Diversions Update

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Presentation to Diversions Advisory Panel, Meeting #4
February 12, 2015
Mississippi River Sediment Diversions: Process

2012 MASTER PLAN
(Mississippi River Diversion Recommendations)

LOWER BRETON (50,000 cfs)
LOWER BARATARIA (50,000 cfs)
MID BRETON (5,000 cfs)
MID BARATARIA (50,000 cfs)
MID BARATARIA (250,000 cfs)
UPPER BRETON (250,000 cfs)

FEASIBILITY & ENGINEERING MODELING
(Site specific data collection and refined 2012 MP Models, river modeling, and localized Delft3D)

WINTER 2014
CPRA DECISION TO ADVANCE PARTICULAR ALTERNATIVES VIA VERIFICATION OF MASTER PLAN BENEFITS AND COSTS
(Land/Site/Size/Cost/Constructability)

MR HYDRODYNAMIC & DELTA MANAGEMENT
(River and basin side modeling)

BASIN-WIDE INTEGRATED HYDRODYNAMIC, MORPHOLOGICAL & NUTRIENTS MODELING
(Analyze Sequencing and Operation of recommended suite of diversions)

ECOLOGICAL MODELING
(CASM and EwE coupling with Basin-Wide Delft3D and MRHDM AdH)

SOCIOECONOMIC EVALUATION
(Social, economic, and fisheries impacts – past/present/future)

PRELIMINARY DESIGN
(varying levels – LCA feasibility, 10%, 30%)

EXTERNAL TECHNICAL REVIEW
(Review/comparison of cost and design assumptions and constructability determination)

DECEMBER 2016
CPRA/FED DECISION TO IMPLEMENT
(Federal Interest Determination – Chief’s Report)

FALL 2015
CPRA DECISION TO IMPLEMENT
(Advance to full engineering and design)

DATA SYNTHESIS/VISUALIZATION
(SSPM and Coastal Sustainability Studio)

2017 MASTER PLAN
(Recommendations would be included as part of evaluation)

SWAMP
(Pre/post construction and coast-wide monitoring, adaptive management)
CPRA Program Implementation

1. Future Project Development
   - Identify Funding Sources
   - Identify Needs and Gaps
   - Feasibility Studies
   - Modeling

   - Goals and Objectives
   - EIS/EA
   - Landrights
   - Modeling
   - Project Plans and Specifications

3. Science Advisory Boards
   - Project Data Analyses
   - Project Reports
   - Annual Inspections
   - Real-time Operations
   - Damage Assessments

4. Model Development and Refinement (e.g., numerical, physical, conceptual, ecological)

5. Programmatic Influence
   - Data Collection & Management (e.g., SWAMP, CRMS, BICM, LIDAR, iLevee, Monitoring Data Interpretations, Flood Protection Inspections)
   - Outreach & Engagement (e.g., Youth Wetlands Education and Outreach, Workshops and Conference Development, etc.)

IMPLEMENTATION

Construction
- Bid Process
- Final Inspection/Acceptance
- Construction Oversight/Inspection
- Construction Completion Report

Planning
- Landrights
- Permitting
- Project Plans and Specifications

Engineering & Design
- Modeling
- Permits

Future Project Development

Construction Completion Report

Damage Assessments

Real-time Operations

Adaptive Management
Feasibility & Preliminary Engineering
Lower Barataria, Lower Breton, Mid Breton, and Mid Barataria

• **Where we’ve been**
  2012 Master Plan concepts expanded upon, alternatives modeled and evaluated

• **Where we are**
  Tentatively selected plans, conceptual level engineering and designs

• **Where we are going**
  Basin-wide and ecological modeling, socioeconomic evaluation, Fall 2015 decision on whether to advance to full engineering and design
Where we’ve been:
Set up and development of model components complete

Where we are:
Integration of model components and model calibration underway

Where we are going:
Model validation and application of model for evaluation of FWOP and alternative scenarios
Mississippi River Hydrodynamic and Delta Management Study

- **Where we’ve been**
  Initial array of alternatives screened to focused array using decision criteria based on the study’s goals, objectives, and constraints

- **Where we are**
  As model development continues, team refining focused array to final array of alternatives and defining model runs to evaluate alternative scenarios

- **Where we are going**
  Evaluate final array of alternative scenarios and chose TSP
Fish and Shellfish Modeling/Studies

• **Where we’ve been**
  EwE model for 2017 MP - Southeast developed

• **Where we are**
  Modifications to the MP EwE model and development of CASM for the Delta Management study underway

• **Where we are going**
  Application of models for evaluation of FWOP and alternative scenarios
Where we’ve been:
Literature review, ID of data gaps, initial data collection complete

Where we are:
Draft model output being reviewed - bio-physical linkages

Where we are going
Draft framework will be recommended to outline methodology for assessing socio-economic effects of diversion activities
Themes from Panel Report #3

• Stakeholder Concerns
  • Tools/analyses intended to address but need refinement
  • Do not appear to be addressed
  • More effective communication

• Biophysical monitoring

• Ecosystems Modeling
Themes from Panel Report #3

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Clearly articulate CPRA vision for the uses of diversion-related socioeconomic analyses

**BASINWIDE SOCIO-ECONOMIC ANALYSIS**

*Past - Present - Future*

**GOALS:** Further analyze the potential effects to communities, fisheries, and the economy from continued land loss and the implementation of sediment diversion projects recommended in the 2012 Coastal Master Plan.

**SCALE:**

- Regional
- Coastal Louisiana
- Economy
- Environment
- Community

**TIMEFRAME:**

<table>
<thead>
<tr>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<td>Summer</td>
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<td>Historic Coastal Atlas</td>
<td>Review of Commercial Fisheries</td>
<td>LSU/RAND Economic Study</td>
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<td>Diversion Feasibility Modeling</td>
<td>Socio-Economic Analysis</td>
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Begin public discussion:

• Types of operational scenarios under consideration
• How models will be used to evaluate these scenarios
• How stakeholder feedback will be incorporated into decisions on operations
Develop more explicit conceptual approach of how model output would be used to determine effects of flooding

Basin-wide modeling
Include dredging restoration projects as an alternative restoration strategy for further discussion with stakeholders.
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Work with local scientists to develop a scale-appropriate experimental design that encompasses a range of nutrient levels and sediment types.

- Applied Research and Development Program
- Evaluating options for commissioning priority applied research and development
- Willing to collaborate with academia
Prepare white paper to identify potential hazards associated with invasive species, and appropriate and effective approaches to address.
Draft communication plan that provides conceptual approach for how technical outputs will be translated, tailored to specific locations and to each of the numerous target audiences.
Evolution of a Diversion
Themes from Panel Report #3

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- Ecosystems Modeling
Address key data needs by: (1) expanding monitoring program - turbidity sensors, coring of bottom  (2) quantifying sensitivity of the DELFT-3D modeling to initial bathymetry/topography and wave action
Themes from Panel Report #3

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• Ecosystems Modeling
Develop a peer-review process for both the EwE and CASM models

• 2017 Master Plan: EwE external peer review
• LCA Mississippi River Delta Management Study: EwE and CASM reviews
Assemble independent working group to assess adequacy of consumer monitoring data and plan for tasks/approaches that have been proposed

- Work with partners to inform discussion on adequacy
- Expect SWAMP monitoring designs help address
- LCA Mississippi River Delta Management Study: Fish and Shellfish Models Technical Workgroup
Key Considerations Moving to 2015 Decision Point

Land Built/Sustained
  Which ones, which one first
River effects
Water levels
Water Quality
  Salinity
  Temperature
  Nutrients – fate/distribution
Vegetation/Habitat diversity
Fish and shellfish biomass/distribution
Socioeconomic considerations
Funding
Thank You!

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