



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

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RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-210196

DEC 22 1982

The Honorable Arthur E. Teele, Jr.
Administrator, Urban Mass
Transportation Administration
Department of Transportation



Dear Mr. Teele:

Subject: Need to Periodically Reassess Mass Transit
Construction Projects (GAO/RCED-83-82)

Because the Urban Mass Transportation Administration (UMTA) has made large expenditures over the past decade to finance construction of capital projects, GAO undertook a review of UMTA's policies for project administration. UMTA requires transit alternatives analysis to assure that only the most meritorious projects are approved for engineering and construction. However, UMTA policy should require reassessment, or analysis of project options, of major capital projects when changing conditions indicate that the project will not achieve planned objectives.

UMTA POLICIES DO NOT REQUIRE
PROJECT REASSESSMENT

Although UMTA requires extensive planning and analysis to assure feasibility and need before approving capital projects, it does not require project reassessment even if, during the project's engineering and early construction phases, changed conditions indicate that the project will not meet its original objectives.

Section 3 of the Urban Mass Transportation Act of 1964, as amended, authorizes UMTA to make discretionary grants to assist States and local public agencies in financing mass transit acquisition, construction, and improvement projects. Capital assistance grants are awarded for up to 80 percent of the total project costs, with State and local sources supplying 20 percent. Since 1965, UMTA has provided over \$18.1 billion in capital grant funds.

In recent years, UMTA has taken several significant steps to assure that only the most meritorious projects are approved for UMTA capital assistance. UMTA approves capital improvement projects pursuant to major investment guidelines that require project proposals to undergo alternatives analysis, which consider a number of alternative transportation modes, cost estimates, and ridership projections. For major rail projects, UMTA and the grant recipient

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execute a full-funding contract which sets UMTA's financial limit for participating in the project and specifies a completion date. Funding of large projects may be approved in "operable segments" to assure completion of those segments even if additional segments are changed or delayed.

UMTA monitors the progress of capital projects by requiring grantees to submit Quarterly Progress Reports. The progress reports provide UMTA with knowledge of (1) the work performed during the quarter and any difficulties or delays encountered; (2) the schedule of planned activities during the next quarter and any anticipated difficulties or delays; (3) whether the project conforms to its planned scope; (4) whether the project is within its approved budget, and actions planned to deal with potential cost overruns; (5) whether the project is on schedule, and actions planned to adjust to schedule slippage; and (6) the percent of the project complete at the end of the quarter. Between progress reports, grantees should inform UMTA of events that may have a significant impact on the project.

Due to the nature, complexity, and magnitude of major capital projects, much time may elapse between UMTA's approval of the grant and the time that construction is substantially underway. Reassessing the project's justification during the early stages of engineering and construction would identify significantly changed conditions during the lapsed time, and allow UMTA to either continue the project as planned, modify the project's scope, or terminate the project. Although UMTA capital grants contain a standard termination clause, UMTA's practice has been to modify projects.

We identified two projects, the Philadelphia Airport High Speed Line and the Queens Trunk Line, where an UMTA policy requiring a post-approval reassessment may have prevented constructing projects whose success is questionable.

Airport High Speed Line

In 1974, UMTA approved construction of a \$60 million high-speed rail line linking the Philadelphia International Airport to downtown Philadelphia, and awarded \$37.5 million for initial engineering and construction. The estimated completion date was 1976. UMTA based its approval on a Philadelphia Department of Public Property conclusion that:

- the airport's passenger traffic would increase from about 7 million passengers per year in 1971 to about 21 million passengers per year in 1985; and
- the regional highway network was insufficient to meet the needs of increased air passenger traffic.

Due to unforeseen delays, construction lagged far behind the original estimated dates, and the line is not expected to be oper-

ational until late 1983 or early 1984. The delays resulted primarily from the city's need to renegotiate easements for right-of-way with Conrail and Amtrak. In its progress report for the quarter ending in December 1976, the city reported to UMTA that the renegotiations had delayed 60 percent of the project's construction. The city completed negotiations for right-of-way with Conrail in February 1979 and with Amtrak in December 1980.

Concurrently, airport passenger volume did not increase as the city anticipated, while the project's estimated cost increased substantially. The following table indicates the actual passenger growth as determined annually by airport officials and the growth in estimated project cost.

<u>Period ending</u>	<u>Philadelphia International Airport annual air passengers</u> (000 omitted)			<u>Estimated project cost</u> (000 omitted)	
	<u>Projected</u>	<u>Actual</u>	<u>Difference</u>	<u>Percentage difference</u>	
6/30/75	9,900	7,467	2,433	(24.6)	\$68,800
6/30/76	10,800	7,906	2,894	(26.8)	68,800
6/30/77	11,800	8,202	3,598	(30.5)	68,800
6/30/78	12,800	9,034	3,766	(29.4)	68,800
6/30/79	13,800	10,175	3,625	(26.3)	86,800
6/30/80	14,800	10,132	4,668	(31.5)	89,000
6/30/81	16,100	9,248	6,852	(42.6)	89,000
6/30/82	17,300	9,092	8,208	(47.4)	89,000

Despite the lack of air passenger growth, construction delays and corresponding increases in project cost, UMTA continued to fund the project. In addition, UMTA approved funding for separate, related projects upon which operating the Speed Line is contingent. The projects and their estimated costs are:

--\$30 million for connections to Amtrak lines which share a right-of-way with a portion of the Speed Line; and

--\$.85 million for railcar modifications.

Total project-related costs are thus about \$119.8 million with UMTA funding about \$86.8 million.

Recognizing that the Speed Line will not attract the ridership originally projected, the city of Philadelphia in March 1982 commissioned a study to identify alternatives for making the line self-sustaining. Alternatives under consideration include an airport park-and-ride lot and/or additional stations to attract commuter traffic.

If UMTA policy required a reassessment of project merits under post-approval conditions, alternatives to completing the Speed Line as originally planned could have been considered in the project's early stages. For example, as of June 1978, only 9 million passengers used the airport instead of the projected 12.8 million. At the same time, construction delays and inflation had increased the project's estimated construction cost to \$68.8 million. Because the conditions under which the project was approved had changed significantly, UMTA's exercising its option to terminate the project, or modifying the project's scope, would have prevented expending additional funds on a project that, when complete, will probably not meet its original objectives.

Queens Trunk Line

In 1969, the New York City Transit Authority (NYCTA) began constructing the Queens Trunk Line project to provide faster and expanded service to residents of southeast Queens. The project included four large segments:

- the 63rd Street line, connecting existing Manhattan subway lines to Queens;
- the Archer Avenue line, a new extension to the existing Queens subway line;
- the Queens Bypass, connecting the 63rd Street line to an existing Queens subway line and thus to the Archer Avenue line; and
- the Jamaica connection, connecting the Archer Avenue line with an existing elevated subway line.

Providing both expanded and faster service to residents of Queens depends on completing all segments of the project.

In 1973, UMTA approved a \$62.7 million grant for assisting construction of the 63rd Street line, and in 1974 approved \$51.1 million to aid in constructing the Archer Avenue line and the Jamaica connection.

New York City's late 1974 financial crisis caused the NYCTA to review its transit program. In 1975, the NYCTA decided to use capital grant funds for operating deficits and deferred construction of the Queen's Bypass, the connector between the 63rd Street and the Archer Avenue lines.

UMTA approved the NYCTA actions and sought assurance that the Archer Avenue line, already under construction, would be completed. UMTA also sought and obtained schedules for completing the entire Trunk Line project under various assumed levels of Federal financing. However, UMTA did not require the NYCTA to

explore alternatives to project segments or modifications in project scope.

To cope with the reduced funding from local sources, local transit officials began studying alternatives to the Queens Bypass that would achieve the original objectives of providing new and faster subway service to Queens. Between 1976 and 1982, the New York State Department of Transportation, the New York City Department of Transportation, and the Alternative Analysis Project Steering Committee, partially funded by UMTA, proposed alternatives to the Bypass. The NYCTA's parent organization, the Metropolitan Transit Authority, does not anticipate funding the Bypass or an alternative until the 1986-1990 time period.

UMTA's emphasis on assuring completed construction of the UMTA-funded 63rd Street and Archer Avenue segments was appropriate in that it sought to protect the existing Federal investment. However, reassessing the project in light of changed financial conditions and capital investment priorities would have recognized that these segments by themselves contribute little to the objective of providing new and faster service. Without the crucial Queens Bypass or a functional alternative, the objective can not be met; yet UMTA's role in exploring alternatives has been limited to Steering Committee membership.

CONCLUSION

We believe the preceding examples illustrate the need for UMTA to reassess approved capital projects when changing conditions jeopardize the project's success. Although UMTA has taken steps to assure that only the most technically sound and meritorious projects receive funding approval, it has not required a reassessment when projects are delayed, circumstances change, or forecasts justifying the project prove to be inaccurate.

UMTA's lack of policy requiring capital project reassessment has resulted in construction of some projects under conditions that differ significantly from forecasts. Consequently, it is questionable whether these projects are cost-effective means of achieving original transit objectives.

RECOMMENDATION

We recommend that the Administrator, UMTA, establish policy requiring reassessment of major capital projects at the completion of specified project milestones. The milestones could be expressed as (1) a percentage of project construction, (2) a unit of time, (3) a phase of the project, or (4) a combination of these or other factors. The Quarterly Progress Reports required by current UMTA policy are an adequate means of providing UMTA with timely project information. Specified progress reports could thus serve as milestones prompting project reassessment.

Reassessment should encompass a comparison between conditions surrounding the project's approval versus current conditions. Reassessment should occur on any project where construction extends over a long period of time, and should include, but not be limited to the following:

- Ridership projections, population density, or other factors used to justify the project;
- the relationship of the individual project to the region's transportation goals; and
- the financial capability of local jurisdictions.

OBJECTIVES, SCOPE, AND
METHODOLOGY

The objective of our review was to determine how effectively UMTA administers selected capital improvement grants. We obtained a comprehensive list of UMTA grants in UMTA Regions II and III and selected an initial sample of projects experiencing significant construction delays and/or cost increases. We focused our review on a high speed rail project in Philadelphia and a project extending the New York City subway system.

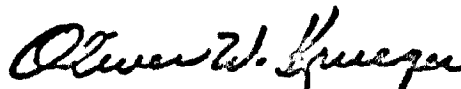
We interviewed UMTA officials in Philadelphia, New York, and Washington, D.C.; city officials in Philadelphia; and local transit officials in Philadelphia, New York, Pittsburgh, and Baltimore. We reviewed UMTA project administration policies, project files, and related documents. In addition, we reviewed city project files in Philadelphia and studies prepared by consultants in New York and Philadelphia.

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Please let us know what actions you take or plan to take on our report. If you have questions or wish to discuss these issues, please contact Mr. Stephen Keleti at 426-2125.

We are sending copies of this letter to the Department of Transportation's Office of Inspector General and Assistant Secretary for Administration.

Sincerely yours,



Oliver W. Krueger
Associate Director