

LMVED-PR

29 November 1966

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification of the Chalmette Area Plan to Include Larger Area

TO: Acting Division Engineer, Lower Mississippi Valley
ATTN: LMVED-TD and LMVPD-F

1. Reference is made to the following:
 - a. Flood Control Act of 1965 authorizing subject project.
 - b. Project document for subject project (H.Doc. 231/89th Congress).
 - c. Design Memorandum No. 3, General Design for Lake Pontchartrain, La. and Vicinity, Chalmette Area Plan, submitted 1 November 1966.
 - d. Flood Control Act of 1962 authorizing hurricane protection for the Mississippi River Delta Area at and below New Orleans, Louisiana, and Reach E, Violet to Verret, in particular.
 - e. Project document for Mississippi River Delta at and below New Orleans, La. (New Orleans to Venice, La.) (H.Doc. 550/87th Congress).
 - f. Resolution adopted 8 May 1964 by the House Public Works Committee authorizing a restudy of hurricane protection in St. Bernard Parish.
 - g. Paragraph 2 of 1st Ind file LMVED-PR dated 25 February 1966 to NOD letter of 21 February 1966 subject "Review of St. Bernard Parish, Louisiana - Plan of Survey."
1505-34 (Hurricane) Middle, St. Bernard
 - h. Paragraph 9.b. of ER 1110-2-1150 dated 1 July 1966.

2. Hurricane protection for the Chalmette area was authorized as an item of the "Lake Pontchartrain, Louisiana and Vicinity," project by the Flood Control Act of 1965 (page 5 of PL 89-298) "...substantially in accordance with the recommendations of the Chief of Engineers in House Document Numbered 231, Eighty-Ninth Congress, except that the recommendations of the Secretary of the Army in that document shall apply with respect to the Seabrook Lock feature of the project...."

1505-34 (Hurricane) (Lake Pontchartrain)

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3. The recommendations of the Board as stated in paragraph 4 of the report are as follows:

"Subject to re-examination of the levee alignment in the preconstruction stage with a view to protecting additional lands, and to certain requirements of local cooperation, the Board recommends authorization for construction of the improvements, essentially as planned by the reporting officers, provided...."

The Chief of Engineers concurred in the recommendations of the Board subject to certain modifications pertaining to the Rigolets lock as a result of a change in the interest rates.

4. The present plan of improvement for the Chalmette area is shown in Design Memorandum No. 3, General Design (reference l.c.). This plan, also shown on the attached map, provides for protection of the Chalmette area against a standard project hurricane (described in paragraph 14 of the DM) having an estimated frequency of about once in 200 years.

5. Protection for the Reach E area, Violet to Verret, against a hurricane having a frequency of about once in 100 years was authorized as a feature of the project "New Orleans to Venice, La.," by the Flood Control Act of 1962. The plan of improvement provided for raising existing back levees from the Mississippi River at Violet to the highway at Verret (see attached map).

6. St. Bernard Parish interests were dissatisfied with this plan and secured authorization for a restudy (reference l.f.) which was initiated in FY 1966 and is being continued in FY 1967. At the public hearing in Chalmette on 15 December 1965, the Parish Police Jury, State of Louisiana, Department of Public Works, and others requested hurricane protection for a much larger area in St. Bernard Parish including the settlements of Caernarvon, Reggio, Delacroix, Yscloskey, and Hopedale. The locations of the levees proposed by the sponsors at the public hearing are shown on the attached map.

7. After preliminary examination of the requested levee alignment, previous studies, and damages caused by hurricane "Betsy" (9 September 1965), it was deemed advisable to move the levee about halfway between the requested location and the highway from Poydras to Verret because of better levee construction conditions (Reach A-B on the inclosed map). The area thus deleted from the proposed protected area is entirely undeveloped marsh in which only minor enhancement benefits would be

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obtained from hurricane protection. It was also deemed advisable to consider the initial plan as protection for the Poydras to Verret area which, if added to the Chalmette area, would eliminate the need for the return levee between the Mississippi River-Gulf Outlet spoil bank and the Mississippi River levee at Violet, a very expensive section of levee to construct and maintain (see reference l.c.). The remainder of the requested levees would be considered as increments thereto. The plan of survey recommending this approach was submitted 21 February 1966 and approved 25 February 1966 (see reference l.g.).

8. Initial studies of the additional protection requested for St. Bernard Parish have been essentially completed. Maximum utilization has been made of the data developed during preparation of the design memorandum for the Chalmette area. The levee sections and estimated construction requirements and unit prices for comparable areas in the Chalmette plan have been used for cost estimates. Hydraulic studies have been made to estimate levee grades. Field reconnaissance and hydraulic studies have been made for benefit estimates.

9. The net levee grade for the Chalmette area plan levee along the spoil banks of the Mississippi River-Gulf Outlet gulfward of Paris Road is 17.5 feet m.s.l. (plates 10 through 15 of design memorandum, reference l.c.). Hydraulic studies have been made and levee grades established for the additional area under study as follows: along the entire spoil bank, 17.5 feet m.s.l.; Caernarvon to the highway at Verret, 16.5 feet; Verret to spoil bank, 17.5 feet; and Verret to Reggio, and thence along Bayou LaLoutre to the Mississippi River-Gulf Outlet spoil bank, 17.0 feet. Levees to these grades would provide the same degree of protection for the entire area as that under the existing Chalmette area plan.

10. The estimated cost of modifying the Chalmette area plan to include the settlements of Caernarvon, Poydras, and Verret (by levees A, B, C, D) in the protected area is as shown below. A detailed estimate of the costs is inclosed.

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<u>Item</u>	<u>Estimated cost</u>
Levee construction	\$ 9,548,500
Foreshore protection along MR-GO	703,000
Drainage structure	146,000
Relocations	
Highway crossings(2)	93,800
Pipelines(7)	295,000
Subtotal	<u>\$10,786,300</u>
Contingencies (20%+)	2,157,700
Subtotal	<u>\$12,944,000</u>
Engineering and design	776,000
Supervision and administration	<u>1,099,000</u>
 Total construction cost	 \$14,819,000
 Rights-of-way	 537,000
 Total estimated cost of additional levees	 \$15,356,000(1)
Less levee from Bayou Lawler (Point D) to Violet made unnecessary	 <u>7,212,000(2)</u>
 Total increased cost for additional protection	 \$ 8,144,000(1)

(1) Includes \$966,000 for foreshore protection along Mississippi River-Gulf Outlet, Reach C-D on the inclosed map.

(2) Section IV, pages 52-53 of D.M. reference l.c.

11. The estimated annual charges based on the increased costs in the preceding paragraph, a 100-year life, and an interest rate of 3-1/8% are:

<u>Item</u>	<u>Amount</u>
Interest	\$255,000
Amortization	12,000
Maintenance and operation	
16 miles levee @ \$5,000/mile	80,000
Less: maintenance levee--Bayou Lawler to Violet(par. 65 D.M. ref. 1)	<u>42,000</u>
 Increased levee maintenance	 <u>38,000</u>
 Increased annual charges	 \$305,000

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12. The benefits from the additional protection are estimated at \$359,200 average annually, consisting of \$13,100 crop, \$178,600 non-crop, and \$167,500 land enhancement. A detailed computation of the benefits is inclosed.

13. Based on annual charges in paragraph 11 and annual benefits in paragraph 12, the benefit-cost ratio for the protection of the additional area is 1.2.

14. Consideration was given to extending the protection eastward and southward of Verret generally as requested by the local sponsors and shown on the attached map. However, these studies indicate protection for a larger area cannot be justified in the foreseeable future. The length of levee required would be relatively large in relation to the levee eliminated and the increased area protected. The area is sparsely inhabited and the improvements are of low value. Reconnaissance scope studies show that the estimated incremental first costs and annual charges for extending the hurricane protection from the Poydras-Verret area to include Yscloskey (excludes Hopedale and Delacroix), generally as shown on the inclosed map (levees B, E, F, I, C), are \$18,000,000 and \$670,000, respectively. The estimated incremental first costs and annual charges for extending the hurricane protection from Verret to Hopedale (levees F, G, H, I) are \$28,000,000 and \$1,000,000, respectively. The average annual benefits for extending the hurricane protection from Verret to Hopedale are only \$195,000 (exclusive of Delacroix) (\$5,000 crop, \$140,000 non-crop, and \$50,000 land enhancement). In view of the very small benefit-cost ratio for the area from Verret to Yscloskey (less than 0.2), no studies were made of the levees along Bayou Terre aux Boeufs to include Delacroix in the protected area.

15. A survey of the highway from Poydras to Verret shows the controlling elevation to be about 5 feet mean sea level. Over two miles of the highway have a controlling elevation of less than 6.0 feet m.s.l. Hurricane "Betsy" produced stillwater elevations in excess of 10.0 feet m.s.l. in the Poydras-Verret-Hopedale area. The protection to be provided under the authorized project "Reach E" is obviously inadequate for a residential area. In recognition of this, the State of Louisiana, Department of Public Works, at the request of the Board of Commissioners of the Lake Borgne Levee District, has recently (about 1 November 1966) initiated the construction of a small levee to elevation 10.0 feet m.s.l. (by dragline) from Caernarvon to Verret generally along the alignment proposed herein and shown on the attached map. The alignment and levee section have been examined in this office. The work being accomplished, unless enlarged and raised, will soon settle

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until it would provide only a small amount of additional protection. However, it will be of substantial value in expediting the construction of the levee to the full grade and section recommended herein. Local interests should be given credit for the work accomplished on their Caernarvon to Verret levee.

16. It is recommended that the presently approved plan of hurricane protection for the Chalmette area contained in the general design memorandum (reference l.c.) be modified under the authority quoted in paragraphs 2 and 3 to provide for the construction of the levee from Caernarvon via Verret and the Mississippi River-Gulf Outlet spoil bank to the approved plan levee at Bayou Lawler (Point D) generally along the alignment shown on the attached map and for the elimination of the levee in the approved plan from Bayou Lawler to Violet (Section IV in reference l.c.). This modification will increase the total estimated cost of the Chalmette area plan from \$29,552,200 to \$37,697,000, which includes \$4,337,400 for foreshore protection along the Mississippi River-Gulf Outlet (an increase of \$966,000). The estimated Federal cost will be increased from \$21,697,952 to \$27,689,000 and the estimated non-Federal cost from \$7,854,236 to \$10,008,000.

17. It is further recommended that, when the modification in the authorized plan is approved, this District be authorized to proceed with work necessary to prepare a supplement to the general design memorandum for the Chalmette area (reference l.c.) on the modified plan.

- 4 Incl (quint)
1. Map
 2. Cost est.
 3. Benefit est.
 4. Apportionment of costs

THOMAS J. BOWEN
Colonel, CE
District Engineer

J. M. Dement
Dement /aw/242

EMW-70 (308 10 Nov 66) 1st Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification of
the Chalmette Area Plan to Include Larger Area

PA, Lower Miss. Valley Div, CE, Vicksburg, Miss. 39180 13 Dec 66

TO: Chief of Engineers, ATTN: EMW-7/EMCC-2

W. B. Best
Best

1. The recommendations of the District Engineer in paras 16 and 17 of basic communication are concurred in, subject to the comments below. General Design Memorandum No. 3 (reference 1c) was forwarded to MCE by our 1st Ind, EMW-70, dated 1 Dec 66, or PD letter, dated 1 Nov 66, subject: Lake Pontchartrain, La. and Vicinity, General Design Memorandum No. 3, Chalmette Area Plan.

R. Kaufman
Kaufman

W. J. Williams
Williams

2. Para 11, basic letter. In connection with studies being made in response to referenced resolution, present indications are that the part of the area lower Vevrer will probably have a very low L/C ratio.

B. Peg
Peg

3. Para 11, basic letter. The estimate of \$27,552,200 is that shown in General Design Memorandum No. 3 and has not been approved in a Project Cost Estimate (PE-1). The estimate of \$57,037,000 should be designated as approximate in view of the comment in para 5 below.

Bus
Bus

4. Incl 1. a. Location of drainage structure should be shown.

G. B. Davi
G.B. Davi

b. Upon approval of enlarged Chalmette Area, consideration should be given to locating the east-east portion of levee A-B approximately 2,000 feet north of the recommended alignment in order to provide a slightly better foundation and to place the levee on somewhat higher ground.

A. J. Davi
A. J. Davi

5. Incl 2. It should be noted that levee fill volumes and costs are based on data furnished in General Design Memorandum No. 3. As pointed out in para 5 of our 1st Ind dated 1 Dec 66, cited in para 1 above, the data and analyses presented in the GDM are not completely adequate to permit the levee to be constructed in relation to final grade without additional studies. As a result, at this time we do not actually know the volume of levee fill required to construct the levee to an ultimate grade which takes account of future settlement and displacement. Thus, the cost estimate for the levee is based on the best information available at this time.

6. Incl 4. Upon approval of the modified plan, local interests should be apprised of the plan including the increase in required

19918-ED (100 22 Nov 66) 1st Ind 13 Dec 66
SUBJECT: Lake Ponchartrain, Louisiana and Vicinity - Modification of
the Chalmette Area Plan to Include Larger Area

non-Federal contribution and their views discussed in the proposed
supplement to the general design memorandum.

FOR THE DIVISION ENGINEER:

4 Incl (quad)
and 1 copy

A. J. DAVIS
Chief, Engineering Division

Copy furnished:
NOD, ATTN: LEGED-PR

ENGCCW-EZ

2nd Ind

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification of
the Chalmette Area Plan to Include Larger Area

Da, CofEngrs, Washington, D.C. 20315, 31 January 1967

TO: Division Engineer, Lower Mississippi Valley Division

1. References:

a. 2nd Indorsement, ENGCCW-EZ, 27 October 1966, on letter LMED-PP, 18 August 1966, subject: "Lake Pontchartrain, Louisiana and Vicinity, Design Memorandum No. 1, Hydrology and Hydraulic Analysis, Part I - Chalmette."

b. 2nd Indorsement, ENGCCW-EZ, 31 January 1967 on letter LMED-PP, 1 November 1966, subject: "Lake Pontchartrain, Louisiana and Vicinity, General Design Memorandum No. 3, Chalmette Area Plan."

2. The modification recommended by the District Engineer in paragraph 16 of the basic letter is approved subject to the comments of the Division Engineer, the comments in OCE 2nd indorsement referenced in paragraph 1a above, and the following additional comment.

3. Since the modification involves a significant increase in the project cost, the Appropriations Committees of Congress will have to be notified by this office. For this purpose the views of local interests on the plan and the increase in the non-Federal contribution is necessary. It is requested that the modification be discussed with local interests and this office be advised of the results thereof.

4. Cost for Reach E, shown in orange on Inclosure No. 1, should be stated in the supplement mentioned below, since the levee ABCD will replace this authorized levee as well as that shown in green.

5. Preparation of the supplement recommended in paragraph 17 of the basic letter is approved.

FOR THE CHIEF OF ENGINEERS:

wd incl

DANIEL D. HALL
Major, Corps of Engineers
Assistant Director of Civil Works
for Mississippi Valley

1505-24 (afternoon) (Pontchartrain file)

WDM
Dement/Ammon/ml/24

LMVED-TD (NOV 29 Nov 66) 3d Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification
of the Chalmette Area Plan to Include Larger Area

DA, Lower Miss. Valley Div, CE, Vicksburg, Miss. 39150 9 Feb 67

TO: District Engineer, New Orleans District, ATTN: LMVED-PR

1. Referred to note approval, subject to comments of 1st and 2d Indorsements.

2. Early action should be taken in regard to para 3, 2d Ind so that OCE may be furnished required information prior to impending Appropriations Hearings. In addition to a statement setting forth the views of local interests on the proposed modification and the increase in local costs, the submittal should clearly show that the modification of the Chalmette Area levee plan will obviate the need for the "Reach L" feature of the New Orleans to Venice hurricane protection project at a saving of \$ _____ to that project. Furthermore, the modified levee plan will eliminate the Bayou Lawler to Violet segment of the Chalmette Area as now planned at a saving of \$ _____. This proposed addition to the Chalmette Area will provide protection to all areas in St. Bernard Parish that can be economically justified at this time.

FOR THE DIVISION ENGINEER:

for GSD
A. J. DAVIS
Chief, Engineering Division

WFB
Best

WFB
Williams

RJK
Kaufman

P
Pegg

WFB
Boydell

Bush

WDM
Torrey

GSD
G.B. Davis

Out-RB
A.J. Davis

LMVED-PP (NOD 29 Nov 66) 4th Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification
of the Chalmette Area Plan to Include Larger Area

DA, New Orleans District, CE, New Orleans, La. 70160 23 Feb 67

TO: Division Engineer, Lower Miss. Valley, CE, ATTN: LMVED-TD

1. In accordance with paragraph 3 of the 2d Indorsement, the State of Louisiana, Department of Public Works, which was designated by the Governor of Louisiana on 2 November 1965 as "...the agency to coordinate the efforts of local interests and to see that the local commitments are carried out promptly....," was requested to comment on the acceptability of the subject modification to local interests and their willingness to provide an additional local contribution therefor of approximately \$2,150,000, inclusive of the value of lands, damages, relocations, and a cash contribution (or equivalent work) amounting to \$1,080,000. A copy of our telegraphic request is inclosed.

2. By letter dated 13 February 1967, the Department of Public Works concurred in the modification and gave assurance that "...the requirements made of local interests will be carried out by the appropriate local governmental units." A copy of this response is inclosed.

3. The modified Chalmette Area Plan will extend hurricane protection to all areas in St. Bernard Parish for which such protection can be economically justified at this time. Since the entire Reach "E" feature of the "New Orleans to Venice, La.," project is located within the protected area of the modified Chalmette Area Plan, construction of this plan will, in addition to producing other benefits, generate all of the benefits realizable through construction of the Reach "E" feature, thus obviating the need for construction of the feature at a saving of \$1,316,000 (\$921,900 Federal, \$394,100 non-Federal, based on PE-3 approved 2 June 1966). In addition, the return levee along Bayou Dupre, a segment of the Chalmette Area Plan as originally authorized, is not required with the modified plan, and its elimination results in an additional saving of \$7,212,000 (\$5,048,400 Federal and \$2,163,600 non-Federal, based on DM No. 3, 1 November 1966).

- 2 Incl (dupe)
5. NOD telegram LMVED-PP-6,
7 Feb 67
6. DPW ltr dtd 13 Feb 67

THOMAS J. BOWEN
Colonel, CE
District Engineer

LDWED-TD (HOP 29 Nov 66) 5th Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification of
the Chalmette Area Plan to Include Larger Area

DA, Lower Miss. Valley Div, CE, Vicksburg, Miss. 39130 27 Feb 67

TO: Chief of Engineers, ATTN: ENOCW-EZ

Information requested by OCE 2d Ind is forwarded for your information. To avoid misinterpretation of the last sentence of para 3, 4th Ind, and to correct minor discrepancies, a summary of costs rounded to nearest \$1,000 is furnished below.

Dement

Best

Cost of Modifying Chalmette Area Plan

Bush

Total Const. Cost	\$14,819,000
Right of Way	<u>537,000</u>
Total Cost	\$15,356,000
Less Levee Violet to Point B	<u>7,212,000</u>
Total Cost of Modifying Plan	\$ 8,144,000

G.B. Davis

Cost of Chalmette Area Plan as Modified

Total Cost of Modified Plan	\$37,697,000
Previous Estimate	<u>29,553,000</u>
Increase	\$ 8,144,000
Federal Cost of Modified Plan	\$27,689,000
Previous Estimate	<u>21,698,000</u>
Increase	\$ 5,991,000
Non-Federal Cost of Modified Plan	\$10,008,000
Previous Estimate	<u>7,854,000</u>
Increase	\$ 2,154,000

Additional Savings

Elimination of Reach E of New Orleans to Venice
Hurricane Protection Project

Total Savings	\$ 1,316,000
Federal Cost	\$ 922,000
Non-Federal Cost	\$ 394,000

FOR THE DIVISION ENGINEER:

2 Incl
Dupe cy wd

GEORGE B. DAVIS
Acting Chief, Engineering Division

Copy furnished:
NOD, ATTN: LSCED-PP

ENGCW-EZ (LMNED-PR, 29 Nov 66) 6th Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification of
the Chalmette Area Plan to Include Larger Area

DA, CofEngrs, Washington, D.C. 20315, 12 April 1967

TO: Division Engineer, Lower Mississippi Valley Division

1. Reference is made to letter, LMVED-A, 21 March 1966, subject:
"Hurricane Protection - Lake Ponchartrain and Vicinity - Chalmette
Area" and 1st indorsement, ENGCW-OM, 15 April 1966 thereon.

2. The construction costs presented in the 4th and 5th indorsements
and in the GDM (DM #3) include costs for riprap foreshore protection along
the Mississippi River - Gulf Outlet reach of the project. 1st indorsement
ENGCW-OM, 15 April 1966, referenced in paragraph 1 above, directed that
these costs be charged to the navigation project (MR-GO) as a Federal cost
for wave protection. These costs, including the modified plan, are in
excess of \$4,000,000. The estimated costs should be adjusted by the District
and revised estimates submitted to OCE, together with draft of letters to
Congressional Committees. Since the riprap should be included in the Gulf
Outlet (MR-GO) project, the necessary revisions to the design memorandum
for the Gulf Outlet project should be made, or a supplement be prepared,
and furnished OCE.

FOR THE CHIEF OF ENGINEERS:

wd incl

WENDELL E. JOHNSON
Chief, Engineering Division
Civil Works

1505-34 (Spencer name) B-7-12/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100

LMVED-TD (MOD 29 Nov 66)

7th Ind

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity - Modification of
the Chalmette Area Plan to Include Larger Area

Ammon/mlo/250

DA, Lower Miss. Valley Div, CE, Vicksburg, Miss. 39180 2 May 67

TO: District Engineer, New Orleans, ATTN: LMVED-PR

1. Referred for necessary action.

2. The question of charging the cost of riprap protection along
the CIWV has been submitted to GCE by letter, LMVBC, SUBJECT: Hurricane
Protection, Lake Pontchartrain and Vicinity, 24 Apr 67 for guidance.
You will be advised when a decision is reached.

FOR THE ACTING DIVISION ENGINEER:

GEORGE R. DAVIS
Acting Chief, Engineering Division

J.D.
Dement

H
Hunt

W.W.
Weller

C.B.
Best

R.K.
Kaufman

W
William

W.H.
Hays

T.H.B.
Poswell

G
Griffith

R
Rush

G.R.D.
G.R. Davis

A.J.D.
A.J. Davis