershed, ASR	A, W, GG, OPE																					
EAA Storage Phase 1 & 2, ASR	G, GG																					
WCA-3 Decomparmentalization (Remainder)																						
Revise LORS	F																					
C-111 Spreader Canal Eastern Project	WW,P2																					
Biscayne Bay Coastal Wetlands Phase 2	FFF,OPE																					

xxxx SMART Planning Compliance Approval  
 ○○○○ Planning  
 ●●●● Design, PPA Execution, Real Estate Acquisition  
 ● Construction  
 ○○○○ Operational Testing and Monitoring Period  
 Foundation Projects  
 Generation 1 Projects  
 Generation 2 Projects  
 Planning Phase - Not Authorized  
 Blue = Non-Federal  
 Black = Federal  
 \* Funded through other program authorities or by other entities

# Theme 3 - Focus on Storage

Project	Yellow Book Code	2015-2035																				
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Federal Construction Cost		39	135	132	165	164	54	54	2	35	35	35	120	119	119	119	0	0	0	0	0	0
Non-Federal Construction Cost		43	139	198	198	76	72	1	2	1	1	1	1	64	90	90	185	185	185	185	0	0
Total Construction Cost		82	274	330	363	240	126	55	4	36	36	36	121	183	210	210	185	185	185	185	0	0
Modified Water Deliveries to Everglades National Park*		●○○○	○○○○	○○○○	○○○○	●																
Herbert Hoover Dike*		●																				
Seminole Big Cypress*	OPE	●	●																			
Restoration Strategies*		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Tamiami Trail Next Steps Phase 1*		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Kissimmee River Restoration		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
West Palm Beach Canal/STA-1E		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-111 South Dade		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Picayune Strand Restoration	OPE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Merritt Pump Station		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Faka Union Pump Station		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Manatee Mitigation and Flood Protection Features		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Miller Pump Station		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Remaining Features - Road removal & canal backfill		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Site 1 Impoundment	M																					
Phase 1																						
Indian River Lagoon-South																						
C-44 Intake Canal	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-44 Reservoir	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-44 STA & Pump Station	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-23/24 Reservoir North	B																					
C-23/24 Reservoir South	B																					
C-23/24 STA	B																					
C-25 Reservoir	B																					
C-25 STA	B																					
Natural Lands	B																					
Decomp Physical Model	Q	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Caloosahatchee River (C-43) West Basin Storage																						
Pump Station & Cell 1	D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cell 2	D																					
Broward County Water Preserve Areas																						
C-11 Impoundment	Q																					
WCA 3A&3B Seepage Management	O																					
C-9 Impoundment	R																					
Biscayne Bay Coastal Wetlands Phase 1																						
L-31 East Flowway	FFF, OPE																					
Cutler Wetlands	FFF, OPE																					
C-111 Spreader Canal Western Project	WW, P1																					
Central Everglades Planning Project																						
PPA South	AA, FF, H, QQ																					
PPA North	QQ, II, G																					
PPA New Water	V																					
Loxahatchee River Watershed Restoration Project	X, Y, K	XXXX	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
EAA Storage Phase 1 & 2, ASR	G, GG	XXXX	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Big Cypress/L-28 Interceptor	CCC, OPE	XXXX	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lake Okeechobee Watershed & ASR	A, W, GG, OPE	XXXX	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Holey Land & Rottenberger Operations	DD, EE	XXXX	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Revise LORS	F																					

XXXX SMART Planning Compliance Approval  
 ○○○○● Planning  
 ●●●●● Design, PPA Execution, Real Estate Acquisition  
 ● Construction  
 ○○○○● Operational Testing and Monitoring Period  
 Foundation Projects  
 Generation 1 Projects  
 Generation 2 Projects  
 Planning Phase - Not Authorized  
 Blue = Non-Federal  
 Black = Federal  
 \* Funded through other program authorities or by other entities

# Themes 2 & 3 similar, except:

- From 2020-2025, Federal costs are well below \$100M due to not building out IRL-S
- Planning efforts differ:
  - ▶ Theme 2: LOW/ASR => Decomp (remainder) => Revise LORS => C-111SCE => LRWRP => BBCW Ph2
  - ▶ Theme 3: LRWRP => EAA 1&2/ASR => L-28/Big Cypress => LOW/ASR => HL & RTB => Revise LORS



# Themes 1 & 4 compared to Themes 2 & 3:

- All themes have different priorities for planning efforts
- From 2019-2029, Non-Fed costs are well below \$100M in all themes except Theme 4 which includes IRL-NL in 2017-19 and consequent delay in construction of C-43 to 2020-26
- Themes 2 & 3 do not include build-out of the remainder of IRL-S (i.e. C-23/24, C-25, and Natural Lands) or BCWPA C-9
- Themes 2 & 3 include additional planning efforts for L-28 Interceptor/Big Cypress, Decomp (remainder) and operational changes for HL & RTB, LORS



# Theme 5

Project	Yellow Book Code	2015-2035																				
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Federal Construction Cost (\$FER)		41	138	142	190	204	141	212	192	195	221	213	186	200	144	151	100	0	0	0	0	0
Non-Federal Construction Cost (\$FER)		43	139	161	161	77	119	55	39	142	141	141	210	192	192	192	123	123	0	0	0	0
Total Construction Cost (\$FER)		84	277	303	350	282	260	267	231	338	362	354	396	392	336	343	223	123	0	0	0	0
Modified Water Deliveries to Everglades National Park*		●○○○	○○○○	○○○○	○○○○	●																
Herbert Hoover Dike*		●																				
Seminole Big Cypress*	OPE	●																				
Restoration Strategies*		=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Tamiami Trail Next Steps Phase 1*		*****	*****	●	=====	=====	=====	●														
Kissimmee River Restoration		●																				
West Palm Beach Canal/STA-1E		●																				
C-111 South Dade Contract 8 & 9		●●●	●																			
C-111 South Dade PACR		●	○○○	●	=====	=====	=====	●	=====	=====	●											
Picayune Strand Restoration	OPE	●																				
Merritt Pump Station		●	●																			
Faka Union Pump Station		●	●	○	○																	
Manatee Mitigation and Flood Protection Features		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Miller Pump Station		●	●	●	○	○	●															
Remaining Features - Road removal & canal backfill		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Site 1 Impoundment	M																					
Phase 1																						
Indian River Lagoon-South																						
C-44 Intake Canal	B	●	○○○	●																		
C-44 Reservoir	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-44 STA & Pump Station	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-23/24 Reservoir North	B				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-23/24 Reservoir South	B				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-23/24 STA	B				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-25 Reservoir	B								●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-25 STA	B								●	●	●	●	●	●	●	●	●	●	●	●	●	●
Natural Lands	B																					
Decomp Physical Model	Q	●	○○○	○○○	●																	
Caloosahatchee River (C-43) West Basin Storage																						
Pump Station & Cell 1	D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cell 2	D																					
Broward County Water Preserve Areas																						
C-11 Impoundment	Q		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
WCA 3A&3B Seepage Management	O				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-9 Impoundment	R																					
Biscayne Bay Coastal Wetlands Phase 1	FFF, OPE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
L-31 East Flowway																						
Cutler Wetlands																						
C-111 Spreader Canal Western Project	WW																					
Central Everglades Planning Project (Authorization WRDA 2016)																						
PPA South: LRR & PPA Execution	AA, FF, H, QQ				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Remove Old Tamiami Trail (CNTX)					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
L-67A Structure 1 & Gap in L-67C Levee (CNT 3)					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Increase S-356 (CNT 4)																						
L-29 Gated Spillway (CNT 4b)																						
Increase S-333 (CNT 4a)																						
L-67A Structures 2 & 3 (CNT 5)																						
Removal L-67C & L-67 Ext, Constr L-67D Levee (CNT 6)																						
Removal L-29 Levee & Backfill L-67 Ext (CNT 7)																						
PPA North	QQ, II, G																					
PPA New Water	V																					
Loxahatchee River Watershed Restoration Project	X, Y, K	XXXX	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lake Okeechobee Watershed, ASR																						
Big Cypress/L-28 Interceptor (Western Everglades)																						
EAA Storage & ASR/Decomp Ph2																						
C-111 Spreader Canal Eastern & BBCW Ph2																						

XXXX SMART Planning Compliance Approval  
 ○○○○ Planning  
 ●●●● Design, PPA Execution, Real Estate Acquisition  
 ● Construction  
 ○○○○ Operational Testing and Monitoring Period  
 Foundation Projects  
 Generation 1 Projects  
 Generation 2 Projects  
 Planning Phase - Not Authorized  
 Blue = Non-Federal  
 Black = Federal  
 \* Funded through other program authorities or by other entities

# Theme 5 Benefits:

- **Maximizes holistic benefits to regional system as early as possible**
  - ▶ Ensures continued stream of construction which provides for steady increase in regional ecosystem benefits
  - ▶ Provides benefits to Caloosahatchee & St Lucie estuaries from storage while infrastructure necessary to open up system for additional flow south is being implemented (CEPP south)
  - ▶ Improves conditions and flow through WCA-3 and provides more water to ENP and FL Bay as early as possible
  - ▶ Advances projects with greatest potential to avert ongoing degradation and considers the implications of climate change and sea-level rise
  - ▶ Increases the spatial extent of wetlands with 55K acres in Picayune Strand, over 4K acres in BCWPA and the expansion of coastal wetlands in BBCW
  - ▶ Implements majority public input on priorities – i.e. CEPP, BBCW\_P1, BCWPA



# Theme 5:

- **Ensures additional projects will be ready to continue progress on restoration**
  - ▶ Includes most of the planning efforts for projects identified by stakeholders as priorities
  - ▶ Sequencing of planning efforts considers the need to:
    - Prioritize CERP planning study for Big Cypress/L-28 Interceptor (Western Everglades)
    - Planning on LOW while infrastructure necessary to open up system for additional flow south is being implemented (CEPP South)
    - Remain consistent with State's LO Basin Management Action Plan obligations to initiate studies in 2016
    - Plan for storage south of lake while the necessary Restoration Strategies and CEPP North are being implemented
    - Time necessary to assess concerns & uncertainties in south Dade



# Theme 5:

- **Consistency with project dependencies and constraints**
  - ▶ Maintains required 50/50 cost share
  - ▶ Commitment to complete construction on projects where construction has been initiated
  - ▶ Fulfills obligations to Congress (Authorizations) and State commitment (PPAs) and identifies funding needs to continue progress on restoration
  - ▶ FY 16 State budget process has committed SFWMD to construction of C-43
  - ▶ FY 16 Presidents budget includes funding for design of BCWPA C-11 Impoundment and BBCW Phase 1, must execute PPAs before Corps can move into construction on projects authorized in WRRDA 2014
  - ▶ Consistent with project dependencies for moving water south
    - Modifications to downstream infrastructure
    - BCWPA C-11 Impoundment
    - Restoration Strategies



# Discussion



# Next Steps

- WRAC - September 3, 2015
- SFWMD Governing Board – September 10, 2015
- Working Group Meeting – September 23, 2015
- Task Force Meeting - November 19, 2015
- Use IDS to guide our planning, design, and construction sequencing and budgeting



**Thank You**

