6 April 1976

MEMO OF MEETING

SUBJECT: Lake Pontchartrain, La., & Vicinity Hurricane Protection Project

DATE: 30 March 1976

ATTENDING: David P. Levy
Herbert O'Donnell
Col. Early J. Rush III
Fred Chatry
Stan Shelton

MEETING CONTENT:

Mr. Levy voiced, once again, many of the erroneous statements and conclusions that he has made in his many previous letters, such as:

a. Lake Pontchartrain does not pose a hurricane threat to New Orleans or the other surrounding areas.

b. The barrier complex will bring economic ruin to the areas surrounding the lake.

c. The barrier complexes will cause significant reductions in the tidal flow between Lake Pontchartrain and the Gulf.

d. The barrier complexes will cause a significant rise in the normal water level of the lake which will necessitate continuous lock operations.

e. Operation of the Bonnet Carre Spillway after the completion of the barrier complexes will cause significant flooding.

f. Removal of the restriction of the Southern Railroad bridge at Seabrook would eliminate the need for the Seabrook Complex.

g. The navigation structures should be larger to agree with existing bridge openings, etc.

h. The Corps did not properly consider alternatives to the barrier plan, specifically the high-level paln.

It was pointed out to Mr. Levy that the barrier plan is the authorized plan of hurricane protection and that in the absence of Congressional action to modify it, it is the only plan of protection that the Corps can implement. It was also explained that because of the serious loss of life risk to be considered in planning hurricane protection works for the metropolitan area, an SPH level of protection was chosen rather than some lesser degree of protection such as the 100-year storm.

Further, the existing as well as the project levees on the lakefront are and will be inadequate for SPH protection in the absence of the barrier complexes. On the matter of navigation structure sizes, it was pointed out once again that such structures are sized in consideration of existing and reasonably expected future navigation patterns and that this is the only logical, cost-effective means of sizing them. We reiterated our willingness to consider dimension increases on this basis.

CLARIFICATION OF ALTERNATIVE PLANS: This project was formulated during the years 1955-1962. Many alternate plans were considered informally as concepts; however, cost estimates were developed for only one--the high level plan. The high level plan called for raising the lakefront levees (the only ones affected by the barrier complexes) to higher elevations to afford SPH protection. This plan would also include the Seabrook Complex which would still be required for MR-GO mitigation though the assignment of cost for this feature is unclear. A copy of pages 57 thru 59 of House Document 231/89 which contains the brief discussion of alternatives is attached for reference. Although it is stated that the high level plan was estimated to cost approximately $100 million, record keeping at that time was not as extensive as now. For the purposes of the Save Our Wetlands, Inc. (SOWL) suit we are attempting to recover the original estimate. It dates from 1961-1962 and it has proven difficult to recover all parts and reassemble them into that estimate. The details have never been made available to Mr. Levy because of the effort required for a previously rejected alternative. Our public statements have cited the $100 million figure and a reference to its costing approximately 50 percent more than the barrier plan. The house document costs for the plan are: Barrier Plan - $64,703,000; Chalmette Area Plan - $15,143,000.

In 1972, at the request of LMVD, a reanalysis of the alternatives was made. New estimates for the high level plan were made and compared with the latest barrier plan estimates. The estimates for each plan included the south shore lakefront levees, the South Point to GIWW levee, and the Seabrook Complex. The barrier plan estimate, of course, additionally included the Rigolets and Chef Menteur Complexes. Those estimates were: High Level Plan - $175,578,000; Barrier Plan - $142,540,000. The estimates did not include the other project levees; however, those costs are readily retrievable. Both of these estimates were recently updated using ENR cost indexes and these updates were expressed in a letter to Doug Clifford, legislative assistant to State Representative Ed Booker, and in a response to an interrogatory in connection with the suit.

The high level plan is sometimes referred to as the partially responsive high level plan. The fully responsive high level plan would include some leveeing all around the lake in order to provide the same degree of protection to all areas as the barrier plan. This alternative was mentioned in the EIS, page V-2 of which is attached. The fully responsive high level plan is clearly unacceptable. Any reference that we make to the high level plan refers to the one described at the beginning of this section, although this is often confused by opponents who so desire.

on completion of the Gulf Outlet, tidal flows also will enter Lake Pontchartrain directly through the Inner Harbor Navigation Canal via the enlarged Gulf Outlet channel to Breton Sound and to the Gulf of Mexico without first passing through Lake Borgne. Thus, salinities in the lake will be increased significantly. Current velocities in the Inner Harbor Navigation Canal have increased notably as construction of the Gulf Outlet progresses with a corresponding increase in navigation difficulties and the creation of major scour problems along existing bridges and harbor developments. The restricted section through the Seabrook Bridge has enlarged greatly since the initiation of construction of the Gulf Outlet. These conditions will worsen as the channel approaches completion.

c. Protective measures considered.

(1) General. Preliminary studies indicated that the extensive marsh, swamp areas, and water bottoms experience a minor degree of damage from hurricane tides and that protective works are impracticable and uneconomical. Hence, detailed studies were not made of these areas. These preliminary studies revealed that justification could be established for the highly developed and inhabited portions of the study area on the north and south shores of Lake Pontchartrain and in the vicinity of Chalmette, and that solution of the problems created by the Mississippi River-Gulf Outlet was required.

(2) Protective structures.

(a) The problems of excessive current velocity and scour in the Inner Harbor Navigation Canal and increased salt water intrusion into Lake Pontchartrain caused by the Mississippi River-Gulf Outlet can be solved only by construction of a lock in the system which can also be utilized to regulate salinity intrusion. The logical site for such a structure is at the Lake Pontchartrain end of the Inner Harbor Navigation Canal at Seabrook. This structure, if raised to the required height, will also serve as an essential part of the barrier plan by preventing the entry of hurricane surges from the lake through the Gulf Outlet.

(b) Protection plans for the areas bordering Lake Pontchartrain were of two types. One plan, the high level plan, contemplated raising, strengthening, and extending the existing protective systems to meet design hurricane requirements. The other plan, the barrier-low level plan, involved the control of hurricane stages in Lake Pontchartrain by construction of a barrier along the east shore of the lake together with a lesser modification of protective works fronting the lake. Protective systems facing Lake Borgne, including the levees along the Inner Harbor Navigation Canal, the Gulf Intracoastal Waterway, and the Gulf Outlet were high level, being unaffected by the barrier. The high level plan, estimated to cost approximately $100 million, was determined to be much more costly than the barrier-low level plan and to require a much longer construction period in view of the

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required height of levees and poor foundation conditions. Therefore, detail study was limited to the barrier-low level plan.

(c) An offshore breakwater was considered for the New Orleans reach to alleviate the erosion problem behind the New Orleans seawall. It was found that such a structure, while effectively reducing wave action at the seawall, would not prevent overtopping of the seawall and its appurtenant back levee by major hurricane tides. In the meantime, local interests have repaired the erosion damage in such a manner as to prevent its recurrence, and they now consider that erosion is no longer a major problem and that such a breakwater is unnecessary and undesirable. A letter expressing the views of the Board of Levee Commissioners of the Orleans Levee District is presented in appendix G.

(d) Several plans were studied for the Chalmette area. One contemplated the enlargement of the existing Chalmette back levee. Another envisioned construction of the hurricane protective system along the south bank of the Gulf Outlet, extending from the Inner Harbor Navigation Canal to Bayou Dupre with gravity drainage structures in Bayou Bienvenue and Bayou Dupre. The existing Chalmette back levee and drainage system would remain in effect. An intermediate plan, extending the expanded protective system only to Paris Road, was also studied. The Gulf Outlet levee system protecting the maximum area was found to be most practicable. Its cost was essentially no higher than the lesser protective systems and it offered substantial additional benefits for the future.

(e) Replacement of the existing seawall at Mandeville by a new wall along the present alignment or offshore was found to be excessive in cost. The wall alone would cost about $850,000. It was found that strengthening the existing wall in conjunction with the Lake Pontchartrain barrier would provide adequate hurricane protection. The addition of a levee landward of the wall to increase the height of protection was not justified.

(f) The provision of an offshore seawall for Citrus in lieu of the levee at this location also was investigated, but excessive construction costs precluded detail study of this proposal.

(g) The erosion problem along unprotected reaches of the north shore of Lake Pontchartrain was found to be primarily one of beach erosion control which can be studied under other existing legislation and which is not within the purview of the hurricane study authority, hence a detailed study was not made. Erosion control studies of these reaches will require appropriate resolution from the Public Works Committee of either the U. S. House of Representatives or Senate as provided by Section 110 of Public Law 87-874. This Act provides for surveys of coastal areas of the United States in the interest of beach erosion control, hurricane protection, and related purposes.

(h) Local interests requested that the barrier levee be located along the Gulf Intracoastal Waterway from the existing levee to and across Chef Menteur Pass, in order to protect a larger

area of land from Lake Borgne stages. Construction of a closure dam together with a combined control structure and navigation gate in the pass between the railroad bridge and the Gulf Intracoastal Waterway presents a number of unusual and complex problems, of seepage, settlement, and structural stability under design conditions. In addition, the navigation gate could not be converted to a lock if later found necessary. Accordingly, a detail study was not made.

(3) Hurricane warning and flood evacuation measures.

(a) Experience in recent past hurricanes along the Louisiana coast indicates that inhabitants of the low areas are not fully responsive to the adequate and timely hurricane warnings of the U. S. Weather Bureau. Some leave promptly, some prefer to remain, and others elect to evacuate after such action is no longer feasible. This last group creates the major problem and usually suffers greatest mortality. Action is necessary at the local or state level to implement the warnings and coordinate timely evacuation while such action is still feasible. The populace of the vulnerable communities must be made fully cognizant of advance hurricane preparedness planning, and advised of the inherent danger of indecision after evacuation warnings have been issued. Local authorities should be informed of the potential hurricane stages along the coastline and the estimated time of arrival, thereby helping to determine the approximate number of hours left before roads become flooded.

(b) Highways traversing the unprotected portions of the problem area adjacent to the east bank of the Mississippi River and the shores of Lake Pontchartrain serve as evacuation routes for the populace prior to the time of occurrence of maximum hurricane tides. These highways have minimum elevations ranging from 4 to 6 feet, and the majority are located some distance inland from open waters. Ample time is available for safe and orderly evacuation to protected areas should the populace of low-lying unprotected areas heed warnings of the authorities.

(4) Zoning regulations and building codes. Public buildings in unprotected areas including schools, churches, auditoriums, and gymnasiums should be designed with upper floor elevations above the height of hurricane surges, and of adequate structural stability to withstand wind and wave forces to be anticipated. Building codes should require sturdy structures in places where buildings and homes are subject to destruction by hurricane surges, and zoning regulations should restrict construction in critical flood areas. Provisions for the future construction of havens of refuge are dependent upon the enactment of legislation by state and local authorities prescribing zoning regulations and building codes.

transiting the open lock. Seagoing traffic in the MR-GO would be interrupted during periods when the barrier was closed. The plan would alter a 8,100-acre tract of prime estuarine marsh located between the western shore of Lake Borgne and the intersection of the MR-GO and the GIWW. Because of its severe impact on navigation, the plan would produce little incremental economic benefit over the proposed action, while the additional costs involved would be substantial - about four times as great as the additional benefits. Beyond this, the plan would have negated any credit to local interests for the substantial expenses incurred by them in improving existing levee systems along the IHNC, MR-GO, and GIWW.

(2) Eliminate the Lake Pontchartrain barrier and modify the levee system to retain the same extent and degree of protection provided by the proposed action. Under this plan, the barrier system would not be constructed and Lake Pontchartrain would remain open to the ingress of tidal surges. The grades of the levees included in the proposed action would be increased and new levee systems along the shores of Lake Pontchartrain would be included to provide protection to unleveed areas equivalent to that which they would receive from the reduction in hurricane stages in Lake Pontchartrain which the barrier would produce. Such a plan would cost on the order of three times as much as the proposed plan without any increase in economic benefits. The environmental disruption attendant to providing the additional levee systems along the shores of Lake Pontchartrain would be of major proportions.

b. Lake Pontchartrain Barrier Plan partially responsive alternatives. The following partial alternatives are available:

(1) High levee plan. Under this plan, the barrier would be eliminated and the grades of the levees included in the proposed plan raised sufficiently to accommodate the higher surge heights in Lake Pontchartrain which would result therefrom. Because of the extreme height of levees required and generally adverse foundation conditions, construction would have to be extended over a very long period of time to prevent failure by excessive subsidence. The high-level plan would be more costly than the recommended barrier plan and, in addition, was strongly opposed by local interests due to esthetic reasons. In addition, the proposed plan would lower the flood stages for all areas around the lake, thus providing some protection to many unleveed areas around the lakeshore.