Appendix E

Louisiana Coastal Resources Program Consistency Determination

BOBBY JINDAL
GOVERNOR

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SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF COASTAL MANAGEMENT

July 29, 2010

Joan Exnicios
Chief, Environmental Branch
Corps of Engineers- New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

RE: **C20100167,** Coastal Zone Consistency
New Orleans District, Corps of Engineers
Direct Federal Action
LCA Ecosystem Restoration Project: Medium Diversion at White Ditch, **Plaquemines Parish, Louisiana**

Dear Ms. Exnicios:

The above referenced project has been reviewed for consistency with the Louisiana Coastal Resources Program in accordance with Section 307 (c) of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in this application, is consistent with the LCRP.

If you have any questions concerning this determination please contact Brian Marcks of the Consistency Section at (225) 342-7939 or 1-800-267-4019.

Sincerely yours,

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/bgm

cc: Nathan Dayan, COE-NOD
Bren Haase, OCPR
Dave Butler, LDWF
Frank Cole, OCM FI
Albertine Kimble, Plaquemines Parish

CONSISTENCY DETERMINATION

Louisiana Coastal Use Guidelines

Medium Diversion at White Ditch
Plaquemines Parish, Louisiana

INTRODUCTION

Section 307 of the Coastal Zone Management Act of 1972, 16 U.S.C. 1451 et seq. requires that "each federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs." In accordance with Section 307, a Consistency Determination has been prepared for the proposed construction of the Medium Diversion at White Ditch (MDWD) project in Plaquemines Parish, Louisiana (Figure 1). This project was identified as a Near-term Critical Restoration Feature Recommended for Study and Future Congressional Authorization in the Louisiana Coastal Area (LCA) Main Report dated January 21, 2005. The project is described in detail in the draft Integrated Feasibility Study and Environmental Impact Statement for the MDWD, Plaquemines Parish, Louisiana. The proposed action is located on the left descending bank of the Mississippi River, between the existing White Ditch diversion siphon to the north (river mile 64.5) and the community of Phoenix to the south (river mile 59.8) (Figure 2). Coastal Use Guidelines were written in order to implement the policies and goals of the Louisiana Coastal Resources Program (LCRP), and serve as a set of performance standards for evaluating projects. Compliance with the LCRP, and therefore, Section 307, requires compliance with applicable Coastal Use Guidelines.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The altered supply and distribution of freshwater, lack of deltaic forming sediments, marsh subsistence and human development in the White Ditch area have resulted in degraded and unbalanced distribution of freshwater, brackish, and saltwater marsh habitats. Further, the degradation of the existing marshes has made them more vulnerable to the range of Gulf storm events; extreme and seasonal, resulting in accelerated degradation, altered hydrology changed salinity regimes.

Installation of the White Ditch diversion siphon was completed in 1963 with the objective of enhancing muskrat and oyster habitat. In the absence of an outfall management plan, the surrounding marsh received limited benefits from the diverted river water. Two 50-inch steel pipes divert water from the Mississippi River through the White Ditch siphon, into the Belair Canal and then into the River aux Chenes (Oak River), where it continues south and out of the

project area. Usage of the siphons was abandoned for many years and they degraded into a non-usable condition. The siphons were recently refurbished and water was diverted into White Ditch as part of research efforts.

Wetlands in the project area are deteriorating for several reasons: 1) subsidence, 2) lack of sediment and nutrient deposition, 3) erosion via tidal exchange, 4) channelization, 5) saltwater intrusion, and 6) lack of freshwater. Recent hurricanes and tropical storms have also caused significant damage to the project area. These activities have resulted in the loss of several thousand acres of solid, vegetated marsh. Deterioration will continue unless preventative measures are taken.

In the absence of supplemental freshwater and sediment from the Mississippi River, subsidence, sea-level rise, wave erosion, and saltwater intrusion will continue to be problems. Protection and enhancement of this area are dependent on providing a hydrologic and sediment regime that minimizes the physiological stress to wetland vegetation from saltwater intrusion and tidal energy and is conducive to the retention of locally provided freshwater and sediments.

The historic hydrology of the project area indicates that the current course of the Mississippi River has remained the same for the last 700 years and has directly influenced the development of the entire area. The project area is located on the east side of the Mississippi River and was formed between two natural levee ridge systems, River aux Chenes on the east and the Mississippi River on the west. There are also two unnamed bayou ridges found within the project area. These ridges formed along the old natural bayous which were distributary channels for the Mississippi River. These natural bayous once carried sediments and nutrients into the project area during high river stages when the natural ridges were seasonally overtopped. In the historical setting, floodwater from the river would recede and sediments and nutrients would be deposited in the inter-distributary basins located between ridges. During normal or low river stages the ridges along the distributary channels served like levees and buffered the basin areas from the daily tidal influence. This buffering effect created a low energy freshwater environment in the inter-distributary basins, forming deep organic soils. Drainage to the area was provided by a high water event breaching the River aux Chenes ridge in the southern part of the project area. This event caused the development of the Bayou Garelle tributary channel.

The present day hydrology of the project area has been altered and no longer functions in a historically natural pattern. Historically, water moved very slowly through the system. Freshwater slowly exited the system through meandering pathways in the marsh and saltwater was slow to intrude. Presently, changes in the marsh allow water to rapidly pass through the system and saltwater is able to quickly intrude. The hydrologic balance within the marsh has been disturbed due to the following man-made changes:

1. The Mississippi River can no longer overflow its banks into the project area due to the Mississippi River protection levee. This has eliminated the introduction of freshwater from the river and disrupted natural sediment deposition patterns.
2. Channels have been dredged through natural ridges which has increased drainage and tidal exchange and exposed the soil to erosive forces.

The MDWD project will provide opportunities to naturalize the distribution of freshwater and deltaic forming sediments—including those necessary for the creation of sustainable marsh communities, improve hydrologic distribution of freshwater, improve topographic diversity, reduce the negative impacts of Gulf storm events, and inhibit invasive species in the Breton Sound Basin.

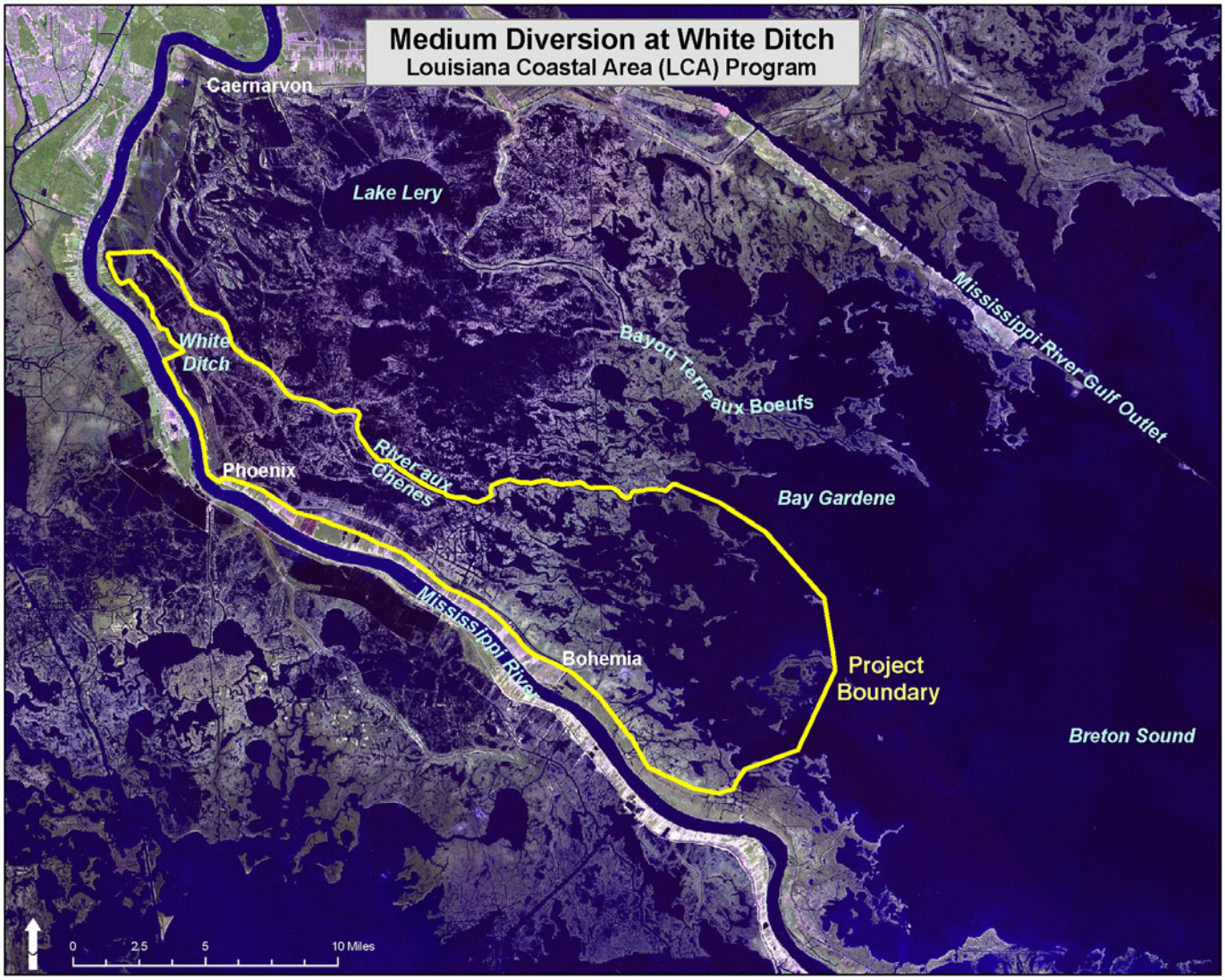

Figure 1. The Medium Diversion at White Ditch project area and Breton Sound Basin, Plaquemines Parish, Louisiana.

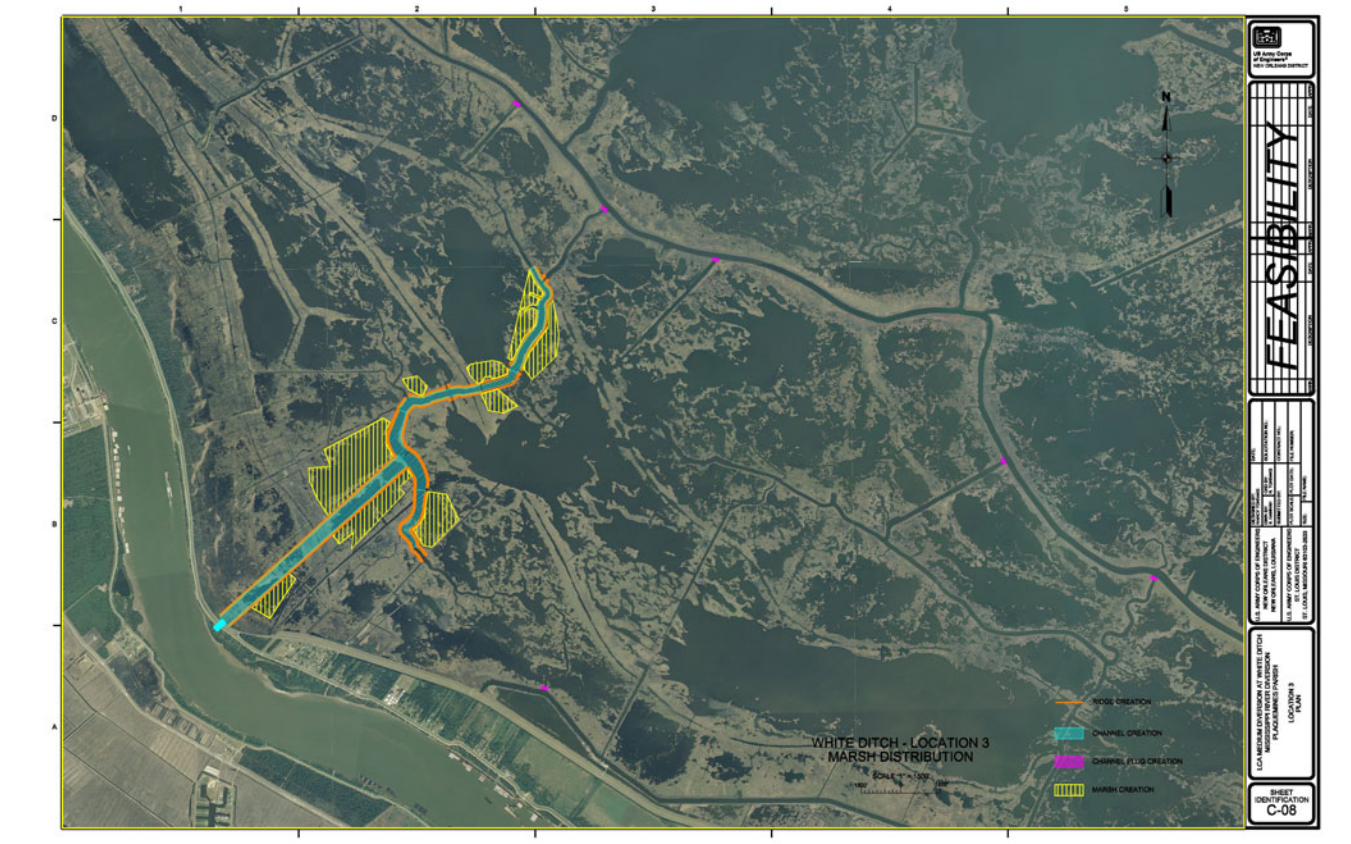

Figure 2. The Medium Diversion at White Ditch project area, Plaquemines Parish, Louisiana.

DESCRIPTION OF THE PROPOSED ACTION

The MDWD project study area is located in LCA Subprovince 1 in the Breton Sound hydrologic basin in Plaquemines Parish, Louisiana (Figure 1). The boundary of the project encompasses over 98,000 acres of intermediate to brackish intertidal wetland habitats. The study area boundary follows distinct landscape features beginning in the north with the confluence of the non-Federal back levee and the forty-arpent canal, extending along the non-Federal back levee, the Mississippi River levee, the Federal back levee and along the left descending natural bank of the Mississippi River to the west; past American Bay, California Bay, and through Breton Sound, near Bay Gardene to the south; into and along River aux Chenes to the east, and back to the point of beginning. The area has been significantly impacted by recent tropical storms and hurricanes and is currently isolated from the effects of the Caernarvon freshwater diversion, located at the northern end of the Breton Sound Basin.

The proposed action involves construction of a structure capable of diverting up to 35,000 cubic feet per second (cfs), which involves excavating a section of levee and constructing 10 each, sized 15' x 15', box culverts with hydraulic operated sluice gates replacing the roadway, and constructing a new outfall channel (i.e., main channel) and enlarging an existing channel (Figure

3) to carry fresh water and sediment to the desired locations in the receiving marsh. Dimensions of both the proposed outfall channel and the currently existing receiving channel to be enlarged are shown in Table 1.

The operating plan for the MDWD project is limited to a diversion pulse of 35,000 cfs in March-April of each year, during the normal high flow period of the Mississippi River, and a diversion of 1,000 cfs the rest of the year. This flow rate may not be experienced over the full 60 day period. The proposed 35,000 cfs diversion will be the largest man-made diverted flow for wetland building on the Lower Mississippi River, but the one to two month duration will be a modifying factor. The diversion should approximate five percent or less of the main channel flow for most years.

Construction of the 35,000 cfs diversion and associated outfall management features would have an initial negative direct impact on existing wetland vegetation, wildlife and fisheries resources, and essential fish habitat within the construction footprint (approximately 283 acres of intermediate marsh; approximately 363 acres of open water; approximately 5 acres of bottomland hardwood habitat), primarily through the excavation and enlargement of outfall channels and placement of excavated material on deteriorating existing marsh and open water areas adjacent to the channels. However, the beneficial use-placement of excavated dredge material will provide a base for the regeneration of approximately 385 acres of wetland vegetation and associated fisheries, wildlife, and essential fish habitat (EFH), and approximately 32 acres of ridge and terrace creation suitable for the re-establishment of bottomland hardwoods. Operation of the proposed diversion structure would provide an inflow of freshwater, sediments and nutrients to the project area and support the re-establishment and nourishment of wetland vegetation in the project area. It is anticipated that a portion of the project area currently classified as intermediate marsh would be converted to fresh marsh within approximately 5 years following project implementation. No loss of acreage of all marsh types in the project area is expected to occur with the proposed diversion. Additionally, the MDWD is expected to produce an overall gain in marsh acreage of approximately 21,282 acres by year 50 after project implementation. An increase in wetland acreage would provide increased nesting, rearing, and foraging habitat for resident and migratory wildlife species. Wetlands creation would also provide valuable foraging, breeding, and nursery habitat, as well as other essential fish habitat, for finfish and shellfish in the project area. These changes in the project area would not only increase the aerial extent of EFH, but would also improve the quality of EFH for several managed species. Submerged aquatic vegetation (SAV) coverage in the fresh and intermediate zones of the areas affected by the diversion are expected to increase from 25% (baseline) to approximately 70%, while in the brackish zone SAV coverage is expected to increase from 25% to approximately 30%.

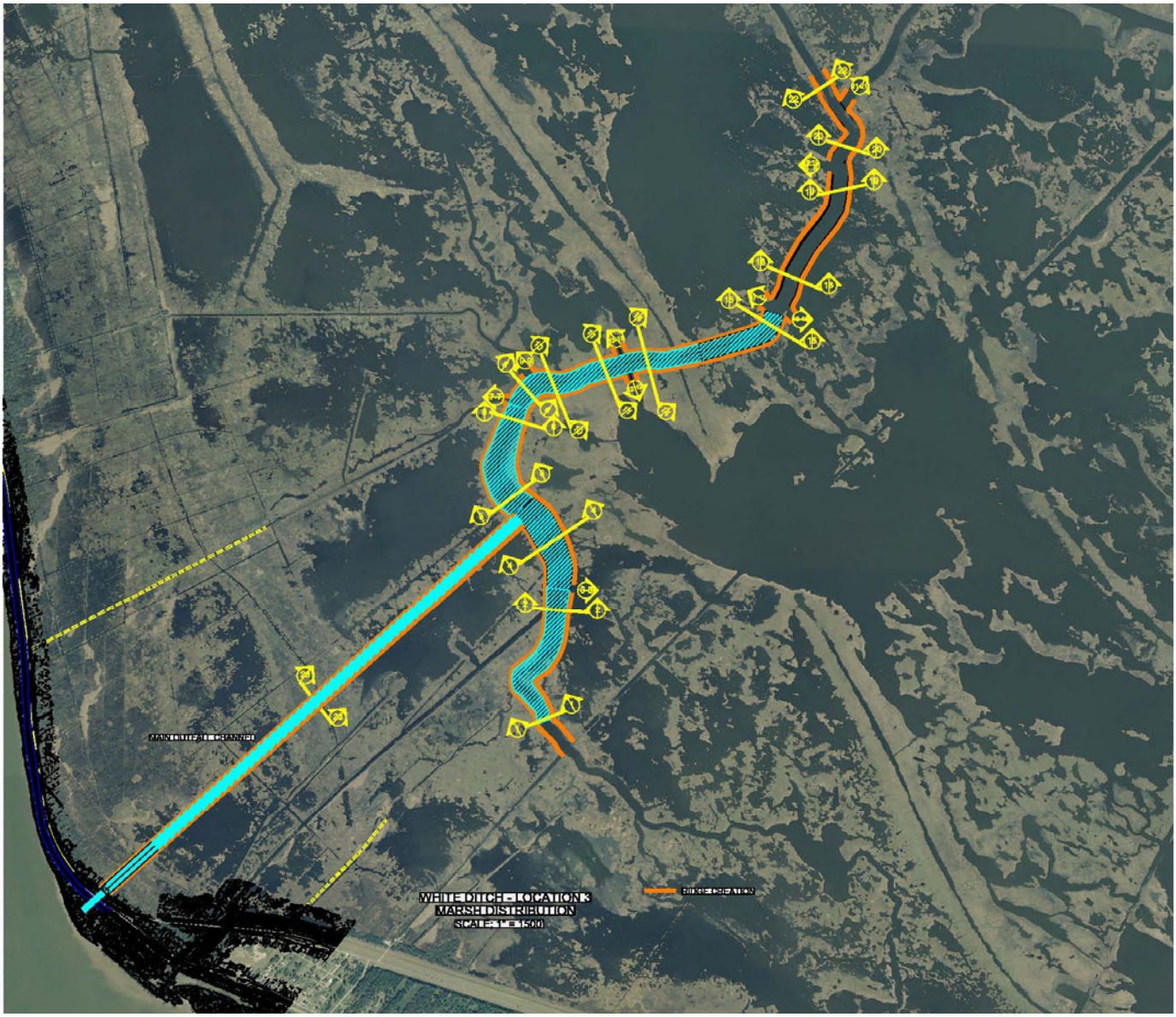

Figure 3. Cross-sectional map of the Medium Diversion at White Ditch, showing both the proposed main outfall channel and the enlarged existing channel. Channel dimensions at each cross-section are included in Table 1.

Table 1. Proposed dimensions for the 35,000 cfs Medium Diversion at White Ditch main outfall channel and existing receiving channel.

	Width at 0 (ft)	Bottom Elevation (ft)	Bottom Width (ft)	Side Slope (1v:_h)	Top Elevation (ft)	Top Width (ft)	Cross Sectional Area (ft^2)
Main Outfall Channel 23	x	-16	365	5	2	545	8190
1	190	-6	118	6	2	214	1328
2	300	-8	204	6	2	324	2640
3	x	-3	450	5	2	500	2375
4	450	-15	270	6	2	474	6324
5	425	-16	265	5	2	445	6390
6	x	-16	185	5	2	365	4950
7	80	-5	20	6	2	104	434
8	315	-15	165	5	2	335	4250
9	174	-6	102	6	2	198	1200
10	310	-14	170	5	2	330	4000
11	275	-14	135	5	2	295	3440
12	140	-4	92	6	2	164	768
13	140	-4	92	6	2	164	768
14	280	-11	148	6	2	304	2938
15	275	-10	155	6	2	299	2724
16	150	-4	102	6	2	174	828
17	100	-4	52	6	2	124	528
18	250	-8	154	6	2	274	2140
19	225	-8	129	6	2	249	1890
19 b.	85	-6	25	5	2	105	520
20	200	-6	104	8	2	232	1344
21	180	-4	116	8	2	212	984
22	150	-4	86	8	2	182	804

GUIDELINES APPLICABLE TO ALL USES

These guidelines are acknowledged and have been addressed through the preparation of responses to the guidelines contained within the specific use categories.

Guidelines 1.1 – 1.6: The guidelines have been read in their entirety, and all applicable guidelines would be complied with. The proposed project would be in conformance with all applicable water and air quality laws, standards and regulations, and with those other laws, standards and regulations which have been incorporated into LCRP, and is deemed in conformance with the program except to the extent that these guidelines would impose additional requirements. The proposed activity shall not be carried out or conducted in such a manner as to constitute a violation of the terms of a grant or donation of any lands or water-bottoms to the State or any subdivision thereof. Information regarding potential impacts of the proposed action is provided herein and in the accompanying feasibility study and environmental impact statement.

Guideline 1.7: Potential short- and long-term effects resulting from the diversion project include increased total suspended sediments, turbidity, and organic/nutrient enrichment of the water column; disturbance and release of possible contaminants; decrease in water temperatures; and the possible release of oxygen depleting substances as well as possibly increasing dissolved oxygen levels. Potential impacts would be minimized, as much as practicable, through the implementation of stormwater pollution prevention plans (SWPPPs) and other applicable best management practices (BMPs).

Generally, four water quality conditions could change with implementation of the proposed diversion:

1) Freshwater would be moved throughout the entire WDMD project area;
2) Salinities would decrease throughout the entire project area;
3) Sediments in the project area would increase allowing for marsh platform development, along with accompanying minor increases in trace metals associated with bed sediments; and
4) Nutrients in the project area could increase.

Introduction of river water into the Breton Sound Basin would immediately change the water chemistry of receiving areas. Change may be beneficial or detrimental, depending on human perceptions and the water uses. The change from a less fresh to a fresher system could be perceived as beneficial to wetland nourishment, but detrimental to recreational use because of water color changes, and possible changes in fish species assemblages in the recreational area. However, the changes in water chemistry would mimic natural conditions prior to the leveeing of the Mississippi River. Stabilization of salinity regimes would probably aid resource managers, commercial and recreational fisheries managers, and water users in making long-term decisions. Salinity could be either beneficial or detrimental, depending on the user group. Salinity is not necessarily a pollutant in coastal waters. Freshwater marshes however are sensitive to salinity levels, but the varying levels of salinity have positive impacts on various commercial and recreational fisheries. On balance, the stabilization of salinities, or the relocation of saltier water zones gulfward, would achieve the goals of the MDWD project. The reintroduction of streambed sediments into the MDWD project area may add some contaminants; these could

include primarily trace metals and hydrophobic organic compounds from Mississippi River streambed sediments.

Cumulative impacts to water quality would primarily be related to the incremental impact of all past, present, and future actions effecting water quality within the Basin such as: increase in freshwater areas; stabilization or decrease in salinities; increase in sediment introduction to the coastal zone, with accompanying minor increases in trace metals associated with bed sediments; increased total suspended sediments; increased turbidity; increased organic/nutrient enrichment of the water column; disturbance and release of possible contaminants; decrease in water temperatures along with fewer water temperature fluctuations; and increased dissolved oxygen levels. However the cumulative impacts to the water quality of the Breton Sound Basin resulting from this project would be a synergistic positive result over and above the additive combination of impacts and benefits of the other alternatives.

Any increases in suspended solids and turbidity levels due to dredging related activities in the immediate project area would be minor, temporary, and highly localized.

No adverse alteration or destruction of unique or valuable habitats, critical habitat for endangered species, important wildlife or fishery breeding or nursery areas, designated wildlife management or sanctuary areas, or forestlands is anticipated. No adverse cumulative or secondary impacts to the biological productivity of wetland ecosystems are anticipated. Adverse disruptions of coastal wildlife and fishery migratory patterns are not anticipated.

No adverse alteration or destruction of public parks, shoreline access points, public works, designated recreation areas, scenic rivers, or other areas of public use and concern is anticipated.

No increases in the potential for flood, hurricane or other storm damage, or increases in the likelihood that damage will occur from such hazards are anticipated.

No significant economic impacts on the locality or adverse disruptions of existing social patterns would occur due to the proposed action. No cultural, historical, or recreational resource sites would be impacted by construction. No proximal areas of special concern exist. No land loss, erosion, or subsidence would occur. This project would not result in reduced long-term biological productivity of the coastal ecosystem.

Guidelines 1.8 – 1.10: Acknowledged. Perceived adverse impacts listed above would clearly be outweighed by the human and environmental benefits the MDWD project would provide through the naturalization of the distribution of freshwater and deltaic forming sediments—including those necessary for the creation of sustainable marsh communities, improvements to hydrologic distribution of freshwater, improvements to topographic diversity, reduction in negative impacts of Gulf storm events, and the inhibition of invasive species in the Breton Sound Basin.

GUIDELINES FOR LEVEES

Guidelines 2.1 – 2.6: The proposed action would not involve the building of levees.

GUIDELINES FOR LINEAR FACILITIES

Guidelines 3.1 – 3.16: Acknowledged. Portions of the proposed diversion outfall channel will utilize a currently existing ditch/canal, which will reduce the length of newly constructed linear channel needed for the project and minimize adverse impacts to wetlands associated with channel excavation. Material excavated during construction of the main outfall channel (i.e., the linear facility) will be used to restore and create marsh and ridge habitat in the presently deteriorating wetlands and open water areas adjacent to the proposed channel.

The proposed main outfall channel will improve natural hydrologic and sediment transport patterns, sheet flow, and water quality, and will positively benefit the receiving wetlands and associated fish and wildlife habitat, in the MDWD project area and Breton Sound Basin.

GUIDELINES FOR DREDGED MATERIAL DEPOSITION

Guideline 4.1: Dredged materials removed during excavation and enlargement of the diversion outfall channels would be deposited in a manner that would avoid disruptions of water movement, flow, circulation and quality. Dredged material deposition is not expected to result in significant or persistent water quality impacts in the vicinity of construction activities. Any minor increases in suspended sediment and turbidity levels during dredged material deposition would be temporary and highly localized. Minor reductions in dissolved oxygen levels associated with dredged material deposition would be temporary.

Guideline 4.2: Dredged materials removed during excavation and enlargement of the diversion outfall channels will be used beneficially to provide a base for the regeneration of approximately 385 acres of wetland vegetation and associated fisheries, wildlife, and essential fish habitat (EFH), and approximately 32 acres of ridge and terrace creation suitable for the re-establishment of bottomland hardwoods. There are no nearby existing disposal areas or upland areas that could be practicably used.

Guideline 4.3: Dredged materials will not be disposed of in a manner which could result in the impounding or draining of wetlands or the creation of development sites.

Guideline 4.4: Approximately 283 acres of presently eroding wetlands will be impacted primarily through the excavation of outfall channels and placement of excavated material on adjacent deteriorating intermediate marsh. However, the beneficial use-placement of these excavated materials will provide a base for the regeneration of approximately 385 acres of emergent marsh vegetation and associated fisheries, wildlife, and essential fish habitat (EFH), and approximately 32 acres of ridge and terrace creation suitable for the re-establishment of bottomland hardwoods. Additionally, the MDWD is expected to produce an overall gain in

marsh acreage of approximately 21,282 acres by year 50 after project implementation.

Guidelines 4.5 – 4.6: Acknowledged.

Guideline 4.7: Not applicable.

GUIDELINES FOR SHORELINE MODIFICATIONS

Guidelines 5.1 – 5.9: Acknowledged.

GUIDELINES FOR SURFACE ALTERATIONS

Guidelines 6.1 – 6.14: Acknowledged. Surface alterations in the proposed project's construction footprint (approximately 283 acres of intermediate marsh; approximately 363 acres of open water; approximately 5 acres of bottomland hardwood habitat) will mainly entail the excavation of a new outfall channel, enlargement of an existing channel for improved conveyance, and placement of excavated material on deteriorating existing marsh. However, the beneficial use-placement of dredged material will produce approximately 385 acres of marsh platform for regeneration or colonization of emergent vegetation and associated fisheries, wildlife, and essential fish habitat (EFH), and approximately 32 acres of ridge and terrace creation suitable for the re-establishment of bottomland hardwoods.

GUIDELINES FOR HYDROLOGIC AND SEDIMENT TRANSPORT MODIFICATIONS

Guidelines 7.1 – 7.9: Acknowledged. The MDWD is designed to introduce fresh water to control salinities. The controlled diversion will also convey sediment and nutrients to the marshes of the MDWD project area and elsewhere in the Breton Sound Basin to enhance fish and wildlife habitat and productivity, and offset land loss. The operating plan for the MDWD takes advantage of sediment-rich high-river stages flowing through the structure, with a proposed diversion pulse of 35,000 cfs in March-April of each year, during the normal high flow period of the Mississippi River, and a diversion of 1,000 cfs the rest of the year.

GUIDELINES FOR DISPOSAL OF WASTES

Guidelines 8.1 – 8.9: The proposed action would not involve the disposal of wastes; therefore, these guidelines are not applicable.

GUIDELINES FOR USES THAT RESULT IN THE ALTERATION OF WATERS DRAINING INTO COASTAL WATERS

Guideline 9.1: The proposed action will minimally affect water quality and flows in the Mississippi River, while providing benefits to the environment of the Breton Sound Basin through the diversion of fresh water, sediments, and nutrient inputs that should enhance fish and wildlife habitat and productivity, and reduce land loss.

Guidelines 9.2 – 9.3: Not applicable.

GUIDELINES FOR OIL, GAS, AND OTHER MINERAL ACTIVITIES

Guidelines 10.1 – 10.14: The proposed action would not involve oil, gas, and other mineral activities; therefore, these guidelines are not applicable.

CONSISTENCY DETERMINATION

The proposed Medium Diversion at White Ditch will provide additional freshwater, nutrients, and fine sediments to the area between the Mississippi River and the River aux Chenes ridges. The proposed action will restore and maintain ecological integrity, including habitats, communities, and populations of native species, and the processes that sustain them by reversing the trend of degradation and deterioration in the project area, so as to contribute towards achieving and sustaining a larger coastal ecosystem that can support and protect the environment, economy, and culture of southern Louisiana and thus contribute to the economy and well-being of the Nation. Based on this evaluation, the U. S. Army Corps of Engineers, New Orleans District, has determined that the proposed action is consistent, to the maximum extent practicable, with the State of Louisiana's Coastal Resources Program.