Water Resources Advisory Commission
January 6, 2010

Phase II Planning

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sfwmd.gov/riverofgrass

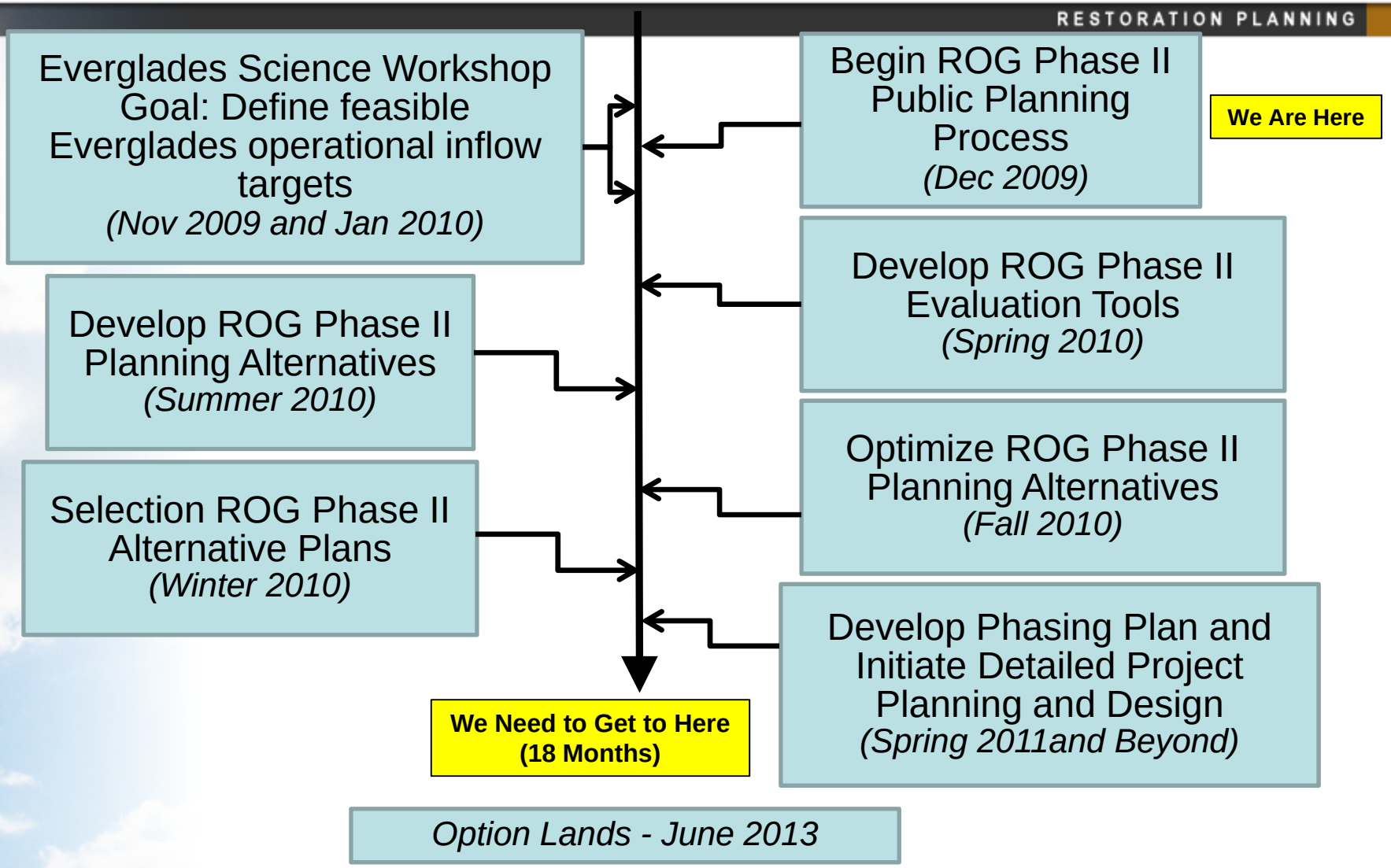
Phase II Scope

- 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

- 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

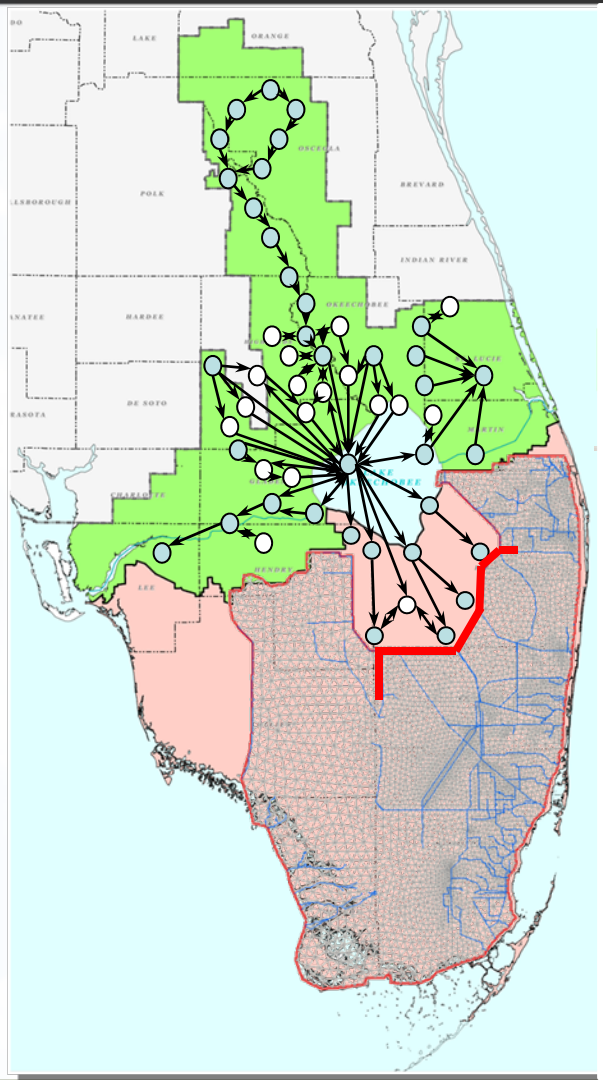
Phase II Schedule - Overview



ROG Phase II Everglades Science Workshop

- 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



Stakeholder Input:

Identification of
ROG Phase II Planning
Alternatives

Interface ("Red Line"):

Identification of
Operational Flow Targets

Science Input:

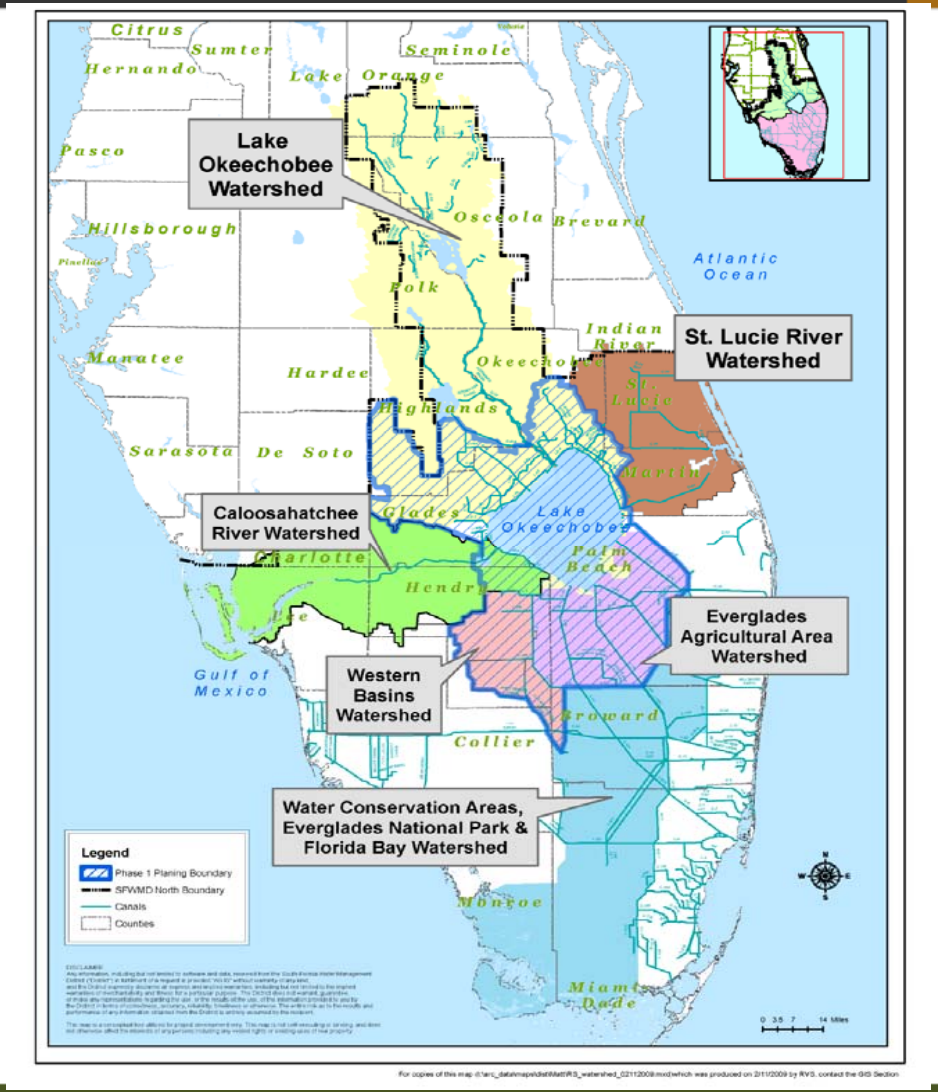
Identification of
Downstream Scenarios

Phase II Everglades Science Workshop

- 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



Plan Formulation - Tool and Evaluation Overview

- 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

- 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

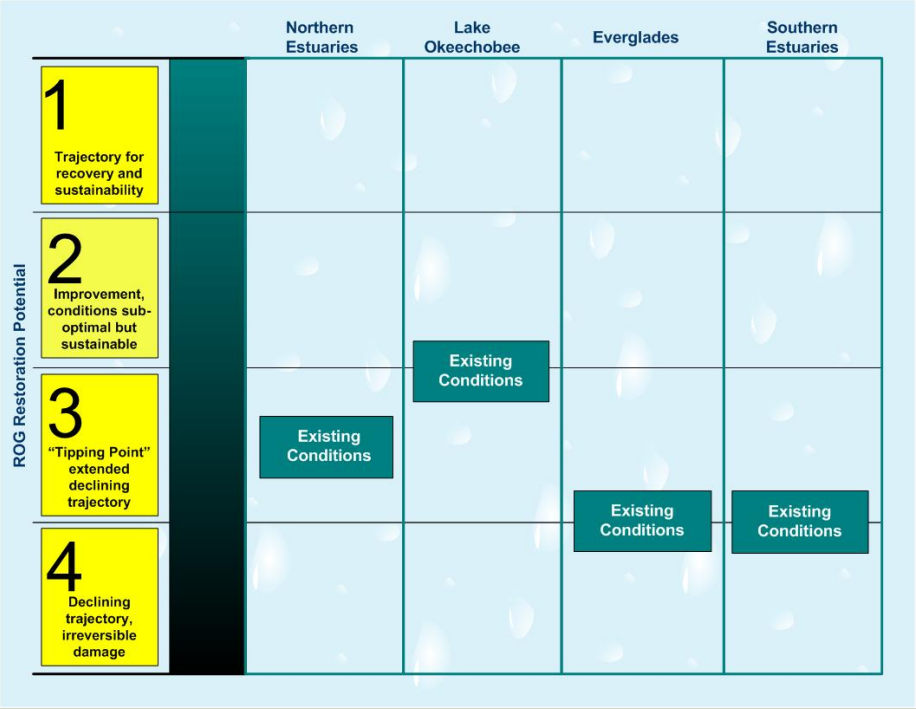
Phase II Planning Evaluation Tools

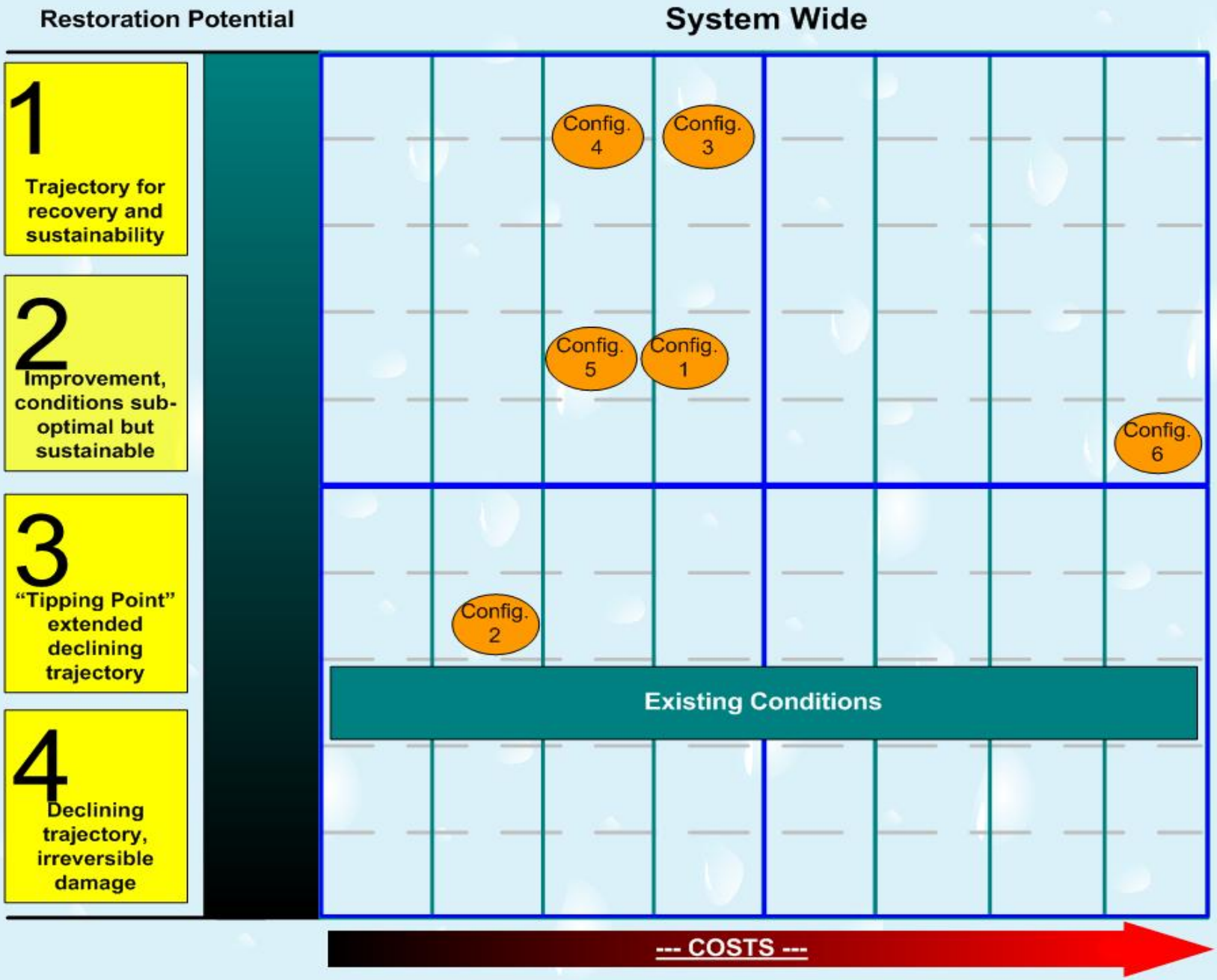
- Land Ownership and Availability
  - USSC Only Lands and Potential Land Swaps
  - Works of the District
  - State, Federal and Tribal Lands

- 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

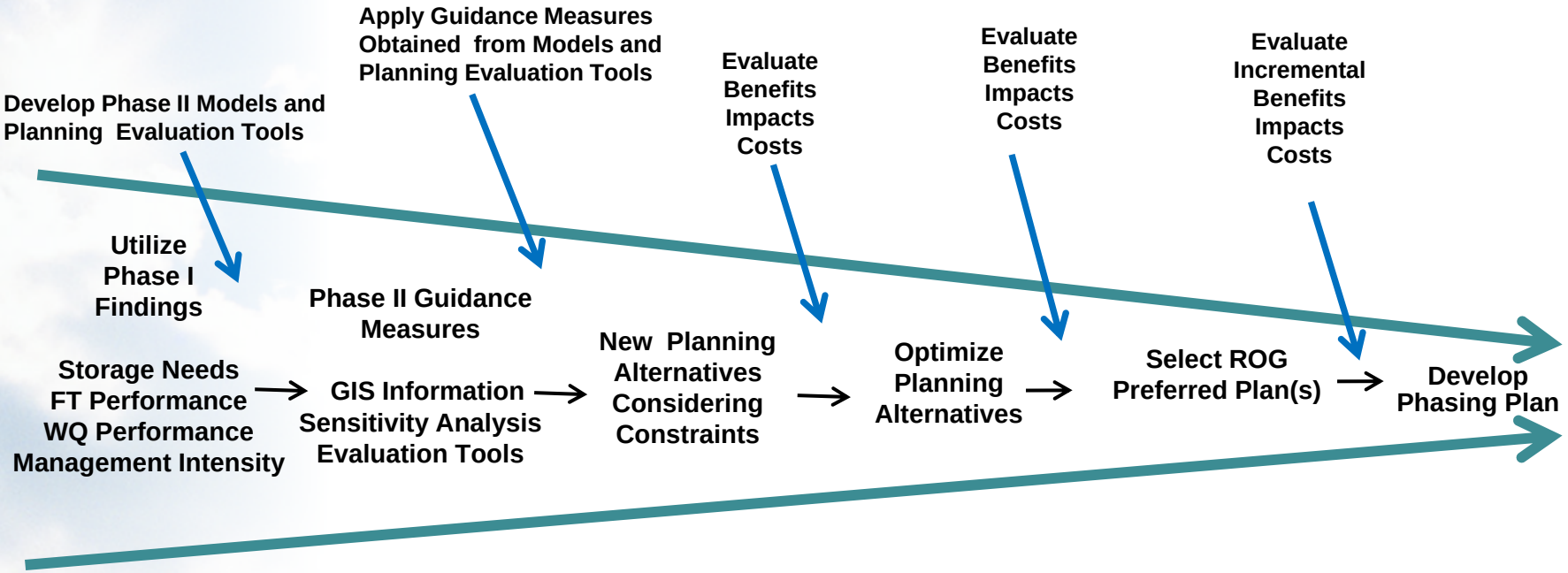
Phase II Ecosystem Benefits Evaluation

- 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"




Restoration Potential
System Wide
1
Trajectory for recovery and sustainability
2
Improvement, conditions sub-optimal but sustainable
3
"Tipping Point" extended declining trajectory
4
Declining trajectory, irreversible damage
Config. 4
Config. 3
Config. 5
Config. 1
Config. 6
Config. 2
Existing Conditions
--- COSTS ---

Alternative Formulation Overview



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

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

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
www.sfwmd.gov/riverofgrass

Questions?