

**Mitigation Credit for the
Larose to Golden Meadow Hurricane Protection Project**

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Introduction

As the federal sponsor, the U. S. Army Corps of Engineers, New Orleans District (COE) worked with the South Lafourche Levee District (SLLD) to take the Larose to Golden Meadow Hurricane Protection Project from a concept to reality. Aspects of the project were reviewed and evaluated by federal and state agencies over a fifteen-year period under the policies and guidelines of the National Environmental Protection Act (NEPA). Because of the presence of significant wetlands that flanked both sides of the Bayou Lafourche ridge which was previously occupied by settlements and later the communities of Larose, Cutoff, Galliano and Golden Meadow, a mitigation plan, consisting of construction of a 6.5-mile levee and three weirs at Pointe au Chien Wildlife Management Area (WMA), was selected over a number of alternative mitigation projects. The selected mitigation project was to compensate for all of the impacts to wetlands within the permanent rights-of-way footprints of the levees to be constructed as well as all of the wetlands that would be included inside of the ring levee system, once completed. The Office of Coastal Management (formerly Coastal Management Division), Louisiana Department of Natural Resources (LDNR) agreed to the mitigation plan in 1985, as written, through Coastal Zone Consistency No. C19840312. At some point in time, the LDNR ceased to recognize the validity of the 1985 Coastal Zone Consistency; likely as the result of the change of LDNR personnel and policy through time; lack of detailed knowledge of the agreements in the mitigation plan and adopting a selective policy that mitigation is required for projects inside of the levee system that impact wetlands.

Instead of being able to complete incremental levee system improvements, as needed, approved and facilitated by Coastal Zone Consistency No. C19840312, the SLLD has been stymied in its efforts by the LDNR. Specifically, the LDNR determined wetland impacts to 16.25 acres of brackish marsh within the hurricane protection system required justification through the SLLD's expenditure of public funds for an expensive, but questionable hydrodynamic water model (P20100242). The SLLD felt that drainage data and calculations, generated and submitted to the LDNR by a professional engineer should have sufficed (Curole per. comm. 2016b). The LDNR was also requesting mitigation for wetland impacts, associated with the same project (P20100242), which the SLLD felt had already been mitigated. Another coastal use permit application (P20070027) was withdrawn by the SLLD for impacts to wetlands that were previously mitigated. Earlier this year, the SLLD did agree to the conditions of a coastal use permit (P2016002) that required mitigation if the impacted wetland site does not revegetate after a full one-year growing season (Curole per. comm. 2016b and SONRIS 2016).

Methodology

Under contract to the SLLD, Coastal Environments, Inc. (CEI) was requested to: (1) review documents/files associated with the abovementioned subject matter and (2) provide an opinion as to the validity of the SLLD's above stated position. CEI reviewed several NEPA documents, prepared by the COE, reports, letters, permits and miscellaneous data provided by the SLLD. In addition, CEI filed a request with the LDNR for two Coastal Zone Consistency files on June 6, 2016, and two additional files

on June 13, 2016. Digital copies of the two project files contained in the former request were provided, but the LDNR advised that the latter two files had been lost; including the most important file (C19840312) which contained the basis for the filing and issuance of the 1985 Coastal Zone Consistency. The investigation also included personal communications with Windell Curole, General Manager of the SLLD, and others. CEI's objective was to analyze and utilize information, contained in the documents and various materials provided by the SLLD, that would document and verify one way or another the SLLD's stated position regarding mitigation. The following provides salient/relevant information, but it is not an all-inclusive history on the subject matter.

NEPA Documentation of Larose to Golden Meadow Hurricane Protection Project

Approximately 90 percent of the wetlands within the SLLD's final levee alignment had been previously impacted by the levee and forced drainage systems, implemented by the Lafourche Parish Police Jury in 1963, more than 20 years before construction work on the Larose to Golden Meadow Hurricane Protection Project was initiated (Curole per. comm. 2016b).

Authorized by the U.S. Congress in 1965, the Larose to Golden Meadow Hurricane Protection Project included: (1) the raising of existing parish levees on both sides of Bayou Lafourche, (2) construction of two navigable floodgates in Bayou Lafourche and (3) emplacement of seven multi-barreled culverts for interior (gravity) drainage (COE, 1984b). By 1972, the project's federal sponsor, the COE, had developed a General Design Memorandum, which described the project, and with input from local interests had replaced the original gravity drainage structures with pumping stations (COE, 1984b). It was agreed that local interests would pay the difference in costs of the upgraded drainage method and the levee was extended from its original alignment a distance of two miles south of Golden Meadow (COE, 1984b). The COE filed the Final Environmental Impact Statement (FEIS) with the Council of Environmental Quality in 1974 (COE, 1984b). In December of the same year, the U. S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) made five recommendations with the most significant one including the realignment of the southernmost portion of the levee on the east side of Bayou Lafourche westward to exclude approximately 2,000 ac of wetlands from the current alignment (COE, 1984b).

During the 1970s, the SLLD requested that two additional tracts, owned by Delta Farms and Louisiana Land & Exploration Co. that were currently in cultivation, be included inside the ring levee system (COE, 1984b). These two agricultural areas were not inside the original levee alignment and were not examined in the 1974 EIS (COE, 1984b). Additionally, approximately 2,079 ac of wetlands that would be impacted by the levee project were identified as being in the system had not been considered in the 1974 EIS (COE, 1984b).

Included in correspondence to the COE, dated January 9, 1976, the USFWS provided a recommendation, based on provisions in the Fish and Wildlife Coordination Act, to mitigate wetland impacts that would result from the new levee system as follows:

When consistent with the purposes of Sections 661 to 666 of this title and the reports and findings of the Secretary of the Interior, land, waters, and interests therein may be acquired by Federal construction agencies for the wildlife conservation and development purposes of

sections 661 to 666c of this title as reasonably needed to preserve and assure for the public benefit the wildlife potentials of the particular project area..."

It is therefore recommended that marshlands located adjacent to the nearby Pointe-au-Chien Wildlife Management Area (WMA) to be purchased in a quantity similar to that eliminated by the project, and transferred to the Louisiana Wild Life and Fisheries Commission for management. The location of these lands is shown on the attached map. We wish to point out that acquisition and development costs and annual operation and maintenance costs for mitigation purposes are properly charged as a project cost. We realize that this acquisition must be authorized by Congress following a specific request for such authority by your agency. However, we are confident that you will recognize the need to mitigate the substantial losses of valuable coastal wetlands and their attendant fish, wildlife, and related resources associated with this project.

The U. S. Environmental Protection Agency (EPA) approved the COE project, but conditioned the approval to include the development of an acceptable mitigation plan (COE, 1984b). Because of the need to evaluate the aforementioned items in the EIS process, the COE determined in the early 1980s that a supplemental EIS would be required.

In the early 1980s, the COE asked the SLLD to participate in the planning and cost sharing of a mitigation project that would mitigate the levee project. The SLLD passed two resolutions in 1982 and 1983, supportive of the seven-mile (also referred to as 6.5 miles in other documents) levee system at Pointe au Chien WMA and agreeing to the 70/30 cost sharing of same. Copies of the two resolutions are included as Exhibit 1ⁱⁱ.

Clearly, the COE contemplated and designed a mitigation plan to account for the complete conversion of all wetlands into non-wetlands within the various levee reaches and inside the protected area as documented by their inclusion of projected target dates in the timeline contained in the Draft Supplemental Environmental Impact Statement and Draft Mitigation Report (DSEIS), a singular document, issued in June, 1984 (COE, 1984a):

1975: beginning of project

1986: completion of first lift

1991: completion of drainage of wetlands inside the levee system (assume that pumping would begin after completion of first lift and continue for five years)

1996: completion of all three project lifts

2026: near complete loss of wooded swamp due to draining and clearing

2096: end of project life

By 1991, drainage of wet areas inside the levee system should be complete. At this time, all inclosed marsh and waterbodies would become pasture and residential/commercial. The inclosed forests would decrease at the rates previously described (COE, 1984a).

The DSEIS contains a description of the 4,600-ac mitigation plan that included the construction of a +6-ft levee along Grand Bayou and Cutoff Canal that was expected to settle to +4 ft. The project also included the construction of three fixed-crest weirs along the newly constructed levee. The weirs would hold a minimum water level within the triangular-shaped marsh unit and buffer saltwater intrusion while still allowing the ingress and egress of marine organisms. Additional lifts and continued maintenance would extend the functional life of the levee to 100 years. After making a number of assumptions and projections on the anticipated benefits of the mitigation plan, the USFWS states:

It has been concluded, then, that the proposed mitigation plan, if implemented simultaneously with renewed (levee) project construction, would in most respects adequately compensate for (levee) project-induced losses to fish and wildlife resources.

DSEIS, Coastal Zone Consistency, LDNR Time Extension Request

The Consistency Determination in the DSEIS, authored by the COE and included as Exhibit 2, states:

Based on this evaluation, the New Orleans District, US Army Corps of Engineers, has determined the implementation of the Larose to Golden Meadow Hurricane Protection Project is consistent, to the maximum extent practicable, with the State of Louisiana's approved Coastal Zone Program.

In correspondence to the Environmental Analysis Branch of the U. S. Army Corps of Engineers, New Orleans District, dated August 14, 1984, C. G. Groat asked for a 45-day period to review the DSEIS and Mitigation Report in regards to the Coastal Zone Consistency No. C19840312 (COE, 1984a) (Exhibit 3):

Because this project was never reviewed by this office due to its implementation prior to the inception of the Louisiana Coastal Resources Program (LCRP), and because the proposed mitigation plan will require further modifications, a proper evaluation of the consistency of this project with the LCRP within the initial 45 day review period is not possible.

LDNR'S consistency regulations in 1984 were based on Act 705 of the 1983 Louisiana Legislative Session which states:

Governmental bodies shall fully coordinate their activities directly affecting the coastal zone with the state program and affected approved local programs. When the (LDNR) secretary finds that governmental actions not subject to the coastal zone permitting program may significantly affect land and water resources within the coastal zone, he shall notify the secretary of the Department of Wildlife and Fisheries or his designee and the concerned governmental body carrying out the action. Any governmental body so unnotified* shall coordinate fully with the secretaries or their designees, acting jointly, at the earliest possible stage of the proposed action. The secretaries or their designees, shall make comments to such other agencies in order to assure that such actions are consistent with the state program and affected local programs. These*

comments shall, to the maximum extent practicable, be incorporated into the action commented upon.

**As it appears in the enrolled bill*

(NOTES: The LDNR's 1984 consistency response provides important information. The first comment is the earliest document, identified by CEI, which indicates when the LDNR initiated its review of the project that had been ongoing for more than a decade. Because the mitigation plan was in the process of being modified and was incomplete, as stated in the letter, there was not enough time for the LDNR to fully interpret and evaluate the plan. Instead of issuing a non-consistency determination or asking for a mitigation plan that provided more mitigation credits, the LDNR simply asked for more time to review the mitigation plan. The anticipated impacts associated with the hurricane protection levee improvements and mitigation project simply did not rise to the level that triggered the excerpted provisions in Act 705.)

The need for modifying the mitigation plan is stated by the COE in the Final Supplemental Environmental Impact Statement (FSEIS) (COE, 1984b):

On June 6, 1984, the Corps of Engineers was notified that two of the three weirs evaluated in the Draft Mitigation Report had been constructed. Because this was just prior to release of the DSEIS to the public, a decision was made to issue the document as originally designed with the knowledge that the mitigation plan would no longer fully compensate for project-induced losses. This because the benefits associated with the weirs can no longer be claimed.

A copy of correspondence in the FSEIS (1984b) to the COE from R. J. Hoogland, Chief, Environmental Assessment Branch, National Marine Fisheries, National Oceanic Atmospheric Administration (NOAA), dated August 21, 1984, provides additional information regarding the background and need for modification of the mitigation plan:

To compensate for wetland losses, a mitigation plan, part of which has been constructed by other entities, is presented both in the DSEIS (1984a) and the Mitigation Report. The mitigation would enhance 4,598 ac of the Point au Chien Wildlife WMA by reducing saltwater intrusion. The mitigation plan, coordinated with the LDWF and USFWS, was presented to the SLLD in September 1982 and adopted in July 1983. Implementation is tentatively scheduled for 1985. This delay in implementation while levee construction continued, resulted in the WMA constructing two proposed weirs as mitigation for some impacts of another project. Thus, we believe that the mitigation plan, which we had already considered inadequate, is now much more severely deficient in offsetting the loss of fishery production. We therefore urge that additional mitigation be developed for incorporation in the FSEIS and Supplemental Report and that the remainder of the existing mitigation plan be implemented as soon as possible. It is imperative that enhancement of existing marsh vegetation and reduction of saltwater intrusion, while maintaining adequate ingress and egress of marine organisms, be undertaken to offset current losses (from completed and ongoing levee construction) of habitat supportive of marine fishery resources.

Regarding areas of controversy with other federal and state agencies, the COE states in the FSEIS (1984b) that:

AREAS OF RESOLVED CONTROVERSY - The leveeing of wetlands caused concern to the USFWS, NMFS, and LDWF. The (alignment in Section A East was changed to drastically reduce the amount of wetlands (enclosed), and a plan to mitigate unavoidable wetland losses is being prepared and would be coordinated with the USFWS and LDWF. The South Lafourche Levee District adopted the concept of a mitigation plan and agreed on a 70/30 cost sharing basis.

UNRESOLVED ISSUES – There are no unresolved issues at this time. Concern has been expressed by the NMFS that a mitigation plan may not compensate for estuarine finfish and shellfish losses.

As they did in the DSEIS (1984a), the COE simply acknowledged that they understood the NMFS' stated position that the proposed mitigation plan was inadequate, without the COE changing their stated position. Unlike the NMFS, the LDNR did not express any concerns that the mitigation plan was either inadequate or required special conditions.

The process going forward was explained by the COE in the FSEIS (1984b):

To expedite public release of the FSEIS, a separate Mitigation Report will be prepared. Modifications to the mitigation plan discussed in the DEIS will be made in cooperation with LDWF and USFWS to insure that mitigation does fully compensate for project losses.

The NEPA process on the mitigation portion of the levee project culminated with the completion of the *Larose to Golden Meadow, LA Hurricane Protection Project, Mitigation Report* in 1987. The report's summary provides the essence of the work to date:

The (COE) proposes to mitigate for adverse fish and wildlife of impacts resulting from the construction of the (levee system) by assisting the State of Louisiana in the management of about 4,600 marshland acres within the publicly owned Pointe-au-Chien Wildlife Management Area. The proposed mitigation plan involves the construction of a levee and three water control structures (weirs) to improve habitat quality by retarding the movement of saltwater into a tract of existing public marshland north of Grand Bayou. The improved retention of fresh water within the leveed area would reduce marsh losses due to saltwater intrusion, and enhance the growth of quality emergent and submergent vegetation in the open-water areas. Fish and wildlife would, in turn, be benefitted by the favorable water levels, abundant food supply, and adequate nesting and nursery areas. Private lands north of the management area would also receive residual benefits.

A Habitat Evaluation Procedure (HEP) was used to assess the hurricane protection project impacts and mitigation requirements. This project would result in a net annual loss of about 83,000 habitat units. Eight alternative mitigation plans were evaluated, and the management of existing public lands alternative was selected. The selected plan would compensate for almost all of lost habitat units.

A draft mitigation report describing a similar recommendation was included in the draft SEIS for the Larose to Golden Meadow, LA, project which was circulated to interested parties in July of 1984. Because two of the three weirs described in the draft mitigation report were constructed as recommended by the LDWF prior to approval of the Corps' mitigation plan, and due to the immediate need to provide environmental compliance for ongoing hurricane protection work, this separate, revised mitigation report was necessary. The Environmental Assessment that accompanies this report examines the impacts of the revised mitigation plan. About 75 acres of marsh and 10 acres of open water would be degraded as a result of the levee construction proposed as part of this plan. This adverse impact would be more than offset by the monetary and nonmonetary benefits of the proposed mitigation plan.

The mitigation features, including first costs, operation and maintenance, and replacements, are cost-shared with the local assuring agency at the same 70-percent Federal / 30-percent non-Federal ratio as the project and at the same authorized 3-1/4-percent interest rate. Mitigation first costs are estimated to be \$2.9 million. The capitalized (present worth) value of annual maintenance and periodic replacements is approximately \$1.3 million and \$30,000, respectively.

1987 Mitigation Report, Coastal Zone Consistency

Included in Appendix C of the Mitigation Report is a copy of the consistency letter from C. G. Groat, Assistant to the Secretary of LDNR, to Colonel Eugene S. Witherspoon, District Engineer, COE, dated September 20, 1985, regarding the (C19840312) Larose to Golden Meadow Hurricane Protection Project and Mitigation of a Weir and Levee in Pointe au Chien WMA, Lafourche Parish, LA. The letter, a copy of which is included as Exhibit 4, states that the project

...has been found to be consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program (LCRP) as required in Section 307 (c)(1)(2) of the Coastal Zone Management Act of 1972, as amended.

(NOTE: Coastal Zone Consistency No. C19840312 approved the proposed Larose to Golden Meadow Hurricane Protection Project and Mitigation of a Weir and Levee in Pointe au Chien Wildlife Management Area, Lafourche Parish, LA, as written. The 1985 consistency determination did not state that the mitigation plan was inadequate nor did the LDNR issue an inconsistent finding. The determination did not include any conditional stipulations and/or requirements that would allow for additional and/or supplemental mitigation to be tacked on at a later date. Specifically, CEI is aware that the LDNR imposed a "conditionally consistent" determination regarding the Galveston District's Sabine-Neches River Waterway Channel Improvement Project in Texas and Cameron Parish (C20090697) (Exhibit 5). Based on the noted conditional consistency determination, we believe the LDNR has issued other such determinations and certainly could have then, if it had chosen.

Description of Final Mitigation Project

The most recent description of mitigation components that we could identify in a NEPA document is contained in the 1987 Mitigation Report as follows:

The selected mitigation alternative involves construction of an earthen-filled levee and a water-control structure (low-level weir), and future replacement of these facilities. In addition, the two recently constructed weirs on the Pointe-an-Chien WMA would be maintained, and replaced as

necessary. The proposed levee would be constructed along Cutoff Canal, Grand Bayou, and Grand Bayou Canal.

(NOTE: At some point in the late 1980s or early 1990s, the LDWF requested that the two fixed crest weirs, constructed as mitigation for an unrelated impact project, be replaced with two new sophisticated culverted stop log structures with flap gates (Curole per. comm. 2016b). It was also decided by the LDWF that the third weir would not be needed (Curole per. comm. 2016b). Drawings of the two water control structures that were built as part of the mitigation project are included in Exhibit 6.

COE Correspondence to the SLLD, dated August 17, 1989

Responding to an inquiry by the SLLD, the COE provides a summary of the agreed upon mitigation project at Point au Chien and summarizes its intent (Exhibit 7):

The plan fully mitigates for project induced damages as determined by the Habitat Evaluation Procedures.....(T)he (Larose to Golden Meadow) mitigation plan compensates for habitat losses to fish and wildlife resources due to both direct and indirect construction impacts. Direct construction impacts would be attributable to the removal of material from borrow pits and placement of the material on levee rights-o-way. Indirect impacts would be the result of the enhanced drainage provided within the levee system

LDNR Correspondence to the Lafourche Parish Council, dated February 16, 1990

Responding to an inquiry from the Lafourche Parish Council, Dr. Terry Howey, Director of the Coastal Management Division, in states in Exhibit 8:

After compiling and reviewing the record on this project, it has been determined that CMD had in fact granted consistency for the mitigation work (and also realignment of a portion of the levee which constituted impacts from the authorized alignment). Since the hurricane protection levee project was considered "grandfathered", it is CMD's view that this consistency determination (is) limited to the acceptability of mitigation work (and partial levee realignment) and does not pass judgment as to the adequacy of this mitigation to compensate for wetland loss resulting from the Hurricane Protection Levee.

This response would appear to indicate that the LDNR issued the consistency determination on the SLLD's levee and mitigation projects and, prompted by a single inquiry from local government, adopted a contrary opinion, casually dismissing the findings that the project was determined to be consistent with the LCRP. We strongly disagree that is how the LDNR issues a consistency determination. Once again, if the LDNR was concerned about the adequacy of the mitigation in 1985, Dr. Groat would have noted such in his consistency letter and included a conditioned/remedial course to address same and/or coordinated needed actions with agencies to correct any concerns related to the mitigation project or simply found the project to be inconsistent with the LCRP. Based on the conditioned consistency determination regarding the Sabine-Neches River Waterway, we have to believe that LDNR has issued a number of conditionally consistent determinations.

Five years later, to say that the mitigation work was acceptable in 1985, but did not pass judgment as being adequate in 1990, is arbitrary and capricious. This statement is likely the first documented

instance that supports the SLLD's position that their mid-1980s, NEPA-approved mitigation obligation had indeed been reinterpreted by LDNR personnel who were probably not familiar with the details of the protracted regulatory processing that the levee/mitigation projects required.

Continuing in the same correspondence, Dr. Howey explains:

It is our finding, after legal consultation, that until the construction of the hurricane protection levees are actually completed, and the exchange of water within the leveed areas with coastal waters is actually blocked, there is no basis for exempting activities within these areas from the permit review process.

The map, downloaded from the LDNR website and identified as Exhibit 9, indicates that the LDNR has designated almost all of the protected area inside the levee as fastlands. SLLD records indicate the two floodgates are closed at ever-increasing frequencies and durations (Exhibit 10). Even though the northern gate may be opened sparingly to accommodate navigation, the southern gate remains closed until the water levels recede. When closed, the entire protected area essentially becomes fastlands.

Lafourche Parish Coastal Zone Management Program

As with other approved local coastal zone management (CZM) programs in Louisiana, the Lafourche Parish CZM Program was reviewed and ultimately approved by the state and NOAA. Cornerstone requirements for all local CZM program plans include a body of general policies for a given parish's overall coastal management program and the development and use of environmental management units (E.M.U.) to more effectively manage specific and possibly diverse/unique habitats within the respective parish's coastal zone.

The area to be protected within the Larose to Golden Meadow Levee Protection project, designated as South Lafourche "A" in the Lafourche CZM Program, was described prior to the completion of the levee work. According to the program document:

South Lafourche "A" contains almost all of the population in the Lafourche Coastal Zone. It is protected from flooding by a series of small (parish) levees and the incompleting South Lafourche Levee and Floodgate system. Upon completion of the new levee system with its increased levee heights, floodgates, and a system of pumping stations, the area will be afforded significantly greater protection from storm flooding and will offer the only reasonably safe place to live within the Lafourche Coastal Zone.

Policy 1 of as South Lafourche "A" is even more specific:

The General Policies of the Lafourche Coastal Zone will not apply to this E.M.U. since the former wetland areas have already been drained and altered for human habitation.

Essentially, South Lafourche "A" Policy 1 dismissed the need for the general policies to manage wetlands within the E.M.U. because it was believed the plan was to support development inside the levee system. Conversely, all of the other environmental units were designed to inhibit urbanized development. Even though *all of the protected area within the SLLD system was never drained*, it was mitigated. Neither the LDNR nor NOAA asked the parish to correct this description which continues to remain erroneous through the current time – more than thirty years after the Lafourche CZM Program was approved. The policy was apparently lock-step with the aforementioned COE's projection of target dates for the levee

system. This information further supports that it was widely accepted during the 1980s that all of the wetlands on the protected side of the levee would, at some point, be used for development.

COE Regulatory Policy, Past and Current

The potential issue of the need for mitigation in future 404 permit actions was clearly contemplated in the 1987 Mitigation Report:

Because the proposed mitigation plan would compensate for both direct construction impacts and the induced impacts to wetlands within the hurricane protection system, the Corps would consider the mitigation provided by the plan in the overall evaluation in regard to mitigation needs related to future individual Section 404 permit actions.

The COE has not and currently does not require compensatory wetland mitigation for projects inside of the levee system. In correspondence addressed to the Lafourche Parish Council, dated May 11, 2000, Ron Ventola, former Chief of the Regulatory Functions Branch, explained that the COE's regulatory jurisdiction over wetlands and waters inside are the same as outside the hurricane protection system; however, noting that the only difference is that once a permit can be issued for an individual action, the COE will require no compensatory mitigation for wetland impacts. In the correspondence, Mr. Ventola further explains:

The COE mitigated for the direct impacts to wetlands caused through implementation of the hurricane protection levee and the associated secondary development of wetlands within the system. Since the loss of wetland functions has been mitigated, we will not require that they be mitigated a second time (Exhibit 11).

Martin Mayer, current Chief of the Regulatory Functions Branch, was contacted by telephone on June 21, 2016, and asked about the COE's regulatory authority inside the levee system. Mr. Mayer confirmed that the COE retains regulatory authority over wetlands and waters inside the system and explained the COE's policy has been that activities, requiring permits inside the system, are considered mitigated (per. comm. 2016). Mr. Mayer added that if a project would adversely affect tidal wetlands inside the levee system, the NMFS could request mitigation for loss of Essential Fish Habitat as provided in the Magnuson-Stephens Act. The COE would have to consider such a request (before making a permit decision).

Mitigation Project

The SLLD Board of Commissioners accepted the responsibility and agreed to cost-share funding to build 6.5 miles of levee and construct and maintain three weirs. Two of the weirs, built by others, were later replaced with more sophisticated water control structures consisting of culvert stop log structures with flap gates (Curole per. comm. 2016b). The SLLD has maintained the project through the current time with no actions or delays that were contrary to the spirit of its agreement with the COE. Specifically, damages to the flap gates on several occasions were repaired by the SLLD. In consultation with the LDWF, the SLLD later constructed a piling structure to protect the flap gates, avoid/reduce repairs and provide consistent control of the two water control structures (Curole per. comm. 2016b).

Discussions with LDWF personnel indicate the system (mitigation project) is a success in maintaining duck habitat and fisheries populations (Curole per. comm. 2016). The mitigation project has had other

positive impacts on the Point au Chien WMA with a major benefit being the protective buffer that has been provided to the adjacent expanse of unbroken marsh habitat to the north. Had the levee and two fixed weirs (later replaced with two flap-gated units) not been constructed, there is little doubt that marsh loss would have marched through the mitigation site well into the marsh to the north. The mitigation project continues to provide needed stability in an area that is in dire need of additional inputs of fresh water and sediment.

SLLD Conservation Efforts

Existing bottomland hardwood and cypress forests and comparable habitat elsewhere in the leveed system provide important habitat to deer, raccoons, squirrels, local and migratory avian species and other fauna. Decades later, these forests are in noticeably better health than adjacent forests outside of the levee. These protected forests could very well be the last stands of their representative types, which are located south of the Gulf Intracoastal Waterway (GIWW) in Lafourche Parish. While the levees may have effectively severed the forest and other habitat from the natural environment, these previously-mitigated habitats have and will continue to provide a number of environmental and wetland benefits.

Admittedly not contemplated, but certainly welcomed, the ever increasing frequency of closures of the two floodgates at +1.0 ft NGVD have set up significantly fresher conditions in Bayou Lafourche that have resulted in the restoration of giant cutgrass and elephant ear along the banks of the bayou as far south as Golden Meadow. In addition, a significant amount of submerged aquatic vegetation (SAV) has colonized on the shallow shelves that lie between the banks and deeper waters of the waterway. These very environmental conditions last existed in Bayou Lafourche some 50 years ago (Curole per. comm. 2016b). The significant increase in emergent and SAV have improved water quality and aesthetics of the bayou.

The SLLD utilized \$2.3M of Lafourche Parish funding through the Coastal Impact Assistance Program to build two marsh restoration projects, totaling +/- 100 acres, on the west side of the levee system as opposed to the initial project which was originally designed to include +/- 50 acres. Utilizing a shallower water alternative site with no containment levees for the northernmost project proved to not only be cost effective, but resulted in a protective apron of marsh that abuts the toe of the levee. The SLLD implemented a Lafourche Parish marsh restoration project, funded by the Mini Cara Program in 2002, that consisted of a strip of marsh that was constructed from dredge material that was pumped over the levee from the levee borrow canal located inside the protection system (Curole per. comm. 2016b).

Small wave attenuating projects, utilizing vegetative, structural and mechanical methods/technologies, are encouraged and have been tried, if thought to hold potential for providing cost-effective protection to portions of the 48-mile levee system that will become subjected to more and more open water conditions (Curole per. comm. 2016b). Additional information on the SLLD's approach to, and consideration of, environmental issues is included as Exhibit 12.

Discussion

As previously noted, approximately ninety percent of the wetlands contained inside the SLLD's protection system were previously impacted by the construction, operation and maintenance of the Police Jury's levee and forced drainage systems. This was happening before the passage of NEPA, the

Water Pollution Control Act and 20+ years before the COE initiated construction on the Golden Meadow to Larose Hurricane Protection Project.

The SLLD levee and mitigation projects were vetted through the NEPA process over a 15-year period by the COE, USFWS, NMFS, LDWF, other agencies and, with exception of NMFS' discontent with the mitigation plan, were agreed upon by the same agencies. The COE clearly intended for all of the wetlands impacted by the levee alignments and remaining inside the protected side of the Larose to Golden Meadow Hurricane Protection Project to be fully mitigated with the implementation of the proposed mitigation project at Pointe au Chien WMA. Unlike the requirements conditioned into a mitigation project during the 1990s through the present, the mitigation project that was agreed to in the mid-1980s did not include: (1) schedule of project milestones, (2) monitoring requirements, (3) provisions or special conditions that would address a partially successful or less than successful mitigation project or (4) a Plan B which could provide additional habitat units to supplant mitigation needs. Simply put, the COE, USFWS, LDNR, LDWF and other agencies approved the mitigation plan, as written. Through the Coastal Zone Consistency, dated September 20, 1985, the LDNR determined the levee and mitigation projects to be consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program.

The LDNR continues to question the adequacy of the mitigation project some 25 years after its implementation despite the fact that typical LDNR mitigation projects only require 20-year terms of service. Moreover, the SLLD will continue to meet its obligations by providing funding to maintain the levee and two water control structures well into the foreseeable future.

Closing

The SLLD is respectfully asking the LDNR to honor the Coastal Zone Consistency determination of 1985, as written.

The completed Larose to Golden Meadow Hurricane Protection System is the only populated area in the state, located south of the GIWW, which has not flooded from tropical weather events (Curle per. comm. 2016b). With continued loss of coastal marsh, subsidence, widening/deepening of open water bodies and the worst sea level rise predictions anywhere, the SLLD is challenged to provide long-term flood protection that the people and culture of South Lafourche deserve. A healthy Cajun environment is dependent on a healthy fish, shellfish and duck producing environment. Going forward, the SLLD needs the LDNR more in a partner than an obstructionist relationship, in its efforts of providing flood protection, public safety, economic stability/growth and environmental enhancement in a deteriorating coastal environment.

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