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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

January 21, 1981

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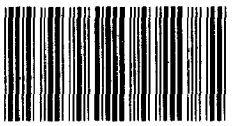
114313

The Honorable Charles H. Percy
United States Senate

Dear Senator Percy:

Subject: Chicago's Tunnel and Reservoir Plan--Costs Continue To Rise and Completion of Phase I Is Unlikely (CED-81-51)

In response to your October 9, 1980, request and subsequent agreements with your office, we are providing updated cost information on Chicago's Tunnel and Reservoir Plan (TARP). This is the fourth in a series of GAO reports dating from May 1978, which, among other things, discuss the costs associated with alleviating the combined sewer pollution and flooding problems in the Chicago metropolitan area.

Our previous reports pointed out the staggering cost of the Metropolitan Sanitary District of Greater Chicago's solution to these problems and questioned whether the country could afford such an expensive and precedent-setting endeavor. This report points out that (1) the cost of TARP and its associated projects has continued to escalate to a current estimate of $10.2 billion and (2) based on the current rate of inflation, recent funding levels for the Environmental Protection Agency's (EPA's) construction grants program, and the State of Illinois' funding policy for that program, TARP's Phase I would never be completed.

To provide the updated cost information, we obtained financial, budgetary, and planning information from EPA officials in Washington, D.C., and Chicago; the Illinois EPA in Springfield; the U.S. Army Corps of Engineers in Chicago; the Northeastern Illinois Planning Commission in Chicago; and the District. We have also discussed this information with these officials.



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## TOTAL COST OF TARP AND ASSOCIATED PROJECTS HAS INCREASED

The $8.5 billion estimate 1/ of TARP and its associated projects, as shown in our May 15, 1979, report, has increased to $10.2 billion as of 1980--an increase of $1.7 billion, or about 19 percent. This estimate is based on various District and Corps of Engineer studies and is expressed in 1980 dollars. Enclosure I contains the details of the estimate.

Our May 1979 report stated that if history were any indication, costs would continue to escalate and could exceed $11 billion by 1983. Using a 12-percent inflation rate, the $10.2 billion cost would result in a $12.5 billion cost by 1983.

The District and the Corps disagree over the total cost to complete TARP because the District does not include those costs that it does not fund. But both parties agree that inflation has caused dramatic increases in their cost estimates. The Corps of Engineers' estimate to complete TARP rose from $6.4 billion in 1975 to more than $10 billion in 1980. The District's estimates climbed from $2.6 billion in 1972 to more than $4 billion in 1977.

## FACTORS AFFECTING COMPLETION OF UNFUNDED PHASE I OF TARP

We considered the impact of the current rate of inflation, recent Federal funding levels, and the State's funding policy to determine if the unfunded portion of TARP Phase I could be completed. The current estimate for this portion of Phase I in 1980 dollars is $1.1 billion. However, since this phase is not scheduled for funding until fiscal year 1987, the $1.1 billion will probably fall far short of the amount actually needed to build the facilities. Although future rates of inflation are uncertain, we assumed a 12-percent annual inflation rate (which approximates the rate the Illinois EPA uses) for the unfunded estimate, which inflates the $1.1 billion figure to $2.1 billion by fiscal year 1987.

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1/This estimate is based on various cost estimates in 1976, 1977, and 1979.

Recent Federal funding levels under the construction grants program give little hope that the funds needed to complete TARP will be available. Although $5 billion annually is authorized for the program through fiscal year 1982, over the past 2 fiscal years the Congress has appropriated $3.4 billion. Under the Federal program allocation formula, Illinois received about $177 million in recent years. Furthermore, an Illinois EPA policy attempts to divide equally, as far as possible, available funds between pollution facility projects in the District's service area and those in the remainder of the State. This policy, therefore, would allow about $88 million each year for District projects such as TARP. If we assume a 12-percent inflation rate, more than $100 million would be added each year to the cost of completing TARP Phase I. Therefore, the $88 million would be less than the amount needed just to keep even with inflation. The long-term outlook for increased Federal funding of the construction grants program seems bleak; the Congress has been reducing the grants program appropriation since fiscal year 1978 from $4.5 billion to $3.4 billion for fiscal year 1981.

The only way in which the unfunded TARP Phase I could be completed would require that (1) the Congress appropriate the $5 billion currently authorized by the Clean Water Act for 9 years starting in 1987 and (2) the District receive the entire $260 million allocated to Illinois. No funds would be available for any other pollution control project in the State during these 9 years. Based on past experience, it is highly unlikely that these actions would occur.

PER CAPITA COST

You asked us to analyze EPA's latest revised projected per capita economic impact figures. Since EPA has not completed its revisions, we were unable to do so. However, we are willing to analyze EPA's figures when they become available.

Your office asked us to obtain some measure of TARP's economic impact on individual households by considering TARP costs in relation to the number of service area households. The $10.2 billion estimated cost of all phases of TARP, expressed in terms of the 5.3 million service area population, is $5,745 per household (based on the District's estimate of 3 persons per household). The $2.2 billion estimated cost (excluding interest during construction) to complete the unfunded portion of Phase I and to upgrade related treatment plants is $1,270 per household.

These costs, however, do not represent the out-of-pocket costs to a household in the TARP service area because 75 percent of the cost is provided by the Federal Government. Such out-of-pocket costs--a per-user cost--would include the cost of financing the local share of the project and operation and maintenance costs after the project is built. We understand that EPA's revised economic impact figures will include such costs.

At your request, we did not take the additional time needed to obtain agency comments on the matters discussed in this report.

As arranged with your office, unless you announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this report. At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

Comptroller General
of the United States

Enclosure

ENCLOSURE I

# TARP AND ASSOCIATED PROJECTS

## 1980 COST ESTIMATE

| Item | Estimated cost (billions) |
|---|---|
| TARP-Phase I: | |
| Funded: | |
| 47.0 miles of tunnels, pump stations, drop shafts, and connecting structures | a/$ 1.257 |
| Unfunded: | |
| 62.6 miles of tunnels, a pump station, drop shafts, and connecting structures | b/1.074 |
| TARP-Phase II: | |
| 21.5 miles of tunnels, increased pump capacity, and open storage reservoirs | c/1.274 |
| Associated Projects: | |
| Treatment plant expansions and improvements | |
| Construction of one new treatment plant, increased capacity at two others, and upgraded treatment processes at the three main plants operated by the District | d/1.169 |
| Instream aeration | |
| 10 planned systems to provide a total of 167,300 pounds of oxygen per day | e/0.046 |
| Upgrading local sewers | f/2.256 |
| Solids utilization | g/0.109 |
| Dredging, channel widening, and associated works | f/0.353 |
| Total | 7.538 |
| Interest during construction | h/2.612 |
| Total | $10.150 |

See next page for footnotes.

a/Source: U.S. Army Corps of Engineers, November 1980.

b/Source: District 1981 tentative budget, November 1980.

c/District April 1976 estimate expressed in December 1980 dollars using the Engineering News-Record construction cost index.

d/Source: District 1981 tentative budget, November 1980, and District Facilities Planning Study, updated May 1978 and May 1980. The District's cost estimates, at least since 1976, provided for new advanced wastewater treatment processes at the three main treatment plants. However, in 1978 the District reevaluated the need for these processes and concluded that the water standards could still be met by eliminating or reducing the scope of certain processes at estimated savings of more than $140 million. Currently, EPA is questioning the need for certain advanced waste treatment processes and the treatment level to be provided. The costs of these plant expansions and improvements would be significantly reduced if EPA does not approve the processes or reduces the project scope.

e/Source: District 1981 tentative budget, November 1980, and District Facilities Planning Study, updated May 1980.

f/U.S. Army Corps of Engineers estimate based on June 1975 price levels expressed in December 1980 dollars using the Engineering News-Record construction cost index.

g/Source: District Facilities Planning Study, updated May 1980.

h/The U.S. Army Corps of Engineers annually updates its 1975 estimate of project costs. The 1980 update reflects interest costs of $2.612 billion and total project costs of $10.042 billion. However, the Corps has not adjusted the original estimate to give consideration to those portions of the project that are under contract and to reflect project changes.

GAO note: Engineering, design, supervision, and review costs identified separately in GAO's May 1979 report are included where appropriate in the individual items shown above.