

Appendix H

Value Engineering Study Report

A Summary of the Value Engineering Study report is listed below. Additional technical information and data is on file and available on request.

**Value Engineering Study Report
Medium Diversion at White Ditch
Prepared by Value Management Strategies, Inc.
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Medium Diversion at White Ditch

Presently, loss of area in the marsh allows water to rapidly pass through the system and salt water is able to quickly intrude. The absence of an outfall management plan related to the White Ditch diversion siphon results in the surrounding marsh receiving limited benefits from the diverted river water. Also, the lack of marsh-forming sediments from the Mississippi River has accelerated the degradation of all marsh types. Sediment needs in the project area are extensive and plan strategies that increase diversion flows to provide required sediment transport may not be sufficient to provide the necessary sediment.

Key VE alternatives identified to address these issues are as follows:

- Maximize sediment introduction
 - Design diversion structures to maximize sediment introduction
 - Install sediment introduction system into White Ditch diversion structure
- Diversion control structure size and location
 - Construct a combination spillway with capacity controls to medium diversion levels
 - Construct diversion structure approximately seven miles south of Phoenix
- Address fresh water source and transport
 - Optimize flow conveyance in White Ditch to feed areas immediately adjacent to the south of existing channel

General/Plan Formulation

- Develop Plan Strategies that account for much higher levels of global sea level (GSL) rise

One issue addressed by the VE team spans all three projects and has ramifications throughout the LCA program. Currently, work is underway by the USACE, National Oceanic and Atmospheric Administration (NOAA), and United States Geological Survey (USGS) to investigate the glacial melt contribution to future GSL rise. Project benefits depend upon habitats maintained above sea level. Consequently, benefits beyond the 50-year planning horizon will be lost if subsidence and GSL rise exceed the current assumptions. The rate of GSL rise in the future is currently unknown, but could be much greater than the current assumptions. As such, the projects should develop specific Plan Strategies that consider the range of possible future GSL rates.

- Provide clarification and address the Water Resources Development Act of 2007 (WRDA 2007) regarding specified authorized funding limits and the extent of planning development of LCA projects

Each LCA project has a specific level of funding to accomplish the authorized project goals and objectives as described in the LCA Program. However, during the plan formulation phase of the studies, stipulations (cost and/or size, as well as time) should not serve as planning constraints. Consideration of all reasonable alternatives to achieve the goals and objectives of the project, regardless of the time, cost, and/or size, is required by USACE policy. The USACE policy guidance requires identification of a National Ecosystem Restoration (NER) plan that maximizes ecosystem restoration benefits compared to costs, in addition to the identification of a Tentatively Select Plan (TSP). In some cases, the NER plan may differ from the TSP by exceeding the authorization stipulations resulting in time, cost, and/or size serving as constraints for the plan selection phase of the study. This forces the TSP to be an alternative that would accomplish the ecosystem benefits within the WRDA authorization.

SUMMARY OF VE ALTERNATIVE CONCEPTS

The table below summarizes all of the alternative concepts developed by the VE team. The items in red text were identified by the VE team as items of particular note and key recommended strategies for the Project Development Team (PDT) to consider.

SUMMARY OF VE ALTERNATIVE CONCEPTS
Medium Diversion at White Ditch

Number	Description
Medium Diversion at White Ditch	
WD-1	Design diversion structures to maximize sediment introduction
WD-2	Optimize quantity of freshwater diverted at White Ditch in combination with other proposed diversion projects
WD-3	Construct diversion structure approximately seven miles south of Phoenix
WD-4	Construct a combination spillway with capacity controls to medium diversion levels
WD-5	Install sediment introduction system into White Ditch diversion structure
WD-6	Optimize flow conveyance in White Ditch
WD-7	Identify and incorporate impacts effects of subsidence due to fluid withdrawal into project analysis
General/Plan Formulation	
G-1	Develop Plan Strategies accounting for rise in sea level
G-2	Provide clarification and address the WRDA 2007 regarding specified authorized funding limits and the extent of planning development of LCA projects
G-3	Define plan alternatives that can be optimized within project authorization
G-4	Amend project authorizations to include additional federal funding for “first phase” adaptive management measures
G-5	Establish permanent trust fund for project maintainability
G-6	Identify impacts of multiple diversion structures on Mississippi River and fresh water and sediment requirements of project areas
G-7	Incorporate comprehensive monitoring of project benefits before, during, and after completion of diversion measures
G-8	Identify and address potential real and perceived drainage impact of proposed diversion flows
G-9	Redefine project constraints versus project issues
G-10	Revisit weighted matrix method of ranking initial alternatives and plan elements
G-11	Redefine structural versus non-structural items
G-12	Develop salt tolerant bald cypress variety for use in coastal swamp restoration efforts
G-13	Use Ascension Parish wastewater effluent to replenish cypress forests
G-14	Use self-regulating tide gates for flap gates
G-15	Consider using vinyl sheet pile in guide levees for proposed diversion outlet channels
G-16	Consider effects of nutria in project analysis

