

# COMPREHENSIVE EVERGLADES RESTORATION PLAN

# LOXAHATCHEE RIVER WATERSHED RESTORATION PROJECT (LRWRP)

Summary Evaluation of Alternative Plans  
Project Delivery Team Meeting #12

Presented by:

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U.S. Army Corps of Engineers

Jacksonville District

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# AGENDA

- **Encore display of the four decision criteria from the Principles and Guidelines**
- **Summary of how alternatives meet the criteria**
- **Discussion of selected details alternatives and criteria**
- **Additional considerations**
- **The NER Plan**



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# PRINCIPLES AND GUIDELINES CRITERIA

- **Effectiveness:** Extent to which an alternative plan alleviates the specified problems and achieves the specified opportunities
- **Efficiency:** Extent to which an alternative plan is the most cost-effective means of alleviating problems and realizing opportunities. CE/ICA is one method to identify plans that maximize environmental benefits compared to costs
- **Completeness:** Extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects
- **Acceptability:** Workability and viability of the alternative plan with respect to acceptance by State and local entities and the public and compatibility with existing laws, regulations, and public policies



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# SUMMARY OF PERFORMANCE

	Alt 2	Alt 5	Alt 10	Alt 13
Effectiveness				
Flow at Lainhart	++	++	+++	+
River/Estuary	++	++	++	+
Acres restored	++	++	+	+++
Connectivity	++	++	+	+++
Plant-Animal	++	++	+	+++
Efficiency				
River/Estuary HU		CE, BB	CE, BB	
Wetland HU		CE		CE, BB
Completeness	y	y	y	n
Acceptability	y	y	n	n



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# EFFICIENCY

## SUMMARY OF COST EFFECTIVENESS & INCREMENTAL COST ANALYSIS

- Watershed (wetlands, connectivity) habitat unit benefits
  - Order of performance (low to high) is 10, 2, 5, 13.
  - Alts 5 and 13 are cost effective
- River, floodplain, estuary habitat unit benefits
  - Order of performance (low to high) is 13, 2, 5, 10
  - Alts 5 and 10 are cost effective and best buys
- CE/ICA suggests that Alt 5 is the National Ecosystem Restoration (NER) plan – it is the only alternative that is cost effective for both types of habitat units
- Alt 5 is also the second best performer for both types of habitat and is the least costly of the four alternatives



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## EFFICIENCY (CONT.)

- Selection of Alt 13 rather than Alt 5 would produce many more watershed habitat units for only a slightly higher cost, but Alt 13 is the worst performing alternative for river/floodplain/estuary habitat units.
- Selection of Alt 10 rather than Alt 5 would produce more river/floodplain/estuary habitat units and a much larger cost, but Alt 10 is the highest cost and worst performing alternative for watershed habitat units.
- However, effectiveness and efficiency (CE/ICA) are not the only deciding factors. Consider completeness and acceptability.



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# COMPLETENESS

The four alternatives are complete except for the following concerns which are not yet resolved

- All four alternatives rely on water from Indian Trail Improvement District (ITID). Change in operation of ITID flood control infrastructure is assumed but is not a formal management measure in the alternatives.
- Alt 13 and Avenir. Alt 13 does not yet have an administrative method to allow the LRWRP project to flow water across the proposed Avenir mitigation site, or a cost estimate for a replacement mitigation site for the Avenir mitigation should this be required.



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# ACCEPTABILITY

- Alts 2 and 5 are acceptable
- Alt 13 has acceptability concerns
  - Use of the Avenir mitigation site might not be resolved
  - Complex operational requirements; might not work as modeled
- Alt 10 has acceptability concerns
  - Changing operations of Lake Okeechobee
  - No control of the size or timing of the C-51 Phase 2 rock mine
  - Significant and complex negotiations for land acquisition
  - Complex operational requirements; might not work as modeled

Does the plan  
comply with laws,  
regulations,  
policies?

Can the plan  
be built? Is it  
feasible?

Will the plan  
work? Is it  
feasible?



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# ADDITIONAL CONSIDERATIONS

## Alt 2

Connects L-8 Canal to C-18W basin –  
additional flexibility of water source;  
potential WQ concerns with L-8 Canal

L-8 Shallow seepage losses

Uncertainty with ASR

C-18W reservoir near residential area

## Alt 5

Does not connect to L-8 Canal – less  
flexibility for water source; relies on  
cleaner sources of water (ITID, Corbett,  
C-18W basin, but not L-8 Canal)

Uncertainty with ASR

C-18W reservoir near residential area

## Alt 10

Connects L-8 Canal to C-18W basin –  
additional flexibility of water source;  
potential WQ concerns with L-8 Canal

Atypical water storage feature – potential  
risks for storage volume, WQ, cost

Incidental benefit - improves water quality  
to City of WPB public water supply

C-18W reservoir near residential area

## Alt 13

Connects L-8 Canal to C-18W basin –  
additional flexibility of water source;  
potential WQ concerns with L-8 Canal

L-8 Shallow seepage losses

Significant land acquisition required

Uncertainty with ASR



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<b>Efficiency</b>				
River/Estuary HU		CE, BB	CE, BB	
Wetland HU		CE		CE, BB
Completeness	y	y	y	n
Acceptability	y	y	n	n



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# ALTERNATIVE 5

30 Apr 2018

- Kitching Creek (Hydration):** Spreader canal; weir/plug (Jenkins Ditch)
- Moonshine Creek (MC) & Gulfstream East (GE) (Restoration):** Connect HSLCD ditch to MC; clear MC vegetation; weir in Hobe Grove Ditch; regrade adjacent area to historic topography
- Cypress Creek Canal (CCC) (Reduce Over-drainage):** Replace CCC weir to raise control elevation; raise berm at Ranch Colony; automate twin 84" culverts;
- Gulfstream West (Restoration & Reduce Over-drainage):** Partial backfill & relocate southern end of HSLCD canal; small pump; construct flow through marsh to attenuate flow
- Palmar East (Restoration & Connectivity)** Plug ditches; remove pipes; improve northern berm; construct western berm; improve eastern berm; pumps at Thomas Farm; redirect drainage to GW flow-through marsh via north Nine Gems canal
- C-18W Reservoir (9,500 ac/ft & 4 ASR Wells):** Above-ground reservoir; inflow pump; discharge structure; seepage control; M-O Canal Connector and pump
- G-160 Structure (Reduce Over-drainage):** Improve hydroperiod in Loxahatchee Slough
- G-161 Structure (Connectivity):** GWP water to Loxahatchee Slough
- GWP Triangle (Connectivity)**
- M-1 Pump Station (Conveyance):** Deliver Lower M-1 Basin water to M-Canal, GWP, and G-161

