

# CERP Adaptive Management Integration

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# Background

- What's it All About
- Setting the Stage
- Integrating CERP Adaptive Management
- Program and Project Efforts
- What's New
- Next Steps
- Challenges to be Addressed

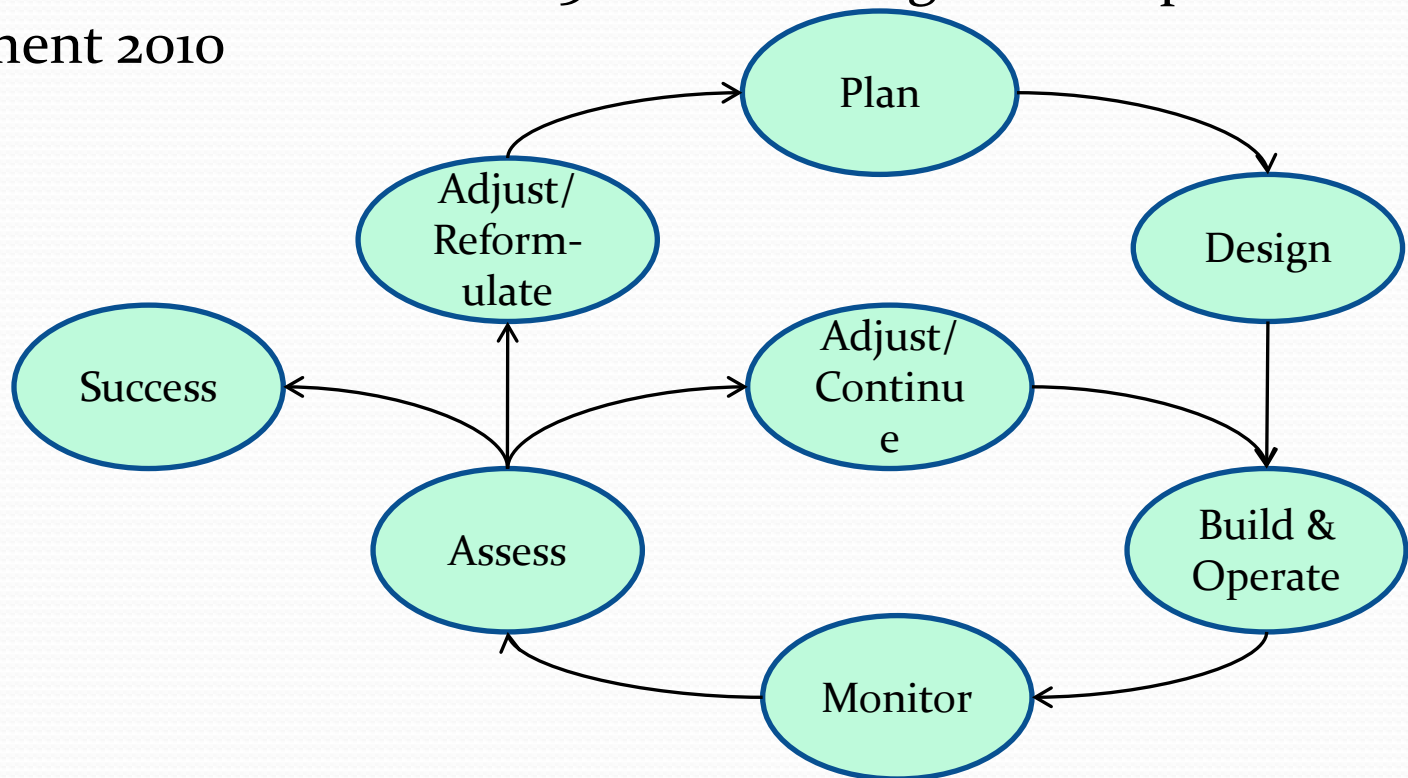


# What's It All About

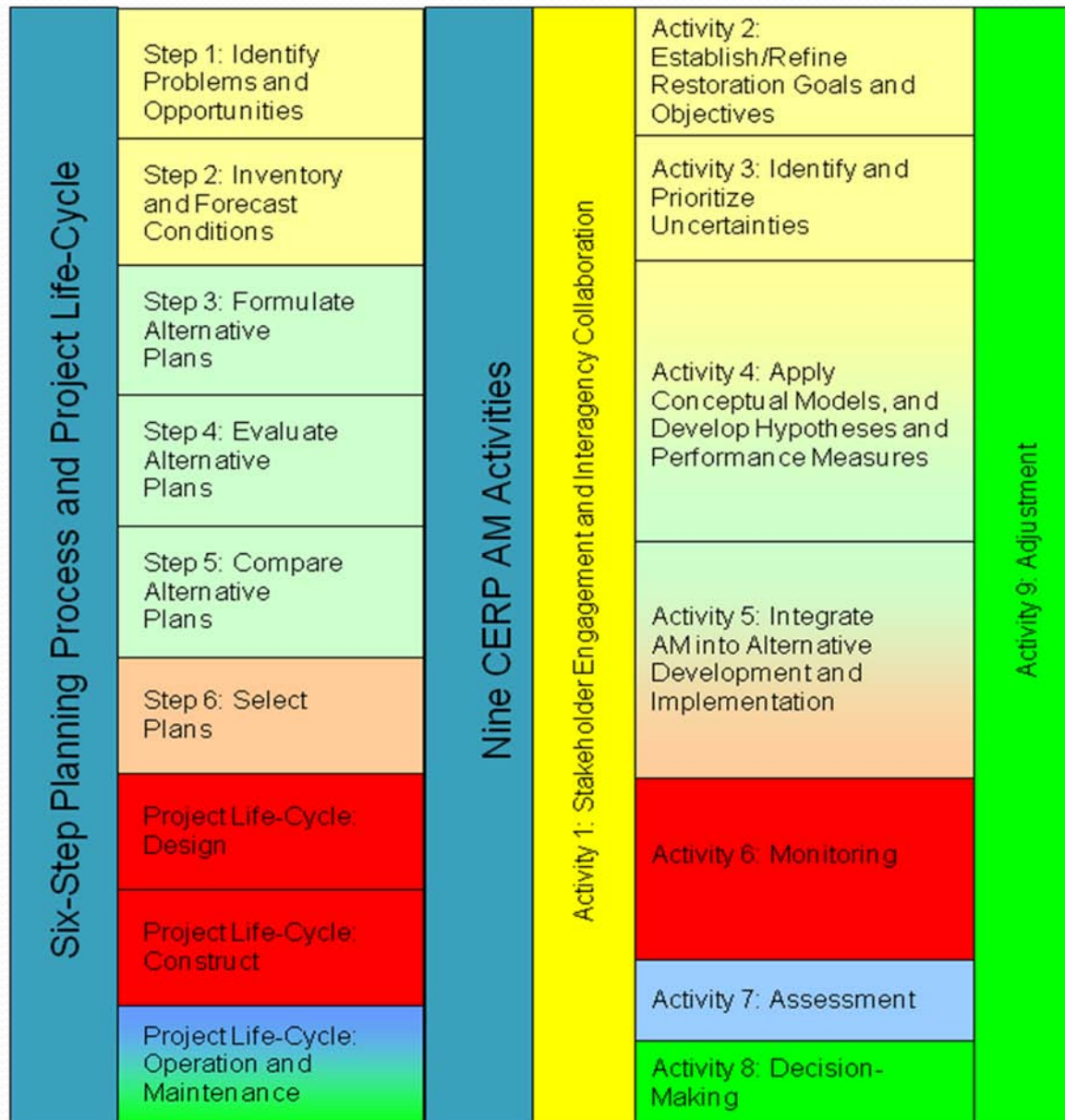
- *CERP adaptive management* is
  - A structured management approach for addressing uncertainties by testing hypotheses;
  - Links science to decision making;
  - Provides flexibility or options to adjust implementation, as necessary, to improve the probability of restoration success; and
  - Uses stakeholder engagement and collaboration to build trust, build common understanding, and opportunities to resolve conflicts

# Setting the Stage

- WRDA 2000 – Adaptive Assessment and Monitoring
- 2003 Programmatic Regulations– Adaptive Management Program
- 2006 CERP Adaptive Management Strategy - Framework
- 2009 USACE Guidance on Section 2039 WRDA 2007
- CERP Adaptive Management Integration Guide 2010
- CERP Guidance Memorandum 56 on Planning and Adaptive Management 2010



# Integrating Adaptive Management into USACE Planning and Implementation



# Program and Project Efforts

- **Program-level**

- AM Integration Guide
- MAP/SSR 2010
- Scientific Knowledge Gained and Shared Definition of Everglades Restoration
- Predictive performance measures refinement

- **Project-level**

- DECOMP Physical Model
- C-111 Spreader Canal
- L-31 Seepage Management Pilot Study
- Biscayne Bay Coastal Wetlands
- Picayune Strand
- Melaleuca Eradication and Other Exotic Plants



# What's New for Projects

- Identify and Prioritize Uncertainty Early In Planning
- Management Approval for Adaptive Management Strategies (Pre- Post PIR)
  - Scenario Planning and Multiple Future Withouts
  - Incorporate Flexibility and Robustness
  - Pilot Projects, Physical Models, or Design tests
  - Post-Project Monitoring/Assessment
- Requirement for Adaptive Management Plan
- Project Monitoring and Assessment
- Science – Management Interface

# What's New at the Program

- Need for Program-level Adaptive Management Plan
  - Programmatic List of Uncertainties
  - Programmatic Management Option Matrices and Decision-Support Tools
- Scientific Knowledge Gained
- Shared Definition of Everglades Restoration
  - Refine Performance Measures and Targets

TABLE 3-1: EXAMPLE OF PROGRAMMATIC MANAGEMENT OPTION MATRIX<sup>2</sup> FOR THE CALOOSAHATCHEE ESTUARY

Stressor/Attribute Metric	Restoration Target (Timeframe)	Management Action Option 1	Management Action Option 2	Management Action Option 3
<b>Salinity*</b> (operational tests may be required to achieve balance between multiple project objectives, i.e., seagrass, oysters, water quality)	5-30 psu range (virtually immediate after all projects are operational. Note that this range is the full range over the spatial extent of the entire Caloosahatchee system)	Change operations to meet flow requirements to achieve salinity range and zones		
<b>Oyster Habitat Suitability Index (HSI)</b>	Optimal oyster habitat areas (1-2 years HSI completed <sup>3</sup> )	Conduct management actions in optimal areas		
<b>Oyster Substrate</b>	Acres of suitable habitat (1-2 years surveys completed)	If salinity range is met, add least expensive hard bottom substrates such as concrete rubble if limiting	Add oyster cultch	Dredge muck
<b>Water Quality Sedimentation</b>	Decrease total suspended solids entering the estuary (2-3 years)	Adjust flows to minimize sediment transport	Look for opportunities to reduce sediment loads from the watershed such agricultural Best Management Practices	
<b>Water Quality Nitrogen/ Phosphorus</b>	Reduce TN and TP concentrations to 0.80-0.85 or less and 0.079 mg/L respectively (2-3 years)	Increase Storm Water Treatment Area acreage in C-43 R.2	Decrease overall flows and associated loads	Implement urban and agriculture Best Management Practices
<b>Oyster Recruitment</b>	Presence/absence adults and larvae (2-3 years)	Seed with juveniles	Stock adults	Change operations to avoid too much or too little flow in key months



# Next Steps

- Final Draft CERP Adaptive Management Integration Guide – August 2010
- CERP Guidance Memorandum 56 – Planning and Adaptive Management – September 2010
- Program-Level Adaptive Management Plan – Fall 2010
- Project-Level Adaptive Management Support -FY10 and beyond
- CERP/RECOVER/Adaptive Management Workshops to Update Staff
- Continue to Improve Stakeholder Engagement and Collaboration Methods that are FACA Compliant

# Remaining Challenges to Address

- Achieving two-way dialogue with stakeholders given FACA
- Additional details for integrating adaptive management into the planning process
- Program-level adaptive management plan
  - Comprehensive list of programmatic uncertainties
- Definition of success with agreed upon set of indicators and desired endpoints
  - Decision criteria to determine if indicators have improved or if success has been achieved
- Tools and forums to resolve competing objectives



# To Reach Success – Questions?

