CERP PIR Streamlining Analysis - Recommendations

restoration

South Florida Ecosystem Restoration Task Force

17 September 2008

PIR Streamlining Analysis

- Review the PIR process & requirements
  (how did we get here?)
- Describe efforts to date
  (what have we done to improve?)
- Discuss additional opportunities
  (what else can we do?)

Existing PIR Process

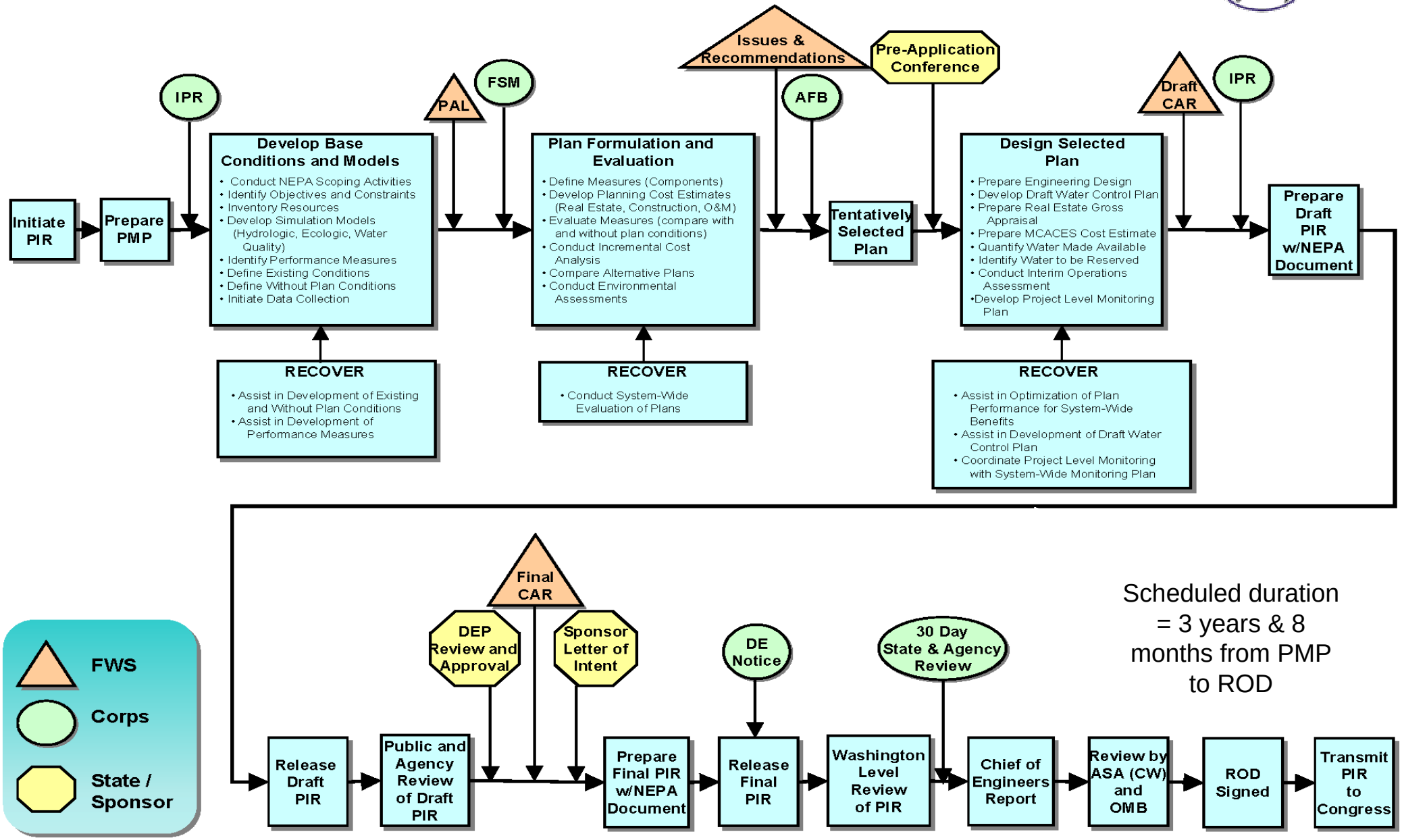
- Is a product of the following requirements:
  - Programmatic Regulations and guidance memoranda
  - National Environmental Policy Act
  - Fish and Wildlife Coordination Act
  - Endangered Species Act
  - Clean Water Act
  - Water Resources Principles and Guidelines
  - Corps of Engineers Planning Regulations
  - Florida Statutes (373.026, .470, .1501, .1502)
  - Evolving Requirements
    - External peer review, Model certification, USACE Civil Works Review Board, Cost Risk Analysis, Acceler8 Program

Programmatic Regulations and Draft Guidance Memoranda

- Product of a lengthy and detailed negotiation and general agreement among many parties:
  - Public
  - US Department of Interior
  - Army and South Florida Water Management District
  - Governor of Florida
  - Tribes
  - US Environmental Protection Agency
  - Florida Department of Environmental Protection
  - Other Federal / State/ Tribal and local agencies

United States Army
Corps of Engineers

TYPICAL PIR PROCESS



Scheduled duration = 3 years & 8 months from PMP to ROD

Programmatic Regulations and the Guidance Memoranda

- Key requirements stemming from ProRegs
  - PIR is tool to ensure goals and purposes of Plan are achieved
  - Next-added Incremental justification required
  - 6 Program-wide Guidance Memoranda to be developed
    - Schedule for development/ finalizing GMs indicates challenges faced by project teams in satisfying all concerned parties (i.e., draft in late 2004 but not yet finalized/concurred upon)
- PIR should be based on the "Best Available Science"
- Detailed procedures for quantifying water made available by CERP projects
  - Protect existing users
  - Identify water to be reserved/allocated for the natural system
  - Identify water for other water-related needs
  - Protect existing levels of service for flood protection

ProRegs and the Guidance Memoranda

- Pro Regs and GMs set forth complex analyses and comparisons to satisfy all concerned parties
  - Requirements quadruple modeling necessary compared to a standard civil works water resources project
  - 4 Baseline conditions
    - Pre-CERP, Future Without CERP, Existing Conditions, Next Added Increment (NAI)
  - 4 “With Project” Conditions
    - Future with all CERP, Future with CERP + each alternative, NAI, Initial Operating Regime
  - 6 Analyses comparing with and without project conditions
    - Base condition
    - Formulation and Evaluation
    - Savings Clause
    - Project Operating Manual
    - Water Made Available
    - Water to be Reserved or Allocated for the natural system

What have we done so far to improve the PIR process?

- Training in application of GMs in 2004 & 2005
  - Trained CERP staff from USACE, SFWMD, USFWS, FDEP
- Project Assurances Team
  - Established a Multi-agency team to interpret model results and apply the concepts of the GMs to develop consistent standardized project assurances analyses for multiple PIRs
- Modeling Tiger Team
  - Recommended and implemented improved model selection processes
  - Increased the role and oversight of the Interagency Modeling Center
- Interagency Modeling Center (IMC)
  - Established improved tracking and management of modeling services requests
  - Asserted a greater role in model selection, model evaluation, model certification
  - Ensures consistency of modeling assumptions and setup across PIRs

What have we done so far to improve the PIR process? (cont.)

- Phased PIRs
  - Implemented a policy to divide projects into multiple PIRs consistent with National Academy of Sciences recommendations to get moving on projects while remaining uncertainties are addressed through follow-on PIRs
- Increased number and frequency of management-level meetings
  - USACE and SFWMD instituted more frequent inter-agency and vertical communications (Jacksonville, Atlanta and Washington D.C.) on project implementation, policy issue identification and resolution, directions to staff
- Acceler8 Program / Expedited Everglades Restoration Projects
  - Forced a programmatic re-evaluation of the PIR development process to achieve time savings while addressing regulatory requirements
  - Necessitated improved interagency communication and coordination to strive for key milestone dates
- Programmatic Modeling Review (2006)
  - Addressed the question of why CERP modeling seemed to be a recurrent source of PIR delays
  - Results of the modeling review indicated a larger challenge

Programmatic Modeling Review Finding

All parties must recognize that "problems with modeling" often reflect and magnify systemic problems in the CERP plan formulation, evaluation and selection process.

Programmatic Modeling Review
Findings

- Obstacles to Simplification
  - South Florida is a risk-averse, litigious environment
  - Stakeholder expectations are high for best available information
  - Diminishing trust among key parties is not conducive to application of best professional judgment
- Policy and guidance
  - ProRegs and GMs demand a complex model-based approach to PIR development
- Communications
  - Modelers, planners, ecologists and engineers do not always communicate effectively across fields of expertise, leading to confusion and delay
- Modeling and the IMC
  - Tendency towards selecting the most complex 3-D integrated surface water – groundwater models in existence (or still in development!)
  - Models applied over very large areas, requiring new physical data and operational knowledge not readily available
  - Expensive: FY09 $3M (USACE)
- Human Resources
  - Staffing, training and retention
  - Too many PIRs underway at same time without a sufficient pool of trained practitioners

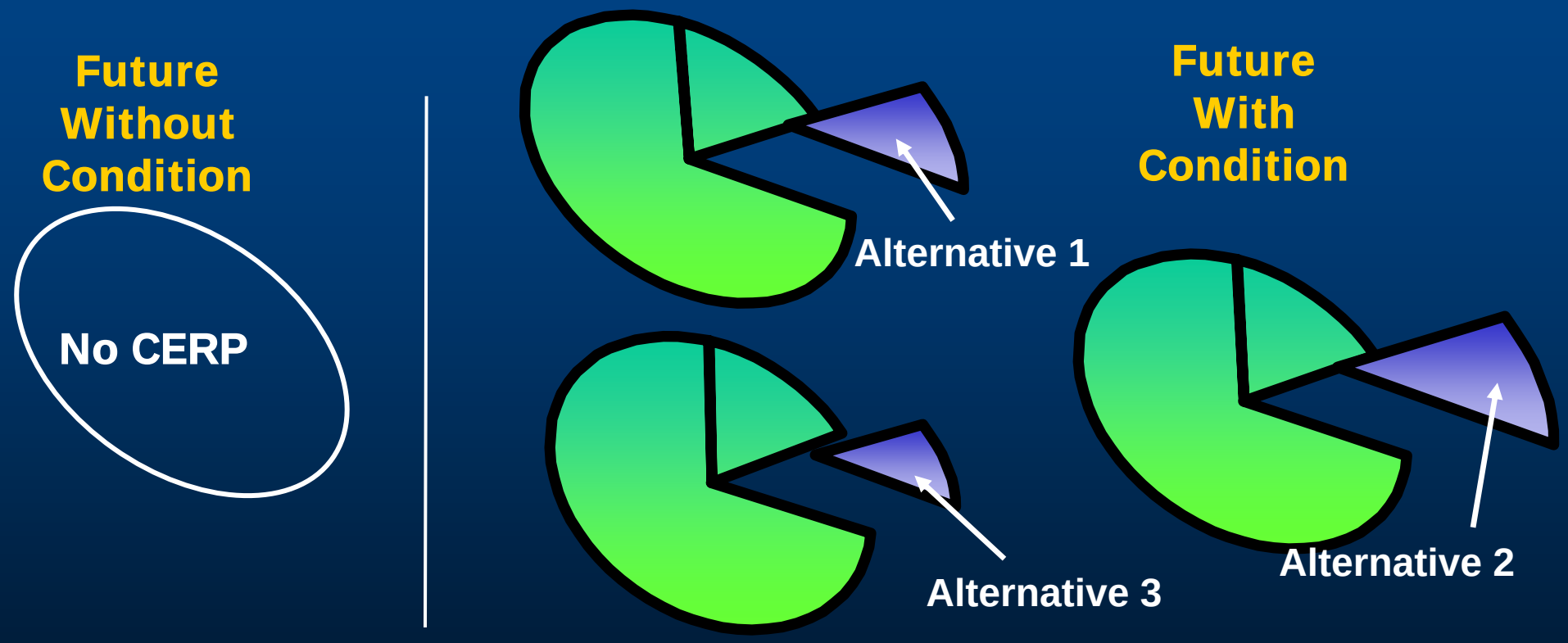
Top 5 things we can do now to improve the PIR process

- Plan Evaluation & Selection, Justification, and Project Implementation
  - System Formulation
  - Next Added Incremental Justification
  - Habitat (benefit) units requirement
  - Level of engineering/design requirement
- Modeling
- Policy / Dispute Resolution process
- Human Resources
- Program Management
  - Integrated Delivery Schedule should establish priorities

Plan Evaluation & Justification

- WRDA 2000, Section 601(f) Evaluation of Projects:
  - (2) Project Justification – ". . . the Secretary may determine that
    - (i) the activity is justified by the environmental benefits derived by the South Florida ecosystem; and,
    - (ii) no further economic justification for the activity is required, if the Secretary determines that the activity is cost-effective."

GM 2: Plan Evaluation & Selection "System Formulation"



- Analysis of individual project contributions confounded by performance of other projects in model (e.g.: Lake Okeechobee ASR)
- Very difficult to meaningfully distinguish between alternatives
- Cost-effectiveness Analysis and Incremental Cost Analysis for <u>plan selection</u>

GM 2: Justification
"Next-Added Increment Analysis"

Future Without Condition (2050)

Future With Condition

What benefits would we get if nothing else in CERP was ever built?

- **Project justification: decision to invest taxpayer funds!**
- **Extremely difficult to model, evaluate, quantify incremental benefits**
- **CERP was formulated holistically; it's a program!**

Next-Added Incremental Justification Challenges

- CERP is a system of related projects (components)
  - Not incrementally formulated
- NAI is an evaluation of individual project's effects over 16,000 sq. miles
  - "New Jersey" x 2
- Comparison to a future baseline condition
  - Defined in Pro Regs and GMs
  - Better than current conditions
  - Unlikely (Expedited Projects, U.S. Sugar)
- Dependent on acceptable benefits quantification methodology
- Dependent on high-resolution modeling tools
- Results compared to costs to determine relative cost - effectiveness
  - Comparison between projects

Evaluation & Implementation
Recommendations

- Revisit requirement for habitat (benefit) units
  - Continue to describe beneficial effects
- Formulate alternative plans for optimizing individual projects
  - Evaluate Cost-effectiveness/Incremental Costs (WRDA 2000)
- Eliminate System Formulation and Next-Added Increment Justification
  - Compare & select based on cost-effectiveness of alternatives
  - Evaluate system-wide effects of selected plan
- Revisit requirements for engineering and design
- Simplify assurances analysis
- Revisit ProRegs and Guidance Memoranda

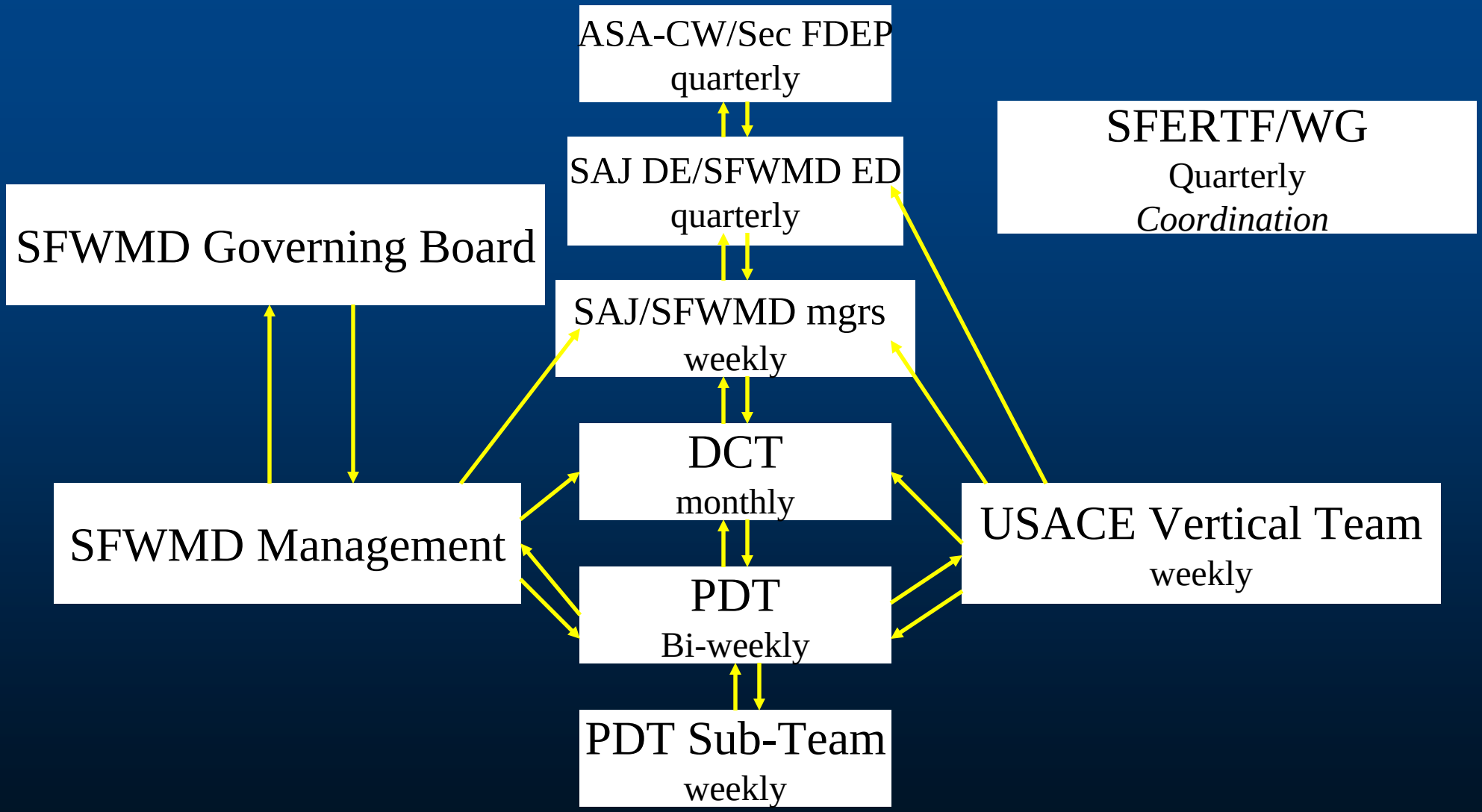
Modeling
Key Findings

- Model selection tends towards the very complex
  - Tools are data hungry
  - South Florida hydrology is hard to model with complex variable human operations (now and 2050/future)
  - Some modeling tools not ready to be used
- Using “best available science” creates preference for complex, high-resolution predictive modeling versus the need for timely project implementation
- New national policies for model certification and approval
- Agency/stakeholder expectations for detailed modeling and output

Modeling
Recommendations

- From the top down, establish philosophy that the need to implement restoration projects is more urgent than ever
- Given this, need to balance the appropriate level of modeling and analysis in a PIR with the urgent need to complete PIRs
- Encourage and support innovation, simplified analysis, and scientific judgment at the PDT level
  - Agencies must formally support when commenting on NEPA document
- Use best available tools instead of developing new, complex tools
- Simplify GMs to reduce the modeling burden
  - Fewer modeled comparisons

CERP Issue Identification and Policy Resolution Process



Issue Identification and Resolution

- Train Project Managers on how to rapidly identify issues deserving elevation and how to frame them clearly
- Strive for timely, helpful downward guidance to resolve the issue without more iterations
- Need an empowered DCT with key representation able to make difficult decisions
  - Involvement by all responsible agencies

Human Resources
Recommendations

- Improve training methods and materials
  - ProRegs, GMs, Federal planning requirements
  - Team building and trust
    - Co-locate
    - Cross-train
    - CERP LDP
- Attract, develop, and retain talented people
- Focus staff resources on critically important projects
  - Priorities established by Integrated Delivery Schedule

Program Management

- Project sequencing & implementation based on importance, logic and dependencies
  - Established by Integrated Delivery Schedule
  - Identify related/dependent projects where demonstration of benefits would be easier (better) if they were combined
    - E.g., Decompartmentalization & Seepage Management
  - Focuses staff talent on fewer simultaneous PIRs
- Address implementation costs and justification issues with USACE/ASA-CW
  - New paradigm for watershed restoration planning/approval
- Management ties to all recommendations

Recommendations Matrix

Issue	Mechanism for Change		
	Programmatic Regulations	Policy Directive	Internal Management
Habitat Units requirements and hydrologic surrogates		X	
Eliminate System Formulation and Next Added Increment requirements for plan selection and justification	X	X	
Reduce Engineering and Design level of detail in PIRs		X	X
Simplify Assurances Analysis methods	X	X	
Establish top-down emphasis on BPJ over detailed modeling			X
Utilize existing operational models			X
Simplify GMs by reducing # of required baselines to evaluate	X		
Improved policy resolution practices			X
Empowered DCT			X
Improved Training			X
Project sequencing and bundling (Integrated Delivery Schedule)		X	

Next Steps

- Review of CERP Programmatic Regulations
  - Comment period ended 18 August
- Agencies to review/reconsider CERP implementation policies
- WRDA 2009?

Thank You