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BRIEFING

LAKE PONTCHARTRAIN HURRICANE PROTECTION PROJECT

....(introductory remarks, as appropriate)....

sfing topics

My subject this morning is the Lake Pontchartrain, Louisiana and Vicinity Hurricane Protection project. (Projector A, slide 1) [SLIDE; briefing topics] We will take a brief look at the history of the authorized project; discuss significant changes which are under consideration and which result from litigation against the project; and finally I will discuss issues raised by the recent GAO review.

(A,2)

[SLIDE; vulnerability to hurricanes] The Louisiana coastline, and in particular the metropolitan New Orleans area, is extremely vulnerable to hurricanes. (Projector B, slide 1) [SLIDE; state map] This slide of the State of Louisiana shows the extent of marshland, shown in green, and its proximity to the City of New Orleans. (B,2) [SLIDE; N.O. area map] This second slide shows the city and its surroundings in greater detail. The city is virtually surrounded by water with the 640 square mile Lake Pontchartrain to the north; Lake Borgne to the east; and the Mississippi River and Mississippi River Gulf Outlet to the south. Lake Pontchartrain, Lake Borgne, and the Gulf Outlet are affected by tidal fluctuations of the Gulf of Mexico.

horized project

(B, 3)
[SLIDE; hurricane tracks] This slide of the Gulf of Mexico area shows the paths of hurricanes which have hit the Louisiana coastline over the last 150 years. It was after one of the most devastating of these, namely Hurricane Betsy, which struck in September 1965, that the Congress authorized the (A, 3) [SLIDE; project map] Lake Pontchartrain Hurricane Protection Project. The project consists basically of a system of levees (B, 4 & 5) [SLIDES; typical levees] and floodwalls (B, 6 & 7) [SLIDES; typical floodwalls] designed to protect the east bank of New Orleans from hurricane generated tidal flooding. (B, 8) [SLIDE; blank] The hurricane protection levees tie-in with existing Mississippi River levees. The net effect is to completely encircle that part of the city on the east bank of the river with levees and floodwalls.

rriers

In addition, the project calls for major structures at the 3 tidal passes connecting Lake Pontchartrain with the Gulf of Mexico. Those passes are the Rigolets Pass (B, 9) [SLIDE; Rigolets Complex], Chef Menteur Pass (B, 10) [SLIDE; Chef Menteur Complex], and Seabrook (B, 11) [SLIDE ~~12~~; Seabrook Complex]. The purpose of the proposed structures is to prevent a hurricane generated tide from entering Lake Pontchartrain. This would reduce the expected peak water level in Lake Pontchartrain by approximately 3 feet. By reducing the water level, the levees and floodwalls along the heavily developed lakefront need not be as high. ~~This is advantageous because lower levees have less impact on the prime residential and recreational nature of the lakefront.~~

(B, 12)

[SLIDE; non-Fed participation] The project was authorized on a minimum 30% non-Federal cost sharing basis. The 30% non-Federal share consists of lands, relocations, and cash. In 1974 the Congress authorized a deferred payment plan applicable to the cash contribution required from local interests, ~~for the Lake Pontchartrain project.~~ Under this authorization local interests need only pay 1/25 of the cash principal owed each year through fiscal 1990, and they must pay interest annually on the unpaid balance. In fiscal 1991 local interests must pay the full remaining unpaid principal, and thereafter they must make contributions sufficient to maintain 30% participation in the project. To date, local interests have met all their obligations, financial and otherwise, toward the project.

~~[SLIDE; construction status]~~ Non-Federal assurances and cash contributions for the project come from several public bodies, including the State of Louisiana, several local levee districts, and a parish police jury. The State of Louisiana's Office of Public Works has been designated by the Governor as the coordinator for all non-Federal participation in the project.

(B, 13)

[SLIDE; construction status]

Project construction was initiated in 1966 and to date it is approximately 56% physically complete. Some $174 million has been expended on the project, of which $130 million has been Federal funds. Construction is well under way on all portions of the project except the levee in St. Charles Parish, the seawall at Mandeville, and the 3 barrier complexes. In St. Charles Parish it has been determined that

the authorized lakefront alinement would cause unacceptable environmental damage to the wetlands behind the levee. An alternative alinement which would preserve the wetlands is presently being developed. As for the Mandeville seawall, work has been deferred because local interests have yet to furnish the required assurances. Regarding the barrier complexes, work has been deferred pending resolution of the litigation matters, which I will now discuss.

S; litigation

(B, 14)
[SLIDE; EIS & litigation] An Environmental Impact Statement on the project was prepared in the early 1970's and placed on file with the Council on Environmental Quality in January 1975. In late 1975 local environmental interests filed suit against the Corps in Federal District Court challenging the adequacy of the EIS. In December 1977, after hearing arguments on the case, the court found that the EIS was inadequate in its treatment of the Rigolets and Chef Menteur barrier complexes. Consequently, it enjoined the Corps from constructing the Rigolets ~~Complex~~ and Chef complexes ~~Menteur Complex~~ until a revised EIS was prepared and accepted. The court stipulated that the Corps was free to continue construction of all other portions of the project, which the Corps has done without interruption.

ternatives

In complying with the court order, the Corps undertook a detailed review of alternative plans for furnishing the desired hurricane protection to the New Orleans area. The review included not only cost estimates for the various alternatives, but also evaluation of potential environmental impacts.

alternatives

(B,15)
[SLIDE; alternative plans] Basically, there are only two alternative methods of protection. One is the presently authorized "barrier" concept of protection; that is, a plan which provides for control structures at the tidal inlets to Lake Pontchartrain to prevent the influx of hurricane tides. The second alternative is known as the "high level" plan, called so because it provides higher levees and floodwalls along the shoreline of Lake Pontchartrain to restrain the hurricane tide in the lake. All protective works not bordering Lake Pontchartrain, for instance protection in the IHNC and MRGO areas, are common to both alternatives.

ree of protection

Regarding degree of protection, (B,16) [SLIDE; degree of protection] the project was authorized by Congress and is presently being built to provide standard project hurricane protection. Considering the topography of the New Orleans area and a population of 800,000 in the protected area, the total flooding resulting from the occurrence of an SPH ~~in~~ is potentially catastrophic in terms of loss of life and human suffering. Current Corps of Engineers planning criteria for urban flood protection holds that when the potential for catastrophic loss of life exists, as a goal, SPH protection should be provided unless there are other overriding considerations.

D plan

No actual plan has been costed above that required to provide SPH protection. This slide (B,17) [SLIDE; NED plan] shows the benefit-cost curve up to the SPH. The point of maximization (NED Plan) would occur where this curve becomes tangent to a 45 degree line. That is where

incremental benefits equal increased costs. This point would be somewhere on the curve above the SPH Plan and below the maximum possible benefit line. Taking into account the accuracies of the analysis, the SPH and the NED for all intent are essentially the same.

Is & B/C

Results of environmental and cost studies of the barrier and high level alternatives show the high level plan to be approximately 15 % less expensive and to have fewer environmental impacts. By way of comparison, (B,18) [SLIDE; costs & B/C ratio] the high level plan is estimated to cost $627 million to complete at Oct 81 price levels and the barrier plan is estimated at $742 million. Preliminary benefit-to-cost ratios are 4.2 to 1 for the high level plan and 3.3 to 1 for the barrier plan. Consequently, it has been determined that the high level plan is preferable to the barrier plan. The New Orleans District is presently drafting documentation, including a revised EIS, to support a recommendation ~~[SLIDE; costs & B/C ratio]~~ to change from the barrier plan to the tentatively selected high level plan. (B,19) [SLIDE; high level plan] Such a change in the project will eliminate the enjoined features, namely the Rigolets and Chef Menteur Barrier Complexes; ~~from the project;~~ thereby eliminating the present legal obstacle to completion of the project. (B,20) [SLIDE; blank]

10 issues

(A,4) [SLIDE; GAO issues] With that as background, ~~on the project,~~ I will now discuss issues raised by the GAO. The recommendations of the GAO report are very broad and certainly the objectives they are intended to achieve are desireable. However, many of those objectives comprise procedures

which have been ongoing since authorization of the project. (B, 21) [SLIDE; "...working"] For example, we are - and I quote from the GAO recommendations - "working closely with local sponsors to acquire the necessary rights-of-way, easements, and construction priorities for the remaining portions of the project" (unquote). Insofar as the high level plan is concerned, this work now involves explaining to local interests the impacts of changing from the barrier to the high level plan; exploring with local interests the implications of those impacts; and eliciting their views and concerns. We are currently moving forward on the change in plan as rapidly as procedural requirements, and sound engineering, economic, and environmental considerations will permit. (B, 22) [SLIDE; milestones] The New Orleans District will provide recommendations on a change in plan to its higher authority in December of this year; it is expected that the final EIS will be submitted to EPA in November 1983; construction of elements of the high level plan can be initiated in fiscal year 1984; and the high level plan can be completed by the year 2000. In the meantime, the Corps is aggressively pursuing construction of those levees and floodwalls common to both the high level and barrier plans, and as the GAO report notes, the Corps is preparing designs for features of the high level plan.

Outfall canals

(A, 5) [SLIDE; outfall canals map] A prominent issue in the GAO report is that of the drainage outfall canals. Before discussing the GAO observations, it is necessary to understand the nature of the problem. There are 3 drainage outfall canals in New Orleans which carry storm ~~drainage~~ water from pumping stations located well within the city to Lake

Pontchartrain. The canals vary in length from approximately 1 to 3 miles. (B, 23 → 29) [SLIDES; canals & levees] ~~outfall canals~~ Since the canals connect with Lake Pontchartrain, canal water levels are subject to tidal fluctuations. Levees line the canal banks to prevent the lake waters and/~~or~~ pumped waters from flooding ~~flowing back into~~ the city. Much of the city which has been under pump drainage for nearly a century, has subsided to well below sea level.

It is these levees on the canal banks which basically constitute the problem. Simply stated, the levees are not high enough and broad enough to hold back water levels which would occur in the event of a standard project hurricane. When the project was initially formulated in the late 50's and early 60's, it was determined that the canal levees were adequate. However, subsequent to project authorization, and armed with knowledge gained from Hurricane Betsy in 1965, the US Weather Service adopted more severe hurricane parameters consisting principally of lower central pressure and greater wind velocities. This resulted in a higher level of required protection along the outfall canals than was initially conceived, and rendered the present canal levees inadequate.

(B, 30)

Outfall solutions

[SLIDE; outfall canal solutions] In studying the problem, the Corps determined that there are two basic solutions: one being to improve the existing levees paralleling the canals, and the second being the installation of flood control structures at the lake ends of the canals. The option to improve the levees is complicated by the proximity of residences, streets, bridges, and other community facilities. The option for structures at the lakefront is complicated

by the potential for interruption of the city's drainage system. Cost estimates for various solutions to the outfall canal problems range from $20 million to $250 million.

work w/ locals

The Corps has long recognized the need for a solution to this problem and believes that the first essential step is to work with local interests in arriving at a mutually acceptable solution. Unfortunately, to date efforts to arrive at this point have been unsuccessful. Until an acceptable solution is identified, it is not possible to identify a cost with reasonable accuracy. ~~even an approximate cost.~~ We have elected, therefore, not to include the outfall canals in the overall cost estimate for budget purposes. We continue to work with local interests to identify the options and associated costs, and to press for a mutually acceptable solution.

Though the outfall canals provide less than project protection, they are not as deficient as some other areas of the project and therefore do not carry as high a priority. (A,6) [SLIDE; GAO issues]

financial capability

(B,31) [SLIDE; financial capability] Another prominent issue discussed by the GAO is the financial capability of the local assuring agencies. ~~assurances.~~ In this regard, it is observed that the Corps has received fully adequate assurances from local interests for all features of the project except the Mandeville Seawall. In 1976 when the local sponsors executed the current assurances for the barrier project, the Corps determined that the sponsors were financially capable. Since that time, the sponsors have met all obligations, financial and otherwise, under the project,

and nothing has occurred since then to indicate that this will not continue to be the case. For the high level plan, the local sponsors have been advised of their estimated cost responsibilities based on best available estimates. If the high level plan is approved, the Corps will at that time review the need for new or revised assurances and for a reexamination of the local sponsor's financial capability.

(B, 32)
[SLIDE; blank] As a final comment on the GAO report, we note that the GAO suggests that the Corps has not prosecuted the project with the vigor and effectiveness that it deserves, and that as a result, the metropolitan New Orleans area does not presently enjoy the degree of protection that it should. While the Corps regrets that progress has not been faster and views with deep concern the residual threat to the area after 17 years of work on the project, we don't believe that the report - or more importantly - the record, supports such findings.

The project was authorized and funded for design in the same fiscal year (1966), a rarity among civil works projects. Designs were pressed with vigor and expedition, and the system was exploited, bent, twisted, and innovatively interpreted to permit the earliest practicable completion of design and start of construction. The resources of local interests, particularly the Orleans Levee District, were pressed into service to permit construction of the project to proceed in 1966 before Federal construction funds were made available. As a result of these efforts, when Hurricane Camille struck in 1969--less than 4 years after project authorization--and generated stages in the critical Industrial

Canal-MRGO area within 6 inches of those of Hurricane Betsy in 1965-no significant flooding occurred, and it is estimated that $100 million in damages, or about the total estimated cost of the project at that time, were prevented by project construction.

'74m expended

Since Hurricane Camille, work on all phases of the project except the barrier complexes has proceeded expeditiously. (B,33) [SLIDE; $174 million expended] To date, $174 million has been spent on construction. If this figure is expressed in 1982 dollars, it becomes $300 million. In physical terms, the project is estimated to be about 56% complete. Exclusive of the barrier structures, which have not been started, the project is about 75% complete. (B,34) [SLIDE; blank]

(A,7) [SLIDE; project map] This concludes the briefing on the history of the Lake Pontchartrain project and the GAO report. I'd be glad to answer any questions you may have.

File

LAKE PONTCHARTRAIN HURRICANE PROJECT

BUDGET HISTORY

	Cumulative Amounts				
FY	Capability	LMVD Request	OCE Allowance	OMB Allowance	Net Work Allowance
1966					538
1967	1,600	0	0	450	2,138
1968	6,100	10,160	0	3,710	6,224
1969	16,900	20,760	10,600	11,510	12,493
1970	25,400	32,760	20,100	17,510	17,753
1971	37,400	43,860	30,850	25,760	28,793
1972	48,400	61,860	45,850	31,315	42,739
1973	68,400	79,860	63,550	51,315	57,579
1974	77,050	99,860	69,950	57,715	60,239
1975	83,550	130,590	73,950	61,015	58,159
1976	105,550	159,590	85,950	83,015	74,139
1977	120,950	178,090	92,950	95,015	84,714
1978	136,550	192,990	107,850	107,415	92,214
1979	136,550	212,990	126,850	107,415	92,444
1980	147,550	223,990	137,850	118,415	105,764
1981	160,550	242,490	150,150	129,215	114,564
1982	175,550	257,890	165,950	144,215	127,564
1983	194,350	283,690	184,750	162,215	

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