DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CECW-EP (1105-2-10c) 21 August 1989

MEMORANDUM FOR COMMANDER, LOWER MISSISSIPPI VALLEY DIVISION
ATTN: CELMV-ED-PG

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, High Level Plan, Design Memorandum No. 18 - General Design, St. Charles Parish, North of Airline Highway.

1. Reference memorandum CELMN-ED-SP, 8 February 1989, subject as above and CELMV-ED-PG 1st endorsement 9 May 1989, thereon.

2. The following comments on the subject design memorandum (Volume I) are furnished for appropriate action.

3. OPERATION AND MAINTENANCE.

a. RESPONSIBILITIES BETWEEN LIFTS. The report identifies a 20-year construction period during which four levee lifts would be completed. Construction activities for these lifts, or phases, are separated by periods ranging from 2 years between the first and second lifts to 7 years between the third and fourth lifts. The operation and maintenance activities and responsibilities between these construction phases should be clearly specified.

b. COMPLETION OF CONSTRUCTION. Paragraph A-8.e., page A-32, notes that by the year 2040 continuation of sea level rise and subsidence may necessitate a wave berm and additional levee height to maintain the initial level of protection. Maintenance after construction, including any desired restoration of design elevations, is a local responsibility.

4. PUMP VERSUS GRAVITY DRAINAGE.

a. The St. Charles Parish Council has expressed a desire to construct several pumping stations in addition to the gravity drainage structures which are now proposed. Credits as work-in-kind may be given to the local sponsor if the pumping stations reduce the required capacity of one or more of the gravity drainage structures.

b. IMPACTS. Since some pump stations will probably be included in the final design and actual construction of the project by the Corps of Engineers, it would be advisable to describe the environmental effects of the construction and operation of the pump stations in the environmental assessment (EA).

5. RECREATION ACCESS. Access to Cross Bayou Canal is proposed via a $120,000 shell road across Airline Highway borrow ditch and the levee. This feature is designed to restore access to that canal and other waterways severed by the levee. This feature is a non-Federal responsibility under LERRDs. Also, the cost of this feature should be included in project cost estimates.

6. OIL AND GAS WASTE PITS. If the cleanup of the oil and gas waste pits is not accomplished as indicated in the DM, a provision should be introduced into the local cooperation agreement assigning responsibility for performance of the work to the local sponsor. If the state regulation referenced in the DM is of a general nature, affecting abandoned oil and gas operations, with or without the project, the cost of cleanup would not appear as a project cost and would be borne in its entirety by others. If, on the other hand, the regulation is specific to the St. Charles Levee right-of-way, the costs should be treated as project costs.

7. BAYOU TREPAGNIER. There is a discrepancy in the report and EA concerning the nature of Shell Oil Company's responsibilities relative to polluted bottom sediments in Bayou Trepagnier. The 30 January 1989 letter from Shell notes that the State's "Remedial Demand Order" (11 January 1989) merely requires an investigation of the problem and an evaluation of remedial measures if deemed necessary. The report and EA state that the company is under orders to engage in actual cleanup. This difference in views on the requirements of the State's order should be clarified.

8. PONDING AND INUNDATION AREAS.

a. MAPPING. Inundation limits and inundation depth-durations from interior (including wave splashover) and/or exterior flooding, with and without the project, should be documented if inundation stages have changed since the July 1984 reevaluation study. (See ER 1110-2-1150, Appendix A, paragraph 7, "Hydrology and Hydraulics".)

b. LERRDS (paragraph 54, page 36). LERRDs should include any fee simple acquisition or easements needed to assure that ponding areas are preserved, function as design, and are not encroached upon (see local cooperation item h, page 7). Costs of acquisitions or easements should be included in the economic analysis.

c. PLATES 2-10. Ponding areas should be marked on plates 2-10. "Flood Side" and "Protected Side" labels are reversed on plate 6.

9. LEVEE ALIGNMENT.

a. SHELL OIL. As explained on page 21, a potential exists for change in levee alignment depending on issuance of a DA permit to Shell Oil Company for expansion of its operations into an adjacent wetland area. Since the EA does not discuss the impacts of this potential change in alignment, it may be necessary to develop and coordinate a separate NEPA document if Shell's expansion becomes reality.

b. LEVEE CENTERLINE. Habitat impacts of the levee alignment should discuss development, project-induced or otherwise, expected between Airline Highway and the levee right-of-way.

10. ECONOMIC UPDATE.

a. UPDATE. Line item benefits and the price indices used to update the benefits from the reevaluation study need to be added under paragraph 54, "Economic Justification".

b. CHANGED CONDITIONS. The GDM should provide either (1) a statement noting that there are no significant changes in the study area affecting the benefits estimated in the July 1984 reevaluation study, or (2) a discussion of how changed conditions affect the currently estimated benefits.

11. WAVES AND FREEBOARD (page A-32).

a. In order not to give the appearance of arbitrarily adding 2 feet of freeboard to the structure, the design rational and computations for establishing the freeboard should be presented or referenced. Specific areas to address are (1) wave setup and runup, (2) estimates of compaction or subsidence, (3) uncertainties in surge, wave, and settlement assumptions, or (4) tradeoffs between volume of wave splashover, interior ponding requirements, residual damages from wave splashover, freeboard height, embankment slope, and embankment roughness, (5) a combination of the preceding. The possible need for a waver berm and raising the levee 1 foot by the year 2040 suggest that most, if not all, of the 2 feet is for wave runup.

b. To insure that the wave berm and levee raising work is included in the project and not treated as future design deficiency, designs, costs and responsibilities discussed in paragraph 4.a., above should be included.

12. LEVEE HEIGHTS (page A-33).

a. Recommend that the last sentence be changed to read "...design levee heights, computed by adding (insert corrected number established by preceding paragraph) feet of wave runup to the stage at the levee alignment.

b. Discussion of the future need for raising the levee should also be added to this paragraph.

13. OTHER. Formal notification of recipients of the EA/FONSI to clarify the EA scope, as suggested in the division comment 2.p. should not be necessary. The document already identifies the scope. The comments of US Fish and Wildlife Service and National Marine Fisheries Service on the overall project do not detract from the document's substantive or procedural adequacy. At most, informal contact appears appropriate.

Edward C. Pritchett
for JOHN A. McPHERSON
Acting Chief, Engineering Division
Directorate of Civil Works