



Reviving  
*THE river OF grass*

**Water Resources Advisory Commission  
January 6, 2010**

***Phase II Planning***

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Division***

[sfwmd.gov/riverofgrass](http://sfwmd.gov/riverofgrass)

# Phase II Scope

RESTORATION PLANNING

- Scope: Identify alternative plans while considering both objectives and constraints (options to include scenarios with land swaps and scenarios without)
  - Conduct public planning process
  - Build upon Phase I Planning and Due Diligence efforts
  - Utilize more extensive and detailed modeling and evaluation tools to evaluate system-wide performance and constraints not previously examined
  - In particular, within the remaining Everglades, additional information regarding water depths, the spatial distribution of depths, and water flows will be considered
  - Evaluate and optimize alternatives
  - Develop approximately 2-4 alternative plans (at least one without land swaps and one with land swaps)

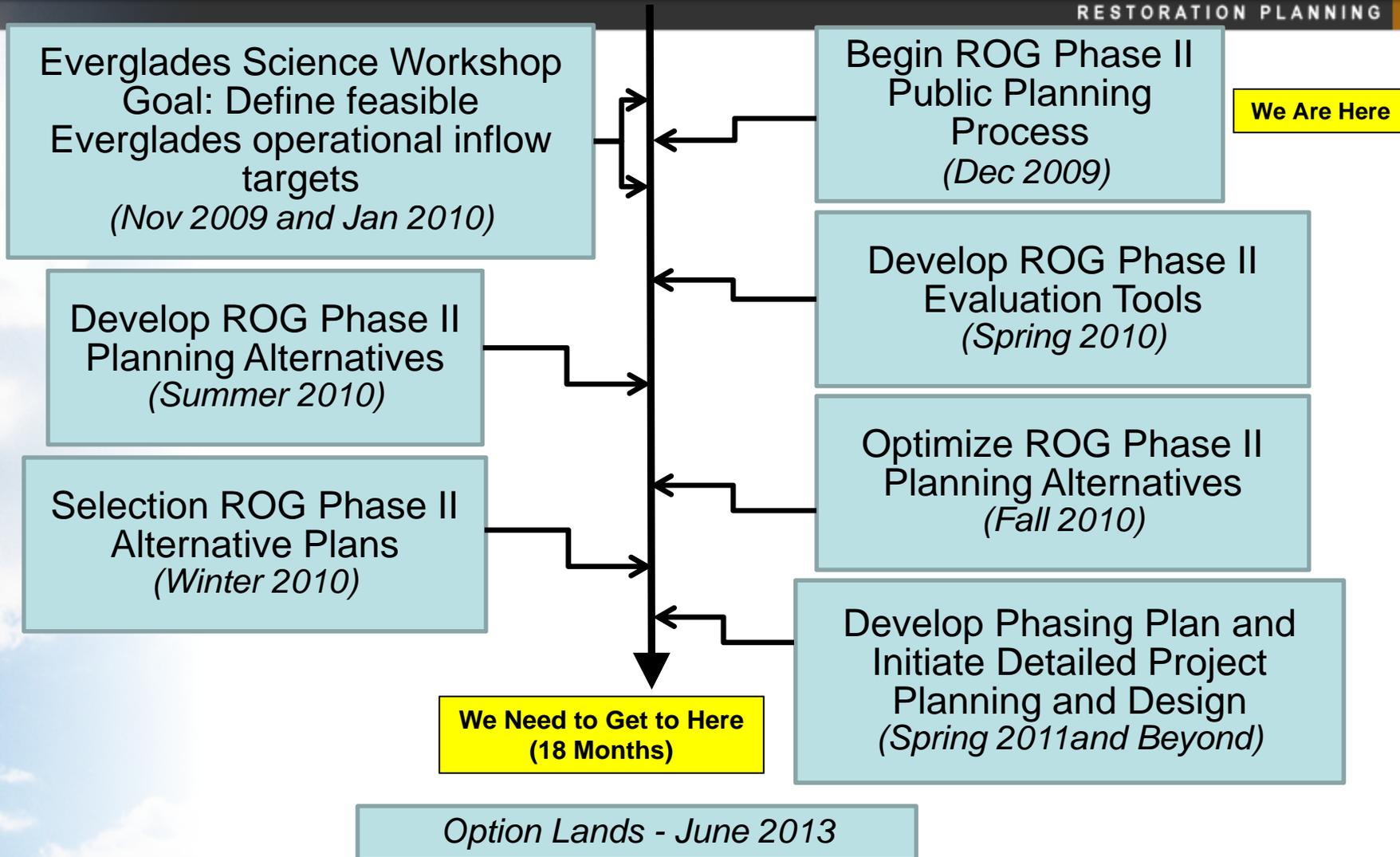
# Refinements as Compared to Phase I

RESTORATION PLANNING

- Evaluation of constraints
- Refinement of hydrologic flows (if necessary based on constraints)
- Modeling
  - Hydrologic – RSM Model with Daily Time Step (instead of water budget model with monthly time step)
    - Northern Link-Node Model
    - Glades-LECSA Mesh Model
  - Hydraulic - HAT or HEC-RAS
  - Water Quality - dynamic using DMSTA
- Alternative Plans
  - Develop new Phase II alternatives for consideration
  - Base on what was learned during Phase I and will be learned during Phase II Sensitivity Analysis

# Phase II Schedule - Overview

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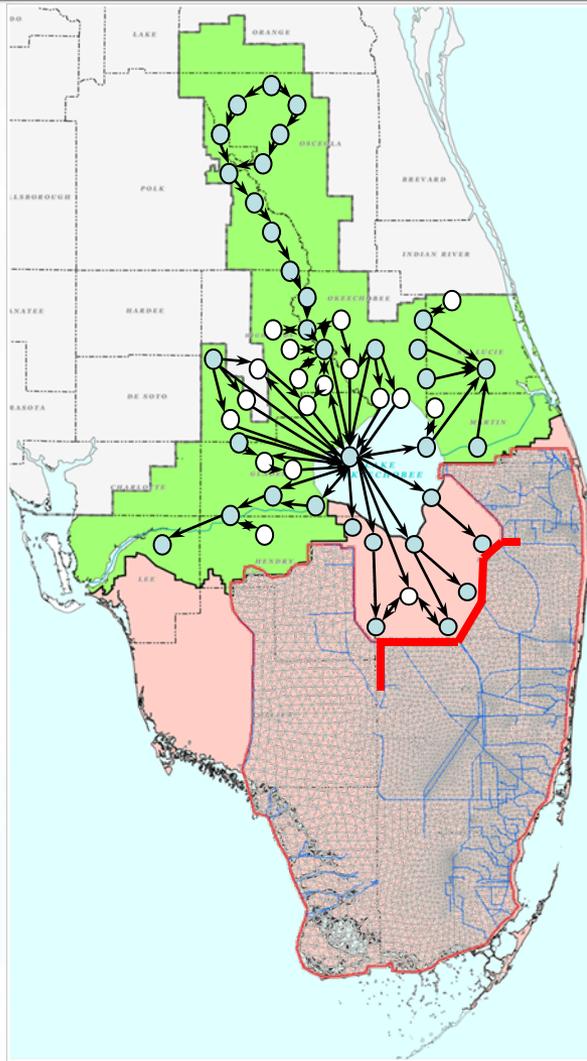
# ROG Phase II Everglades Science Workshop

RESTORATION PLANNING

- November 17 and 18
  - Presentations on the latest scientific & modeling data for the Everglades and Southern Estuaries were provided
  - Ever-View windows, which facilitate system-wide Everglades analysis across multiple models, were introduced as a Phase II evaluation methodology
  - System objectives, constraints and hydrologic characteristics were discussed
  - A goal to identify a range of feasible Everglades scenarios through examination of various modeling outputs for use in ROG Phase II planning was established

# Phase II Hydrologic Modeling Strategy

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## Stakeholder Input:

Identification of  
ROG Phase II Planning  
Alternatives



## Interface ("Red Line"):

Identification of  
Operational Flow Targets



## Science Input:

Identification of  
Downstream Scenarios

# Phase II Everglades Science Workshop

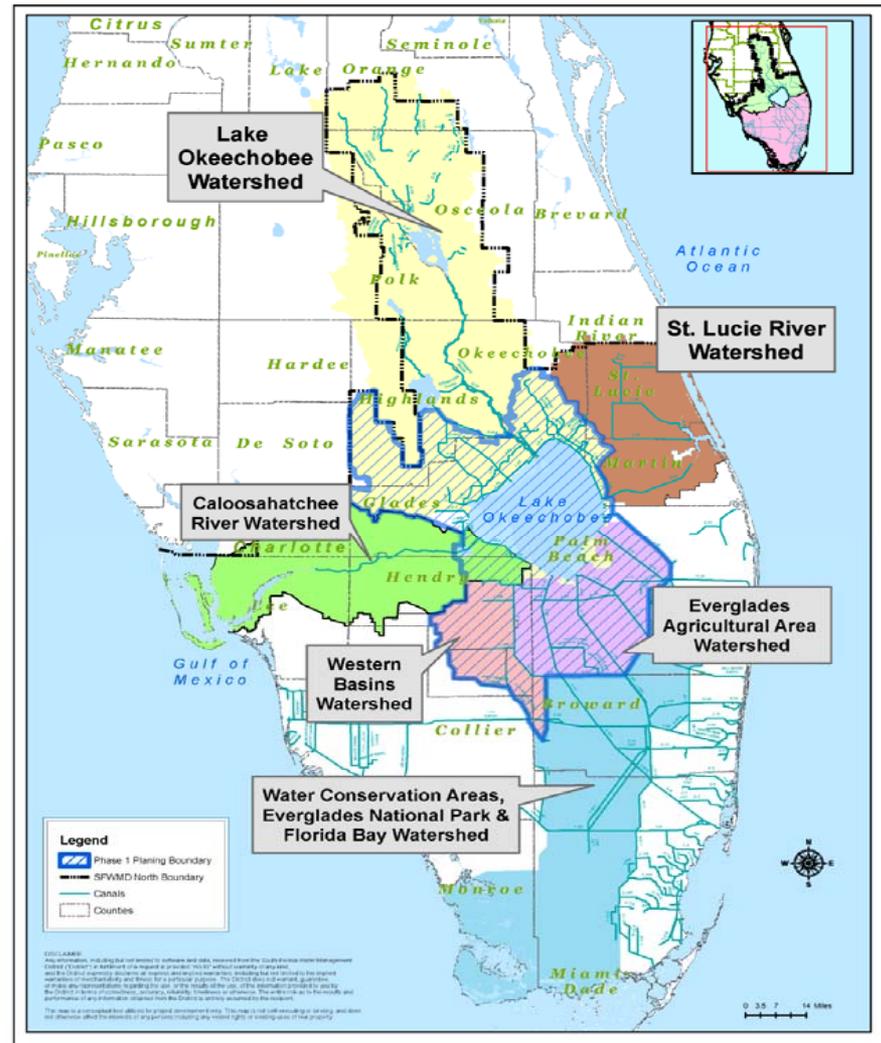
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- Between the November and the January science workshops, public input will contribute towards the development of three downstream scenarios:
  1. CERP flows and conditions (already defined)
  2. Pre-drainage like flows emphasizing marsh flow through the WCA3/ENP system
  3. Pre-drainage like flows allowing for a CERP-like eastern flow path (Central Lake Belt or equivalent)
- Outcomes will be presented and discussed at the January workshop

# Phase II Planning Boundary

- North of Lake Okeechobee
  - Reservoir storage sizing will be optimized but without infrastructure details
  - Water quality will not be evaluated
- South of Lake Okeechobee
  - Identification of ROG Phase II Planning Alternatives
  - Consider various feature types for storing, treating, and delivering water to WCAs, ENP and Florida Bay
  - Feature types will improve performance in the northern estuaries and Lake Okeechobee

## RESTORATION PLANNING



# Plan Formulation - Tool and Evaluation Overview

RESTORATION PLANNING

- Provide stakeholders with an opportunity to develop Alternative Plans that they believe may best achieve restoration objectives while considering constraints and other relevant factors
- Utilize modeling information and evaluation tools as guidance measures when considering various options for storing, treating, and delivering water
- Utilize models and evaluation tools to evaluate alternative benefits, costs, and potential impacts
- Develop approximately 2-4 alternative plans (at least one without land swaps and one with land swaps)
- Identify common project elements of the alternative plans and assess components for incremental costs, impacts and benefits
- Use information gained during incremental assessment to develop a phasing plan for project implementation
- Present ROG Phase II information to the SFWMD WRAC and Governing Board at regular intervals during the 18 month planning process

# Phase II Planning Evaluation Tools

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- What are they?
  - Compilation of land related information and other cost, risk and uncertainty data gathered to provide guidance measures in project planning
- Why use them?
  - Provide assistance to project teams in formulating cost effective and impact avoidant project footprints and alternatives
  - Allows us to quantify project costs and impacts for comparison against project benefits during the alternative screening and plan selection process

# Phase II Planning Evaluation Tools

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- Land Ownership and Availability
  - USSC Only Lands and Potential Land Swaps
  - Works of the District
  - State, Federal and Tribal Lands



- Quantification of Costs and Potential Impacts
  - Real Estate Cost Estimates
  - Water Control Districts – 298 District flood control and water supply
  - Environmental Remediation
  - Capital Construction
  - Operations and Maintenance
  - Infrastructure – transportation, municipal, commercial, residential
  - Sugar Cane Crop Yield
- Other Considerations
  - Climate Change & Sea Level Rise
  - Threatened & Endangered Species
  - Valuation of Ecosystem Services

# Phase II Ecosystem Benefits Evaluation

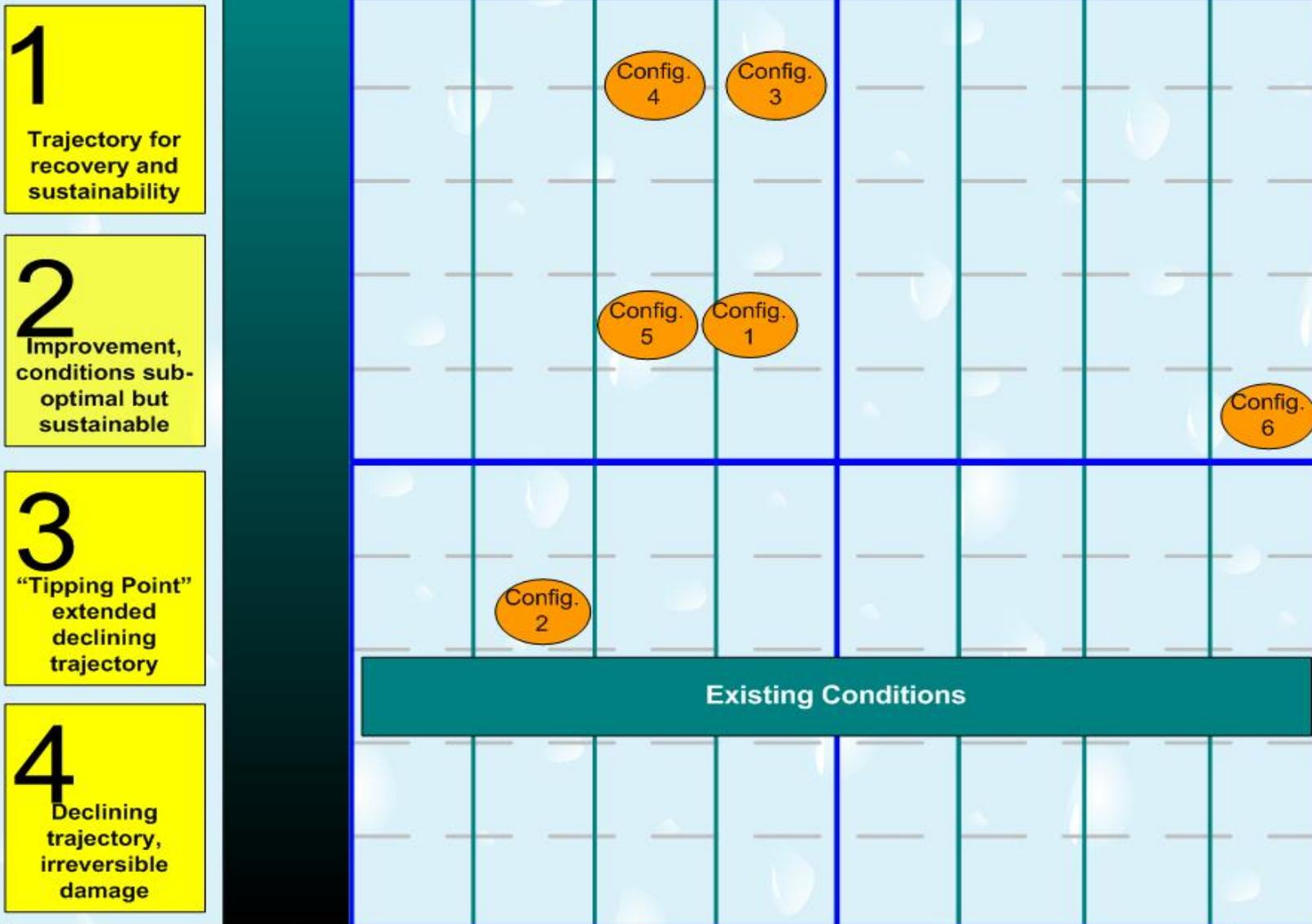
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- Update the incremental narratives for the benefits evaluation to include refined ecological performance measures as result of more detailed model output
- Ecological performance will be measured as a function of “Restoration Potential”
  - Northern Estuaries
  - Lake Okeechobee
  - Everglades
  - Southern Estuaries
- LOSA Demands “no harm”

		Northern Estuaries	Lake Okeechobee	Everglades	Southern Estuaries
ROG Restoration Potential	<b>1</b> Trajectory for recovery and sustainability				
	<b>2</b> Improvement, conditions sub-optimal but sustainable		Existing Conditions		
	<b>3</b> “Tipping Point” extended declining trajectory	Existing Conditions			
	<b>4</b> Declining trajectory, irreversible damage			Existing Conditions	Existing Conditions

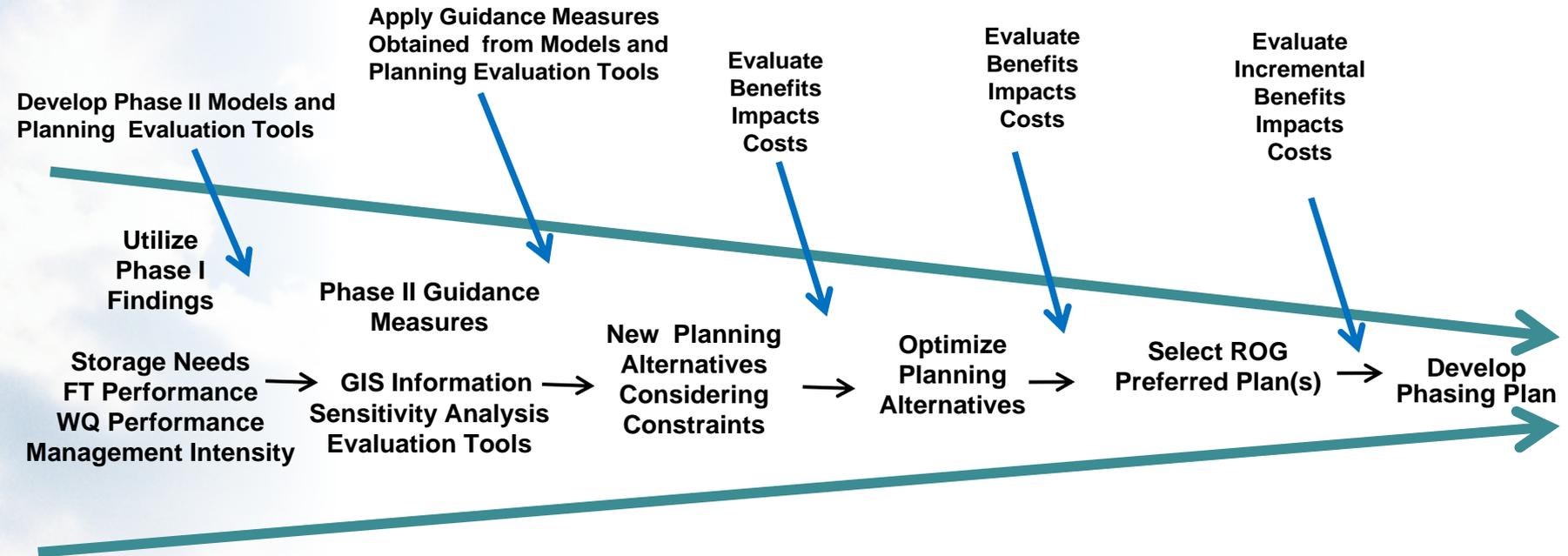
# Restoration Potential

# System Wide



# Alternative Formulation Overview

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## GOAL

2-4 alternative plans

At least one without land swaps and one with land swaps

Phasing of project components for plan implementation

# Next Meeting – Date, Location and Topic

RESTORATION PLANNING

## Science Workshop #2

- Discussion regarding 3 downstream scenarios developed as a result of November Science Workshop

January 27-28

SFWMD Auditorium

Day 1: 10:30 a.m. – 4:00 p.m.

Day 2: 9:00 a.m. – 4:00 p.m.

# Next Meeting – Date, Location and Topic

RESTORATION PLANNING

## WRAC Issues Workshop

- Results of January Science Workshop
- Status of tool development

February 18  
SFWMD Auditorium  
10:00 a.m. – 4:00 p.m.

# Phase II Planning

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### Restoration Project Planning

On December 16, 2008, the South Florida Water Management District Governing Board voted to accept a contract with the United States Sugar Corporation to acquire more than 180,000 acres of agricultural land for Everglades restoration. This historic transaction provides water managers with the unprecedented opportunity to store and treat water on a scale never before envisioned for the benefit of America's Everglades, Lake Okeechobee and the St. Lucie and Caloosahatchee rivers and estuaries.

With full public involvement, the first phase of *River of Grass* restoration project planning is under way. Through a series of [Water Resources Advisory Commission](#) Issues Workshops, the Phase 1 planning process will determine viable configurations for constructing a managed system of water storage and treatment to support ecosystem restoration efforts.

Inform  
decision  
planning

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