AUG 2 1 2009

CECW-PC (1105-2-10a)

MEMORANDUM FOR CECW-SAD (ATTN: Stacey Brown) and CECW-MVD (ATTN: Joe Redican)

SUBJECT: Mississippi Coastal Improvements Program (MsCIP), Hancock, Harrison, and Jackson Counties, Mississippi – Documentation of Review Findings

1. This memorandum forwards the documentation of policy compliance review findings for the subject project proposal. In the opinion of the policy compliance review team, all policy review concerns have been adequately addressed for this phase of project formulation and development.

2. Office of Water Project Review consideration of subject report and environmental assessment is complete. Questions concerning the HQUSACE policy compliance review of this project proposal may be discussed with review manager, Thomas Hughes, at 202-761-5220.

Encl

Mark Matarazzo
acting for C. Lee Ware, P.E.
Acting Chief, Office of Water Project Review
Planning and Policy Compliance Division
Directorate of Civil Works

DOCUMENTATION OF REVIEW FINDINGS

MISSISSIPPI COASTAL IMPROVEMENTS PROGRAM (MsCIP)

COMPREHENSIVE PLAN

FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT

August 2009

ENCLOSURE

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A. GENERAL.

1. Policy Compliance Review Findings. The following summarizes the final HQUSACE policy compliance review findings for the feasibility report and Programmatic Environmental Impact Statement (PEIS) on the proposed comprehensive plan. This summary includes the concerns and the related resolutions of those concerns for the HQUSACE reviews of the Alternative Formulation Briefing Documentation received in January 2008, Draft Report and PEIS dated August 2008, the revised Draft Report and PEIS dated January 2009 and the Final Feasibility Report and PIES dated June 2009.

2. Project Location. The MsCIP Comprehensive Plan study area (see Figure 1) consists of the three Mississippi coastal counties: Hancock, Harrison, and Jackson. Congressional District: MS-4, as represented by the Honorable Gene Taylor (D), Mississippi Senators are Senator Thad Cochran (R) and Senator Roger Wicker (R).

3. Authority. The Mississippi Coastal Improvements Program Comprehensive Plan was authorized by the Department of Defense Appropriation Act of 2006 (P.L. 109-148), dated 30 December 2005. The study authorization states, in part, the following:

> *"... the Secretary shall conduct an analysis and design for comprehensive improvements or modifications to existing improvements in the coastal area of Mississippi in the interest of hurricane and storm damage reduction, prevention of saltwater intrusion, preservation offish and wildlife, prevention of erosion, and other related water resource purposes at full Federal expense; Provided further, that the Secretary shall recommend a cost-effective project, but shall not perform an incremental benefit-cost analysis to identify the recommended project, and shall not make project recommendations based upon maximizing net national economic development benefits; Provided further, that interim recommendations for near term improvements shall be provided within 6 months of enactment of this act with final recommendations within 24 months of this enactment."*

4. Non-Federal Sponsor. A Letter from the State of Mississippi indicating the intent to be the non-Federal cost-share sponsor of the MsCIP was received on 27 May 2009.

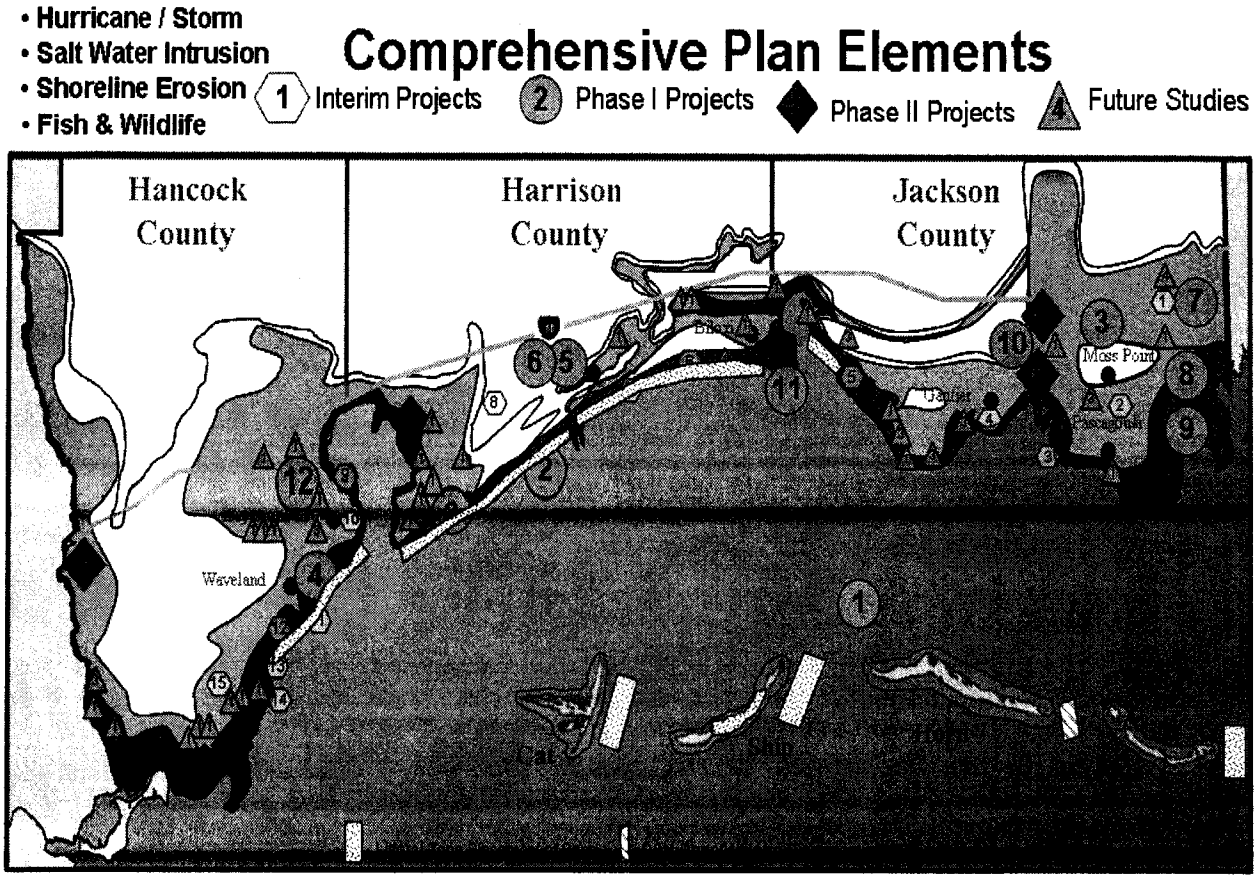

Figure 1: MsCIP Study Area

5. Problems, Needs And Opportunities The problems identified by the study team, state, county, and city officials, residents, and agency staff, included:

- Hurricane-induced storm surge caused significant damage to structures and infrastructure within the three-county (Hancock, Harrison, and Jackson) MsCIP study area;
- Hurricane-induced storm surge caused significant damage to coastal ecosystems and fish and wildlife resources within the three-county study area;
- Hurricanes induced saltwater intrusion within the Mississippi Sound ecosystem and associated coastal environments; and
- Hurricanes induced erosion of coastal wetlands and coastal infrastructure within the three county MsCIP study area.

6. Plan Formulation A system-wide approach was used in formulating the Mississippi Coastal Improvements Program (MsCIP) Comprehensive Plan to ensure that both the MsCIP and the Louisiana Coastal Protection and Restoration (LaCPR) efforts were fully coordinated and developed complementary plans for the restoration of the U.S. Gulf coastal region as an integrated system. In addition, the planning effort has taken a "top down" comprehensive planning approach, beginning with development of a Comprehensive Plan to address the overall water resources problems and opportunities of the region. Building off of the comprehensive identification of problems and opportunities, the planning effort then proceeded to develop site specific problems, opportunities and solutions that contribute to accomplishing the Comprehensive Vision for the restoration and protection of the Mississippi Gulf Coast. The results of this effort led to a comprehensive regional plan that addressed hurricane and storm

damage reduction and environmental restoration needs, as well as recommending a variety of site specific projects for either for immediate implementation or for further investigation and subsequent implementation.

This Mississippi Coastal Improvements Program (MsCIP) Comprehensive Plan Report and Integrated Programmatic Environmental Impact Statement contain both a Comprehensive Plan and a variety of water resource development projects that were developed through the comprehensive planning process. The Report also contains options for additional study for those components of the Comprehensive Plan which require additional investigations prior to identifying a specific recommendation for construction.

All of the development of measures and alternatives, evaluation, and screening conducted to this point in the plan formulation process resulted in a relatively small set of alternatives to be analyzed at the highest level of detail. The final refinement of alternatives consisted of incorporating comments from team members and stakeholders, as well as making adjustments based on the last set of evaluations. The final refinement was directed at identifying the most cost-effective options within the four key areas of study:

- Hurricane / storm damage reduction;
- Ecosystem restoration for preservation of fish, wildlife and habitat functions and values;
- Saltwater intrusion / encroachment reduction; and
- Coastline Erosion.

Saltwater intrusion/encroachment reduction and coastal erosion reduction purposes are encompassed under the discussions of hurricane / storm damage reduction and ecosystem restoration alternatives.

Each alternative was refined to achieve more damage reduction, more ecosystem benefits, greater freshwater inflow, or better salinity reduction, particularly during the period of greatest importance in the life cycles of select organisms.

The alternatives were also compared and contrasted according to their achievement of the additional criteria of a) effectiveness; b) completeness; c) acceptability, and d) efficiency (cost-effectiveness). In addition to these four traditional accounts, information on potential risks, uncertainties, and consequences, is also presented in System of Accounts format, for comparison at the same level of scrutiny of the information presented in other accounts

7. Selected Plan. This report supports the recommendation of the following recommended features to Congress for authority to implement the Mississippi Coastal Improvements Comprehensive Plan:

- Identify the list of projects seeking a construction Authorization

o High Hazard Area Risk Reduction Plan (HARP Phase 1)
o Barrier Island Restoration
o Coast-wide Beach and Dune Restoration
o Submerged Aquatic Vegetation Restoration
o Waveland Flood Proofing
o Forrest (Forest) Heights Levee Elevation
o Deer Island Ecosystem Restoration
o Turkey Creek Ecosystem Restoration
o Bayou Cumbest Ecosystem Restoration
o Dantzler Ecosystem Restoration
o Admiral Island Ecosystem Restoration
o Franklin Creek Ecosystem Restoration

- Identifies further detailed feasibility level investigations for:

- Long-term High Hazard Area Risk Reduction Features
- Escatawpa River Freshwater Diversion
- Additional Environmental Restoration Features
- Additional Structural Hurricane and Storm Damage Risk Reduction Features

The Congressional authorization for this study mandated a comprehensive approach to solutions for water resource problems in coastal Mississippi. The comprehensive nature of the study team's approach included identifying solutions regardless of implementation authority or agency. Hence a number of recommended plan features also include education and hurricane preparedness. These features include:

- Hurricane Risk Reduction Education
- Hurricane and Storm Warning Systems
- Hurricane Evacuation Planning Services Floodplain Management
- Building Codes
- Zoning Codes, and
- Relocation of Critical Infrastructure and Services (Line of Defense 5).

8. Project Costs. The estimated first costs of the features recommended for authorization are summarized below in Table 1. Post-implementation monitoring of ecosystem restoration components of the Comprehensive Plan is projected to be conducted for no more than five years at a cost of less than 1% of the total first cost of the project's ecosystem restoration features. Adaptive management of ecosystem restoration features is expected to cost no more than 3% of ecosystem restoration feature first costs, and may in some cases be less than that figure. Monitoring and adaptive management costs have been accommodated in the cost estimates for each potential ecosystem restoration component as part of the contingency estimate. Information gained from post-implementation monitoring and adaptive management of recommended ecosystem restoration plans will be used to provide "lessons learned" for the design and implementation of future ecosystem restoration projects.

Table1
Mississippi Coastal Improvements Program
Cost Sharing (October 2008 Price Level)

Phase I Recommended Plan Feature	Total First Cost	Federal Cost	Non-Federal Cost
Phase I High Hazard Area Risk Reduction Plan	$407,860,000	$265,110,000	$142,750,000
Waveland Floodproofing	$4,450,000	$2,890,000	$1,560,000
Forrest Heights Levee	$14,070,000	$9,150,000	$4,920,000
Turkey Creek Ecosystem Restoration	$6,840,000	$4,450,000	$2,390,000
Dantzler Ecosystem Restoration	$2,210,000	$1,440,000	$770,000
Franklin Creek Ecosystem Restoration	$1,860,000	$1,210,000	$650,000
Bayou Cumbest Ecosystem Restoration & Hurricane & Storm Damage Reduction	$25,530,000	$16,590,000	$8,940,000
Admiral Island Ecosystem Restoration	$21,810,000	$14,180,000	$7,630,000
Deer Island Ecosystem Restoration	$21,520,000	$13,980,000	$7,530,000
Submerged Aquatic Vegetation Pilot Program	$900,000	$590,000	$310,000
Coast-wide Beach and Dune Ecosystem Restoration	$23,320,000	$15,160,000	$8,160,000
Comprehensive Barrier Island	$479,710,000	$311,810,000	$167,900,000

Restoration			
Total MsCIP Authorization Request	$1,010,080,000	$656,552,000	$353,528,000

9. Operation, Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R). It is anticipated that the entities of the State of Mississippi or other appropriate coastal municipalities (e.g. City of Gulfport for the Forrest Heights Levee) will assume complete responsibility for the operation of, maintenance of, repair of, and rehabilitation of, programs and projects recommended for implementation. In addition, monitoring project performance, followed by adaptive changes to the project if necessary, will be conducted.

10. Project Benefits. The twelve recommended MsCIP comprehensive plan features would result in significant benefits to coastal Mississippi as described below in Table 2.

Table 2
Summary of Feature Benefits

Management Measure	Description
Barrier Island	$17.7M annual damages avoided, $43.62M annual fishery losses avoided, 1,150 acres restored, protectection of threatened and endangered species including piping plover and nesting habitat for the brown pelican, green, Kemp's ridley, and loggerhead sea turtles and 4,900 jobs created
Near-term HARP	2,000 parcels removed from the FEMA VE Zone, $22 - 33M in annual damages reduced, 4 municipal structures relocated or elevated, and 5,200 jobs created
Waveland	25 residential structures elevated and 50 jobs created
Forrest Heights	$100K annual damages reduced in a minority community and 200 jobs created
Beach & Dune	60 miles of dune restoration, 200 jobs created, and incidental damage reduction
Turkey Creek	689 acres of wet pine savannah restored, incidental flood storage capacity, and 30 jobs created
Bayou Cumbest	110 acres of tidal wetland restored, 38 acres scrub/shrub restored, and 280 jobs created
Dantzler	385 acres of wet pine savannah restored, incidental flood storage capacity, and 10 jobs created
Admiral Island	62 acres of tidal wetland restored, 61 acres of scrub/shrub restored, and 280 jobs created
Franklin Creek	149 acres of wet pine savannah restored, incidental flood storage capacity, and 10 jobs created
SAV Pilot	Five acres submerged aquatic vegetation
Deer Island	400 acres of critical habitats restored

11. Cost Sharing. Based on the fiscal year 2008 price levels, the total first cost of the MsCIP comprehensive plan is estimated at $1,085,477,000. All costs of the proposed project elements are allocated to ecosystem restoration or hurricane and storm damage reduction. In accordance with provisions of WRDA of 1986, as amended, cost sharing for project elements with costs allocated to ecosystem restoration, nonstructural hurricane and storm damage reduction, and structural hurricane and storm damage reduction will generally be 65-percent Federal and 35-percent non-Federal. The currently estimated Federal share of the estimated first project cost is $932,951,300 and the non-Federal share is currently estimated as $248,716,700. Significant monetary and non-monetary benefits as described herein would accrue from implementation of the fifteen project elements.

12. NEPA Compliance. This report presents information in support of a Record of Decision for construction for a number of ecosystem restoration, storm damage reduction, and multi-purpose projects. Additionally, other projects are developed in this feasibility study which are not presented in support of a Record of Decision for construction, but are addressed as reasonably foreseeable actions for the consideration of cumulative effects. Supplemental NEPA information will be presented in the future as programmatic elements of the Comprehensive Plan are further developed. A Notice of Intent (NOI) was published in the Federal Register on August 9, 2006, to inform the public of the Corps' intent to prepare an EIS for the MsCIP Comprehensive Plan. The public was invited to attend a public scoping meeting, a public workshop, and a public hearing to obtain public input and ensure compliance with NEPA. Several initial scoping meetings were held between April and August 2006 in conjunction with development of the interim report. A scoping workshop was held in Biloxi, MS, December 19, 2006, to gather public input for the programmatic EIS.

Per the Council on Environmental Quality regulations on implementing the National Environmental Policy Act, the Corps, Mobile District requested that a number of State and Federal Agencies accept the status of Cooperating Agency on the Integrated Report and Programmatic Environmental Impact Statement. In response to this request, dated October 30, 2006, nine federal agencies, seven state agencies, and one regional planning commission are participating as cooperating agencies.

B. COMMENTS FROM REVIEW OF THE JANUARY 2008 ALTERNATIVE FORMULATION BRIEFING DOCUMENTATION.

1. Planning Process. While much of the specific project related analysis is adequate, the report does not analyze and recommend a comprehensive plan from which these projects should have evolved. The comprehensive plan should take you through all the steps of the planning process resulting in a recommended comprehensive plan. This plan should be fully developed with a description of all project elements and a general estimate of cost. After the comprehensive plan has been developed all elements of the comprehensive plan should include a recommended path forward. Some elements will include a more specific detailed project analysis that will provide the necessary information to make further recommendations for construction authority or further project specific study authorization. Other elements may only indicate that more study is needed. The comprehensive plan may include a plan for implementation that includes elements to be implemented by others or elements that may

require new authorization. Although the comprehensive plan may identify elements that require new authority, it should clearly identify those elements that can be implemented within existing authority.

Response: *Concur. The report will be revised to include a description of how the concept of the comprehensive plan was developed in the context of a system-wide approach, how the elements of the comprehensive plan were formulated, what outcomes each of the elements would achieve – alone and in combination, a summary of the final plan components, and implementing entities. The report will also be revised to better lay out planning approach taken, how public involvement and the Risk Informed Decision Framework (RIDF) was integrated into the process and used in the plan selection process, how risk was assessed and incorporated into the process, and all other factors integrated into the plan selection process.*

Discussion: *The HQ review team found the report difficult to understand because of the approach taken to describe the entire iterative process the PDT utilized in developing solutions, the lack of an overall comprehensive plan framework, the scaling of problems, and the amount of detail included in the discussion. The Main report should take the reader through the planning process in a clear and concise manner referencing the detailed discussion that is found within the appendices. The main emphasis should be to focus the discussion on how each component fits together in a comprehensive, system-wide plan (i.e. why here – why now), working to achieve the goals and objectives. The report also needs to clearly define all elements of the Comprehensive plan, not just those that can be accomplished by the USACE, and what actions Congress and /or others may need to take to ensure that these elements are realized. Relationships between various programs within the Federal government also need to be explained including how they may conflict with and/or compliment each other as part of the plan. The report should also clearly define what Congress needs to do in response to the recommendations. In summary, the plan should be restructured in more linear fashion following the planning process and laid out in a three scale fashion – comprehensive – regional – local.*

Required Action: *The report will be rewritten in a concise, clear linear fashion to take the reader through the comprehensive vision to the regional opportunities to the local solutions and then back to how these fit together in the overall achievement of the plan. This will include a description of how the concept of the comprehensive plan was developed in the context of a system-wide approach, how the elements of the comprehensive plan were formulated, what outcomes each of the elements would achieve – alone and in combination, a summary of the final plan components, and implementing entities. The report will also be revised to better lay out the planning approach taken, how public involvement and the Risk Informed Decision Framework (RIDF) were integrated into the process and used in plan selection, how risk was assessed and incorporated along with all other factors the plan selection process. Actions to be taken by other entities will also be clearly defined.*

The Executive Summary will also be revised to describe the vision, and how the planning approached was used to define the problems, opportunities and possible solutions. Discussion of the recommendations will be limited and put at the very end of the summary.

Action Taken: The Main Report has been rewritten in it's entirety and a Plan Formulation Appendix has been developed to provide the decision maker with the requisite information to understand the Comprehensive Plan for coastal Mississippi and how the construction of the previously authorized interim projects, implementation of the recommended plan features along with projects which may result from authorized future studies would provide for a coastal Mississippi more resilient to the impact of future hurricanes or tropical storms. The report now clearly identifies the comprehensive plan, the formulation process taken to get to the plan, and the various elements of the plan. The report has been rewritten with an eye toward readability of the intended audience(s) and includes the role that public involvement and the incorporation of risk assessment was used in determining which plan elements were the most cost effective in meeting the goals and objectives.

***HQ Analysis:** Partially Resolved. Although modifications to the report have occurred, a clearly defined comprehensive plan is not incorporated into the main report. This plan should describe the total plan and estimated costs and benefits. Then identify how this plan would be implemented through either construction or more detailed study. All the necessary information seems to be already included in the appendices but has not been incorporated into the main report to clearly describe the comprehensive plan. The non-structural appendix does provide the information that would closely describe the comprehensive plan. Follow the non-structural appendix as a guide for the main report.*

***Discussion/Action Taken:** Sections 3 and 5, specifically 3.1 and 3.5 and 5.1 and 5.5 have been revised to address the issues discussed at the FRC of 18 December including the need to clearly identify the problems and needs of the area and the process used for developing solutions. We have also included an expanded discussion of monitoring and adaptive management. Section 5.9 has also been expanded to discuss comprehensive plan costs and benefits. Section 3 is at attachment 1 and Section 5 is at attachment 2. Please refer to attachment 3 for Sec 5.9 revision.*

2. System Approach. The report does not include a clear description of how the projects will function together as a system. A comprehensive plan needs to systemically address problems, and as such, the lack of a systems approach is a major shortcoming.

***Response:** Concur. Although not evident in the draft report, an overall system approach was utilized in combination with the legislative directive to develop the comprehensive plan vision, goals and objectives. The report will be revised to include an overall framework of the natural and manmade elements that comprise the Mississippi coast. We will include a discussion of how the area responded to natural disasters in the past, i.e. Camille, and the consequences of the actions taken subsequently to rebuild the coast. Included here will also be the significant expansion in development in the 1990s associated with the legalization of gaming on the coast. The presentation of lessons learned and lessons not learned from the past form an integral part of the system approach taken in development of the comprehensive plan. We will also include a discussion of the importance of understanding activities outside the 'MS System', e.g. activities in Louisiana or Alabama, in developing the comprehensive plan. This discussion will dovetail with the revisions of the report to better explain the planning process (comment 1 above) as well as revisions planned to address comments 3 and 4 below.*

Discussion: *Although not evident in the draft report, an overall system approach was utilized by the PDT in combination with the legislative directive to develop the comprehensive plan vision, goals and objectives. The report should include a discussion of the comprehensive framework of the coast, how this has developed over time, and how the comprehensive plan is based within the vision of creating a resilient and sustainable coastal community (i.e. framework vision). A clear linkage between the elements of the framework will be critical in showing how the recommended comprehensive plan elements will achieve this overall vision. It is understood that the comprehensive plan would be a living document that will take many years to fully achieve. The plan should address how the Interim projects fit into the overall framework, those additional elements that can and should be undertaken in the near future, and those elements which will require a longer time to be implemented.*

Required Action: *The report will be revised to include an overall framework of the natural and manmade elements that comprise the Mississippi coast. It will include a discussion of how the area responded to natural disasters in the past, i.e. Camille, and the consequences of the actions taken subsequently to rebuild the coast. Included here will also be the significant expansion in development in the 1990s associated with the legalization of gaming on the coast. The presentation of lessons learned and lessons not learned from the past form an integral part of the system approach taken in development of the comprehensive. A discussion will also be included of the importance of understanding activities outside the 'MS System', e.g. activities in Louisiana or Alabama, in developing the comprehensive. This discussion will dovetail with the revisions of the report to better explain the planning process (comment 1 above) as well as revisions planned to address comments 3 and 4 below.*

Action Taken: *An overall environmental framework is included in the MsCIP Comprehensive Main Report and Integrated Programmatic Environmental Impact Statement in Section 2.1.1 General Description of the Study Area and also in the Environmental Appendix in Section entitled -* COASTAL MISSISSIPPI – THE ENVIRONMENT PRE- AND POST-HURRICANES & RECOVERY ANALYSES - *from page 1 through 12. This framework serves as a basis for the development of the overall Comprehensive Plan and forms the scorecard against how the program features attain the goals and objectives.*

HQ Analysis: *Partially resolved. Include in the report the LACPR/MSCIP Systems Analysis. This was included in the last version.*

Disussion/Action Taken: *Per the FRC of 18 Dec 2008 and subsequent e-mail from J. Redican the following actions have been taken: Sec 1.6 of the Comprehensive Plan has been replaced with an updated version of the systemwide discussion that was included in the MsCIP Progress Report dated March 2008. Updating was done to make the discussion contemporary with today. Chapter 7 'Regional Considerations and Across-Region Influences of MsCIP and LACPR Alternatives' from the draft MsCIP Comprehensive Plan Report dated January 2008 has been included in it's entirety as Section 11 in a revised Plan Formulation Appendix (K). In addition Section 11.1.3 of that Chapter 'Coordination with FEMA Updates to Flood Insurance Rate Maps' has been revised and re-titled 'Coordination with FEMA' to reflect recent coordination between the two agencies. See attachment 4.*

3. Goals and Objectives. The main report needs to explain more fully the goals and objectives. These goals and objectives need to be the basis for the formulation of the

comprehensive plan. The objectives will need to be defined at various levels of detail starting with the overall study area down to the specific problem area.

Response: *Concur. The PDT has developed the following strawman for discussion at the upcoming FRC.*

The Vision of the Mississippi Coastal Improvements Program is a coastal Mississippi that is resilient in regards to hurricane and storm surge.

The Comprehensive Goal is the establishment of a framework for collaborative implementation of solutions addressing hurricane and storm damage reduction, fish and wildlife preservation, saltwater intrusion, erosion, and other appropriate water resource activities which results in a sustainable coastal system.

The system-wide goals established for this study take into consideration the linkage of structural, nonstructural, and ecosystem restoration opportunities across the coastal landscape and are identified as follows:

- *Identify measures to minimize risk to loss of life and safety caused by hurricane and storm surge;*
- *Recommend cost-effective measures for restoration of nationally and regionally-significant environmental resources within a context of long-term sustainability;*
- *Recommend cost-effective measures to reduce damages from hurricanes and storms without encouraging re-development in high-risk areas;*
- *Recommend cost-effective measures to mitigate damages caused by saltwater intrusion into nationally significant ecosystems;*
- *Recommend cost-effective measures to restore eroded coastal resources as part of a system-wide approach to develop a resilient coastline;*
- *Identify other water resource related programs and activities integral to the development of a comprehensive system-wide plan.*

The system-wide objectives established for this study provide specific targets to obtain the comprehensive goals and are identified as follows:

- *Reduce loss of life caused by hurricane and storm surge by 100%;*
- *Reduce damages caused by hurricane and storm surge by $150M-$200M annually;*
- *Restore 10,000 acres of fish and wildlife habitat including coastal forests, coastal wetlands, wet pine savannah, submerged aquatic sea grasses, oyster reefs, and beaches and dunes by the year 2040.*
- *Manage seasonal salinities within the western Mississippi Sound such that optimal conditions for oyster growth (surrogate for other aquatic resources, 15 ppt during summer months) are achieved on an annual basis by 2015*
- *Reduce erosion to barrier islands, mainland, and interior bay shorelines by 50%*
- *Create opportunities for collaboration with local, state, and Federal agencies to facilitate implementation of programs and activities that maximize the use of resources in achieving the comprehensive goal.*

We would like to have a discussion at the FRC discussing the above goals and objectives and especially the loss of life objective.

Discussion: *The PDT presented the above information.*

The review team indicated that the vision should be defined early on and carried throughout the report. The projects recommended are actions not solutions that lead to a more resilient coast. The report should clearly convey expectations, i.e. Say that one option is to move everything northward away from the coast, but for these reasons ..... it cannot be done, however what can be done is ..... The report should fully describe any limitations on achieving the vision (Congressional limitations, state/local limitations, environmental limitations, public response etc.) as well as what can be done to alleviate the limitations (i.e. Congressional authority). The PDT concept of a 'resilient coast' should be presented in the first paragraphs of the Executive Summary. This would be important to Congress and the reader. Describe the comprehensive goals on a system scale and how they tier down to a more local level and then tie back to achieving comprehensive vision. The report should also show the need to ensure that the comprehensive plan can be updated as we move forward.

Required Action: *As described in Actions 1 and 2, the report will be revised to contain the above concepts. In addition the revised report will include a discussion of implementation strategy including aspects of geographic scale, fiscal scale, time scale, agency scale. The report will need to clearly define implementation of the comprehensive plan as compared to USACE implementation of specific elements of the comprehensive plan.*

Action Taken: *The MsCIP Vision, Goals, and Objectives are presented in Section 3 of the revised Main Report. There is also discussion of how these relate to the overall environmental framework and how the comprehensive plan serves to achieve these goals and objectives.*

HQ Analysis: Resolved.

4. Problem Identification. The main report needs to develop problems and opportunities for both the more general comprehensive plan level of detail and for the more detailed evaluation that will lead to recommendations for project authorization. Table 5.2.1-1 describes potential solutions not problems that will be addressed through the formulation process.

Response: *Concur. We will organize the problems and opportunities on both a system-wide and site-specific scale and revise the report. Table 5.2.1-1 will be reorganized to follow this strategy. In addition the table will be shortened to better highlight the major problems and opportunities rather than the site specific problems.*

An example for discussion at the FRC follows:

The PDT presented the following for discussion:

System- wide Problem

- *Hurricane-induced storm surge damage to ecosystems within the three-county area.*

System-wide Opportunity

- *The opportunity to assist in the recovery and long-term sustainability of coastal wetlands supporting important fish and wildlife resources, that would be damaged by future events and are currently incapable of unassisted recovery.*

Site-specific problem

- *The 118 acre Admiral Island site, located in Hancock County next to Bay St. Louis, consists of degraded wetland habitat as a result of debris and sediment deposited during the storm surge event of Hurricane Katrina, as well as the resulting spread of invasive species throughout the area.*

Site-specific opportunity

- *The opportunity exists for the removal of sediment, debris, and invasive species, the restoration of the wetland hydrology, and the re-planting of native vegetation for the restoration of the ecosystem and fish and wildlife preservation of the Admiral Island area of Hancock County.*

Although no specific discussion of this comment occurred at the 8 May vertical team meeting, many of the discussion points described in 1 – 3 above apply in concept to this comment.

Discussion: *The above information was presented at the FRC.*

Required Action: *The report will organize the problems and opportunities on both a system-wide and site-specific scale and revise the report. Table 5.2.1-1 will be reorganized to follow this strategy. In addition the table will be shortened to better highlight the major problems and opportunities rather than the site specific problems.*

Action Taken: The above information has been presented in Section 3 of the revised report. Required actions relative to Table 5.2.1-1 (now Tables 3-1 thru 3-15) have been taken. These tables summarize initial coastwide stakeholder input.

HQ Analysis: *Partially Resolved. The report identified the system wide problems and then documents stakeholder input in tables 3-1 to 3.15. These tables still only provide a list of alternatives identified by the stakeholders. The report still does not include discussions of site specific problems as indicated in the response above. The report should include a short analysis of the stakeholder input and how it relates to the specific problems. Section 3.6 Development of Measures should then relate specifically to these identified problems. The measures identified in the report indicate that specific problems have been identified. These problems are not discussed sufficiently.*

Discussion/Action Taken: *The discussion centerend on the importance of establishing a clear link between the problems and needs and the alternatives. Sections 3.2 and 3.6 have been revised to identify system and site specific problems with clear linkage to the development of measures. New Table 3.1 has been developed to summarize problems and stakeholder identified needs. Old tables 3-1 to 3-15 have been relocated to the Plan Formulation Appendix and revised to specifically identify the specific problem being addresses and a new column added to identify the specific stakeholder identified needs. See attachment 1.*

5. Non-Structural Implementation. While the report identifies the need for programmatic authority to implement a significant non-structural alternative, non-structural alternatives can also be implemented through individual project authorizations. The report should identify areas where these projects could be implemented and how they could compliment FEMA and HUD programs. The report should clearly compare this approach with a programmatic approach discussing the benefits and drawbacks of each. This discussion should include parts of the plan that may be implemented by each agency. The Plan should state what our role is and how we will work with other agencies. The comprehensive plan needs to include actions that can be accomplished by others including Federal, State and local agencies.

Response: *Concur. Nonstructural measures described in the report could be implemented through individual project authorizations. However, following a disaster such as Katrina, where the total losses of residential, commercial and institutional structures are so pervasive, immediate private rebuilding of the coastal areas, especially areas identified to be high-hazard areas defeats the shared goal of reconstructing the project area as a disaster-resilient community. Allowing homeowners the chance to rebuild in these high-hazard zones while the Corps seeks separate congressional authorities and labors through an extended approval process, misses the opportunity to acquire those vacant properties without a new and potentially more expensive structure in place, thereby substantially increasing program costs. Enabling the Corps to react quickly through the use of a standing authority following a disaster in the project area would reduce acquisition costs and likely would increase the percentage of participants in a voluntary program thereby reaching the objectives and goals.*

While the Corps has been formulating a comprehensive plan to reduce flood damages and loss of life, both FEMA and HUD have started to implement post-disaster programs (through their congressionally approved standing authorities) that are implemented through the state and local governments. FEMA's Hazard Mitigation Grant Program (HMGP) and HUD's Homeowners Assistance Program (HAP) both include acquisition of damaged properties and the HAP includes grant funds for elevation of residences. The nonstructural appendix addresses the FEMA HMGP and discusses how that program may be combined with the Corps' proposed HARP. Differences in the handling of relocations expenses for displaced homeowners may restrict the combination of the two programs, but efforts will be made to look for opportunities to implement the programs together.

The extent of the HUD HAP was only discovered in the last few months following the completion of the draft comprehensive plan. The HAP is being implemented in two phases. Phase I addressed structures located outside of the FEMA 100 yr zone but were damaged by Katrina surge inundation. Phase II, now underway, addresses those structures within the FEMA 100 yr flood zone. At this time HUD has processed applications for the two phases. The MsCIP team has discussed the HAP program (being implemented through the MS Development Authority (MDA) with both HUD and MDA. The results of those discussions did not lead to any significant changes in the implementation of the HUD HAP. Although the HAP provides homeowners compensation for flood damages due to Katrina, it does not specifically acquire at-risk properties and in fact could result in new construction and rehabilitation in areas that the MsCIP comprehensive plan recommends be permanently evacuated. In addition, the HAP elevation program provides grant funds (only a percentage of the total funds required to elevate) for homeowners to elevate their structures in

accordance with FEMA guidelines and local building codes. Although these requirements are similar to the MsCIP nonstructural recommendations, the HAP allows elevation of structures within the identified high-hazard zones. This would be inconsistent with the Corps MsCIP recommendations for voluntary acquisition of those structures. The HAP also transfers responsibility for all elevation design, construction and inspection oversight to local governments. The Corps' recommended elevation program would include Corps oversight of the design, construction and inspection in accordance with the latest IBC and FEMA guidelines. The lack of agency oversight under the HAP generates the potential risk of inadequate design, construction practices and inspection in areas where extreme surge and wave conditions could lead to catastrophic failure and loss of life.

HUD has agreed to provide GIS data on the location of all program applicants so that the Corps can identify those parcels in the project database and address future nonstructural actions for those parcels. The potential for "double-dipping" of government funds by landowners is apparent and will be addressed in the Plan. The Appendices and Plan will be revised to describe fully each of the other agency plans that include nonstructural measures and whether and how these plans could be integrated into the MsCIP plan.

The main report identifies a number of elements of the comprehensive plan that can only be accomplished by others. Additional information is needed in the main report on both FEMA and HUD programs and how they can accomplish elements of the plan. A good example would be the Bayou Cumbest ecosystem restoration which would be dependent upon the FEMA HMGP acquisition of the properties. Collaborative examples such as this should be highlighted in the report.

Following discussion at the FRC, we will modify the report to lay out how the comprehensive plan can be implemented through individual authorizations (i.e. – elevating structures in the Waveland), where we are working with FEMA and HUD in complimenting their programs (i.e. - HUD's structural elevation of houses outside the 100 year floodplain and the Corps' acquisition of properties within). We will also demonstrate where different agencies policies and programs conflict with each other and lay out the benefits of having a programmatic approach versus separate individual projects.

Discussion: *The review team indicated that the report needs to clearly define the nonstructural plan and what part of this total plan is accomplished via the HARP. The report should clearly define roles and responsibilities of all Federal agencies in the nonstructural arena. Even though the plan would apply the standard '646 process' but the HARP would use a different calculation process in determining replacement values. The goal is to remove people/buildings from high risk zones. There are two windows of opportunity – now and in the long-term (quickly after the next storm). To do this would require Standing Authority. We need to clearly lay out the normal process and discuss any deviations. The review team also suggested that we look at ESF 14 and the application of this to the MsCIP (LACPR was described as ESF 14 friendly by ITR team member).*

Required Action: *Develop Nonstructural White Paper, discussing the above, for review by the vertical team. In addition the White Paper will lay out how the comprehensive plan can be implemented through individual authorizations (i.e. – elevating structures in the Waveland), where we are working with FEMA and HUD in complimenting their programs*

(i.e. - HUD's structural elevation of houses outside the 100 year floodplain and the Corps' acquisition of properties within). The team should also demonstrate where different agencies policies and programs conflict with each other and lay out the benefits of having a programmatic approach versus separate individual projects.

Action Taken: Modifications to the Nonstructural Appendix related to descriptions of the FEMA and HUD Assistance Programs and the potential conflicts with the MsCIP nonstructural plans are found in two places. The FEMA and HUD program descriptions are on pages 17-20 (Section 3.5) and page 96 Section 4.5.9.7 and both descriptions and potential program conflicts in the floodproofing programs are discussed on pages 87-89 in Section 4.5.8.

A Nonstructural "White Paper" has been completed and added to the Real Estate Appendix as an Exhibit C.

***HQ Analysis:** Partially Resolved. One element of the nonstructural plan is to buy out flood prone properties. The extent of the properties considered for buyout has been described sufficiently in the report and multiple scales have been considered. The two main parts of the buyout option need to be formulated and evaluated separately. First, formulate the desired buyout options to be determined by scale, approach and combined as an integral part of a nonstructural and comprehensive plans. The second part is the methods used to implement the plan. The report identifies the HARP implementation plan before a comprehensive plan is developed. The report needs to include the buyout as a generic part of the plan. The recommended plan should include buyouts that are within the current Corps authority. The report should also lay out implementation options (HARP as one) and the anticipated impact of these options such as costs, participation rates, future impacts and other impacts. How the buyout is implemented will likely impact cost and participation. A mandatory buyout is within the Corps authority and should be evaluated. The draft report has improved the discussion of FEMA and HUDs programs. However the district did not develop an implementation alternative buyout option that would utilize the Corps, FEMA, and HUDs program in one coordinated effort. This alternative would use the problems identified with these non-Corps programs to identify ways to make these programs more complimentary. The comparison of the identified implementation plans in the Economic Appendix does not adequately compare these alternatives. Participation rates of 100% for the HARP is not realistic and a mandatory buyout would provide significantly more benefits than a voluntary buyout. There needs to be a discussion of potential impacts of implementing HARP on insurance participation, increasing the value of properties in the buyout area, the cost of providing services and maintaining infrastructure for the remaining properties and potential increase in speculative property investment in the buyout area.*

We understand from our 20 November 2008 telecon that the "standing authority" proposal currently described in the report is no longer being proposed. All report sections describing such proposal should be revised accordingly.

For further requirements regarding the proposal for implementing the HARP, see Comment C.3. of this memorandum.

***Discussion/Action Taken:** Please see response at New Comment C.3.*

HQ Analysis: *Resolved by comment C.3.*

6. Policy Deviations. There needs to be a section in the Main Report detailing all of the policy deviations. This section should also include a discussion of the need for waivers from the Assistant Secretary of the Army (Civil Works).

Response: *Concur. A new section will be added to the report discussing the basis and need for policy deviations and/or waivers. Additional changes will also be made in the appropriate appendices, providing additional detail on the need for such deviations.*

RE will identify all Policy Deviations and or waivers pertaining to Real Estate in a separate section of the HARP "Exhibit C" Report attached to the RE Appendix.

Discussion: *The review team discussed the need for adding information relating to any policy deviations that may be required to achieve the goals of the comprehensive plan. This discussion should also discuss any waivers that may be requested from ASA(CW).*

Action Required: *A new section will be added to the report discussing the basis and need for policy deviations and/or waivers. Additional changes will also be made in the appropriate appendices, providing additional detail on the need for such deviations.*

Real Estate will identify all Policy Deviations and or waivers pertaining to Real Estate in a separate section of the HARP "Exhibit C" Report attached to the Real Estate Appendix.

Action Taken: *A new section has not been added since the only remaining policy deviations are associated with the HARP. Rather than a new section at this point, a legal review of the various policy issues is being requested to determine which of the proposed policy deviations that are referenced in the most recent version of the Nonstructural White Paper , a.k.a. Exhibit C to the RE Appendix, may require special authorization prior to implementation. A separate memorandum will be forwarded to CE-RE addressing the questions to these policy deviations.*

HQ Analysis: *Partially Resolved. As required by Comment C.3. a clear summary of the issues and analysis for implementation of the HARP must be provided to CECW-PC.*

Discussion/Action Taken: *Please see response at New Comment C.3.*

HQ Analysis: *Resolved by comment C.3.*

7. Programmatic Authority. The report should also identify components of the comprehensive plan where we lack specific authority to implement. Several components of the comprehensive plan that may need programmatic authority to implement include the Submerged Aquatic Vegetation Pilot Project, HARP, MsCIP Environmental Restoration program. Care must be taken when discussing the need for programmatic authority that we only identify the need and not request the authority.

Response: *Concur. The team understands the sensitivity associated with programmatic authority and will ensure that the PDT only identify the "need" for such authority in the main report and all appendices.*

Since OMB has expressed displeasure with the use of programmatic authority, especially for environmental restoration programs, we would like to have discussion at the FRC to assist in developing the path forward for the team. Obviously, individual authorizations for each element of the restoration program are an approach, but it would seem to be cumbersome and contrary to the vision of a system wide comprehensive program for the coast. The PDT would like to move forward with the programmatic approach but require HQ expertise in this matter to develop a quality approach.

Discussion: *The team understands the sensitivity associated with programmatic authority and will ensure that we only identify the need for such authority in the main report and all appendices.*

Per the discussion it appears that we may not need a programmatic authority. The HARP could be accomplished via a Standing Authority and our earlier discussion may have been more a confusion of terms. For the environmental restoration projects we should lay out all the measures that are part of the comprehensive plan, identify in detail the efforts required in the first 10 years, then discuss how we would apply adaptive management, i.e. lessons learned etc. , to the remaining measures. We would recommend the entire program for authority via the Chief's Report and specify the implementation plan which would include reporting to Congress at a set future schedule and the amount of funds that would be required for the next phase of implementation. The PDT should also consider applying contingency of up to 50% for the future measures cost estimates.

Required Action: *Revision of the report will remove any reference to programmatic authority. The PDT will develop the environmental restoration program per the discussion with detailed focus on those phase I efforts and their relationship to the overall comprehensive plan. Additional efforts will be described in sufficient detail to show relationship to comprehensive plan and to what extent they would accomplish the goals and objectives. Benefits of each of the measures will be developed to show how they support objectives on a local, regional, and systemwide basis.*

Action Taken: Any reference to a Programmatic Authority for environmental restoration efforts has been removed from the Environmental Appendix in Section entitled - COASTAL MISSISSIPPI – THE ENVIRONMENT PRE- AND POST-HURRICANES & RECOVERY ANALYSES *and also from the MsCIP Comprehensive Main Report and Integrated Programmatic EIS . Phase I and II efforts have been explained in Sections 5.1, 5.1.1.1.2, and 5.9, and Table 1.1.6-1 in the above Environmental Appendix. The Main Report and the appendix show how benefits of each of the measures were developed and how they support objectives on a local, regional, and systemwide basis.*

Action Taken: The Nonstructural Appendix was modified on page 92 Section 4.5.9.5 to better describe the HARP and bring its description more in line with that discussed in the Real Estate Appendix and remove all references to a programmatic authority.

HQ Analysis: *Partially Resolved. As noted in the "HQ Analysis" component of Comment B.5 all references to a "standing authority" proposal should be deleted from the draft report. Also see Comment C.3. regarding further requirements regarding summary of implementation requirements for the HARP.*

Discussion/Action Taken: *Please see response at Comment C.3.*

HQ Analysis: *Resolved by comment C.3.*

8. Comprehensive Plan. The Comprehensive Plan is difficult to read because of its length and repetition. Rather than a main report that tells the story of what the problem is, how the solutions to the problems were developed, and why the recommendations make sense, it appears that the main report is a repeat of anything considered important in the Appendices. As Appendices were updated it seems that the updates were not carried through to the main report creating discrepancies. The final main report and appendices need to be consistent.

Response: *Concur. The main report is being re-structured to better reflect the sequence of a traditional Corps planning report, to address the issue of repetition created by the original integrated report format. See also Response to Comment 3.A.1. Part 1, above.*

Discussion: *See earlier discussion elements.*

Required Action: *The main report should be re-structured to better reflect the sequence of a traditional Corps planning report, to address the issue of repetition created by the original integrated report format. PDT will ensure that the main report and appendices are consistent.*

Action Taken: The main report has been restructured and rewritten in it's entirety to address the issue of repetition and length of document. The report and appendices have been quality checked to remove any inconsistencies.

HQ Analysis: See analysis of comment 3.A.1(AFB Comment 3.A.1)

9. Executive Summary. The Executive Summary does summarize the main report at this time; however, as the main report is revised to better reflect the story telling, the Executive Summary needs to follow suit. The Executive Summary should provide most essential information about the report. It should be clear and concise. Usually, it contains a statement of the problem, some background information, a description of any alternatives, and the major conclusions. Since the executive summary is a condensation, when creating it, preliminaries, details, and illustrative examples should be omitted.

Response: *Concur. The Executive Summary will be totally revised in an effort to reflect the possible content of the draft Chief's Report.*

Discussion: *See earlier discussion elements.*

Required Action: *Revise Executive Summary to reflect the possible content of the draft Chief's Report.*

Action Taken: *The Executive Summary is new and reflects the content of a possible draft Chiefs Report.*

HQ Analysis: Resolved

10. Risk. ER 1105-2-101 defines "Risk" as "the probability an area will be flooded, resulting in undesirable consequences". This definition defines risk as a probability. From the engineering perspective risk is the resultant of the probability of something occurring multiplied by the consequences that would happened if it occurred. Other related terms such as risk assessment and risk management should also be defined. These terms can have different meanings to different people. To improve the understandability of the document these concepts need to by defined early in the report and applied consistently throughout the entire document.

Response: *Concur. We received a similar comment from the ITR. The confusion results from the term 'risk' being used in a number of different contexts, e.g. risk education, risk management etc. We will ensure that an appropriate definition is supplied for each of these and that the definition is used consistently throughout the main report and the appendices. The approach toward incorporating risk assessment, evaluation, and incorporation into the plan selection process, will also be covered more articulately.*

In the "Twelve Actions for Change", the Corps was committed to a process that also "Employ[s] risk-based concepts in planning, design, construction, operations and major maintenance." In addition, it has been made clear to all involved in Corps planning studies in the post-Katrina environment, that a major expectation of Corps planners is to also incorporate risks associated with over-topping, failure of the plan to perform as intended, risks of loss of life, risks to cultural and historic resources, and other factors of importance to a given study. The Corps currently does not have guidance on how to communicate, in terms of probabilities, many of these new risk factors, nor does it have a mandated process by which to incorporate risk in the plan selection process. Therefore, the MsCIP team was challenged to take a more qualified approach towards quantifying or alternatively, characterizing risk so that comparisons might be made as to project performance of various alternatives in comparison to one another, in this new, and larger "risk" environment.

Discussion: *The main concern is with the multiple definitions and uses of the term 'RISK'. To alleviate the concern there should be complete definitions of entire terms, e.g. Risk management, perceived risk, residual risk etc., in the Glossary as well as within the text of the report. In addition the team needs to be clear on how the RIDF/MCDA was utilized in the MsCIP evaluation, not just the theory behind the concept and its use outside the USACE planning process. The team also needs to be very clear on how we involved the stakeholders in developing risk reduction strategies, how the stakeholder feedback was garnered and how it was used in the plan selection process via the System of Accounts alternative comparison.*

Required Action: *the PDT will ensure that an appropriate definition is supplied for each of these and that the definition is used consistently throughout the main report and the*

appendices. The approach toward incorporating risk assessment, evaluation, and incorporation into the plan selection process, will also be covered more articulately.

Action Taken: *The Main Report and Risk Appendix have been revised in light of the comment and discussion. Specifically Sections 3.1, 3.1.3, 3.17 and 3.19 contain discussion of the application of risk within the planning process.*

HQ Analysis: Resolved

11. Threat to Life. Even though Life Safety is recognized it as a paramount concern, the report does not discuss it in terms of investigation, reasoning, definition and prevention except in the Non-Structural Appendix. Throughout the MsCIP efforts, there has been extensive investigation into the expected annual damage to the property in the flood plain. Cultural and environmental resources have been identified. However, the main report does not describe fully the threat to life to include where loss of life occurred during the Katrina event, the location of the houses that potentially contained loss of life or injuries, the reason people stayed in certain houses or where concentrations of population did not evacuate, etc. The main report does not describe how alternatives were formulated to reduce the risk of fatalities – a major shortcoming in the comprehensive plan development.

Response: *Concur. We concur that Life Safety is a significant concern and that discussion in the main report of information on the numbers, locations and circumstances of deaths directly associated with Katrina surge and waves would be beneficial for the Plan.*

Data on reported deaths per county is available as well as various news reports relating some specific circumstances. Unfortunately, comprehensive specific information on locations of recovered bodies and other related data mentioned in the comment is very sensitive and local forensic/mortuary/recovery agencies were reluctant to share such sensitive data with the Corps during creation of the draft report. We will incorporate readily available data and again attempt to secure more specific information from State and local sources. The updated information will be incorporated in the Main Report and Nonstructural Appendix to further support project components as means to attaining the goals and objectives of the comprehensive plan.

We will also attempt to gather similar data from post Camille reports to provide a broader context of the lingering risk to life along the coast.

Discussion: *The above information was presented at the FRC.*

Required Action: *The PDT will incorporate readily available data and again attempt to secure more specific information from State and local sources. The updated information will be incorporated in the Main Report and Nonstructural Appendix to further support project components as means to attaining the goals and objectives of the comprehensive plan. The PDT may also look to gather similar data from post Camille reports to provide a broader context of the lingering risk to life along the coast.*

Action Taken: *Additional data regarding more specific numbers of fatalities and their general locations was not forthcoming from the local authorities and therefore no additional*

data was included in the Nonstructural Appendix regarding that formulation parameter. Since the fatalities data was not available on Katrina there was no purpose in including the available Camille data for comparison purposes either. However, one additional section was added to the Nonstructural Appendix to specifically address Loss of Life Issues (Section 4.3 – Page 22) in nonstructural plan formulation.

Since no additional data were available, no changes we made to the body of the Main Report. However, the issue of loss of life has been captured in the plan selection process via the System of Accounts analysis as presented in Sections 3.17 and 3.18.

HQ Analysis: Resolved

12. Relative Sea Level Rise. The use of the term "relative sea level rise" can be misleading to the reader. Care needs to be taken to distinguish between the individual impacts from land subsidence and the impacts of sea level rise. Given that sea level rise is estimated as consistent across the study reaches, any variation in the sea level at discrete points along the coast is associated with subsidence. Make clear the contribution that subsidence alone has to the relative sea level rise reported through out the document.

Response: *Concur. Additional language will be inserted in the main report to refer the reader to Chapter 1.6 of the Engineering Appendix for a detailed discussion on relative sea level rise as related to the present stage of Comprehensive Plan evaluations.*

By way of discussion, predictions of future relative sea level rise incorporate both the observed rate of rise and a future, eustatic (sea level only) component. The eustatic component is assumed to be uniform over the Mississippi coast; but, the historic components, determined from the records of three tide gages, are not equal. It is possible that the differences might be attributable entirely to subsidence, but differences attributable to other factors, primarily: gage record length, proximity of a gage to a passing surge producing storm cell, gage location (open coast or, as in the case of the Pascagoula gage, somewhat recessed), historic data collection aggregation (MTL vs. MSL) all weigh in the relative sea level rise estimates and cannot be discounted in favor of subsidence. As discussed in the Chapter 1.6 of the Engineering Appendix, attempts have been made by others to quantify near-coastal subsidence in Mississippi, but those results, taken in consideration of computed relative rise from gage records, would suggest the Mississippi Coast is rising. Such an argument is not presently supported. Beyond those, reports have indicated that, of the Gulf Coast states, Florida is considered to be the most stable, and relative sea level rise rates determined from west coast Florida gages might be considered to be the closest thing to a Gulf Coast eustatic rate as might be obtained. Rates in Mississippi are comparable to those in Florida, any differences covered by the standard error of estimate and/or most readily and arguably reconciled by period of record or inherent data quality issues versus a strict allocation to subsidence. Given these considerations a definitive allocation of relative rise and sea level rise impacts to subsidence is problematic.

Discussion: *The above information was presented at the FRC.*

Required Action: *Additional language will be inserted in the main report to refer the reader to Chapter 1.6 of the Engineering Appendix for a detailed discussion on relative sea level rise as related to the present stage of Comprehensive Plan evaluations.*

Action Taken: Sea level rise is discussed in Sections 2.2.2 and 3.1.3.3 of the revised Main Report. In addition response of a plan to sea level rise is one of the evaluation factors in the System of Accounts analysis at Section 3.18. Additional language has been inserted into Section 1.6 of the Engineering Appendix.

HQ Analysis: Resolved

13. Framework for ecosystem restoration. The draft report does not include a framework that provides the context for the ecosystem restoration planning effort for coastal Mississippi. Without a framework, it is not apparent that the ecosystem restoration projects recommended for construction in the report, or those that would be considered under the proposed programmatic restoration authority, represent an effective and efficient way to invest Federal dollars. For example, there is little discussion in the report of the types of wetland habitats that are deemed to be the most important, productive or valuable within the state, or of the historical losses of wetland acreage and functions that have occurred in coastal Mississippi.

While the SDSS method is useful at identifying and prioritizing restoration efforts, the starting point for the SDSS analysis is those areas that were damaged by the hurricanes of 2005 (i.e., the damaged areas are a subset of the larger coastal ecosystem). Ecological resources that were not significantly damaged by the hurricanes were not considered in the SDSS analysis, nor were valuable habitats that had already been completely lost or destroyed prior to 2005 considered in the comprehensive planning effort. Without a framework to establish the context for the proposed restoration efforts, it is difficult to explain, much less justify, why the proposed restoration plan is a cost-effective way to invest Federal funds, because it is not clear that the proposed restoration sites represent a reasonable way to achieve the types of ecosystem outputs that are of greatest importance in coastal Mississippi. The analysis of the barrier island restoration incorporated some contextual elements, in that the condition of the barrier islands prior to Hurricane Camille was discussed; however, the barrier island discussion could also benefit from an expanded framework that better describes the historic extent and functions of this resource.

The study authorization does not appear to restrict ecosystem plan formulation efforts to those areas damaged by the 2005 hurricanes, and does not limit scope of analysis to restoring pre-hurricane conditions. As such, HQUSACE recommends that the report be revised to include a framework that describes the context for the comprehensive plan for ecosystem restoration for coastal Mississippi.

Response: *Concur. Early guidance suggested that any ecosystem restoration would be restricted to addressing damages resulting from the 2005 storms. This was problematic in that many of the environmental impacts of the storms of 2005 were in reality the culmination of processes that started in the early 1950s. Removing this restriction will make the development of a framework for action easier and will lead to better quantification of the comprehensive nature of the program.*

The report will be revised to include an overall framework of the natural and manmade system found within Coastal Mississippi. The national significance of the resources will be identified, e.g. the Fertile Fisheries Crescent, importance wetlands in reducing flooding impacts, Mississippi Flyways for neotropical migrants and waterfowl, presence of threatened and endangered species etc. Also, past and current losses to the natural environment will be depicted using historic land use maps, i.e., National Wetland Inventory maps from 1950 through the most current, 1992. A description of past and current development pressure (post Camille, 1990s expansion, recovery of the coast and need for affordable housing) will be added to highlight concerns as rebuilding occurs. Additionally, a discussion of the impacts of historic alteration of freshwater flows, the storm surge and increased salinities on the coastal forests and coastal wetlands would tie-in how the storms of 2005 worsened the already existing problem. This framework would serve as the basis from which we developed options to meet the stated goals and objectives. Potential restoration sites will have language added to highlight which projects provide which objective.

The SDSS was only one tool for identifying restoration sites and initially the SDSS was used to prioritize sites where we could not only perform environmental restoration but also reduce risk of future damages to property by acquisition. In fact, the final sites include several that did not meet the SDSS criteria, Turkey Creek, for example was added because of the issues associated with overdevelopment in the watershed and increased impacts from flooding. Other factors that were used to select potential restoration sites obtained utilizing personal knowledge of the interagency team and a site's proximity to land currently protected by US FWS, State of Mississippi Coastal Preserves Lands, and/or other protected land.

The SDSS tool was developed as a rapid way to assess, identify and prioritize potential wetland restoration areas on a large scale throughout Coastal Mississippi to meet stated objectives, reduction of future storm damages and preservation of fish and wildlife habitat. The SDSS analyzed several GIS layers of information including soils, damages from surge, historical land-uses and targeted previous wetlands that had been developed primarily with residences which were either completely obliterated or severely damaged by the storm surge of Hurricane Katrina. This allowed us to recommend removal of residences located within risky areas and restoration of historical wetlands that were filled. First hand knowledge of past and current land-uses by the PDT served to further screen-out or add-in sites that were important for restoration. Additionally, we identified eleven potential restoration sites working with the State of Mississippi, Department of Marine Resources on lands they owned through their Coastal Preserve Program. This allowed us to further our restoration effort by identifying lands that were especially important to this ongoing state program of acquiring and managing sensitive coastal habitats.

Discussion: *The above information was presented at the FRC.*

Required Action: *Report will be revised per the response and discussion above.*

Action Taken: *In the environmental documentation (EIS & Appendix), the references to the storms of 2005 were removed and then replaced with hurricane and storm events in order to link damages to more than the season of 2005. This has been done throughout the entire document therefore the specific reference locations will not be provided. An overall environmental framework is included in the MsCIP Comprehensive Main Report and*

Integrated Programmatic Environmental Impact Statement in Section 2.1.1 General Description of the Study Area and also in the Environmental Appendix in Section entitled - COASTAL MISSISSIPPI – THE ENVIRONMENT PRE- AND POST-HURRICANES & RECOVERY ANALYSES - from page 1 through 12. Table 1.1.6-1 in the above Environmental Appendix document shows how benefits of each of the measures were developed to show how they support objectives on a local, regional, and systemwide basis.

HQ Analysis: Resolved

14. Ecosystem restoration objective, page 81 Main Report. The main planning objective (second bullet, page 81) for the ecosystem restoration effort is very general, and in fact, resembles a goal more than an objective, in that it does not adequately identify, describe or quantify the desired outcomes of the restoration efforts. HQUSACE recommends that this objective be revised to include greater detail about what would be achieved by the short-term and comprehensive ecosystem restoration plans.

Response: *Concur. As discussed in response to comment A.3 above specific ecosystem restoration objectives have been developed. These objectives will be further refined to address both the short-term (10 years) and longer term comprehensive ecosystem plans (30 – 40 years) as well how these elements contribute to the overall system goals and objectives. The role of the interim ecosystem restoration projects (Jackson Marsh, Harrison County dunes etc.) will also be included in this discussion.*

Discussion: *The above information was presented at the FRC.*

Required Action: *These objectives will be further refined to address both the short-term (10 years) and longer term comprehensive ecosystem plans (30 – 40 years) as well how these elements contribute to the overall system goals and objectives . The role of the interim ecosystem restoration projects (Jackson Marsh, Harrison County dunes etc.) will also be included in this discussion.*

Action Taken: *Programmatic Authority reference for environmental restoration efforts has been removed from the Environmental Appendix in Section entitled - COASTAL MISSISSIPPI – THE ENVIRONMENT PRE- AND POST-HURRICANES & RECOVERY ANALYSES and also from the MsCIP Comprehensive Main Report and Integrated Programmatic EIS . Phase I and II efforts have been explained in the above Environmental Appendix document in Sections ES 5.1, 5.1.1.1.2, and 5.9. Table 1.1.6-1 in the above Environmental Appendix document shows how benefits of each of the measures were developed to show how they support objectives on a local, regional, and systemwide basis.*

HQ Analysis: Resolved

15. Planning Horizon and Period of Analysis. The term planning horizon should not be used as a substitute for period of analysis or economic life. The period of analysis is what should be used in reference to the 50 to 100 year time frame. (ER 1105-2-100, paragraph 2-4.j.) "The period of analysis shall be the same for each alternative plan. The period of analysis shall be the time required for implementation plus the lesser of: (1) the period of time over which any alternative plan would have significant beneficial or adverse effects, (2)

a period not to exceed 50-years except for major multiple purpose reservoir projects,..." The planning horizon would be greater than the period of analysis as it includes the planning and design phases. Also, the report needs to be clear that the period of analysis does not imply project life. The document does make a case for the use of a 100 year period of analysis, but its use would still require a waiver from the Assistant Secretary of the Army Civil Works. **The district should request this waiver as soon as possible.**

Response: *Concur. The comprehensive plan has two types of recommendations: construction recommendations and recommendations for further study. All potential measures were initially evaluated at a 100-year period of analysis for screening and sensitivity purposes. After coordination with HQUSACE during multiple IPR's throughout the comprehensive study, it was determined that all construction recommendations would be adjusted to a 50-year period of analysis for construction recommendations in this report and that all recommendations for further study recommendations would remain at 100-years for this report and be converted to a 50-year period of analysis in future study efforts. This methodology will be followed for all construction recommendations except for the barrier islands and the Home Owner Assistance and Relocation Program (HARP). Given the sensitivity of these plans to environmental forces and the impacts of relative sea level rise, it is the recommendation of the PDT to keep these construction recommendations at a 100-year period of analysis and ask for a waiver from the Assistant Secretary of Civil Works for these two construction components of the comprehensive plan.*

The PDT would like to discuss this issue further at the FRC.

Discussion: *The team presented the above information. It was discussed that for the Louisiana Coastal Area (LCA) that a sensitivity analysis for 100-year period was completed for the overall plan while formulation and evaluation was completed using a 50-year period. It was mentioned by Barbara Kleiss from ERDC that in the NAS review of the Louisiana Coastal Area (LCA) report that the use of the 50 year period of analysis was not appropriate for environmental planning purposes. The NAS suggested that we should use 100 years as the planning horizon and 50 years for the economic analysis.*

Required Action: *For the near term recommendations the PDT will evaluated a 50-year period of analysis which includes the barrier islands and the HARP. The current 100-year analysis will be used as sensitivity analysis for the plans.*

Action Taken: Period of Analysis discussions are in Chapter 8 of the Economic Appendix.

HQ Analysis: Resolved

16. Screening Process, page 216 Main Report. This section of the report states that the PDT screened hundreds of potential restoration sites, and selected 34 final sites. These final sites include a combination of sites identified by the SDSS results, as well as some additional sites. It is not clear from the narrative whether the additional sites were screened using the same criteria as the 34 remaining sites, or whether other criteria were used to add these additional sites to the list of final measures. A list of 38 restoration sites is found on pages 216-218. The additional sites appear to be four in number, and include at least the Bayou Cumbest and Dantzler sites. The screening and selection process for all final restoration sites

should be documented in the report.

Response: Concur. *Screen of potential restoration sites was accomplished by an interagency expert team utilizing a variety of methods (spreadsheets, models, best professional judgment). All the elements of the recommended plan were screened initially and during the second round of screening, using the same criteria. The third and final round of screening used the specific criteria developed for the type of outcome or functional area suited to that element. Using the SDSS, ecosystem restoration sites were screened using the criteria of whether or not it was capable of achieving the outcomes desired for restoration of that site; in this case, sufficient acreage to make restoration viable (> 5 ac; less than 5 acres being screened), a measure of "restorability" (low or medium low scores being screened), an assessment of habitat "class" (low or medium low scores being screened), and secondarily, an assessment of how much the area would contribute to surge damage reduction potential. In addition to the SDSS other environmental restoration sites were evaluated using criteria which did not include surge damage reduction potential. This screening process resulted in the forwarding of the final 38 sites for more detailed analysis. A cost effective analysis was conducted using IWR-PLAN on five of the restoration sites that were representative of the entire 38. Cost effective analysis would be conducted using this methodology at the other 33 sites as part of the programmatic work. Additional detail is provided in response to comment A.1 above.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Revise the main report for clarity, and a more understandable characterization of the plan formulation and screening process.*

Action Taken: *The main report was updated to better describe the plan formulation process of selecting the environmental restoration sites. The above language was incorporated into the main report to better describe the formulation process and selection of the environmental restoration sites. Specifically Sections 3.14 and 3.15.2.2 contain a discussion of the formulation process for the environmental restoration plan features.*

HQ Analysis: Resolved

17. Section 6.19, page 391 Main Report, Unavoidable Adverse Environmental Effects.
This section of the report contains the following statement "It is anticipated that any adverse environmental affects which could not be avoided should potential projects be implemented should be temporary and localized and would be minor individually and cumulatively". The basis for making such a broad statement about environmental effects of projects that would be subject to further study is not apparent. Not only is the basis for the statement unclear, but the mitigation cost estimates for a number of the potential future projects are quite substantial, a point that would appear to conflict with the statement in question. HQUSACE recommends that this statement be deleted from the report.

Concur: *While this statement is true for the majority of the restoration projects, it cannot apply to all projects evaluated in the comprehensive plan and certainly cannot be applied to those projects which require further study to determine the specific project elements.*

Included in later screening criteria were environmental consequences and potential impacts to sensitive ecosystems found throughout the coastal area.

Discussion: *The above information was presented at the FRC.*

Required Action: *This section of the report will be revised to highlight the processes which were used to minimize impacts including the early screening of measures for environmental sustainability. Further clarification should be added that identifies potential projects that help meet the stated environmental objectives. A general discussion should also be added that provides information on potential structural measures that could be studies further and any mitigation that might be required to address minimization and avoidance of impacts.*

Action Taken: *Chapter 6 – Effected Environment has significantly been revised throughout the entire section. The specific statement was revised to not be a board, general statement for the entire comprehensive effort. Table 4-4 was added in the Effected Environment Section that shows how benefits of each of the measures were developed and how they support objectives on a local, regional, and systemwide basis. Additional information is presented in Sections 3.9 and 3.12.*

HQ Analysis: Resolved

18. Benefits to Mississippi Sound from Barrier Island Restoration, page 458. Section 8.1.2.11.3 on page 458 states that no environmental benefits have been calculated to result from the proposed restoration of the barrier island system. Given that the protective benefits of the restored barrier islands could be substantial, HQUSACE strongly recommends that an estimate of benefits be included in the final report. (If time constraints were the reason that benefit estimates were not prepared for the draft report, it might be a good idea to say that such a benefit analysis will be included in the final report). Lastly, the New Orleans district investigated how to evaluate these sorts of benefits during the planning phases of the Louisiana Coastal Area restoration plan, and may be able to offer some assistance, if needed.

Response: Concur. *Development of direct environmental benefits associated with the placement of sand to repair damage to the islands is problematic since we are dealing with the tradeoff from one habitat type (open water) to another (beach and dune). We have been able to calculate preliminary benefits associated with the sustainability of the Mississippi Sound through restoration of the islands. Additional benefits will be developed for the final report and we will consult with MVN staff.*

This section of the report will be revised to discuss those benefits associated with sustainability of Mississippi Sound including those presented in the example table below taken from the Economic Appendix. The report will clearly depict the estimate of the benefits and how they were derived.

Required Action: *Develop additional benefits for the final report in consultation with MVN staff. Revise this section of the report to discuss those benefits associated with sustainability of Mississippi Sound including those presented in the example table below taken from the Economic Appendix. The report will clearly depict the estimate of the benefits and how they were derived.*

Summary Benefits and Costs by Measures

	Restore Island Footprint	Littoral Zone Placement (River Sand)	Littoral Zone Placement (Offshore Sand)	2 Foot Dunes on Existing Island Footprint	6 Foot Dunes on Existing Island Footprint (Offshore Sand)	Restore Island Seagrass Resources	Fill Ship Island Breach	Fill Ship Island Breach & Littoral Zone Placement
National Economic Development Benefits								
Future 3 Damages Avoided (Annual $)	$17,699,600	$10,831,480	$9,748,332	$9,206,758	$9,206,758	$7,365,406	$7,229,600	$17,699,600
Future 4 Damages Avoided (Annual $)	$17,699,600	$10,844,920	$9,760,428	$8,296,364	$8,296,364	$6,637,091	$7,498,400	$17,699,600
Future 5 Damages Avoided (Annual $)	$17,699,600	$12,646,145	$11,381,531	$9,674,301	$9,674,301	$7,739,441	$8,082,900	$17,699,600
Future 6 Damages Avoided (Annual $)	$17,699,600	$12,661,160	$11,395,044	$9,685,787	$9,685,787	$7,748,630	$8,383,200	$17,699,600
Recreation Losses Avoided (Annual $)	$466,341	$116,585	$116,585	$116,585	$116,585	$116,585	$233,171	$466,341
Environmental Quality Benefits								
Fishery Losses Avoided (Annual $)	$43,618,143	$8,723,629	$6,542,721	$4,361,814	$4,361,814	$2,180,907	$21,809,072	$43,618,143
Regional Economic Development Benefits								
Change in Sales Volume	$2,289,546,000	$2,463,534,000	$565,947,000	$34,506,000	$95,256,000	$642,735,000	$277,263,000	$843,210,000
Change in Income	$480,984,800	$517,536,100	$118,893,400	$7,248,976	$20,011,260	$135,024,900	$58,247,050	$177,140,450
Change in Employment	14,100	15,171	3,485	212	587	3,958	1,707	5,192
Average Annual Costs								
Average Annual Cost	$50,762,856	$54,620,424	$12,547,919	$765,051	$2,111,994	$14,250,445	$6,147,337	$18,695,256

Action Taken: *Direct environmental benefits associated with the placement of sand and the filling in of the Ship Island breach are discussed in the Economic (Section 6.2) and Environmental Appendix and shown in Chapter 4 – Effected Environment Section of the Main Report.*

HQ Analysis: Resolved

19. Bayou Cumbest Alternatives, page 251 Main Report. Section D, on the last line of the table on page 251, notes in the column titled "Acquisition Only" that the responsibility for this alternative would be joint Federal and Non-Federal. The proposed joint cost-sharing for this alternative is not in accordance with ER 1165-2-501, paragraph 6(b), which states, in part that proposals that consist primarily of land acquisition are not appropriate as Civil

Works ecosystem restoration investments. A similar statement is found in EP 1165-2-502, paragraph 7(m). If this no-action alternative is to be pursued, a policy waiver from the ASA(CW) would be required.

Response: Concur. *The description of the alternatives utilizes a poor choice of words. This area is subject to an ongoing FEMA HMGP to Mississippi Emergency Management Agency (MEMA) and Jackson County to acquire all those repetitively flooded properties in the Bayou Cumbest community. Separate discussion with MEMA indicates they will also acquire properties that do not meet the repetitively flooded criteria such that the acquisition is not piece-meal. This activity is currently ongoing with or without the MsCIP. Coordination with MEMA indicated that environmental restoration of the area would be an allowable activity but that FEMA would not provide resources to accomplish. Due to the significant value of the surrounding wetlands area, the MsCIP developed several restoration alternatives that could be implemented following completion of the HMGP process. 'Acquisition Only' was used to specify that no restoration would occur and represents the without project condition, i.e. No Action alternative, and serves as the basis for evaluating the benefits of the restoration alternatives.*

After further evaluation of the costs associated with restoration of this area, primarily due to the excavation of fill that was placed in the historic wetland so that the residential development could proceed, the team feels that we should evaluate the project in light of other important habitats that could be restored without excavation. For example this area of Mississippi, which is adjacent to the Grand Bay National Wildlife Refuge and National Estuarine Research Reserve, is a critical element of the Mississippi Flyway. Habitats utilized by neotropical migrants such as scrub shrub communities would have significant benefit to these species for resting and forage without the need for costly excavation.

In revising the report we will either redefine the restoration objectives for this site and redesign or recommend that this project undergo additional study to refine the most cost effective environmental restoration option.

Discussion: *The above information was presented at the FRC.*

Required Action: *The PDT will either redefine the restoration objectives for this site and redesign or recommend that this project undergo additional study to refine the most cost effective environmental restoration option. The report will be revised subject to the above decision. The PDT will also get definitive information from MS MEMA / Jackson County on the status of the HMGP activities.*

Action Taken: *The Bayou Cumbest restoration project was redefined to recommend the most cost-effective environmental restoration options. Close coordination with MEMA ensured that all suitable acquisition sites were incorporated into the Corps' recommended restoration project. The Bayou Cumbest figures used throughout the report (i.e. Main Report and Environmental Appendix) clearly depict the proposed purchased properties. Thus, the Bayou Cumbest restoration project now consists of approximately 144 acres to be acquired and 4 acres being acquired by MEMA. Of the 148 acres, approximately 110 acres of emergent tidal marsh and 38 acres of scrub/shrub wetland habitat would be restored. Although MEMA is purchasing over 200 acres in the vicinity of Bayou Cumbest many of*

these acres are not suitable for restoration (i.e. were upland habitat prior to development) and are not included in the proposed restoration. The project as redefined incorporates a large contiguous tract of lands suitable for restoration as tidal marsh (adjacent to the bayou) and improvement as scrub/shrub buffer.

HQ Analysis: *Partially Resolved. The recommendation for submerged aquatic vegetation restoration in Bayou Cumbest is problematic on several fronts, including;*

- *Outputs of the work are not quantified*
- *The study authorization does not address formulation of pilot projects. Ordinarily, pilot projects or demonstration projects are specifically stated in study authorizations.*
- *The applicability of this measure to the larger Mississippi Sound area is not apparent*

With regard to the outputs of the work, page 4-71 of the Main Report states that it is unclear how the benefits of the SAV restoration would be quantified. This statement is troubling because the quantified outputs of ecosystem projects have traditionally been used as the basis for project justification. The lack of quantified outputs for this activity is a major weakness of the proposal, even though the general discussion of the value of SAV habitats on pages 4-71 and 4-72 is pretty good. In addition, paragraph C-3 (d) 5 of ER 1105-2-100 requires that a habitat-based assessment method be used to the extent possible to evaluate ecological resources.

Lastly, HQUSACE has a general observation concerning the applicability of the proposed pilot project to the larger issue of lost of SAV habitat in Mississippi Sound. It is not apparent in the report if the SAV habitat in Bayou Cumbest is representative of a large percentage of the historical extent of SAV in Mississippi Sound. If the Bayou Cumbest site is not representative of the historical SAV habitats throughout the study area, the applicability of the lessons learned from the Bayou Cumbest site would appear to be limited. If the Bayou Cumbest site is not representative of extensive parts of potential SAV habitat in the study area, perhaps a different site should be proposed because it would allow better use of the lessons learned from a pilot project. In addition, it is not clear from the report why this small area (5 acres total) of SAV is significant to the larger SAV habitat of Mississippi Sound.

The district needs to provide a more thorough discussion of the proposed pilot project to include the outputs of the project, its relevance to the larger Mississippi Sound, how the information will be used.

Discussion/Action Taken: *As Discussed in the FRC revisions to sections 3.15, 3.16 and 3.20 of the Comprehensive Plan Main Report have been made to include further reasoning regarding the use of a pilot project and its benefits regarding the applicability to the larger issue of lost SAV within the brackish ecosystem. Highlights from these revisions include:*

SAV restoration efforts across the nation have proven to be rather challenging and many examples can be identified close to Mississippi, such as in Florida. Thus, Bayou Cumbest was chosen due to its small size to produce data such as salinity, water quality, currents,

substrates, composition of sediments, boating traffic (propellor scarring/turbidity), transplant success rates, and heterogenoity of species composition in order to determine the success criteria for future recovery efforts of SAV within brackish systems in Coastal Mississippi. Future SAV restoration sites could include areas north of Buccaneer State Park, Cat Island, Ship Island, Dog Keys Pass, Horn Island, Petit Bois Island, and Point aux-Chenes. After discussing the potential SAV pilot project with biologists at ERDC, it has been determined there currently are no assessment tools for quantifying benefits of SAV restoration projects. Although quantified outputs of ecosystem projects have traditionally been used as the basis for justification, little data is available for use in establishing baseline conditions of existing SAVs, organisms currently using established beds, and the specific causes for the overall decline of brackish SAVs. As part of the data collection described above, an index would be developed most likely using acreages and density quantifying environmental outputs generated through the success of the SAV restoration pilot project. This quantifiable environmental output would then be used to demonstrate cost effective criteria for future brackish SAV systems.

For the SAV effort, limited knowledge of the functional restoration prohibited the team in developing cost effective alternatives; thus, a pilot project was identified at Bayou Cumbest to obtain the much needed described data. The federal recommendation is to construct a pilot project which would restore the SAV beds lost in Bayou Cumbest. The information gained from this pilot study could then be used to develop a plan to implement larger scale SAV restoration. The full Section 3 is at attachment 1.

20. Table 5.17-1, page 226 Main Report. With regard to the Bayou Cumbest and Turkey Creek sections of this table, HQUSACE recommends that additional information be added to help distinguish among several of the alternatives for each site. Plans 3 and 6 for Bayou Cumbest, and Plans 3 and 6 for Turkey Creek, display the same information in all of the columns for their respective sites; thus, the table is not an effective tool to distinguish between these alternatives. Footnotes or other information could be added to help clarify the differences between the various alternatives.

Response: *Concur. This table was not meant as a tool for distinguishing among alternatives but rather was an example of the information presented to the stakeholders during the RIDF process.*

Discussion: *The team presented the above information.*

Required Action: *The PDT will evaluate the need for including the table and if so will clarify its use. The report will be revised accordingly.*

Action Taken: *Table 5.1.1.1.2-2 "Cover Classes and Midpoint Values for Each Class" has been included as an example of the specific application of the HGM to the evaluation of environmental benefits. In addition an expanded discussion has been included in Section 5.1.1.1.2-2.*

HQ Analysis: Resolved

21. Programmatic Authority. Programmatic Authority for Ecosystem Restoration, page

303 Main Report, Section 5.19.2 of the report discusses the establishment of the MsCIP Environmental Restoration Programmatic Authority. It is not clear whether the report is requesting programmatic authorization to study ecosystem restoration efforts, or programmatic implementation authority. Given that a cost estimate of approximately $5 billion is included in the report, it appears that programmatic implementation authority is being requested. Please be advised that the Office of Management and Budget has consistently opposed programmatic implementation authorities for Corps projects.

Response: Concur. *See discussion at Comment A.7.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Revision of the report will remove any reference to programmatic authority. The PDT will develop the environmental restoration program per the discussion with detailed focus on those phase I efforts and their relationship to the overall comprehensive plan. Additional efforts will be described in sufficient detail to show relationship to comprehensive plan and to what extent they would accomplish the goals and objectives. Benefits of each of the measures will be developed to show how they support objectives on a local, regional, and system-wide basis.*

Action Taken: *All references to a Programmatic Authority for environmental restoration efforts has been removed from the Environmental Appendix in Section entitled -* COASTAL MISSISSIPPI – THE ENVIRONMENT PRE- AND POST-HURRICANES & RECOVERY ANALYSES *and also from the MsCIP Comprehensive Main Report and Integrated Programmatic EIS . Phase I and II efforts have been explained in the above Environmental Appendix document in Sections ES 5.1, 5.1.1.1.2, and 5.9. Table 1.1.6-1 in the above Environmental Appendix document shows how benefits of each of the measures were developed to show how they support objectives on a local, regional, and systemwide basis.*

HQ Analysis: Resolved

22. Demonstrating Cost-Effectiveness of Ecosystem Restoration Sites. The ecosystem restoration sites proposed for Coastal Mississippi are described in Chapter 5 of the Environmental Appendix, and are displayed in Table 5.1.1.1.1-1. The costs for the proposed sites range from approximately $136 thousand to $2.2 million per acre. It is not clear from the information presented in the Main Report and Environmental Appendix how the determination of cost-effectiveness was made for these sites, both within each category of environmental setting, and in the ecosystem program as a whole.

A comparison of costs within the identified environmental settings reveals that costs vary considerably in some of the categories, as shown by the following examples:

- Emergent aquatic vegetation, Bayhead swamps trees, Bayhead swamps shrubs, Riverine/levee forests. This category contains four sites, and costs per acre range from $395 thousand to $2.1 million, an approximate five-fold spread.

- Emergent aquatic vegetation. This category contains 15 sites, and costs per acre range from $233 thousand to $1.4 million, a six-fold spread.

- Dune system: This category contains 2 projects, and costs per acre range from $246 thousand to $1.5 million, an approximate six-fold spread.

The considerable range in per acre cost for projects that appear to provide similar types of habitat is problematic, in that it would seem to be difficult to develop a convincing argument that all of the projects are cost-effective, given the dissimilar costs.

With regard to the ecosystem restoration program as a whole, the report should fully discuss the cost-effectiveness of the proposal, possibly by highlighting examples of projects that were not deemed to be cost-effective, in order to provide the reader a basis for comparison.

In any case, demonstrating that each project, and the entire program, is cost-effective is a critical element of the report, given that the costs associated with the proposal are substantial, and will certainly be subject to close scrutiny by HQUSACE, OASA(CW) and OMB.

Response: Concur. *A cost effective analysis has been incorporated into the Economic Appendix using the IWR Plan; however, an incremental analysis was not prepared. This analysis was only applied to those restoration projects recommended for construction (which are a representative sample of the ecosystems to be restored) and not the entire list of 38 presented in the table. A cost effective analysis would be performed on the remainder of the plan elements as they are more fully developed through additional study. As with the Bayou Cumbest plan element discussed in comment B.7 above we believe additional effort will reduce the cost per acre or functional unit and improve the cost effectiveness.*

It is important to note that different eco-systems restoration plans require specific actions based on the type of habitat being restored, for example, a wet pine savannah habitat would require removal of exotics and burning to establish and maintain wetland vegetation while tidal wetland restoration would require the removal of old fill, some infrastructure and the introduction of marsh vegetation resulting in large cost differences. The restoration costs are also dependent upon the current condition of the land. As with Bayou Cumbest the majority of the cost is associated with the fill that was previously placed in the wetlands to make the area developable. Since two major objectives of the comprehensive plan are to reduce risk from future hurricane and storm events and to restore the environment, sites that address both objectives rank high in the priority list.

Additional information will be included in the revised report to discuss the cost effectiveness of the recommended plan elements and how that cost effectiveness was developed.

Discussion: *The above information was presented at the FRC. With the development of the environmental framework showing the linkages between different habitat types within coastal Mississippi, we will re-evaluate the proposed actions to determine whether a mix of habitats within a site, e.g. vegetated ridges within a wetland to provide habitat for migratory neotropical migrants, would aid to the overall quality of the habitat. Taking this approach should allow us to reduce the cost of specific proposed projects while increasing the overall diversity and benefit to the coastal ecosystem.*

Required Action: *Include additional information in the revised report to discuss the cost effectiveness of the recommended plan elements and how that cost effectiveness was*

developed. Revise and re-evaluate appropriate proposed projects to increase diversity and benefit to the ecosystem. Clarify the intent and purpose of the information presented in Table 5.1.1.1.1-1. Provide additional information in the Environmental Appendix discussing the current state of the lands evaluated for environmental restoration.

Action Taken: *The MsCIP is a comprehensive plan addressing the issues presented in the legislation. This plan has been developed on a system-wide basis as discussed in the revised Main Report. Since all the features discussed in the comprehensive plan are part of the system approach it would be inappropriate to compare plan features that address different system needs (i.e. comparing tidal wetlands to wet pine savannas to swamps to dunes etc.) The PDT has developed features that support the goals and objectives and alternate ways of implementing these specific features. The most cost effective alternative for a feature was then determined using the IWR PLAN. Since no two locations across the coast which could support a specific feature are the same, e.g. some sites may only require removal of exotics to be restored while others may also require removal of fill, the cost per acre of achieving a specific end product will vary.*

Bayou Cumbest and Admiral Island restoration sites have been re-formulated to ensure that the proposed projects were cost-effective. These projects were re-scaled to reduce costs through restoration of a different habitat – scrub/shrub – in addition to the proposed emergent tidal marsh habitat. Table 5.1.1.1.1-1 shows the different habitats to be restored and then additional text was added in Section 5.1.1.1.2 to explain how these restoration projects achieved the overall planning objects which is specifically outlined in Table 5.1.1.1.2-1. The reader is referred to Economic Appendix Chapter 6, Environmental Appendix Chapter 5 and Sections 3.14 and 3.15 of the Main Report for additional information.

HQ Analysis: *Partially Resolved. The justification for the selected alternatives for the ecosystem restoration projects recommended for implementation in the Main Report is very limited, consisting mainly of a general statement that the PDT selected the plan based on cost estimates and benefits gained. An example of this approach is found on page 4-58, lines 7-9. Additional discussion of the value of the incremental environmental outputs gained by the added Federal investment should be included in the justification for each selected alternative.*

Discussion/Action Taken: *Discussion at the FRC of 18 December highlighted the need to explain the process used in selecting sites, specific criteria utilized for initial qualitative screeningdiscuss that cost effectiveness was applied to specific selected sites not across the entire venue of sites, and to include a discussion of incidental benefits. The process for prioritization is now discussed in more detail in response to Comment A-1 and also New Comment 1. A specific cost-effective analysis was conducted at the site level post-screening of potential sites, and Section 3.16 was revised to include an overview of the cost-effective analysis. Section 3.20 was revised to include additional information on each of the ecosystem final array of alternatives, a side-by-side comparison of cost-effective plans, and reasoning as to why the selected plan was chosen including benefits gained, potential impacts, and environmental outputs. See attachment 1.*

HQ Analysis: Resolved

23. Environmental Effects Analysis for Programmatic EIS. The Main Report/Programmatic EIS should be revised to better describe the environmental consequences of the projects recommended for construction, as well as the cumulative effects of the various components of the Comprehensive Plan, such as the programmatic ecosystem restoration authority and the Home Assistance and Relocation Program. The programmatic EIS for the Comprehensive Plan should describe the types of activities that would take place, discuss the environmental effects of these activities, and to the extent possible, estimate the scale of the environmental effects (both benefits and adverse effects).

While the types of activities are well-described in the report, the environmental effects, and in particular the scale of these effects, are not adequately discussed, either at the project-specific level, or at the cumulative effects level. The programmatic EIS should be revised to adequately discuss the environmental effects of all identified projects proposed for construction, as well as the likely effects of the programmatic efforts such as HARP.

Page 393, lines 23 through 41, of the Main Report, state, in part, that the abbreviated cumulative impacts assessment found in the report (i.e., 2 pages of text) is commensurate with the impacts of the projects recommended for construction, and that future EISs would identify those cumulative effects associated with recovery actions. HQUSACE strongly disagrees with this conclusion, given the indirect impacts caused by new residential development into pine forests, as well as those impacts directly associated with project features such as ring levees, inland barriers and surge gates. A cumulative impact assessment must be completed for all NEPA documents, even at the programmatic level, and cannot be pushed off to a later date for any reason. In addition, the cumulative affects section of a programmatic NEPA document is the ideal place to discuss the effects on the coast of Mississippi from other actions, such as the Louisiana Coastal Area ecosystem restoration proposal.

HQUSACE recommends that the cumulative effects analysis establish a range of values for the environmental effects of each component of the comprehensive plan, with the explicit recognition that these values are only estimates, and may be adjusted and refined as additional data from future NEPA documents becomes available. It is not possible to develop a meaningful cumulative effects analysis in the absence of data, because data is needed to both establish the background for the analysis, as well as to project the effects of the future conditions of the study area. Reliable data for refining the cumulative effects analysis may be obtained from any number of sources, such as NEPA documents completed by other agencies, and need not be restricted to data or other information that is generated by the Corps of Engineers.

Lastly, the cumulative effects analysis does not adequately discuss the role of other parties that have or may implement projects in the study area over the period of analysis. As noted in 40 CFR 1508.7, the cumulative impact analysis must consider past, present and reasonably foreseeable future actions, regardless of the agency (federal or non-federal) or person that undertakes such actions. To this end, the cumulative effects analysis must recognize that the larger recovery effort directed toward Coastal Mississippi involves many players, including

Federal and State agencies, businesses, non-governmental organizations and private individuals.

Response: Concur. *The structure of this section of the report will be significantly revised to be able to discuss the effects on a system basis both for classes of actions as well as for the specific project elements within each class. In addition, the cumulative impacts section will be revised and expanded to include both the direct and indirect impacts of ongoing and reasonably foreseeable actions. We will build upon information gathered prior to Katrina to gauge the level of cumulative impacts as a function of growth rate and redevelopment. We will discuss how past actions (post Camille redevelopment and development of the 1990s) impacted the coast and the lessons we can learn from these activities. With the emphasis on reducing risk to the coastal population and the HARP recommendation the cumulative impacts associated with these actions could result in new residential development in currently undeveloped rural lands. This movement of the population would require additional supporting infrastructure which will also be discussed. Additional data will be obtained from other studies such as the environmental documentation completed by Mississippi Department of Transportation for replacement of bridges destroyed by the hurricane and documentation prepared by FEMA and HUD for the HMGP and HAP.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Reorganize and revise the Environmental Effects chapter per the discussion above and other relevant discussion on the Comprehensive Plan and system-wide approach.*

Action Taken: *Chapter 6 – Environmental Effects has been revised and a thorough analysis on different levels based on project types has been placed under a new chapter 4. The analysis has been conducted on a Comprehensive level using a systematic approach and impacts have been discussed qualitatively. An intermediate level analysis has been conducted on projects that require additional data, engineering and design, and possibly further study to develop alternatives and potential impacts/benefits are discussed qualitatively with required follow-up action to ensure NEPA compliance. Specific projects being recommended for construction and alternatives considered have been evaluated and supporting data relative to selected plans has been added into Section 4. Table 4-4 was added in the Effected Environment Section documentation that shows how benefits of each of the measures were developed to show how they support objectives on a local, regional, and systemwide basis.*

HQ Analysis: Resolved

24. Cooperating Agencies under NEPA. Has the Corps requested that any of the agencies listed in Section 4.5 of the main report be cooperating agencies pursuant to 40 CFR 1501.6? The Council on Environmental Quality strongly encourages cooperating agency status for Federal projects. If such formal requests have not been made to date, HQUSACE requests that the District initiate the requests as soon a possible. As an example, it is noted that the USFWS has written part of the Main Report and Environmental Appendix, a task that is specifically mentioned in the cited regulation.

Response: Concur. *This information was inadvertently omitted from the draft report. A letter requesting cooperating agency participation was sent on 30 October 2006. None of the agencies declined to participate. Attachment 1 lists those agencies cooperating on the MsCIP.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Include a list of Cooperating Agencies in the Main Report / EIS and indicate the role each played in the development of the comprehensive plan.*

Action Taken: *A list of Cooperating Agencies has been included in the main report in Section 1.7.3.*

HQ Analysis: Resolved

25. Fish and Wildlife Coordination Act as Constraint, page 80 Main Report.
HQUSACE does not agree that the Fish and Wildlife Coordination Act (FWCA) must be considered a constraint on the planning process. A constraint, as normally employed in the planning process, is a restriction that limits the extent of the planning process, or otherwise restricts plan formulation. The FWCA does not appear to meet this definition. The FWCA requires that the Federal action agency solicit the views of the USFWS and the state fish and game agency about a project, and requires that the action agency give "full consideration" to the recommendations of those agencies. The recommendations made by the USFWS and state agency are advisory in nature, and the action agency may implement the recommendations at its discretion. Given the advisory nature of the recommendations, it is not clear that the FWCA restricts plan formulation, or may be classified as a planning constraint.

Response: Concur: *The recommendations contained in the FWCAR are guidelines for minimizing impacts as well as determining benefits.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Report will be revised.*

Action Taken: *Report has been revised to remove any reference of the FWCAR as a constraint.*

HQ Analysis: Resolved

26. Fish and Wildlife Coordination Act Report (FWCAR). The FWCAR does not address all recommended projects/plans, and is therefore incomplete. Normally, a complete draft FWCAR is included in a draft feasibility study that is made available to the public. The report should be revised to specifically note the projects have yet to be evaluated under the Fish and Wildlife Coordination Act, and should also provide a status update and schedule of any supplements needed to complete the FWCAR.

Response: *Concur. At the time this draft version of the FWCAR was written the program*

was very much in the conceptual stage and specific information was not available. The FWS, Jackson, MS Field Office is currently updating the draft FWCAR using the most current information. This updated draft will be included in the Environmental Appendix prior to public review.

Discussion: *The above information was presented at the FRC.*

Required Action: *Include updated draft will be included in the revised Environmental Appendix. Discuss recommendations in the Main Report.*

Action Taken: FWCAR has been revised by US FWS with updated information and has been included in the Environmental Appendix. Recommendations are specifically discussed in Section 1.7.3.2 of the Main Report.

HQ Analysis: Resolved

27. Biological Assessment. There is no biological assessment included in the report appendices, even though it is clear from section 6.9.2 that the recommended work would have the potential for both adverse and beneficial impacts to listed species. The description of the process to be followed concerning the biological assessment is found in ER 1105-2-100, starting in Appendix C, section C-3(c)(2). The draft report should be revised to include the status of the BA, and the views of the USFWS and NMFS on same. Note: given that the bald eagle has been delisted, the discussions on section 6.9.2 should be edited to remove references to the bald eagle so that the readers are not misled as to the ESA status of this species.

Response: Concur. *Rather than prepare a separate BA, the FWS has agreed that the draft EIS will suffice for the biological assessment. This is their preferred method for initiating programmatic consultation under Section 7, ESA. The Jackson, MS Field Office is currently developing the Programmatic Biological Opinion. As additional details become available on specific plan elements, additional effort under the programmatic would be initiated as appropriate.*

Both the NMFS and FWS have played a significant role in the development of many of the comprehensive plan elements such that consideration of T&E species has been an integral part of the plan formulation process.

Discussion: *The above information was presented at the FRC. Although the bald eagle is no longer listed, it is considered a species of special concern in Mississippi. We will address specific bald eagle issues within a separate section of the report.*

Required Action: *Clearly state the intent of the FWS and NMFS to consider the EIS as the Biological Assessment and Include the Programmatic Biological Opinion to the report when it becomes available. Remove any reference of the bald eagle from the section on T&E species. Add information to the sections of the report dealing with faunal resources to discuss the special consideration for the bald eagle.*

Action Taken: *In Section 2. Fish and Wildlife Coordination Act Report and Biological*

Assessment and Biological Opinion of the Environmental Appendices, it clearly states that the FWS and NMFS will consider the EIS as a Biological Assessment when the report becomes available. A footnote is added to Table 2-1 indicating that the Bald eagle has been removed from the T&E listing as endangered. The Bald eagle however is still afforded special protection under other Federal laws and as such is a species of special concern.

HQ Analysis: Resolved

28. Clean Water Act Sections 401 and 404(r), pages 466-467 Main Report. The discussion of the Clean Water Act sections 401 and 404 (r) should be revised because it is not clear whether the Corps plans to request Congressional approval of section 404(r), or not. The discussion in section 8.8 of the Main Report on page 463, suggests that the Corps will request Section 401 water quality certification from the Mississippi Department of Environmental Quality, although it is not clear whether the certifications would be requested on an individual project basis, or a comprehensive plan basis. Clarification of the status of Sections 401 and 404(r) is requested.

Response: *It is our intent to seek State Water Quality Certification under Section 401 CWA for the implementation of the comprehensive plan elements. The discussion on CWA 404(r) was provided strictly for compliance information.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Ensure that the report clearly states the intent to request State Water Quality Certification for comprehensive plan elements.*

Action Taken: *Section 5.8 of the main report clearly states that water quality certification will be requested from the State of Mississippi for the recommended comprehensive plan features.*

HQ Analysis: Resolved

29. Environmental Justice, pages 389 and 472 Main Report. While the demographic information and analysis of environmental justice issues is well-written, HQUSACE requests that additional information concerning the outreach efforts made to the potentially-affected low-income and minority communities be included in the report. Executive Order 12898 stresses that outreach efforts are an essential part of the process. Guidance on environmental justice dated 10 December 1997 may be found on the Council on Environmental Quality website, about halfway down the page on the following link: www.nepa.gov/nepa/regs/guidance.html.

Response: *Concur. Additional information regarding specific and ongoing meetings with minority communities, especially in the Turkey Creek watershed, will be incorporated into the main report. This is an organized group the Corps has worked with in the past as well as participating in informational meetings and workshops to address their specific needs. Other outreach to minority communities was through the workshops held in each of the counties and the cities/towns along the coast. With the exception of the Turkey Creek group*

there are no other concentrated minority communities in the area that would be impacted by any of the recommended plan elements.

Discussion: *With the exception of the Turkey Creek group there are no other concentrated minority communities in the area that would be impacted by any of the recommended plan elements. This is an organized group the Corps has worked with in the past as well as participating in informational meetings and workshops to address their specific needs. Other outreach to minority communities was through the workshops held in each of the counties and the cities/towns along the coast.*

Required Action: *Additional information regarding specific and ongoing meetings with minority communities, especially in the Turkey Creek watershed, will be incorporated into the main report.*

Action Taken: *Additional supporting information has been included in Sections 3.4 and 4.1.21 of the main report and is also in the Environmental Appendix (Section 5.7).*

HQ Analysis: Resolved

30. Section 404(b)1 Guidelines analysis, Environmental Appendix. The 404(b)1 Guidelines analysis discusses both projects where the Corps has feasibility-level analysis and is recommending projects for authorization, as well as projects that would be the subject of future feasibility-level analysis. In general, the 404(b) 1 Guidelines analysis must discuss the specific affects on the aquatic environment that would result from any given project. Given that detailed project-specific information is required in order to complete the analysis, it is not possible to complete the required analysis for potential future project components, such as the surge gates across the Bay of St. Louis (see page 404(b)(1)-5). The 404(b)1 analysis should be limited to those project components that have feasibility-level analysis at this point in time. Additional analysis under the 404(b) 1 Guidelines for potential future projects can be completed as feasibility-level information becomes available. If the desire exists to discuss the affects of potential future projects, the cumulative affects section of the programmatic EIS would be the best place to do so.

Response: *Concur. The team went a little overboard in trying to include all proposals.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Revise the 404(b)(1) to only include those activities recommended for either construction or advanced engineering and design.*

Action Taken: *The 404(b)(1) has been revised and only includes features recommended for construction or advanced engineering and design.*

HQ Analysis: Resolved

31. Borrow Areas, Environmental Appendix. The effects on the borrow areas needed to construct the recommended and potential projects are not discussed either in the 404(b) 1 analysis or in the programmatic environmental impact statement. The effects on borrow

areas located in special aquatic sites should be analyzed in the 404(b) 1 Guidelines analysis, to the extent that detailed feasibility-level information is available. No analysis would be needed for any borrow areas located in upland areas (i.e., not located in special aquatic sites), or those located in offshore areas such as St. Bernard Shoals (i.e., outside the reach of the Section 404 regulatory program). However, the environmental affects on all proposed and future borrow locations, including uplands, special aquatic sites and offshore borrow areas, should be discussed in the appropriate sections of the programmatic EIS. Note: future actions are discussed on pages 7, 8, 10, 11 and 12 of the 404(b) 1 Guidelines analysis, Environmental Appendix.

Response: Concur. *Most of the borrow sites will be located in upland areas (commercially available). The main exception is the St. Bernard Shoals which on some maps is depicted as being within Louisiana state waters. We are currently investigating the location of the shoals in relation to the State territorial sea. Depending the results either the use of this area as a borrow site will be included in the 404(b)(1) or will be coordinated with the Minerals Management Service. Existing disposal areas located adjacent to the two deep draft navigation channels would also be mined as borrow sites for suitable sandy material.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Fully describe the environmental effects of all proposed borrow sites within appropriate sections of the EIS.*

Action Taken: *The effects of the borrow sites have been described using existing data and historical knowledge gained from previous borrow sites and recovery. In cooperation with the National Park Service, additional information regarding existing conditions and benthic communities will be gathered. Rates of recovery of benthic communities will be analyzed during further study.*

HQ Analysis: Resolved

32. Habitat variables, Franklin Creek, Turkey Creek and Dantzler Restoration Areas, Environmental Appendix. These three sections of the Environmental Appendix discuss the restoration variables that plug into the HGM assessment used to evaluate the ecosystem benefits of the proposed work at these locations. HQUSACE questions whether the assumed ten-fold increase in value for several of the restoration variables (from 0.1 to 1.0) is reasonable, considering the degree of disturbance and the influences of surrounding land uses. A rating of 1.0 typically represents the highest value achievable for any particular habitat variable. The report should address the basis for the increases in function that are assumed to occur based on the particular variables.

The restoration variables used at the Franklin Creek site include filling ditches, maintaining vegetation by burning, removing existing road beds and other fill materials, and adding culverts. The first three measures are projected to increase from an existing condition value of 0.1 to 1.0 in the with-project condition.

The variables used at the Turkey Creek site include filling ditches, maintaining vegetation by burning, and removing existing road beds and other fill materials, and adding culverts. These

three measures are projected to increase from an existing condition value of 0.1 to 1.0 with-project condition of 1.0.

The restoration variables used at the Dantzler site include maintaining savanna vegetation by burning, filling in 100% of existing artificial ditches, and 100% removal of exotic species. In all cases, implementing these measures will improve the scores from 0.1 to 1.0.

HQUSACE questions whether these with-project values are realistic, or even possible. For example, is it possible to remove 100% of exotic species given that invasive species such as Chinese tallow are common throughout the study area? Similarly, the filling of artificial ditches appears to relate to the restoration of hydrology; is it reasonable to assume that this measure will be completely successful at restoring the full extent of natural hydrology, given that nearby areas will remain in a drained condition? In any case, the report should discuss the scientific basis of the with-project habitat variables in order to better explain the substantial increase in habitat function.

Response: *Non-Concur. These numbers are based on values from the HGM guidebooks and are not based on the professional judgment of the MsCIP PDT.*

For instance a site with lots of hydrologic alterations will have a score of 0.1. A site without hydrologic alterations would score 1.0 following the guidebook. For exotic species, we are assuming that the amount removed will be sufficient for the plant function variables to reach full capacity. This could probably still occur without 100% removal of exotics. There is no "exotic species" variable in the model per se, but we are assuming the presence of exotics will affect the score of other variables. For instance, there is a variable "cover of native bunchgrasses"- the variable maxes out at 1.0 when cover is greater than 50%, so this is still possible without 100% removal. In terms of the drainage, again we are assuming removing not only ditches in the wetland, but ditches outside of the wetland that may also be draining it. If areas outside of the wetland are drained but the wetland itself is not, this should not affect the scores within the model.

We will include a table from the guidebook showing the scaling for one of the variables as an example with a reference to the Environmental Appendix for additional detailed information. In addition, we will use examples of the variables in the main report to further clarify the use of the models.

Discussion: *The above information was presented at the FRC.*

Required Action: *Include a table from the guidebook showing the scaling for one of the variables as an example with a reference to the Environmental Appendix for additional detailed information. In addition, display examples of the variables in the main report to further clarify the use of the models.*

Action Taken: *Table 5.1.1.1.2-2 from the HGM guidebook showing percent cover and the scaling (score) is included in Section 5.1 of the main report.*

HQ Analysis: Resolved

33. Mitigation ratio, page 99, Environmental Appendix. The 5:1 mitigation ratio for tidal and non-tidal wetlands is not clearly explained, and is not in accordance with ER 1105-2-100, paragraphs C-3 (d) 5 concerning the use of a habitat-based methodology for mitigation need determination, and C-3 (e) 8 concerning incremental analysis for mitigation plans. Similar language on mitigation ratios is also found on pages 5 and 6 of the 404(b)1 Guidelines analysis.

Response: *Concur. This discussion on mitigation ratios utilizing current mitigation bank policies in coastal Mississippi was used as an early surrogate to get a handle on potential (ballpark) mitigation costs for potential structural components and was not meant to comply with Corps policy. Should any off these structural plan elements be recommended for additional study, the actual development of the mitigation plan and associated costs would be developed at that time.*

The discussion will be revised to reflect this. In addition the discussion of the structural elements, will be removed from the 404(b)(1) evaluation per response to comment D. 1 above.

Discussion: *The above information was presented at the FRC.*

Required Action: *Revise the discussion in the Environmental Appendix to reflect this discussion. In addition, remove the discussion of the structural elements from the 404(b)(1) evaluation per response to comment D. 1 above.*

Action Taken: *An updated discussion concerning mitigation was included in Section 4.1.7 to state that the mitigation based on the current regulatory actions taking place within coastal Mississippi was used as guide for determining rough order magnitude mitigation costs in the absence of detailed information. These costs were then used in the preliminary evaluations of possible comprehensive plan features. Discussion of structural elements, with the exception of the Forrest Heights levee, has been removed from the revised 404(b)(1) Evaluation.*

HQ Analysis: *Partially Resolved: Lines 27 through 33 on page 107 state that the PDT used the mitigation bank policy of 5:1 replacement ratio as a surrogate for the preliminary assessment of mitigation costs. While this approach may be appropriate for preliminary cost estimation purposes, HQUSACE recommends that the specific 5:1 ratio not be used in the report because it may create an expectation among the interested public that all mitigation will be implemented using this ratio. While acknowledging that the last sentence in this paragraph states that a project mitigation plan would be developed as the study of individual projects progresses, HQUSACE would prefer that no specific mitigation ratio be included in the public release of the draft report*

Discussion/Action Taken: *Per the FRC discussion all reference to the use of a mitigation ratio has been removed from the Environmental Appendix Sec 1.1, pages 112 - 113.*

HQ Analysis: Resolved

34. Future Without Project Condition. The report describes future without project condition but relies too much on data at the county level. To fully describe the existing condition, more information is needed specific to the area inundated. Within the inundation area the report describes damage zones. How many structures of each damage category and occupancy type are located in each planning unit or sub-unit? More specific data about the property in each of these zones need to be addressed.

Response: *Concur. Additional information will be added to the main report to more descriptively depict the existing and without-project economic conditions to include types of structures and expected annual damages by planning unit (which is the county level) and by planning sub-unit.*

Discussion: *None, however the PDT concurs with the comment.*

Required Action: *More information should be added to the main report to more descriptively depict the existing and without-project economic conditions to include types of structures and expected annual damages by planning unit (which is the county level) and by planning sub-unit.*

Action Taken: *Information is included in the main report under the socio-economic section at the planning unit/county level (Section 2.2.10). Detailed data pertaining to the planning sub-unit level is included in Chapter six of the Economic Appendix and pertains to specific area analyses.*

HQ Analysis: Resolved

35. Structure Valuations. It appears that the implementation and cost associated with the nonstructural alternative are overstated. The real estate evaluation was conducted just several months after Katrina caused a reduction of the supply of homes by 65,000 units. At the same time demand for housing would have increased dramatically. This would likely account for the sudden increase in housing valuations. However, the future without project condition includes the rebuilding of those homes significantly altering the pressure on the housing market. Based on the assumed future without project condition, a market analysis for housing should be based on a proxy area where housing prices were not impacted by Katrina.

Response: *Non-concur. The real estate values used throughout the MsCIP Report were based on a market survey conducted by a Mississippi State Certified Appraiser in March 2007 or approximately 18 months after Katrina. This is further explained in the fourth paragraph of the RE Summary of the RE Appendix. The estimated values were obtained from comparable sales located throughout the project area. Based on a recent inquiry with the appraiser, these values were at their peak during early and mid 2007 and have since been flat indicating no further increase or decreases. There have been no indications from the coastal Mississippi market to suggest that these estimates could slip to pre-Katrina valuations. However, as with any project requiring real estate costs, the valuations should be re-assessed approximately every 12 - 18 months.*

Discussion: *The above information was presented at the FRC.*

Required Action: *None.*

Action Taken: *None.*

HQ Analysis: Resolved

36. Bayou Cumbest: Table 6.14-3. The implementation cost for acquisition is missing from the table. It should also be noted that if the ecosystem restoration alternatives are dependent on the acquisition of the vacant land and structures (mandatory buy outs), then the plan should be considered to be similar to a NED/NER plan and costs allocated appropriately. This question is also raised in the Dantzler and Franklin Creek measures.

Response: *Non-concur. Please see the response to comment B.7 in discussion of the Bayou Cumbest plan element.*

The Dantzler area is on state owned land and Franklin Creek properties and land was authorized and appropriated for purchase under the MsCIP Interim Plan therefore there are no land acquisition costs associated with these plan elements.

Discussion: *The above information was presented at the FRC.*

Required Action: *The PDT will either redefine the restoration objectives for this site and redesign or recommend that this project undergo additional study to refine the most cost effective environmental restoration option. The report will be revised subject to the above decision. We will also get definitive information from MS MEMA / Jackson County on the status of the HMGP activities.*

Ensure that landownership is clarified, especially with regards to State owned lands that are part of a proposed project.

Action Taken: *The Bayou Cumbest restoration project was redefined to recommend the most cost-effective environmental restoration options. Close coordination with MEMA ensured that all suitable acquisition sites were incorporated into the Corps' recommended restoration project. The Bayou Cumbest figures used throughout the report (i.e. Main Report and Environmental Appendix) clearly depict the proposed purchased properties. Thus, the Bayou Cumbest restoration project now consists of approximately 144 acres to be acquired and 4 acres being acquired by MEMA. Of the 148 acres, approximately 110 acres of emergent tidal marsh and 38 acres of scrub/shrub wetland habitat would be restored. Although MEMA is purchasing over 200 acres in the vicinity of Bayou Cumbest many of these acres are not suitable for restoration (i.e. were upland habitat prior to development) and are not included in the proposed restoration. The project as redefined incorporates a large contiguous tract of lands suitable for restoration as tidal marsh (adjacent to the bayou) and improvement as scrub/shrub buffer. Land ownership has been clearly defined in the revised report. Costs will be properly apportioned for Bayou Cumbest in the draft Chief's Report.*

HQ Analysis: Resolved

37. Forrest Heights Levee: Forrest Heights Levee is evaluated using a 50-year period of analysis when the rest of the FRM alternatives uses 100-year period of analysis. The price level and discount rate should be from FY2008 not from FY 2005 and the period of analysis needs to be consistent. A scenario analysis should also be conducted on this alternative to also be consistent with other alternatives. It appears that this measure was added into the study because near the end of the study process and was not analyzed consistent with other alternatives.

Response: *Concur. A more detailed analysis using HEC-FDA will be conducted for the three relative sea level rise scenarios and the data will be included in the main report. Based on the analysis conducted to date, there is no evidence to suggest that this issue will have an effect on plan formulation and selection.*

Discussion: *None, however the PDT concurs with the comment.*

Required Action: *Conduct a more detailed analysis using HEC-FDA for the three relative sea level rise scenarios and include the data in the main report. Based on the analysis conducted to date, there is no evidence to suggest that this issue will have an effect on plan formulation and selection. Revise the discussion of this measure in both the Main Report and the Engineering Appendix to be consistent with the remainder of the document.*

Action Taken: *A more detailed analysis of the Forrest Heights project has been conducted to include the scenario analysis in HEC-FDA and documented in the main report and the economic appendix. Reference is made to Sections 3.3.6 and 6.18 of the Engineering and Economic Appendices, respectively and also to Sections 3.11, 3.18, and 3.20 of the main report. A detail cost estimate is also included in the Cost Appendix.*

HQ Analysis: Resolved

38. Table A3-6. Table A3-6 needs to define damages prevented better. Are these expected annual damages. Label the table accordingly. Describe the basis for moderate improvement versus a significant improvement?

Response: *Concur. All tables and references to expected annual damages will be properly labeled in the report and a more detail discussion will be added to describe qualitative levels of risk reduction.*

Discussion: *None, however the PDT concurs with the comment.*

Required Action: *Ensure that all tables and references to expected annual damages are properly labeled in the report and a more detail discussion added to describe qualitative levels of risk reduction.*

Action Taken: *All references to damages have been clearly labeled expected annual damages. The definition of moderate and significant has been addressed with the updated system of accounts tables.*

HQ Analysis: Resolved

39. HARP Programmatic Authority. A large part of the nonstructural element of the project relies on implementation of a new programmatic authority. In reading the Comprehensive Plan, it is difficult to understand what elements are planned to be implemented under existing authority and what elements rely upon new authority. The Plan should clearly identify these different components.

The HARP would provide programmatic authority for the Government, subject to the availability of funds, to voluntarily acquire residential and other properties for a one-year period within the high risk zone of coastal Mississippi after a hurricane or other storm event based on a letter of intent from a non-Federal sponsor (NFS). The NFS would provide its cost share, 35%, within the one-year period. The acquisition would be based on a document called the Real Estate Acquisition Management Plan (RAMP). Either the Federal Government or NFS would acquire the property.

There are several legal/policy issues that should be clarified. Some of these are:

a. payment of relocation assistance payments for a voluntary project under section 49 CFR 24.101;

b. payment of a Modified Replacement Housing Payment (MRHP) based on square footage of the "acquired home" instead of a comparable home;

c. payment of the MRHP for destroyed structures (50% damage or greater);

d. MRHP is not appealable;

e. application of "constructive occupancy" determination until December 2010;

f. implementation of a project based on a letter of intent; and

g. implementation of a project based on a real estate acquisition management plan (RAMP).

Would the MRHP be used for all acquisitions or only for destroyed structures? Since participation is voluntary, how can the future use be determined when it is unknown how many homeowners/tenants will participate in program? When will the OMRR&R plan be developed? How can benefits be quantified with nonstructural measures when participation is voluntary?

Perhaps the approach should be to recommend a programmatic authority to implement a nonstructural project after an emergency. A PPA could be executed based on a decision document, which could be the RAMP. The normal cost-sharing and responsibilities of the parties would apply. The authority also could provide for payment of a MRHP for voluntary acquisitions.

Response: *Concur. Reference to use of programmatic authority throughout the report will be reviewed and revised to clarify which recommended elements will rely or would be dependent upon new authority. Note that the acquisition plan was determined to be cost*

effective under existing policy, the HARP is merely a value saving implementation technique for implementation.

We request that a discussion of the use of 'standing authority' vs.' programmatic authority' be held as part of the FRC.

Items a-g. Concur. The HARP Section or Exhibit "C" of the RE Appendix and the Non-Structural Appendix will be revised to clarify the legal and policy issues pertaining to use of a modified replacement housing payment, appeal rights, constructive occupancy, LOI and RAMP.

In reference to the MRHP, it would only be applied to property owners who lived in homes prior to Katrina that were more than 50% destroyed. This will be clarified in revised HARP.

In reference to determination of future use of property with a voluntary program. Concur. This is an uncertainty and the projected use is based on anticipated applicants who would participate in a voluntary HARP Program that would offer substantial incentives. Due to the political consequences and based on public reaction from various stakeholders meetings, a mandatory acquisition program would not be acceptable. Additional justification to support a volunteer program will be expanded on in the revised HARP.

A draft OMRR&R plan would be developed prior to signing the PPA with the NFS and finalized during the preliminary acquisition phase.

Benefits can be estimated/calculated for a voluntary acquisition program based on a range of parcels acquired. A table will be included in the revised HARP to illustrate benefits or future cost savings from a HARP compared to a standard acquisition program. A table will also be prepared in the non-structural appendix to illustrate benefits from flood proofing or raising structures in place. It should be noted that future cost savings or benefits from a HARP would not take into account all of the additional benefits that would be obtained such as reduced loss of life from future storm events, reduced future flood damage claims nor the increased environmental benefits. It would be difficult at best to quantify certain types of benefits such as these for this phase of the study.

Recommended authority. Concur. The HARP of the RE Appendix will be revised to clarify the recommended authorization, cost sharing responsibilities and implementation documents.

Discussion: *The above information was presented at the FRC.*

Required Action: *Develop a Nonstructural White Paper addressing the issues raised by these comments and the subsequent discussions for review by the vertical team.*

Revise the HARP portion of the RE Appendix to clarify the recommended authorization, cost sharing responsibilities and implementation documents.

Action Taken: *A legal review of the various policy issues is being requested to determine which of the proposed policy deviations that are referenced in the most recent version of the Nonstructural White Paper , a.k.a. Exhibit C to the RE Appendix, may require special*

authorization prior to implementation. A separate memorandum will be forward to CE-RE addressing the questions to these policy deviations.

HQ Analysis: *Partially Resolved. As noted in Comment B.5, references to a "standing authority" proposal should be deleted from all report sections. Further, as required by Comment C.3, a clear summary of the issues and analysis for implementation of the HARP must be provided to CECW-PC.*

Discussion/Action Taken: *Please see response at Comment C.3.*

HQ Analysis: Resolved

40. Constructive Occupancy. The term "constructive occupancy" needs to be defined as it is used throughout the report in different contexts. Under Public Law 91-646, this term has a very specific meaning in regard to payment of relocation assistance benefits. It is unclear how this term is used throughout the report, particularly in the economics and nonstructural appendices.

Response: *Concur. According to the West Publishing Co., the Judicial and Statutory definition of constructive occupancy is defined as "a temporary vacation without abandonment, and with a bonafide and subsisting intention to return." According to a 2005 FHWA Guidance Memorandum that refers to the eligibility of the Uniform Act in areas impacted by Hurricane Katrina, if it is determined that a property owner would have occupied the property within the project limits at the time of displacement had it not been for the hurricane, that person would be eligible for residential relocation benefits and payments in accordance with provisions of Subpart D of 49CFR Part 24.*

Discussion: *None, however the PDT concurs with the comment.*

Required Action: *Review this term wherever it is used throughout the report to determine if it is being used in its correct context and revised as necessary*

Action Taken: The term constructive occupancy as it was referred to in the nonstructural, real estate and economics appendices has been reviewed and revised where necessary for consistency purposes.

HQ Analysis: *Partially Resolved. As required by Comment C.3., a clear summary of this issue and analysis must be provided to CECW-PC.*

Discussion/Action Taken: *Please see response at Comment C.3.*

HQ Analysis: *Resolved by comment C.3.*

41. 902 Limits. Are we seeking to implement all the tentatively selected plans under one authorization with one 902 limit or separate authorizations with a 902 limit for each plan? Discuss this option in a section on implementation.

Response: *We would like to discuss this at the FRC.*

The interim projects were authorized under one authorization with one 902 limit. As with the interim projects we would prefer to have one 902 limit. We will add a section on implantation in the Main Report that discusses this option.

Discussion: *The interim projects were authorized under one authorization with one 902 limit. As with the interim projects we would prefer to have one 902 limit.*

Required Action: *A section on implementation could be added in the Main Report (see below) to the end of Section 6.1 that discusses this option. However, the team feels that this discussion should occur with appropriate congressional liasons, instead of written in the report:*

Once a project is authorized, there is a limit to the maximum amount of funds that can be used for that project. This is legislated in Section 902 of the WRDA of 1986, as amended, and is referred to as a project's "902 limit". It states that the maximum amount of funds includes the authorized cost (adjusted for inflation), plus the current cost of any studies, modifications, and actions authorized by the WRDA of 1986 or any later law, and 20 percent of the authorized cost (without adjustment for inflation). Further authorization by Congress is required to raise the established 902 limit for the project. Also, no funds may be obligated or expended nor any credit afforded that would result in the maximum cost being exceeded, unless the House and Senate committees on Appropriations have been notified that Section 106 of the Energy and Water Development Appropriations Act of 1997 will be utilized.

The maximum project cost allowed for the 15 MsCIP interim projects was set through PL 110–28 (MAY 25, 2007), which legislates:

"That $107,700,000 of the amount provided may be used to implement the projects for hurricane storm damage reduction, flood damage reduction, and ecosystem restoration within Hancock, Harrison, and Jackson Counties, Mississippi substantially in accordance with the Report of the Chief of Engineers dated December 31, 2006, and entitled ''Mississippi, Coastal Improvements Program Interim Report, Hancock, Harrison, and Jackson Counties, Mississippi.''

The authorized amount, in this case, was set by the legislation for all of the interim projects, and not specified for each individual project. This allows maximum flexibility when constructing several projects. For example, if a project ends up not costing as much as originally estimated, then the difference can be spent on another project that may have exceeded the original estimated amount, without having to go back for additional authorization. This scenario would also be ideal for the Comprehensive recommendations, where some variables in cost may change by the time the projects are authorized and ready for construction.

HQ Analysis: *Resolved. However, HQUSACE notes that the $107M amount appropriated in P.L. 110-28 is a static amount of appropriations to be used for implementation of the Interim Report measures and does not represent an authorized cost estimate subject to Section 902.*

Discussion/Action Taken: *Concur. No action necessary.*

42. Items of Local Cooperation. For the projects recommended for construction, Items of Local Cooperation should be included in the Study. Paragraph 8.2 on Cost-Sharing and Items of Local Cooperation needs to be amplified.

Response: *Concur. Additional information will be added using the Interim Report as a basis.*

Discussion: *None, however the PDT concurs with the comment.*

Required Action: *Add information to this section of the main report using the Interim Report as a basis.*

Action Taken: *Cost-Sharing and Items of Local Cooperation are discussed in Section 6.1.*

HQ Analysis: Resolved

43. Non Federal Sponsor. Has a letter of intent been received from a non Federal sponsor as per ER 1105-2-100? Will each TSP have a different NFS or will one sponsor be identified for the entire Comprehensive plan. Do we have an assessment of NFS's Real Estate Acquisition Capability and their financial capability?

Response: *Concur. We will discuss these issues with our local sponsor, State of Mississippi, and will request a letter of intent be developed either for all the tentatively selected plan elements or for individual TSPs.*

An assessment of the NFS's Real Estate Acquisition Capability has not been obtained. Due to the numerous projects that are possible and considering the magnitude of the acquisitions which may number in the thousands, there will be many considerations to evaluate in determining rather the NFS will conduct the acquisitions or if the Government would as was the case for the Interim Projects. Significant requirements for staffing up the existing work force of the NFS or Government could be required depending on which alternatives or projects are recommended for implementation.

The NFS would have the expertise to acquire the real estate but may not have the staffing or financial capability to undertake a very large acquisition program. Due to this uncertainty, the RE Appendix recommends that the NFS assessments for the real estate acquisition capabilities be made during the PED phase once it is known which of the alternatives are selected for implementation. For this study, the administrative cost for the real estate acquisitions were estimated to be the same for both the NFS and Government. Thus, the total estimated RE costs provided for each alternative would not change.

Discussion: *The above information was presented at the FRC.*

Required Action: *Request a Letter of Intent from the State of Mississippi.*

Action Taken: *RE appendix - Re: Assessment of NFS Capability to Acquire RE. RE Appendix page 4, paragraph 2.4 – A statement is made that the assessment of the NFS's real estate acquisition capability will be made during PED. The state would have the expertise, but not necessarily the staff to handle a large number of acquisitions without most probably using the services of a contractor.*

A Letter of Intent was received from the State of Mississippi on 26 August 2008. A copy will be included in the transmittal package.

HQ Analysis: *Resolved. Include letter in the report together with revisions of appropriate report sections to identify the State as the non-Federal sponsor for implementation of projects for which construction is proposed in the report.*

Discussion/Action Taken: *The Executive Summary and Section 6 has been revised to indicate that the State of Mississippi has indicated intent to act as sponsor for the MsCIP Comprehensive Plan. A copy of the State's letter is included as an attachment to the Comprehensive Plan report.*

44. Consistency between Report Appendices. The information is presented differently between the main report, RE Appendix and Non-Structural Appendix so that it is difficult to obtain project specific information for those projects recommended for construction. In particular, the Non-Structural Appendix contains detail regarding the HARP which is not contained in the RE Appendix or Main Report so it is unclear how these projects will be implemented within existing authority or under the HARP, if such authority is received in the future. There are several statements in the Non-Structural Appendix that are inconsistent with other parts of the Study or raise policy or legal concerns. Most of these statements are related to application of Public Law 91-646. The document needs to be edited for consistency throughout the appendices and main report.

Response*: Concur. The Nonstructural and Real Estate appendices will be reviewed for consistency in the description of the HARP and the application of P.L. 91-646 in the Plan and corrected as necessary to assure that both programs are described and applied consistently in the formulation.*

Discussion: *None, however the PDT concurs with the comment.*

Required Action: *Review the Nonstructural and Real Estate appendices and main report for consistency in the description of the HARP and the application of P.L. 91-646 in the Plan and correct as necessary to assure that both programs are described and applied consistently in the formulation.*

Action Taken: *The Nonstructural Appendix was modified on page 90 Section 4.5.9.1 and page 92 Section 4.5.9.4 and Section 4.5.9.5 to ensure consistency between the Real Estate Appendix and the NS Appendix regarding the HARP and use of PL 91-646 in acquisitions.*

HQ Analysis: Resolved

45. Feasibility Level of Detail. The level of detail for those projects recommended for

construction authorization is not at the feasibility level. Issues that are deferred until PED for at least some of these projects include HTRW, borrow/disposal areas, use of permitted areas for borrow/disposal of materials instead of a real estate interest, mitigation land requirements, utility/facility relocations, RE land costs, etc. Only real estate administrative costs are included in many of the project estimates. Costs for mitigation are found on page 5 of the RE Appendix but it is not clear whether these prices include RE administrative costs. Land acquisition required for mitigation needs to be clearly described in the RE Appendix. How mitigation bank credits would be used is not clear. Also, interior drainage/induced flooding issues are not addressed.

Response: *Partially Concur. The RE costs provided are not at the Feasibility level and depending on which alternatives are selected, a separate Real Estate Plan should be completed prior to implementation. As a general rule, the real estate costs for any project should be updated prior to implementation if those costs are more than 12– 18 months old.*

The costs referenced for mitigation were based on the purchase of mitigation credits from a mitigation bank and were used as an early surrogate for possible mitigation costs for structural alternatives. Please see response to comment D.4 above for more information. There was no need to separate the administrative costs for this type of mitigation since a real estate interest in the lands is not being acquired. Purchase of mitigation credits would be accomplished by contract between the NFS and owner of the mitigation bank.

We non-concur with the comment regarding interior drainage and induced flooding. Interior drainage and induced flooding are addressed according to the minimum facility concept as expressed in EM 1110-2-1413 "Hydrologic Analysis of Interior Areas" and, with this in mind, commensurately captured in the Flood Damage Analysis and cost estimates. Should any element be advanced to the feasibility level of detail, interior drainage and induced flooding will be advanced accordingly.

Discussion: *The above information was presented at the FRC.*

Required Action: *Appropriate sections of the report should be revised to clearly define which costs are included in the estimates as well as which costs will need to be further developed in the future phases.*

Action Taken: *RE Appendix- The LOD1 estimate shows only administrative costs as only permits will be required from other agencies to construct the project. The LOD 2 estimates also show only administrative costs as the project is only lands that are seaward of the seawall and are considered to be state owned. For LOD3 and 4 and for the Acquisition and Ecosystem Project, all estimates show land, PL 91-646 and administrative costs. Page 4, paragraph 2.6 Mitigation lands is expanded and page 5, p paragraph 2.9 induced flooding is expanded. Interior drainage is mentioned in the body of the report for LOD3 and LOD4.*

HQ Analysis: *Resolved. HQUSACE notes that the District's response above indicates that the non-Federal sponsor would be responsible for acquisition of mitigation bank credits. However, existing policy classifies such credits as a construction cost (not a LERRD item) and the District must ensure that the report sections assign such costs accordingly. See November 6, 2008 Implementation Guidance Memo for Section 2036(c) of WRDA 2007.*

46. Project purpose. For the projects recommended for hurricane storm damage reduction, is protection being provided for privately owned shores, undeveloped lands or federally owned shoreline? Are there public access issues? Does the project involve tidal or fluvial flooding, i.e.; is it clear what the project purpose is and has the project been formulated as a hurricane storm damage reduction or flood damage reduction project?

Response: *Concur. A statement will be included in the first section or paragraph for each of the RE sections for hurricane storm damage reduction to clarify the type lands that are being protected as well as to whether the project involves tidal or fluvial flooding.*

Addendum C of the Economic Appendix describes in detail the availability of parking and access in all three counties. There were no public access issues for the storm damage reduction projects since they are adjacent to existing roads for public access. This information will be added to the main report with a reference to the Economic Appendix.

Discussion: *None, but the PDT concurs with the comment.*

Required Action: *Add a statement in the first section or paragraph for each of the RE sections for hurricane storm damage reduction to clarify the type lands that are being protected as well as to whether the project involves tidal or fluvial flooding.*

Addendum C of the Economic Appendix describes in detail the availability of parking and access in all three counties. There were no public access issues for the storm damage reduction projects since they are adjacent to existing roads for public access. Add this information to the main report with a reference to the Economic Appendix.

Clarify that the Forrest Heights project is being formulated for both hurricane and flood storm damage reduction.

Action Taken: *RE Appendix – Page 16, paragraph 3.2.1.1, page 25, paragraph 3.2.2.1 and page 34, paragraph 3.2.3.1 – A statement is added that the purpose of the project is to provide hurricane storm damage reduction. At page 80, paragraph 3.3.5 a statement is made that proposed levee will address a combination of storm surge protection and inland surge protection.*

HQ Analysis: Resolved

47. Ecosystem Land Cost. In general, land acquisition cost for ecosystem restoration projects should not exceed 25% of the project cost, as noted in EP 1165-2-502, paragraph 7(m). It is not clear in the report whether land costs are greater than 25% of total project costs. For ecosystem restoration projects, please display land acquisition costs relative to total project cost in a table. Should acquisition costs exceed 25% of total project costs, HQUSACE recommends that the issue be coordinated with the ASA(CW).

Response: *Concur. A table will be developed to clearly show land acquisition costs as part of the total project costs. For environmental restoration projects situated in areas that suffered significant structural damage, the land purchase would be for the purpose of*

damage reduction and the environmental restoration would be an ancillary purpose. The differences for the cost share for the different purposes will be highlighted in these cases.

Request a discussion at the FRC for clarification on this issue.

Discussion: *For environmental restoration projects situated in areas that suffered significant structural damage, the land purchase would be for the purpose of damage reduction and the environmental restoration would be an ancillary purpose. The differences for the cost share for the different purposes will be highlighted in these cases.*

Required Action: *A table will be developed to clearly show land acquisition costs as part of the total project costs. At this point no waiver to existing policy is expected.*

Action Taken: *RE Appendix – page 287, paragraph 5.1.2 and page 297, paragraph 5.2.2 – include an expanded discussion statement on land value in relation to total project cost.*

HQ Analysis: Resolved

48. Cost Sharing. The possibility of different cost sharing is mentioned throughout the report. There are references to the real estate acquisition being full federal and other references to CERP cost-sharing. Different cost-sharing may be recommended but the report should be written to comply with existing law and policy.

Response: *Concur. References to how the projects will be cost shared in the RE appendix will be revised to clarify standard policy from any recommendations that would differ.*

Discussion: *None, but the PDT concurs.*

Required Action: *Revise all references to how the projects will be cost shared in the RE appendix to clarify standard policy from any recommendations that would differ.*

Action Taken: *RE Appendix – any references to real estate acquisition being possibly a full federal responsibility rather than being a NFS responsibility have been removed from the appendix. The appendix states that it is the responsibility of the NFS to acquire all real estate required for the project and that the NFS is entitled to receive credit against its share of the project costs for the value of the LER it provides.*

HQ Analysis: Resolved

49. Innovative Contracting Techniques. Waveland Flood-proofing project includes references to innovative contracting techniques. The report needs to discuss this technique in greater detail especially in relation to current policy. This discussion needs to provide sufficient detail to determine the need for additional authorization or a policy waiver from ASA(CW).

Response: *Concur. The report will be revised to remove all references to innovative contracting techniques relative to the proposed Waveland Demonstration Floodproofing project. The Waveland Floodproofing Project will be used to demonstrate the application*

and effectiveness of the FEMA 550 Guidelines for floodproofing structures on the Gulf Coast and the Corps of Engineers' processes and procedures used to elevate structures in accordance with local building codes and NFIP regulations. These processes and procedures have been used by LRH to successfully floodproof over 700 structures with limited liability or litigation to the Corps. It is unlikely that use of these processes and procedures would require ASA (CW)approval or any policy waivers since all of the 700 structures that have been approved for floodproofing were reviewed and approved by HQUSACE and ASA (CW) through multiple LRH decision documents. Application of the processes and procedures will be coordinated with Mobile District Counsel and Real Estate elements prior to their use in the Waveland demonstration project.

Discussion: *The Waveland Floodproofing Project will be used to demonstrate the application and effectiveness of the FEMA 550 Guidelines for floodproofing structures on the Gulf Coast and the Corps of Engineers' processes and procedures used to elevate structures in accordance with local building codes and NFIP regulations. These processes and procedures have been used by LRH to successfully floodproof over 700 structures with limited liability or litigation to the Corps. It is unlikely that use of these processes and procedures would require ASA (CW)approval or any policy waivers since all of the 700 structures that have been approved for floodproofing were reviewed and approved by HQUSACE and ASA (CW) through multiple LRH decision documents.*

Required Action: *Remove all references to innovative contracting techniques relative to the proposed Waveland Demonstration Floodproofing project.*

Coordinate application of the LRH processes and procedures with Mobile District Counsel and Real Estate elements prior to their use in the Waveland demonstration project.

Action Taken: *The Nonstructural Appendix was modified on page 85 Section 4.5.7.9 to remove all references to "innovative contracting procedures" as a part of the proposed Waveland Pilot Floodproofing project.*

HQ Analysis: Resolved

50. Bayou Cumbest Ecosystem Restoration. The report needs to provide more detail on how the acquisition of property by both the Corps and FEMA will be coordinated. Property acquired by FEMA may limit the Corps ability to restore the ecosystem. The report needs to discuss FEMA requirements that may impact the restoration project.

Response: *Concur. Please see response to comment B.7.*

Discussion: *See discussion at comment B.7.*

Required Action: *The PDT will either redefine the restoration objectives for this site and redesign or recommend that this project undergo additional study to refine the most cost effective environmental restoration option. The report will be revised subject to the above decision. We will also get definitive information from MS MEMA / Jackson County on the status of the HMGP activities.*

Action Taken: *The Bayou Cumbest restoration project was redefined to recommend the most cost-effective environmental restoration options. Close coordination with MEMA ensured that all suitable acquisition sites were incorporated into the Corps' recommended restoration project. The Bayou Cumbest figures used throughout the report (i.e. Main Report and Environmental Appendix) clearly depict the proposed purchased properties. Thus, the Bayou Cumbest restoration project now consists of approximately 144 acres to be acquired and 4 acres being acquired by MEMA. Of the 148 acres, approximately 110 acres of emergent tidal marsh and 38 acres of scrub/shrub wetland habitat would be restored. Although MEMA is purchasing over 200 acres in the vicinity of Bayou Cumbest many of these acres are not suitable for restoration (i.e. were upland habitat prior to development) and are not included in the proposed restoration. The project as redefined incorporates a large contiguous tract of lands suitable for restoration as tidal marsh (adjacent to the bayou) and improvement as scrub/shrub buffer.*

HQ Analysis: Resolved

51. Moss Point - Are the municipal facilities to be relocated public facilities for which a substitute facility should be provided?

Response: *All of the structures included in the Moss Point Demonstration Relocations Project are owned and operated by the City of Moss Point, are considered essential to the operation of the city and are therefore eligible for relocations under Appendix Q of EFARS in lieu of acquisition only. Following Katrina, all of the Moss Point municipal buildings were damaged to such an extent that they were not useable for continued municipal administrative activities. The City utilized interim facilities (trailers) so that critical municipal services could continue. The demonstration relocation project would be based upon the pre-Katrina municipal buildings regarding square footages and facilities. This measure in the Nonstructural Appendix is only applied to publically-owned and operated structures and facilities that are determined to be essential to continued operation of the local governments within the project area. Structures leased by public agencies are not eligible as they are considered commercial property and would be included in the nonstructural plans as either acquisitions under P.L. 91-646 or floodproofing by appropriate means. The description of the relocations measure, eligible facilities, and costs are included in the Nonstructural Appendix. Any substitute facility relocations will be performed under a Real Estate Relocation Contract. The cost for these relocations is captured in the Nonstructural Appendix but final crediting would be considered as part of the LERRD credit.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Revise the Real Estate Appendix with added discussion on the Pilot Moss Point Public Buildings Relocation Project and with reference to Section 4.3.9.6 of the Nonstructural Appendix.*

First Action Taken: *The Nonstructural Appendix was modified on page 105 Section 4.6.6 to indicate that the candidate structures in the proposed Moss Point Pilot Relocations project were indeed public buildings. Similar statements are made in Section 4.6, page 103 concerning all project structures that would be eligible for relocations in the nonstructural program.*

Second Action Taken: *RE Appendix – page 249, paragraph 3.4.5.5 discussion added to RE on public facilities at Moss Point.*

HQ Analysis: Resolved

52. Approval for Borrow or Disposal Sites. RE Appendix 2.8 - Sites identified for acquisition for use as a borrow or disposal area would have to be approved by the appropriate County Planning Commission. Is this approval required as a matter of policy?

Response: *Concur. A statement will be added to clarify the requirement that should any new borrow or disposal sites be required, the NFS would be responsible for obtaining any necessary approvals from the County. This approval would not be required necessarily as a matter of policy but more as a matter of courtesy. Preliminary investigations indicate that there are existing borrow and disposal sites located throughout the study area to suffice for most of the alternatives.*

Discussion: *This approval would not be required necessarily as a matter of policy but more as a matter of courtesy. Preliminary investigations indicate that there are existing borrow and disposal sites located throughout the study area to suffice for most of the alternatives.*

Required Action: *Add a statement to the Nonstructural Appendix to clarify the requirement that should any new borrow or disposal sites be required, the NFS would be responsible for obtaining any necessary approvals from the County.*

Action Taken: *RE Appendix – page 5, paragraph 2.8 – Statement added pertaining to approval processes for new lands intended for use as borrow or disposal areas.*

HQ Analysis: Resolved

53. Inconsistencies between Appendices and Main Report. There are several statements in the Non-Structural Appendix that are inconsistent with other parts of the Study or raise policy or legal concerns. Most of these statements are related to application of Public Law 91-646, the HARP or how the non-structural program is to be carried out. Because of this, it is unclear how the non-structural program is to be implemented. All of the documentation must be consistent.

Response: *Concur. The inconsistencies between the Main Report and Nonstructural Appendix in the description of plan components and the integration of nonstructural and structural features will be addressed.*

Discussion: *None, however the PDT concurs.*

Required Action: *Address all inconsistencies between the Main Report and Nonstructural Appendix in the description of plan components and the integration of nonstructural and structural features.*

Action Taken: *The Nonstructural Appendix was modified on page 90 Section 4.5.9.1, and page 92 Sections 4.5.9.4 and 4.5.9.5 to make the report more consistent with the Real Estate Appendix and the Main report on the use of PL 91-646 and the HARP.*

HQ Analysis: Partially Resolved. As required by Comment C. 3., a clear summary of this issue and analysis must be provided to CECW-PC.

Discussion/Action Taken: *Please see response to Comment C.3.*

HQ Analysis: *Resolved by comment C.3.*

54. Value Engineering. The district needs to address the requirement to include value engineering as part of a feasibility study as well as during the design phase.

Response: *Concur. As required by ER 11-1-321 dated 28 February 2005, value engineering (VE) methodology shall be applied to appropriate projects. As part of the final design, the VE effort shall include study of design documents, cost data, and other information furnished as the basis of the design. The VE study shall develop alternate designs to achieve the required mission(s) or function(s) at the lowest overall cost consistent with performance for structures, structure or facility siting, site development, equipment, electrical and materials or methods. The study includes examination of high cost including life cycle cost, anticipated construction time, and conservation of energy. Design details and analysis will be considered and alternatives developed as appropriate. The VE team should consider the latest technology in development of alternatives to achieve maximum results for life cycle cost, energy conservation, functional use, and first cost (construction) savings.*

Request that a discussion of VE schedule and implementation be held during the FRC.

Discussion: *As required by ER 11-1-321 dated 28 February 2005, value engineering (VE) methodology shall be applied to appropriate projects. As part of the final design, the VE effort shall include study of design documents, cost data, and other information furnished as the basis of the design. The VE study shall develop alternate designs to achieve the required mission(s) or function(s) at the lowest overall cost consistent with performance for structures, structure or facility siting, site development, equipment, electrical and materials or methods. The study includes examination of high cost including life cycle cost, anticipated construction time, and conservation of energy. Design details and analysis will be considered and alternatives developed as appropriate. The VE team should consider the latest technology in development of alternatives to achieve maximum results for life cycle cost, energy conservation, functional use, and first cost (construction) savings.*

Review team did not concur that VE is only applied at design but should be utilized throughout the Feasibility process to make sure all interests, esp. local, are being heard. As discussed, it is likely that the PDT has been employing VE, but not with this name, throughout the study via the public involvement program.

Required Action: *Explain the process utilized throughout the MsCIP to ensure that we addressed all interests and that options were not eliminated upfront without valid reasons.*

Action Taken: *The PDT is composed of a large and diverse group that has followed the spirit of VE throughout the plan formulation and initial design process. Meeting with sponsors and the public has also added in this process. A formal VE process will be held during the initial E&D phase for all projects as required.*

HQ Analysis: Resolved

54. Mitigation cost estimates. The Real Estate and Cost Appendices contain estimates for the unit cost of mitigation for tidal and non-tidal wetlands ($5,500 and $200,000 per unit, respectively). While page 5 of the Real Estate Appendix states that the mitigation cost for non-tidal wetlands is based on mitigation bank prices, HQUSACE was unable to find the basis for mitigation cost for non-tidal wetlands. The report should briefly discuss the basis for the tidal mitigation costs, given that some potential project components would require substantial mitigation efforts.

Response: *We assume that you are requesting information on the basis of tidal wetlands cost not non-tidal.*

Tidal mitigation costs were based on professional knowledge of the local area. The PDT utilized actual costs incurred during recent restoration and/or mitigation projects in which tidal wetlands were established in coastal Mississippi, Alabama, and Florida. An example of these types of projects include: the Deer Island marsh establishment, MS; Naval Station mitigation site at Mobile, A; mitigation marsh site at Choctaw Point, AL; Mackey Island Disposal Area marsh creation, FL; and the Bayou Casotte Dredged Material Management Site mitigation site, MS. The costs for these projects varied depending upon excavation requirements and planting spacing primarily. Professional experience obtained from constructing these sites was then used to develop how to implement the proposed projects and to determine the costs.

Discussion: *Tidal mitigation costs were based on professional knowledge of the local area. The PDT utilized actual costs incurred during recent restoration and/or mitigation projects in which tidal wetlands were established in coastal Mississippi, Alabama, and Florida. An example of these types of projects include: the Deer Island marsh establishment, MS; Naval Station mitigation site at Mobile, A; mitigation marsh site at Choctaw Point, AL; Mackey Island Disposal Area marsh creation, FL; and the Bayou Casotte Dredged Material Management Site mitigation site, MS. The costs for these projects varied depending upon excavation requirements and planting spacing primarily. Professional experience obtained from constructing these sites was then used to develop how to implement the proposed projects and to determine the costs.*

Required Action: *Provide information in the report on how costs for wetland restoration were developed.*

Action Taken: *See response to D.4* - Mitigation ratio, page 99, Environmental Appendix.

HQ Analysis: Resolved

55. HTRW. Basic assumptions in all of analysis are that there will be no HTRW issues.

The only compensation for this assumption is use of 25% contingencies. This should be verified and adjustments made as necessary. There should at least be a discussion of the potential areas where HTRW may be a concern.

Response: Partially concur. It is not correct to say that there were assumptions made that there would be no HTRW issues. Due to the vast number of properties involved and the uncertainties associated with project footprints, there were no specific costs for assessments made for HTRW investigations and remediations during the this phase of study. In discussions with the HTRW technical team in SAM, we developed an estimate based on a percentage that would be added to the usual cost contingencies for each project. This estimate is based on the mix of residential, commercial and industrial properties. HTRW concerns in the nonstructural measures particularly affect the acquisition and demolition of structures in the high-hazard zones and eligible structures where elevation would exceed 13 feet in height above the ground surface. HTRW concerns could also affect elevation of eligible homes where contaminated materials may be present in foundation components or HVAC units to be relocated. The presence of asbestos and underground storage tanks on residential and commercial properties is possible given the ages of many of the structures and the presence of numerous service stations and other commercial establishments (vehicle repair, dry cleaning, chemical distributors, etc.) that would possibly contain contaminants. A preliminary Phase I HTRW assessment will be conducted for all structures that are determined to be eligible for these nonstructural measures during the Detailed Project Report (DPR) phase. Costs and schedules for the Phase I HTRW assessment for homes and businesses would be included in the DPR PMP. Structures determined to contain hazardous materials will not be addressed by the program until the identified HTRW concerns are addressed by the owner or the local sponsor.

Discussion: *The above information was presented at the FRC.*

Required Action: *Add a statement similar to the discussion to the Cost appendix*

Action Taken: *A lead-in paragraph for the Cost Appendix has been added to reflect the discussion above.*

HQ Analysis: Resolved

56. Feasibility Level Cost Estimates. Cost estimates are consistent but are not yet to that of feasibility level designs. Estimates are considered comparative-level "parametric-type and are based on historical data, recent pricing, and estimator's judgment. Estimates exclude project escalation and HTRW cost. The potential impacts of these omissions should at least be discussed since they could dramatically impact final costs.

Response: *Concur. The following statement will be added to the Appendices mentioned above for clarification:*

"At this phase of the plan formulation process, there were no assessments made for HTRW investigations nor remediation costs based on the vast number of properties potentially involved and the uncertainties associated with project footprints. Also, the cost of escalation will be addressed as projects are selected to proceed to feasibility level of design. The

identification of a major HTRW site within a project footprint could certainly have a cost impact, but none are known to exist at this time. Likewise, depending on the time that a project is funded for further study to feasibility level, the effects of escalation could be a major factor based on fuel costs or other items that can change drastically outside the usual inflation rate."

Discussion: *It was noted that all parties need to understand that this is not a typical feasibility level report. We need to 'catch a middle ground' in our discussions and use a descriptor such as evaluation is 'commensurate with the level of detail in the report'. Feasibility level cost estimates should be completed for the Barrier Islands restoration and Forrest Heights levee at a minimum.*

Required Action: *Add the following statement to the Appendices mentioned above for clarification:*

"At this phase of the plan formulation process, there were no assessments made for HTRW investigations nor remediation costs based on the vast number of properties potentially involved and the uncertainties associated with project footprints. The identification of a major HTRW site within a project footprint could certainly have a cost impact, but none are known to exist at this time. Likewise, depending on the time that a project is funded for further study to feasibility level, the effects of escalation could be a major factor based on fuel costs or other items that can change drastically outside the usual inflation rate."

Action Taken: *The above statement has been added to the Basis of Cost Estimate under the Exclusions section.*

HQ Analysis: Resolved

57. Interior Drainage Analysis. The pumping requirements are consistent but they do not reflect a feasibility level of study. Pumping head, flow rate and horsepower have been determined at each tentative site. However, any alternative requiring pumping should be refined if it is recommended for further consideration.

Response: *Non-concur. Interior drainage and induced flooding are addressed according to the minimum facility concept as expressed in EM 1110-2-1413 "Hydrologic Analysis of Interior Areas" and, with this in mind, commensurately captured in the Flood Damage Analysis and cost estimates. Should any element be advanced to the feasibility level of detail, interior drainage and induced flooding will be advanced accordingly.*

If a project moves to feasibility level of design, a revised cost estimate will be prepared during that phase to include the refined cost for pumping and other interior drainage features. No other additional drainage analysis will be performed at this time since none of the other structural flood risk management options are being recommended for construction.

Discussion: *Interior drainage and induced flooding are addressed according to the minimum facility concept as expressed in EM 1110-2-1413 "Hydrologic Analysis of Interior Areas" and, with this in mind, commensurately captured in the Flood Damage Analysis and*

identification of a major HTRW site within a project footprint could certainly have a cost impact, but none are known to exist at this time. Likewise, depending on the time that a project is funded for further study to feasibility level, the effects of escalation could be a major factor based on fuel costs or other items that can change drastically outside the usual inflation rate."

Discussion: *It was noted that all parties need to understand that this is not a typical feasibility level report. We need to 'catch a middle ground' in our discussions and use a descriptor such as evaluation is 'commensurate with the level of detail in the report'. Feasibility level cost estimates should be completed for the Barrier Islands restoration and Forrest Heights levee at a minimum.*

Required Action: *Add the following statement to the Appendices mentioned above for clarification:*

"At this phase of the plan formulation process, there were no assessments made for HTRW investigations nor remediation costs based on the vast number of properties potentially involved and the uncertainties associated with project footprints. The identification of a major HTRW site within a project footprint could certainly have a cost impact, but none are known to exist at this time. Likewise, depending on the time that a project is funded for further study to feasibility level, the effects of escalation could be a major factor based on fuel costs or other items that can change drastically outside the usual inflation rate."

Action Taken: *The above statement has been added to the Basis of Cost Estimate under the Exclusions section.*

HQ Analysis: Resolved

57. Interior Drainage Analysis. The pumping requirements are consistent but they do not reflect a feasibility level of study. Pumping head, flow rate and horsepower have been determined at each tentative site. However, any alternative requiring pumping should be refined if it is recommended for further consideration.

Response: *Non-concur. Interior drainage and induced flooding are addressed according to the minimum facility concept as expressed in EM 1110-2-1413 "Hydrologic Analysis of Interior Areas" and, with this in mind, commensurately captured in the Flood Damage Analysis and cost estimates. Should any element be advanced to the feasibility level of detail, interior drainage and induced flooding will be advanced accordingly.*

If a project moves to feasibility level of design, a revised cost estimate will be prepared during that phase to include the refined cost for pumping and other interior drainage features. No other additional drainage analysis will be performed at this time since none of the other structural flood risk management options are being recommended for construction.

Discussion: *Interior drainage and induced flooding are addressed according to the minimum facility concept as expressed in EM 1110-2-1413 "Hydrologic Analysis of Interior Areas" and, with this in mind, commensurately captured in the Flood Damage Analysis and*

cost estimates. Should any element be advanced to the feasibility level of detail, interior drainage and induced flooding will be advanced accordingly.

If a project moves to feasibility level of design, a revised cost estimate will be prepared during that phase to include the refined cost for pumping and other interior drainage features. No other additional drainage analysis will be performed at this time since none of the other structural flood risk management options are being recommended for construction.

Since the only structural recommendation is the levee at Forrest Heights, this would be the only project that needs to be updated to feasibility level.

Required Action: *Complete interior drainage assessment for the Forrest Heights levee and provide feasibility level costs.*

Action Taken: *The interior design process is described in the Engineering Appendix, Section 3.3.6.5.1.*

HQ Analysis: Resolved

58. Automated Closure System Costs. There are hundreds of culverts through the ring levees. There is discussion that an automated system will be required that will monitor gates and operate them from a central location. The detailed design was not performed but they stated that a parametric estimate was included in the costs. Depending on the level of automation that is required this could be a significant cost factor. One system should be designed such that parametric cost could be based on that demonstration system to reduce some of the uncertainty in the cost estimate of the overall system. This cost could impact the selection of a plan.

Response: *Concur. The text in the Engineering Appendix will be changed to reflect that the automated closure systems "could" be incorporated instead of "would." Since none of the structural FRM projects are being recommended for construction, additional efforts will not be taken at this time. However, should these projects be recommended for further study, a template system will be designed and used for cost estimating purposes.*

Discussion: *The majority of these alternatives are only recommended for further feasibility studies therefore the required costs analysis would be performed at a future date. The Forrest Heights levee analysis will proceed to the required level of detail.*

Required Action: *The text in the Engineering Appendix will be changed to reflect that the automated closure systems "could" be incorporated instead of "would." Since none of the structural FRM projects are being recommended for construction, additional efforts will not be taken at this time. However, should these projects be recommended for further study, a template system will be designed and used for cost estimating purposes.*

Action Taken: *Corrections to the text as noted above. Since only a single small levee system that has two gate closures (Forrest Heights) is being recommended, the automated system was not considered.*

HQ Analysis: Resolved

59. Cost Risk Analysis. Executive Summary: Line 1, page 4 states " In answer to this mandate, the recommendations contained in this report present a package of cost-effective potential programs and projects, in full consideration of possible outcomes, including *full consideration of the risks, uncertainties, and consequences* inherent in each action or activity." Also, line 17 states "Thus, the recommendations are not based solely on cost effectiveness, but based on analysis of costs, benefits, risk, environmental impacts, and stakeholder input". These statements are misleading since there is no documentation that shows a cost risk analysis was prepared to support the development of the various cost estimates. There is no information in the report and in the estimate that clearly identify potential sources of uncertainty and certainty in the cost estimate. The construction contingency of 25% applied to the cost estimate could be underestimated due to insufficient design information and HTRW assessment. The narrative (Basis of cost estimate and Rationale) stated exclusions of cost risk analysis, HTRW, and escalation. It is not very clear as to the rationale for the exclusions. Please explain the rationale for excluding these items specifically cost risk analysis and HTRW or prepare a cost risk analysis in accordance with ECB 2007-17 dated 10 Sep 2007.

Response: *We concur that in the technical sense that risk does include consequences. However, when communicating with the stakeholders, we have chosen to separate the two factors so they can better understand all of the various consequences that are associated with that risk. For example, when discussing risk of failure for ecosystem restoration projects, we have different alternatives with varying spacing of plants. Larger spacing could result in a higher risk of failure to achieve the estimated benefits. The consequences of this (keeping in mind we have to achieve the benefits for success), could be that it takes longer to achieve the benefits, result in replanting more often, may induce more exotic plants to the area, conduct more monitoring, may not be as resilient to storms early in the life of the project, etc. We will add additional information on these two terms for clarification. We will also add discussion on cost risk analysis process.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Revise Executive Summary. Clarify the use of terms and be consistent. Add a discussion on cost risk analysis process. Perform risk analysis on Barrier Island Restoration project.*

Action Taken: *A cost risk analysis was completed for the Barrier Island Restoration Plan and the results are included in Part 2 of the Cost Appendix.*

HQ Analysis: Resolved

60. Range of Costs. Executive Summary: Line 42, page 12 states "The cost estimate for the tentatively recommended plan element for limited restoration of the Mississippi Barrier Islands is $349,000,000". The statement implies the cost estimate is very precise with a very high degree of confidence. With too many variables, risks, and uncertainties described in the report this amount could be very well underestimated. The district should present a range of probable costs for the recommended plans to provide an assessment of the probability of

completing the project at any given cost level within the identified range, to identify project variables which could contribute most significantly to overruns. Also, the district should include a breakdown about the composition of those costs for easy reference and understanding.

Response: *The estimate of $349,000 000 was based on a cost of October, 2007 with a higher than normal contingency (25% vs. the usual 20% on the construction contracts) to help cover the uncertainties associated with this project. This was also noted that there was no escalation assigned to this cost, but this will be modified as the cost estimate is updated to feasibility level.*

Discussion: *The above information was presented at the FRC.*

Required Action: *Update the barrier island cost estimate to feasibility including escalation.*

Action Taken: *All the recommended alternatives have been updated in Part 2 of the Cost Appendix to include escalation.*

HQ Analysis: Resolved

61. Cost Estimate Reviews. Several estimates (see pages 249-267, 278-305) shows missing names of reviewer/checker. It is not very clear whether those estimates were thoroughly checked. Confirm those estimates were checked or reviewed and provide the name of the reviewer on the appropriate estimate page.

Response: *Concur. This deficiency will be corrected in the Cost Appendix.*

Discussion: *None, but the PDT concurs.*

Required Action: *Make corrections in revised Cost Appendix and ensure that all estimates have been reviewed..*

Action Taken: *All reviewers have been added as noted (as well as other pages)*

HQ Analysis: Resolved

62. Real Estate Costs. The real estate costs included in the cost estimates do not matched the amounts stated on Table RES-1 of Appendix J. Based on cursory review of the real estate costs in the cost estimate, it appears there are major cost differences in the amounts. The Total Project Costs could be understated due to this discrepancy. This discrepancy should be verified and corrected. The following cost differences were found based on cursory review:

Project	County	Table RES-1	Cost estimate
LOD3 Bay St. Louis Ring Option A20	Hancock	$120,246,000	$103,151,686 (see p64)
LOD3 Bay St. Louis Ring Option B30	Hancock	$156,363,000	$139,269,357 (see p66)
LOD3 Pascagoula Ring Option A20	Jackson	$237,004,000	$222,308,608 (see p85)
LOD4 Inland Barrier OptionA20	Harrison	$253,268,000	$235,115,205 (see p120)

Response: *Concur.*

Some of the costs in the Cost Estimate Section were not reflective of the most recent RE costs that were submitted and will be revised.

Discussion: *The above information was presented at the FRC.*

Required Action: *Ensure that cost estimates include the most up-to-date information.*

Action Taken: Corrections have been made as noted above and the remaining real estate costs checked for accuracy.

HQ Analysis: Resolved

C. COMMENTS ON THE AUGUST 2008 DRAFT FEASIBILITY REPORT AND PROGRAMATIC ENVIRONMENTAL IMPACT STATEMENT

1. Prioritization of recommended ecosystem restoration projects. While the reasons that the ecosystem projects recommended for implementation are described in the report (such as availability of existing data, SDSS screening process and land ownership by State of Mississippi), Prioritization for the 38 ecosystem restoration projects should be addressed in the report. It is likely that the reviewers in the Office of the Assistant Secretary for the Army, Civil Works, and the Office of Management and Budget will ask why these particular sites have been recommended for implementation at this time, with a heavy emphasis on prioritization based on economic efficiency (i.e., bang for the buck). Historically, OASA(CW) and OMB have expressed a strong preference for a construction sequence that implements the most efficient plans first. HQUSACE does not oppose the projects recommended for implementation, but urges that the District to be prepared to address the question of prioritization and economic efficiency, and to include this information in the report.

Discussion/Action Taken: *Discussion at the FRC centered on the following questions: 'why here, why now, and why at this cost?'. Also stressed that we capture, at least qualitatively, any incidental benefits. In response Section 3.15 has been revised to appropriately describe efforts undertaken to identify potential ecosystem restoration measures, prioritization of potential projects, and the use of a two-phased approach. A discussion of the development and application of the SDSS Assessment Tool has been incorporated into Section 3.15 along with the resulting 38 potential ecosystem projects. Due to the time constraints of this study, an array of potential alternatives was developed for 5 sites – Turkey Creek, Bayou Cumbest, Franklin Creek, Admiral Island, and Dantzler. These sites were chosen by the team for various reasons. The five sites developed for ecosystem restoration implementation were selected because they were either:*

* *Already vacant lands with wetlands degraded by the storms of 2005;*
* *Previously functioning wetlands which would not require relocating residents; or*
* *Developed wetland areas where residents are willing to relocate.*

A full copy of Sec 3 is attachment 1.

HQ Analysis: Resolved

2. Use of professional knowledge in feasibility study for ecosystem restoration projects. As stated on page 118 of the Environmental Appendix, estimated values provided by MDMR personnel were used in place of field data in the HGM model for some of the recommended restoration sites because of time constraints. It is not clear whether or how the use of these estimated values is documented in the report or appendices. Along a similar line, the assumptions used to develop these estimated values should also be documented in the study. Use of best professional judgment is acceptable in habitat analyses as long as the scientific basis for the assumptions and estimated values is documented, and that such information is demonstrated to constitute a feasibility level of detail. While the report states that necessary field work would be done prior to restoration activities, the assumptions and estimated values must be well documented because they are being used as part of the basis for justifying a number of projects recommended for implementation.

Discussion/Action Taken: *The team has misused the term professional judgment since actual data was used during the evaluation and there were no assumptions utilized in developing scores for HGM elements. Data used included actual field investigations by specific PDT members, previous HGM assessments, aerial photography, soil surveys and other readily available information. Appropriate changes have been made in the Environmental Appendix.*

HQ Analysis: Resolved

3. Replacement Housing. The report remains unclear as to whether, and under what conditions, owners who sell their property will be entitled to replacement housing benefits and if so, whether such entitlement is attributable to application of the provisions in the URA regulation or to application of proposed project specific incentives. Because of the significance of this issue, and the need for clarity in its presentation to decision-makers, the District should prepare a memorandum that succinctly yet clearly explains what is proposed and why. The basic framework of the memorandum should address, at a minimum, the following issues:

a. Are the homeowners "displaced persons" under the test provided in the URA regulation? What is the rationale for this conclusion? If they are displaced persons, are there any proposed changes to the URA principles that would apply and, if so, what is the rationale for such changes.

Response:: *Yes, the homeowners would be considered "displaced persons" under the URA.*

The acquisition process for Federal and Federally assisted projects is governed by law and regulations as set out in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended (42 U.S.C. Section 4601, et seq.), and 49 CFR Part 24 (the "Uniform Act" or "URA").

Under the URA if a project or program is a direct Federal project or program, then all acquisition requirements found in 49 CFR Part 24 Subpart B apply. If the project or

program is one receiving Federal financial assistance (ie. Cost shared with a non-Federal local sponsor) then benefits differ if the project or program is voluntary or involuntary. As currently contemplated in the report, the HARP would be implemented in accordance with normal requirements for Corps projects and a non-Federal sponsor would participate – most likely the State of Mississippi. Therefore, the HARP plan would be a project or program receiving Federal financial assistance and not a direct Federal project.

The URA requirements for voluntary acquisitions and involuntary acquisitions differ significantly. While there are protections for property owners in both circumstances, only involuntary acquisitions trigger the full acquisition requirements of the URA. If the HARP is determined to be a voluntary acquisition project, then many of the benefits under the URA would not apply, and the incentives to the landowners in the high hazard areas to participate in the project would most likely be greatly reduced.

Under 49 CFR 24.101(b) projects receiving Federal financial assistance are determined to be voluntary or involuntary using two sets of criteria, one for agencies with eminent domain authority and one for agencies without eminent domain authority. It is anticipated that the non-Federal agency for the HARP would possess eminent domain authority. If the agency possesses eminent domain authority, then the acquisition project is determined to be voluntary if ***all*** *of the following conditions are met:*

- *"No specific site is needed and any of several properties could be acquired for project purposes; and*
- *The property is not part of an intended, planned or designated project area where other properties will be acquired within specific time limits; and*
- *The agency informs the owner in writing of the property's market value; and*
- *The agency also informs the owner in writing that the property will not be acquired, through condemnation, if negotiations do not reach an amicable agreement.*
- *If tenants are displaced, the tenants are provided relocation assistance."*

When applying the above criteria to the proposed HARP it appears the answers would be as set out below:

- ***Yes.*** *The proposed project area expands along an 80 mile area of the three coastal counties of Mississippi. Although it is within the designated high hazard zone, there is no specific site required for the project. To obtain the maximum benefits for a HARP within coastal Mississippi, it would be desirable but not critical that all of these parcels be acquired sooner than later. However, should only a portion of these total parcels be acquired, MsCIP studies and data show that significant cost and environmental benefits would still be afforded.*
- ***Yes.*** *Although greater benefits can be realized from implementing a HARP sooner than later, there is no specific time limit or deadline to acquire the parcels and the parcels are not required as part of another intended project.*
- ***Yes.*** *Under the terms of the Project Partnership Agreement the non-Federal Sponsor would agree to inform the property owners in writing of the market value of their property as required by the URA.*

- ***No.*** *It is the intent to establish the HARP as a Federally assisted project with all available options – including eminent domain. It is not anticipated that authorization would restrict the project to voluntary or willing sellers only. However, the project, in order to maximize the application of dollars and to speed acquisition of properties, may be implemented by acquiring from voluntary sellers first. If so, those property owners would be informed in writing that if negotiations fail for the purchase of their property, condemnation will not be used to acquire it* ***at that time****. The option of using eminent domain to acquire would still be available for use at any time it was determined by the agency to be appropriate. Most likely this would initially be for clearing title to a property where agreement on price is reached. However, it could be used if both the agency and the landowner agreed to let the court set the value of the property if negotiations were deadlocked. It would also be applied as the agency determined necessary as the project progressed.*
- ***Yes.*** *It is the Corps intent to also provide relocation assistance to any tenants that may be displaced.*

Therefore, since all five of the conditions set out in 49 CFR 24.101(b) are not met, the acquisitions under the HARP would be deemed involuntary and all acquisition requirements found in 49 CFR Part 24 Subpart B apply. It is not anticipated that any changes from the URA principles and benefits would be implemented.

HQ Analysis: Partially Resolved. We will schedule a meeting to discuss additional information required to fully resolve the comment.

Discussion: *HQUSACE agrees with the overall concept of the HARP and will work with the District and Division in finalizing the HARP write-up that will be incorporated into the final report.*

Required Action: *The District is to update the HARP consistent with the comment above.*

HQ Analysis: Resolved

b. To the extent that homeowners are considered to be displaced persons under the URA, does the "constructive occupancy" concept of the regulation apply to owners who have not rebuilt homes as their primary residence? The District's analysis must be presented with specific reference to existing Federal guidance and relevant legislative history. If the regulation's constructive occupancy concept is not applicable (either because owners are not displaced persons or that the concept otherwise does not apply), what is the District's proposal as to application of an analogous concept and the rationale for, and its scope of, application.

Response: *The incentives for landowners to participate in the implementation of the HARP would be the potential reduction in flood damages and personal injury with no cost to the homeowner. The costs to the homeowner associated with the implementation of the HARP would be compensated for through the use of PL 91-646. In order for a landowner to receive these relocation payments and benefits they must qualify as a displaced person, which*

includes the requirement that a homeowner actually owned and ***occupied*** *the dwelling being purchased for 180 days prior to the initiation of negotiations for purchase. Since a majority of the properties that are proposed for purchase under the HARP were destroyed in 2005 and not rebuilt, the homeowners could not meet this condition.*

However, Section 414 of the Stafford Act, as codified at 42 USC subsection 5181, provides that:

> *"Notwithstanding any other provision of law, no person otherwise eligible for any kind of replacement housing payment under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) [42 U.S.C. 4601 et seq.] shall be denied such eligibility as a result of his being unable, because of a major disaster as determined by the President, to meet occupancy requirements set by such Act."*

49 CFR Section 24.8 requires implementation of the URA must be in compliance with the provisions of the Stafford Act, among other laws and regulations. Therefore, this should apply since the coastal counties of Mississippi were declared a major disaster area by the President following Hurricane Katrina.

A search has revealed no legislative history or Federal guidance on the application of the concept of "constructive occupancy" to displaced persons under the URA. Members of the MsCIP team have discussed the concept and application with parties at the Federal Highway Administration (the designated lead agency for the URA) and they indicated that there was no guidance issued because it was intended to leave the implementation to the various Federal agencies as necessitated by the circumstances of their particular project.

HQ Analysis: Partially Resolved. We will schedule a meeting to discuss additional information required to fully resolve the comment.

Discussion: *HQUSACE agrees with the overall concept of the HARP and will work with the District and Division in finalizing the HARP write-up that will be incorporated into the final report.*

Required Action: *The District is to update the HARP consistent with the comment/response above.*

HQ Analysis: Resolved

c. If the provisions of the URA regulation directly apply, what would be the method of computing and applying replacement housing benefits under the regulation? Is there discretion under the regulation to apply the proposed "Modified Replacement Housing Benefit."

Response: *In reading P.L. 91-646 and the URA provisions in the CFR, it is clear that without specific authorizing language to the contrary, the implementation of the HARP would be limited to those benefits as calculated in accordance with the applicable provisions of the URA.*

The emphasis in both the law and regulations is upon fairness and uniformity for Federal and federally assisted projects. Thus, benefits or the calculation thereof should be in accordance with the applicable provisions of the URA. The URA provides for calculation of the replacement housing payment upon comparable dwellings, if available.

This does not mean a MRHP could not be used in implementing the HARP. If sufficient comparable replacement housing is not available, then the agency has "broad latitude" to provide replacement housing under the provisions of 49 CFR 24.404 governing replacement housing of last resort. This includes not only such things as calculations for a replacement housing payment, but even up to and including the actual construction of a replacement dwelling, if appropriate. Clearly, use of a MRHP would fall within this provision.

HQ Analysis: Resolved

d. The District should prepare a table or tables that generally describe the number of tracts (and existing housing condition thereon) that are anticipated to be acquired together with a separate breakdown of the dollar amounts that are attributable to purchase price and to replacement housing benefits (both with and without application of a constructive occupancy theory).

Schedule:

Under Phase 1 of the HARP, constructive occupancy would be offered if available for the acquisition of approximately 2,000 of the estimated 15,000 parcels identified in the High Hazard zones. Parcels would be acquired from those owners who are willing to sell. Those owner's who currently have a vacant lot within the high hazard zones that meet the requirements as an owner occupant, would be eligible for a Replacement Housing Payment. To be eligible as an owner occupant, they would have to show evidence they were residing on their parcel for at least 180 days prior to Hurricane Katrina on August 29, 2005.

When identifying the acquisition process and steps for a HARP based on acquisition of an estimated 2,000 parcels, the total time required was estimated to take 4 – 5 years. The HARP acquisition process would require less administrative time and related costs as a traditional acquisition since the traditional survey of the entire project area would not be required and time spent for negotiations would be minimal due to the willing seller concept. Additionally, the administrative cost associated with the legal requirements for processing condemnations should not be necessary or should be minimal.

There are an estimated 15,000 parcels located in the High-Hazard zone. Considering that many of these parcel owners may not participate in an acquisition program and that many may not be eligible for other reasons, the PDT estimates that approximately 2,000 of these property owners would likely sell their parcel under a HARP. An estimate of 400 parcels per year based on a five (5) year program would be a reasonable number of acquisitions to expect with an adequately staff field office. Annual reports of the HARP progress could be submitted to Congress and if participation varied more than 25 percent, adjustments to the annual appropriations could be requested.

Costs:

The following figures represent the estimated average costs that could be expected from implementing a HARP for coastal Mississippi.

$	*50,000*	*Avg. vacant land/parcel cost.*
$	*180,000*	*Avg. Replacement Housing Payment based on 1800 sf home*
$	*(90,000)*	*Avg. Insurance payment received for 1800 sf home*
$	*2,500*	*Avg. PL 91-646 payment for moving allowance*
$	*0*	*Demolition cost. In the case of post Katrina parcels, the majority of destroyed homes have been cleared from their lots. In the event of another major storm event, added costs for clean up, demolition and removal may be incurred.*
$	*25,000*	*Avg. admin costs for negotiations and closing.*

Table 1 illustrates the cost to the Government if vacant parcels are acquired with a Replacement Housing Payment (RHP) under a HARP before they are rebuilt. The first column indicates the estimated number of previously occupied but currently vacant parcels. Table 2 illustrates the Chart of Accounts for a HARP.

Table 1

HARP Cost

For Acquisition of Parcels with use of Constructive Occupancy

Number Parcels Occupied Pre-K	***Vacant Parcel Value***	***RHP Payment***	***Less Other Payments Ins/Grants***	***91-646 Payment (moving)***	***Demolition Costs***	***Acquisition Admin Costs***	***Total Acquisition Cost***
2,000 Vacant	*100,000,000*	*360,000,000*	*180,000,000*	*5,000,000*	*0*	*50,000,000*	*335,000,000 **

** Note: Does not include contingencies.*

Table 2

HARP – Chart of Accounts

For Acquisition of Approximately 2,000 Parcels

01A	*PROJECT PLANNING Other Project Cooperation Agreement*	*FEDERAL*	*NON-FEDERAL*	*TOTALS*
01AX	*Contingencies Subtotal*			
01B	*LANDS AND DAMAGES/PERMITS*			

01B40	*Acquisition/Review of PS-Admin*	*5,000,000*		*5,000,000*
01B20	*Acquisition by PS-Admin*		*45,000,000*	*45,000,000*
01BX	*Contingencies*	*925,000*	*8,325,000*	*9,250,000*
	Subtotal	*5,925,000*	*53,325,000*	*59,250,000*
01F *01F20*	*PL 91-646 ASSISTANCE By PS*			
01FX	*Contingencies*		*0*	*0*
	Subtotal		*0*	*0*
01R	*REAL ESTATE LAND PAYMENTS*			
01R1B	*Land Payments by PS*		*100,000,000*	*100,000,000*
01R2B	*PL91-646 Payment by PS(MRHP)*		*185,000,000*	*185,000,000*
01R2D	*Review of PS*			*0*
01RX	*Contingencies*	*0*	*52,725,000*	*52,725,000*
	Subtotal	*0*	*337,050,000*	*396,975,000*
	TOTALS	***5,925,,000***	***391,050,000***	***396,975,000***
	ROUNDED TO			***$397,000,000***

HQ Analysis:: Partially Resolved. We will schedule a meeting to discuss additional information required to fully resolve the comment.

Discussion: *HQUSACE agrees with the overall concept of the HARP and will work with the District and Division in finalizing the HARP write-up that will be incorporated into the final report.*

Required Action: *The District is to update the HARP consistent with the comment/response above.*

HQ Analysis: Resolved

4. Constructive Occupancy. Page 14 of Exhibit C to the RE Appendix incorrectly states that the constructive occupancy concept "would allow for the agency to value it as though the structure and occupant were still there." This statement, and any other similar statement elsewhere in the report, must be deleted.

Discussion/Action Taken: *Based on the discussions at the FRC on 18 December the PDT has developed two alternatives for the implementation of the High Hazard Area Relocation Program. Both alternatives employ the use of P.L. 91-646 but differ on the application of replacement housing payment and constructive occupancy. Sections 3.15, 3.20.1 and 5.3.1 have been revised to reflect these changes (attachment 5). In addition any mention of a standing authority as the implementation of the Long-term HARP have been removed from the document (Sec 5.1). Annex C to the Real Estate Appendix is also being revised – copy to be furnished in total by COB 16 January).*

We would also like to schedule a meeting of appropriate PDT, SAD, and HQ staff to further discuss the issues raised at the FRC concerning the application of constructive occupancy in this instance and whether additional authorization is necessary. We believe that the use of incentives such as constructive occupancy as well as other innovate incentives discussed at the IRWA Conference that was held this week. At this conference FHWA presented several recent pilot projects that they approved for other agencies that allowed for incentive payments by the agency for acquiring parcels and for relocations. An example presented was an incentive payment if an owner would sell within 30 days. As discussed in the FRC we would like to have these issues revolved prior to the completion of the public review period (currently scheduled for 23 March). We would prefer to have any nonstructural / real estate issues resolved by 28 February if possible.

HQ Analysis: Partially Resolved. We will schedule a meeting to discuss additional information required to fully resolve the comment.

Discussion: *HQUSACE agrees with the overall concept of the HARP and will work with the District and Division in finalizing the HARP write-up that will be incorporated into the final report.*

Required Action: *The District is to update the HARP consistent with the comment/response above.*

HQ Analysis: Resolved

D. COMMENTS ON THE JANUARY 2009 DRAFT FEASIBILITY REPORT AND PROGRAMATIC ENVIRONMENTAL IMPACT STATEMENT

1. Wetlands as a category under environmental effects. Given the number of categories of environmental effects discussed in the report, the lack of a category for wetlands resources is puzzling, especially since some of the projects discussed in the comprehensive plan have the potential to result in the significant gain or loss of wetland function and acreage. While the environmental effects of the various measures under consideration are accounted for

indirectly in other categories (such as fish and wildlife habitat) wetlands acreage is a familiar concept that is easily understood by the general public. HQUSACE recommends that a wetlands category be added to Table S-2 and Section 4 (Environmental Effects) of the Main Report, and Table 3-11 in the Environmental Appendix. In addition, the OASA(CW) reviewers and the Office of Management and Budget typically request detailed information on wetlands acreage for ecosystem restoration projects.

Discussion: *Concur. The PDT initially had focused on the benefits gained by the wetland restoration is terms of fish and wildlife resources and not specifically on the acreage. We agree that it is important to include this as well. Reference to Table 3-11 of the Environmental Appendix is inaccurate as no table exists.*

Required Action: *Include a discussion on wetlands, presenting detailed information on acreages of wetlands and benefits in the Main Report.*

Action Taken: *A column for wetlands has been added to Table S-2 which identifies both the number of acres and the type of wetland involved. In addition, Section 4.1.9 of the Main Report/EIS has been written to highlight the beneficial impacts to wetlands that would occur with the implementation of the comprehensive plan.*

HQ Analysis: Resolved

2. Federal interest in State Initiative restoration sites. The federal interest is not apparent in some of the State Initiative sites discussed in the Environmental Appendix (Appendix A). Specifically, the proposed restoration measures for several of the sites discussed on pages 96-101 of the Appendix do not appear to require the use of the Corps expertise (engineering or other technical solutions), as discussed in section 7(l) of EP 1165-2-502. For example, the Wachovia, Ansley, Pascagoula and DuPont sites appear to involve mostly debris removal, prescribed burning or control of invasive species, and for this reason, do not appear to be consistent with the cited guidance. The project descriptions and justifications for including the selected State Initiative sites should be strengthened, or barring adequate justification, removed from the tentatively selected plan. HQUSACE does not have an issue with the use of these measures per se, but believes that they must be used in conjunction with other significant measures that utilize Corps expertise, such as the hydrologic restoration measures as proposed for the Dantzler and Turkey Creek sites.

Discussion: Additional evaluation of these sites needs to be accomplished prior to the development of the most comprehensive plan however all these sites would require the restoration of natural hydrology to be successfully restored. The majority of these sites were slated for development in the 50's and 60's and were either ditched to drain the wetlands prior to development or filled for similar reasons. We are recommending these sites for contingent authorization since they suffered extensive damage in the hurricane and this damage has led to initial colonization by exotic species. The exotics will continue to reproduce and will be much more difficult to control as time progresses. In addition, since the sites are already owned by the State there will not be real estate issues which can slow down the implementation process.

Required Action: *Report needs to be revised to provide information supporting the Corps role in the restoration of these sites.*

Action Taken: *We have elaborated on the needs for hydrologic restoration of these sites in the Main Report, specifically Sections 3.15.2.1 (page 3-42), 3.22.2 (page 3-186) and 5.18.6.7 (page 5-22). The additional decision documentation prepared prior to implementation would include specific details on the requirements necessary to restore hydrology.*

HQ Analysis: Resolved

E. REVIEW COMMENTS ON THE JUNE 2009 FINAL REPORT AND PIES.

1. Table S-1 on page S-11 (executive summary). The project benefits in this table for the Submerged Aquatic Vegetation (SAV) Pilot Project states that "Ecosystem restoration benefits to be determined". Recommend that the benefits be stated as "5 acres of seagrass restoration". This statement appears to be reasonable, based on the discussion in section 4.11.2. Also, given that this is a pilot program, the knowledge gained is an output as well (in addition to the 5 acres). Consider whether it would be appropriate to include improved knowledge of restoration techniques as an output in this table.

Response: Concur

Action Taken: *Table S-1 has been modified and include as part of errata pages.*

HQ Analysis: Resolved

2. Recovery stats in Table 1 Table 1 should be changed to estimated costs to be consistent with text. Tables 1 and 2 may need to also be amended as relates to facility relocations.

Response: Concur

Action Taken: *Table 1 and Table 2 have been modified and include as part of errata pages.*

HQ Analysis: Resolved

3. RE acquisition. In the assessment of the RE acquisition capability of the non-Federal sponsor, please change "to" to "of" in 1b. Does the sponsor have the power of eminent domain for this project?

Response: Concur. The *sponsor has power of eminent domain for this project*

Action Taken: *The identified change has been incorporated into the errata pages.*

HQ Analysis: Resolved

4. Approval of Real Estate Supplement. Real Estate Plan notes that Real Estate Supplement will be approved by SAD. There should be a caveat with statement as to depend

on substantial deviation from current concept of each project and/or whether other elements within HQ will need to review; or will final approval for all components rest with SAD once the project is authorized?

Response: Concur.

Action Taken: *Additional language clarifying the role of SAD with respect to Real Estate Supplement approval has been included in the errata pages.*

HQ Analysis: Resolved

Thomas Hughes

Policy Compliance Review Manager