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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Metropolitan Atlanta's Rapid Transit System: Problems And Progress

Progress and performance is good on Metropolitan Atlanta's rapid transit system, but GAO found

- ineffective administration of the railcar contract,
- inadequate contract provisions and recordkeeping procedures for proper warranty management, and
- replacement of public housing at costs exceeding the appraised value.

Better guidance from the Urban Mass Transportation Administration could have eliminated, or at least lessened, the management weaknesses.

The report includes GAO recommendations for more Urban Mass Transportation Administration input into rapid transit authority procedures and practices. Dissemination of the management experiences on this project to other transit authorities may avoid future problems.



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

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To the President of the Senate and the
Speaker of the House of Representatives

This report points out the status of development and performance of Metropolitan Atlanta's rapid transit system and problems being encountered. We made this review to determine how the development of future rapid transit systems can benefit from the experiences of the Metropolitan Atlanta Rapid Transit Authority and the Urban Mass Transit Authority on this project.

We are sending copies of this report to the Director, Office of Management and Budget, and the Secretary of Transportation.

A handwritten signature in black ink, appearing to read "Luther A. Austin".

Comptroller General
of the United States



D I G E S T

Although the Metropolitan Atlanta Rapid Transit Authority (MARTA) has been successful in completing project milestones close to its plan, management weaknesses and trade-offs have contributed to

- increased costs of \$50 million over the initial estimate for one segment, the result of delays in construction because contracts were awarded before rights-of-way were acquired and the design completed, and
- ineffective administration of the railcar contract. (See pp. 7 and 13.)

MARTA's policy of concurrent right-of-way acquisition, design, and construction, although effective in taking advantage of a period of low construction activity, created other problems which proved to be costly. For example, the State would not authorize condemnation of its lessees on State-owned property and the contractor experienced delays in access to the property, thereby increasing construction costs by \$2.6 million. (See p. 7.)

Ineffective administration of the contract resulted in late delivery of cars which delayed the opening of the East Line by 6 months. Cars currently being accepted are 8 months behind schedule, but MARTA continues to make progress payments as if deliveries were on schedule. (See p. 13.)

Other factors contributing to the ineffective project management were:

- The Urban Mass Transportation Administration (UMTA) waiver of its prior approval requirement for some procurement actions before MARTA's procurement procedures were deemed adequate. (See p. 11.)

--Agreement by MARTA without advance UMTA approval to construct low-rent housing to replace housing currently in the path of the rail line. Under contractual agreement, the replacement housing is estimated to cost \$4.3 million, almost \$1.7 million more than originally estimated. (See p. 15.)

--Inadequate warranty provisions. Following an internal audit, MARTA agreed to take action to correct the deficiencies in its warranty program. (See p. 16.)

As a positive project management action, MARTA gave its internal audit group greater independence. This should allow the group to conduct effective audits and elevate its reporting, without restrictive influences from other organizational groups, to a level where action can be taken on its recommendations. (See p. 18.)

MARTA is continuing project development beyond phase A under "no-prejudice" authorizations from UMTA. This means that it will proceed with development in specified areas, using local funds, with the understanding that, if future grants are awarded, it will be reimbursed 80 percent of allowable costs. (See p. 12.)

Except for project development in specified areas, no-prejudice authorizations contain no restrictions and incentives to limit Federal participation in cost overruns.

Since these authorizations can eventually result in a Federal grant, GAO believes that similar restrictions and incentives included in the phase A contract should apply. Under the present authorizations, project costs could increase because of poor management and other inefficiencies and still qualify as reimbursable. (See p. 12.)

CONCLUSIONS

Experiences under MARTA's phase A grant have revealed weaknesses in both UMTA's administration of the grant and MARTA's management

of the project. In some instances, more thorough UMTA review and guidance could have eliminated, or at least lessened, these management weaknesses. However, MARTA has also demonstrated a commitment to effective management which UMTA should require other local transit authorities to adopt.

RECOMMENDATIONS

The Secretary of Transportation should direct the UMTA Administrator to

- assure that local transit authority procurement and procurement-related practices and procedures are adequate before UMTA waives its prior review and approval requirements;
- incorporate restrictions and incentives limiting Government participation in cost overruns to extraordinary costs into its no-prejudice authorizations similar to those included in MARTA's phase A agreement;
- direct MARTA, in future procurements, to formally incorporate all contract changes into the contract;
- assure that contracts are being properly administered in accordance with contract provisions;
- develop a better understanding of warranties, prepare and implement guidelines to assure provisions are properly enforced;
- require that an organizationally independent internal audit function be established at other transit authorities receiving Federal grants; and
- disallow for Federal participation the cost of the replacement housing in excess of the established just compensation value.
(See p. 20.)

TRANSIT AUTHORITY COMMENTS

The General Manager agreed that some features of concurrent design, construction, and

right-of-way acquisition and other management techniques were not good and has already taken action to correct many deficiencies. (See p. 8.)

The General Manager believes UMTA could give retroactive administrative approval for Federal participation in the full cost to replace the low-rent housing. He stated that not to do this would be an unreasonable penalty. He also believes that problems associated with the railcar contract were primarily because of a contractor misunderstanding that progress payments were contingent on its meeting certain milestone dates.

MARTA believed it had been successful in closely approximating estimated project costs and meeting scheduled operating dates.

DEPARTMENT OF TRANSPORTATION
COMMENTS

Department of Transportation officials agreed with the report issues. However, they felt that attachments O and P to Office of Management and Budget Circular A-102 prevented compliance with GAO recommendations.

Office of Management and Budget officials reviewed the GAO recommendations and reaffirmed that there was no conflict with attachments O and P of Circular A-102.

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ABBREVIATIONS

AHA	Atlanta Housing Authority
GAO	General Accounting Office
HUD	Department of Housing and Urban Development
MARTA	Metropolitan Atlanta Rapid Transit Authority
OMB	Office of Management and Budget
UMTA	Urban Mass Transportation Administration

CHAPTER 1

PROJECT DESCRIPTION AND STATUS

The Metropolitan Atlanta Rapid Transit Authority (MARTA), established in 1965, is planning a 53-mile rapid transit system which is estimated to cost about \$3.3 billion. The development and construction of phase A (the first 13.7 miles of this system) is well underway and is estimated to cost about \$1.067 billion. Also, some design work and right-of-way acquisition has been accomplished on system segments beyond the phase A boundaries.

Phase A, the hub of the 53-mile system, extends 7.1 miles east, 4.7 miles west, 1.4 miles north, and 0.5 miles south from the center of the hub. (See map on p. 2.) Phase A also included the communications and control system, construction of a central railcar maintenance and storage facility, purchase of 100 railcars, and the design of 7 stations and 8.1 miles of the system beyond phase A.

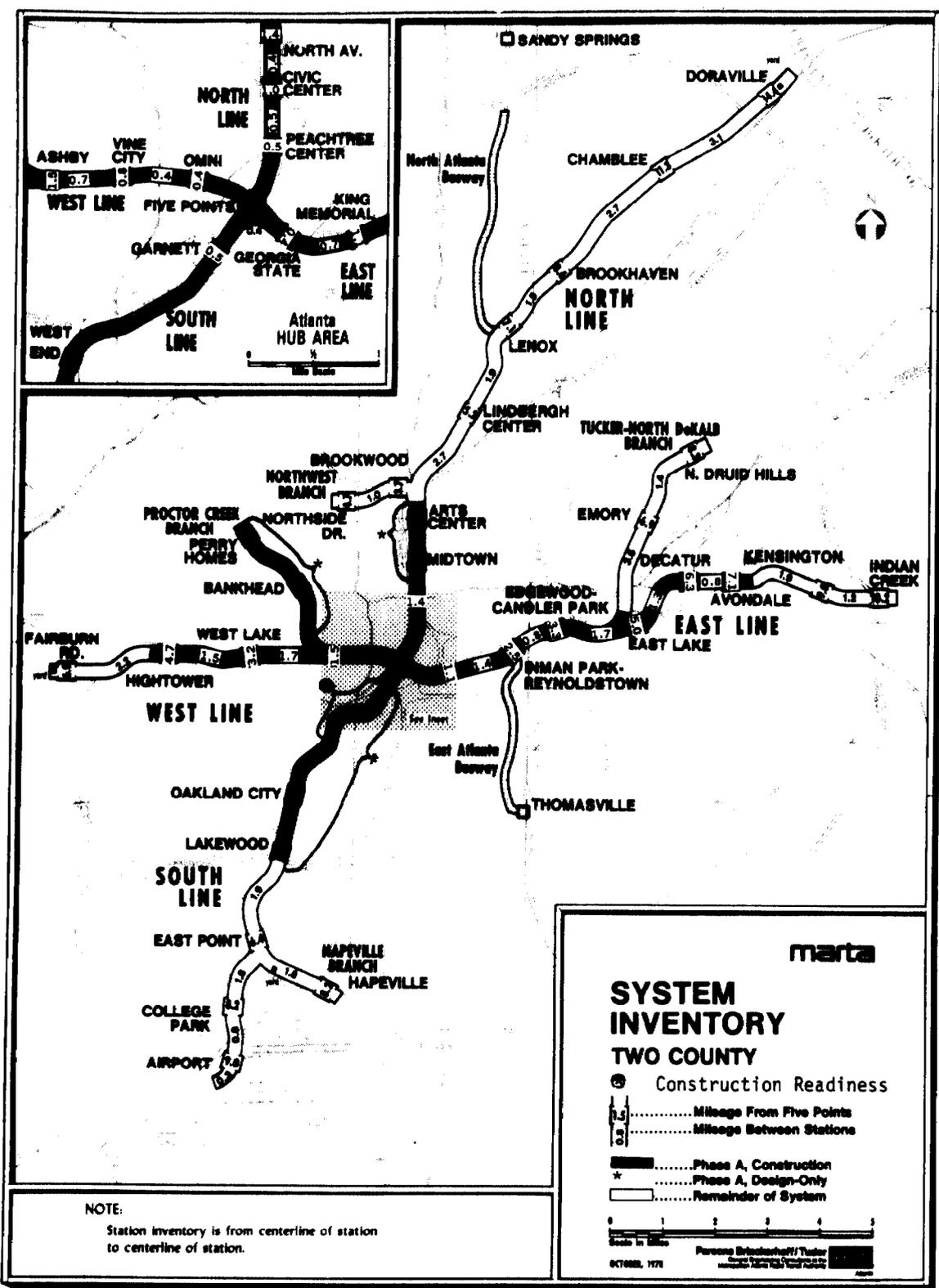
A picture of a MARTA car and the Avondale and Decatur Stations are shown on page 3.

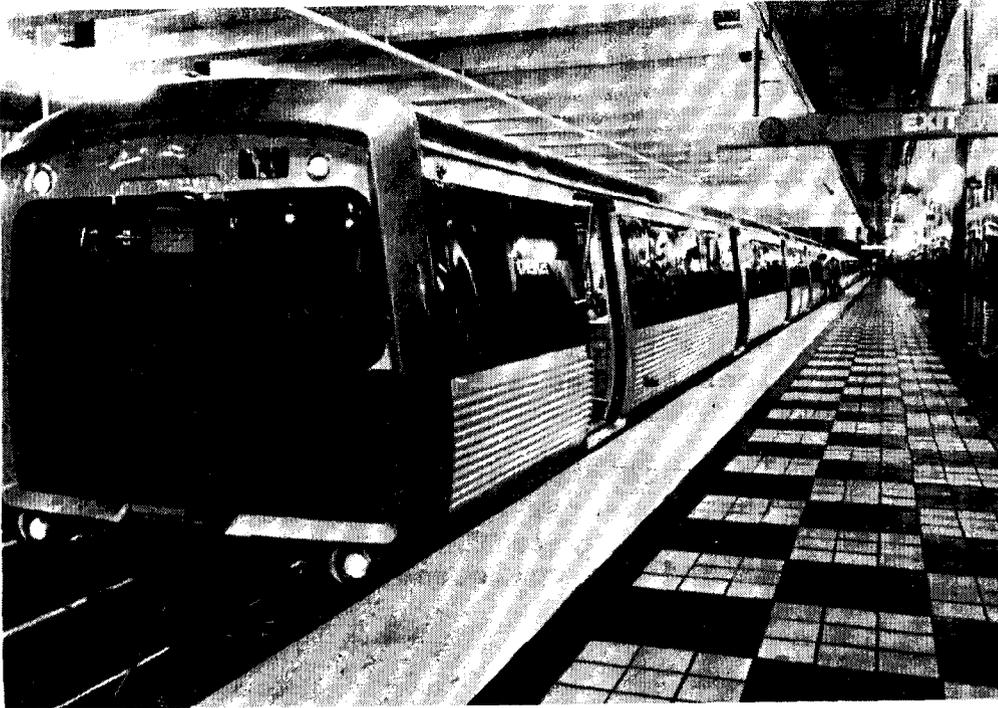
PROJECT FUNDING

The Urban Mass Transportation Act of 1964, as amended, authorizes up to 80 percent Federal funding of total capital acquisition and construction costs for rapid transit systems. The Urban Mass Transportation Administration (UMTA), one of seven operating units of the Department of Transportation, is responsible for carrying out the Federal mandate to improve urban mass transportation.

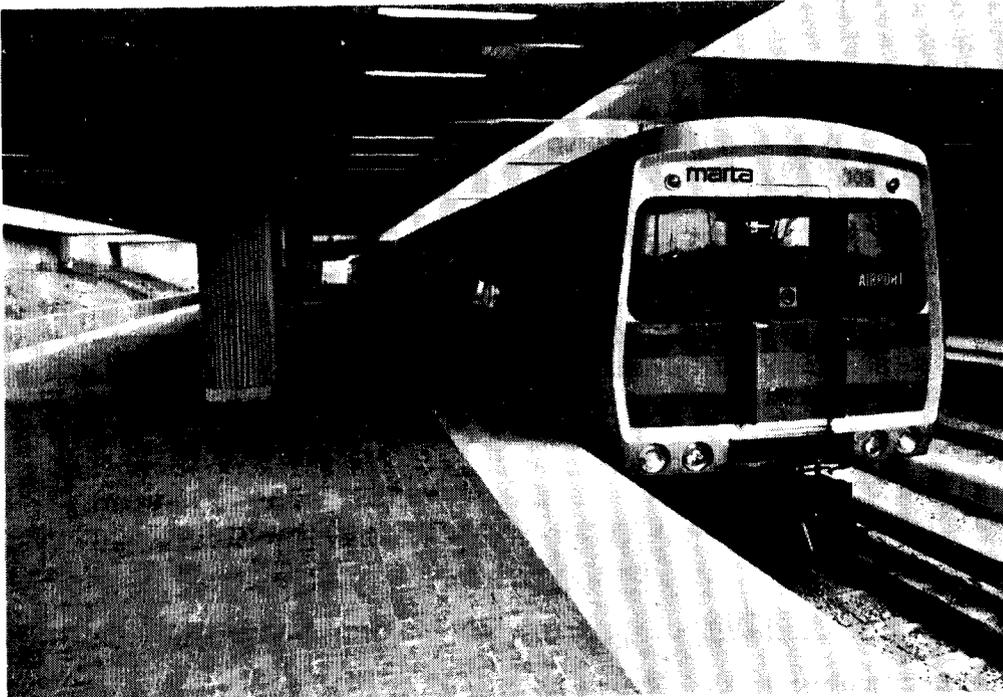
In 1971 the voters of the City of Atlanta and two adjacent counties authorized a 1 percent sales and use tax and a bonding capacity of \$200 million of revenue bonds to finance the local share of a rapid transit system, then estimated to cost \$1.3 billion. By 1974 the system's estimated cost, for a variety of reasons, including inflation, had increased to \$2.1 billion.

In May 1975 UMTA awarded MARTA a \$800 million grant for the development and construction of the first phase of the rail system. UMTA stipulated, however, that the \$800 million should be used to construct a segment which could operate as a full system if the remaining portions of the system were not built. The grant agreement allowed increases in this \$800 million limit only for extraordinary causes such as .





DECATUR STATION



AVONDALE STATION

- additional construction and some procurement costs because of an inflation rate in excess of the May 1975 estimate,
- real estate costs beyond MARTA's just compensation offer where condemnation was necessary and for approved administrative settlements,
- acts of God, or
- additional costs resulting from Federal legislation or for regulations enacted after the May 1975 implementation date.

In 1979 MARTA's revenue bonding capacity was increased to \$650 million, and the sales tax expiration date was extended to 1997. As of September 30, 1979, MARTA had issued \$150 million of the bonds and had collected \$427.6 million in sales taxes.

PROJECT MANAGEMENT

After considering management systems used by other rapid transit authorities, MARTA chose to contract with an engineering consultant for the primary design, construction, and procurement of its system. However, overall management of the project and monitoring of the consulting engineer remained the responsibility of MARTA's engineers and management personnel. Under this arrangement MARTA retained final authority and approval for all functions. Also, MARTA set up a real estate division to handle all rights-of-way acquisitions, except those involving eminent domain proceedings. As of September 30, 1979, the consulting engineer had 383 employees assigned to the project, and MARTA had a staff of 101 assigned directly to the project.

All major decisions and contract awards must be approved by MARTA's Board of Directors, and UMTA has project development responsibility to assure that Federal funds are spent properly and effectively. After evaluating and approving MARTA's policies, procedures, and management concepts in 1976, UMTA waived its requirements for prior approval on most actions. Since then, it has exerted only limited oversight of MARTA's contracts, schedules, budgets, and work scope.

CURRENT PROJECT STATUS

MARTA completed a 6.7-mile segment of the East Line of phase A and began weekday service on June 30, 1979, which

has since been expanded to include weekends. The West Line was completed and began revenue operations on December 22, 1979. The North-South segment of phase A is scheduled to begin revenue operations in mid-1981. UMTA has agreed that, within certain limits, local funds used for work beyond phase A will be eligible for Federal participation, assuming Federal funds are available and MARTA qualifies for a grant. MARTA, using local funds, is continuing system design and purchasing rights-of-way for completion of the North-South Line.

SCOPE OF REVIEW

We reviewed both MARTA's and UMTA's records pertaining to phase A of the project and available records on segments of the system to be completed under future UMTA grants. We conferred with officials of MARTA and UMTA's region IV headquarters who have direct cognizance over MARTA grants.

Also, we coordinated with MARTA's internal audit staff, utilizing the results of their reviews as much as possible. Internal audit coverage over the past 3 years was reviewed and considered in determining the depth of our audit coverage. Our work was significantly reduced in the real estate area as a result of efforts by the MARTA internal audit group. We also assisted the internal auditors in developing an audit program for a review of the warranty area and utilized the results of their work in our coverage of warranty administration. Also, we reviewed reports of the Defense Contract Audit Agency on UMTA's operations.

CHAPTER 2

PROJECT DEVELOPMENT: GENERALLY GOOD

Although MARTA has made mistakes and was overly optimistic in some of its projections and estimates, project development generally has been good on phase A. Cost increases that occurred are attributed to startup costs; inflation; excessive condemnation awards; and MARTA's policy of concurrently designing, acquiring property, and constructing portions of the system. Scheduled revenue service was delayed 6 months on the East Line, the West Line began service on schedule in December 1979, and a delay of up to a year is probable on the North-South Line. MARTA has been experiencing generally good performance on that portion of the system currently in operation.

PROJECT COSTS
EXCEED ORIGINAL ESTIMATES

Phase A of the MARTA system is almost complete and will cost about \$1.067 billion, an increase of \$50 million (5 percent) over the estimate included in the May 1975 implementation plan. However, individual cost item estimates changed significantly since 1975. The following table lists the original 1975 estimates, the more definitive 1976 revisions, and the current estimates.

<u>Cost category</u>	<u>Cost estimates</u>			<u>Difference</u> <u>(1975 to 1979)</u>
	<u>May</u> <u>1975</u>	<u>May</u> <u>1976</u>	<u>October</u> <u>1979</u>	
----- (000 omitted) -----				
Transit vehicles	\$ 60,000	\$ 62,763	\$ 71,419	\$11,419
Support and maintenance equipment	58,051	57,251	63,298	5,247
Real estate acquisition	64,969	76,228	101,922	36,953
Relocations	10,336	6,233	6,895	-3,441
Engineering and design	93,169	153,481	169,645	76,476
Construction management	21,277	27,716	16,094	-5,183
Construction of facilities	247,995	167,454	202,847	-45,148
Right-of-way construction	319,797	308,160	318,186	-1,611
Insurance	17,028	34,827	31,395	14,367
Capital utilities	22,700	48,861	48,522	25,822
Support services	27,847	35,611	39,890	12,043
Contingencies	74,131	40,115	-	-74,131
Revenue financing	-	-1,400	-3,237	-3,237
Total	\$1,017,300	\$1,017,300	\$1,066,876	\$49,576

As shown above, phase A experienced substantially higher costs from the 1975 estimate than anticipated in engineering and design, real estate acquisition, capital utilities, insurance, support services, transit vehicles, and support and maintenance equipment. The only major reduction was in construction of facilities. The increase in capital utilities includes \$22 million for a power distribution system not included in the original estimate. MARTA originally assumed the power company would construct these facilities.

FACTORS AFFECTING COSTS SINCE 1976

The major cost increases since 1976 have occurred in real estate acquisition (\$25.7 million), engineering and design (\$16.2 million), and construction (\$45.4 million). Startup costs; inflation; condemnation awards; and MARTA's policy of concurrent design, property acquisition, and construction caused these increases.

Originally, UMTA did not specifically provide for grantees to include startup costs in its grant estimates; therefore, MARTA did not provide for these costs in its grant budget. Since April 1979, MARTA has added \$8.9 million to its budget forecast for this purpose. MARTA also identified an additional \$10.9 million of "extraordinary" costs-- \$4.6 million for construction inflation rates exceeding those anticipated in 1975 and \$6.3 million for condemnation awards in excess of MARTA's just compensation offers. Likewise, MARTA officials attributed the increase in real estate costs largely to inflation.

The impact of concurrent design, construction, and right-of-way acquisition on the MARTA project

The low state of activity in Atlanta's construction industry in 1975 resulted in a favorable environment for advertising and awarding construction contracts. To take advantage of the situation, speedup project development and construction, meet scheduled revenue service dates, and minimize the impact of inflation, MARTA adopted the concurrency technique. This involved completing the design, acquiring needed property, and contracting for construction simultaneously instead of sequentially.

Although concurrent development at first appeared successful because bids on early construction contracts were generally below MARTA estimates, it later proved to be costly in certain circumstances. In one case, property needed to complete a

portion of the system was being leased to a private enterprise by the State of Georgia, and the State would not authorize condemnation. Lengthy negotiations with the lessee resulted in a construction delay of 7 months, costing MARTA an additional \$2.6 million. MARTA, without obtaining prior approval in accordance with UMTA regulations, eventually agreed to pay the lessee \$2.2 million for airspace and support structure rights for its elevated track over the property, even though before negotiations just compensation for the property was established at \$142,500 by MARTA with UMTA concurrence. We believe that UMTA should limit its participation to this amount.

MARTA may also incur other construction delay costs of about \$3.9 million. One contractor was awarded \$445,000 for construction resequencing caused by delays in real estate acquisition; another contract was increased \$750,000 for design changes, railroad agreements, utility relocations, and delays in acquiring needed property to meet construction schedules. Still another contractor has submitted claims for \$2.7 million for delays in his construction schedule.

MARTA officials also stated that concurrent development has caused increased design and engineering costs, citing that, in some cases, construction contracts were awarded before designs were complete resulting in extensive redesigning costs. Design changes have also affected adjacent construction, and costs were increased on all affected contracts.

The MARTA General Manager said that given the depressed state of the construction industry in 1975 and the impact of inflation on any schedule slippages that otherwise might have occurred, the positive features of the concurrent development technique outweighed the negative features. He stated that, in his opinion, the overall project costs were lower by using this technique than they would have been if all development and construction phases had been done sequentially.

Although MARTA's concurrent development technique offers some schedule and cost advantages, particularly when the construction industry is economically depressed, it should be recognized, however, that the technique created other problems which proved to be costly. Without the benefit of studies conducted for that purpose, it is not possible with any certainty to state that costs were lower or to what extent they were. MARTA, in proceeding with project development beyond phase A, has now developed a system to assure that design and property acquisitions are in order before construction contracts are awarded.

REVENUE SERVICE
SCHEDULE DELAYS

MARTA planned for the 7.1 mile East Line to go into revenue service in December 1978, but problems in obtaining the railcars caused a delay of about 6 months. According to the transit car contract, 24 cars were to be delivered and accepted by December 1978. None were accepted by that date. The date for beginning revenue service was then revised to June 1979, but only 20 cars were accepted and available when revenue service began. The West Line began service as scheduled in December 1979. The railcar contractor delivered enough cars to meet this schedule.

The North-South Line, initially scheduled to begin revenue service in November 1980, is now scheduled to open in April 1981. MARTA attributes this 6-month delay to problems in real estate acquisitions and delays in reaching agreement with the City of Atlanta. A further delay of 4 to 6 months is now probable, partly because of delays in obtaining certain access rights and partly because of contractors falling behind schedule.

RAPID TRANSIT SYSTEM
PERFORMANCE IS GENERALLY GOOD

Although MARTA has experienced some minor problems since revenue service on the East Line began in June 1979, the performance of the system has generally been good. For example, MARTA established a target for its trains to achieve a systemwide ontime performance 93 percent of the time, but they have averaged 97 percent for the first 5 months of operation, with a high of 98.6 percent in November 1979. Because of a lack of cars when service began, the system operated on a limited schedule and only on weekdays. Service has since been expanded to include weekends, more frequent trips, and longer operating hours.

Patronage on the rail system for the 5 months of July through November 1979 is shown below:

<u>Month</u>	<u>Patrons</u>
July	263,500
August	268,200
September	204,100
October	523,709
November	654,196

In October 1979 MARTA started a feeder bus system, which is increasing patronage by routing more people to the rapid rail stations rather than directly downtown.

MARTA'S ASSESSMENT OF
PHASE A PROGRESS

The MARTA General Manager attributed much of the rapid rail system's development success to UMTA's commitment of \$800 million to fund the entire phase A system and MARTA's reciprocal commitment to build the phase A system within this amount. MARTA knew that, except for limited extraordinary costs as defined in the agreement, cost overruns would have to be paid from local funds. The General Manager said this limit on Federal funds, along with the management flexibility provided by the full \$800 million Federal commitment, was the most effective incentive UMTA could have used.

CHAPTER 3

MARTA'S EXPERIENCE

COULD BENEFIT OTHER TRANSIT AUTHORITIES

MARTA's phase A grant was the first major project for which UMTA had grant responsibilities throughout project development and construction. MARTA's experiences therefore should not only benefit UMTA in its future administration of grants but also be helpful to other rapid transit authorities in managing such projects. UMTA should require other authorities to adopt the good features of the MARTA system into their own management systems. The sections that follow identify specific areas in which we believe MARTA system development experiences would benefit UMTA and other transit authorities.

UMTA WAIVER OF PRIOR APPROVAL REQUIREMENT

In 1977, in an attempt to provide greater efficiency in administering the MARTA project, UMTA waived the requirement for MARTA to obtain prior approval for some procurement actions and for concurrence on certain real estate appraisals. However, at the time UMTA granted the waiver, MARTA's procurement procedures were inadequate.

Although Office of Management and Budget (OMB) Circular A-102, attachment O, limits Federal grantor preaward review and approval of its grantees proposed contracts and procurement documents, attachment O requires Federal grantor agencies to review its grantees' procurement systems as a prerequisite for certifying that grantee procurement systems are fair, efficient, and effective. The certification process described was effective as of October 1, 1979. Prior to that time, UMTA generally required its grantees to receive prior approval for a number of procurement items, including prebid review, approval of construction and rail activation solicitations, and addenda to construction and procurement contracts. In July 1978 UMTA extended its waiver for prior approval in connection with mistakes in bids, single bids, and nonresponsive bids, although UMTA did specify that MARTA must certify the action and maintain adequately documented files to support its decisions.

In September 1978 the Defense Contract Audit Agency issued a report on its review of MARTA procurement procedures which stated that:

- MARTA had no written procedures for single bid responses, evaluation of bids, awarding of contracts to other than low bidder, and withdrawal of bids.
- Procedures to insure consistent and effective award and administration of fixed-price contracts were inadequate.
- MARTA's practices for recording bids, determining responsiveness and responsibility of bidders, and limiting competition because of restrictive requirements and its rationale for determining insufficient bidder response were weak.

A MARTA task force, formed to review its procurement practices and procedures, agreed with the report's recommendations and agreed to develop new procedures.

DEVELOPMENT PROCEEDING BEYOND
PHASE A WITHOUT GRANT CONTRACT

UMTA has authorized MARTA to proceed with project development beyond phase A, using primarily local funds, with the understanding that costs incurred may be included in future project grants if such grants are approved. UMTA does not guarantee, however, that the projects will be approved for Federal assistance nor that all the items or costs incurred will be eligible for inclusion in the projects.

MARTA, in order to maintain development momentum, requested and received UMTA approval for development beyond phase A under no-prejudice funding. This is an arrangement in which expenditures are financed from local funds which may be reimbursed in future grants. MARTA currently has outstanding no-prejudice authorizations from UMTA totaling \$161 million of which the Federal share, at 80 percent, would be \$128.8 million. MARTA has received one grant of \$25 million (authorization of \$31.25 million) making a total authorization beyond phase A of \$192.2 million.

No-prejudice authorizations essentially restrict development to certain areas of the project. There is no commitment by MARTA to complete development of the items included in the no-prejudice authorization, nor has UMTA specified that it will not participate beyond certain cost limits. Absent from the UMTA authorizations are the limits of participation by the Federal government in extraordinary costs, such as inflation beyond certain percentages or eminent domain proceedings, included in the phase A contract.

While UMTA is not legally bound to fund expenditures under no-prejudice authorizations, the transit authority obviously anticipates eventual Federal reimbursement of 80 percent of these costs. UMTA, in disapproving a MARTA request for \$102 million in no-prejudice authority in June 1978, stated that approval of such a request

"* * * would be interpreted as a commitment to a multi-million dollar project, for which, at the present time, there is no available Federal funding."

Since both MARTA and UMTA expect that no-prejudice authorizations will eventually result in grants providing for Federal reimbursement, we believe the same restrictions and incentives included in the phase A contract should be included in these authorizations. Although MARTA's no-prejudice authorizations are supported by cost estimates, these estimates are subject to change as the project progresses. Since the authorizations do not limit increases to extraordinary costs, such as inflation and eminent domain proceedings, the incentive for achieving project objectives within a fixed budget, cited by the MARTA General Manager as a key factor in MARTA's successful management under phase A, is not present when a no-prejudice authorization is approved.

INEFFECTIVE CONTRACT ADMINISTRATION

MARTA's administration of the railcar contract has been characterized by

- informal agreements between the MARTA General Manager and the contractor,
- progress payments made before designated milestones were achieved, and
- failure to enforce contract provisions.

The ineffective contract administration has caused costly schedule delays.

Since the contract for delivery and acceptance of 100 railcars was awarded to a French firm in 1976, the contractor has consistently failed to meet contract milestones. The first contract milestone provided for the contractor to furnish six documents within 30 days from the issuance of the Notice to Proceed. Three of the documents, which

would appear to be essential for schedule management, were not submitted by the milestone date. The documents include

- a master schedule depicting key milestones and events,
- a flow chart showing the timing and integration of all tasks on the first railcar, and
- a manufacturing schedule.

Other milestone dates were missed, and MARTA tried to encourage compliance by delaying progress payments in accordance with the terms of the contract. In August 1979 the contractor's President notified MARTA's General Manager that his firm would not ship the next four vehicles if, as a MARTA representative recommended, the Authority withheld progress payments. MARTA decided to make the progress payments even though milestones were not achieved.

The MARTA General Manager and the contractor also made informal agreements regarding contractor performance but did not incorporate these modifications into the contract. In some instances, the General Manager attempted to achieve a lesser degree of contractor performance and make progress payments as though contractual obligations had been performed. For example, MARTA, in exchange for the progress payments, attempted to get the contractor's assurance that the contractor would work toward achieving 50 accepted cars by December 1979. The contract, however, stipulated acceptance of all 100 cars by November 1979.

The railcar contract is being administered by a general engineering consulting firm. Its responsibilities include

- providing documentation for determining progress payments;
- coordinating changes to the contract and negotiating cost and schedule changes; and
- assisting MARTA in the resolution of claims, lawsuits, arbitration, and other matters.

However, MARTA's informal changes to the contract frustrated the consultant's efforts to effectively carry out these responsibilities. According to MARTA's legal counsel, the intent of some of the General Manager's memorandums to the contractor are contractually binding. Such informal administration makes it more difficult, if not impossible, to resolve the claims, initiate lawsuits, or arbitrate differences.

MARTA's principal concern after awarding the railcar contract was to obtain car deliveries to meet its scheduled revenue service date. In commenting on the administration of the contract, the MARTA General Manager pointed out that valuable time would have been lost had MARTA declared the contractor in default. Notwithstanding the contractual problems that have, or may occur, he noted that the cars that were delivered are operating with minimal problems when compared to the performance of new cars of other transit systems.

The MARTA General Manager said that, in retrospect, the contractual milestones were the principal problem. He said the car contractor is not familiar with the complex American system for meeting the milestones which are designed to measure progress in order to earn progress payments. Moreover, he said that the contractor has incurred substantial costs that exceeded progress payments and that contract administration would be greatly simplified if the contractor were to receive another contract. Under a follow-on contract, many of the milestones would be eliminated and progress payments would be calculated differently, probably with an advance payment for part of the contract and the balance payable as deliveries are actually made.

PUBLIC HOUSING REPLACEMENT EXCEEDS APPRAISED VALUE

MARTA, without advance UMTA approval, is constructing replacement public housing at an estimated cost of \$4.3 million, almost \$1.7 million more than MARTA estimated it would cost. Much of the difference is because of higher quality building standards for the new housing than those that existed for the units being replaced. When it agreed to construct this housing, MARTA entered into a contractual arrangement whereby the Atlanta Housing Authority (AHA) and the Department of Housing and Urban Development (HUD) could require design changes without MARTA having any alternative but to comply. Although MARTA will ask UMTA to fund 80 percent of the construction costs, MARTA did not request UMTA's approval of the construction arrangement until building sites had been selected, buildings were designed, and a construction contract was awarded.

MARTA's rapid rail line runs through a low-rent public housing district that AHA built about 11 years ago with funds from HUD. About 128 apartments of the 650-unit complex will be condemned and removed to accommodate construction of the rapid transit system. A May 1978 appraisal of these 128 units established the replacement cost at \$2.6 million. To expedite construction of the replacement units, MARTA, in

lieu of a lump-sum payment to AHA, agreed to construct the new units. In March 1978 the MARTA Board of Directors approved a resolution authorizing MARTA to enter into an agreement with AHA for that purpose. The agreement gave HUD and AHA design review and approval rights.

In May 1978 MARTA awarded a design contract which stipulated that the estimated construction cost of the apartment units so designed could not exceed \$2.4 million. This estimate was based on 1977 HUD prototype costs plus a 6 percent escalation factor. However, a construction contract for the units ultimately designed was awarded to the low bidder in January 1979 for \$3.9 million. The bid substantially exceeded MARTA's estimate because of higher quality building standards and materials required by the City of Atlanta, AHA, and HUD as well as added items and unusual escalation. MARTA's Board approved this contract and budgeted an additional \$200,000 for contingencies.

In June 1979, about 5 months after awarding the construction contract, MARTA advised UMTA of its replacement housing arrangement and requested approval of the project for UMTA funding. UMTA is currently reviewing MARTA's request to determine if the costs will be allowable. However, UMTA regulations provide for administrative approval of Federal participation in right-of-way costs that exceed just compensation (usually the appraised value) only when prior UMTA approval is obtained. Otherwise, Federal participation is limited to just compensation, or the costs in eminent domain proceedings. Since MARTA did not obtain prior UMTA approval of its arrangement with AHA and HUD, Federal participation in those costs in excess of just compensation appears questionable.

MARTA's General Manager felt that to disallow part of the cost to replace the low-rent housing would be an unreasonable penalty. He stated that retroactive administrative approval for full Federal participation can be provided.

NEED FOR MORE AND BETTER UMTA GUIDANCE ON WARRANTY PROGRAMS

MARTA contract warranty provisions are inadequate because they are not specific as to coverage. The Authority is only now preparing formal procedures to implement its warranties even though it has awarded virtually all major procurement contracts under phase A and the warranty period on some items began several months ago. UMTA reviewed and approved most of the MARTA contracts containing the deficient warranty provisions.

In February 1979 GAO reported 1/ that the Washington Metropolitan Area Transit Authority needed to improve its management of warranty provisions. Because of this report, the MARTA Office of Audit with our assistance reviewed MARTA's warranty program to determine (1) whether it adequately complied with warranty administration procedures and (2) whether clear and consistent interpretation of warranty provisions was established. The Office of Audit reviewed warranty provisions of the transit vehicle, train control, yard control, and fare collection contracts with special emphasis on warranty administration of the transit vehicle. It concluded that warranty administration procedures were inadequate and that unclear and inconsistent interpretation of warranty provisions would impair proper warranty administration.

For example, the report noted that MARTA maintenance personnel are performing work related to equipment under warranty but not billing the cost of the repairs to the contractor. The warranty provisions do not specifically address the question of in-house warranty repair, and MARTA is negotiating with the contractor for such an arrangement. MARTA officials concurred that its warranty program needs improvement and are taking actions to correct the deficiencies cited.

Now that at least two transit authorities have experienced similar problems with warranty programs, UMTA clearly needs to become more involved in developing acceptable contract warranty provisions and in establishing adequate warranty administration programs. Also, in view of the warranty problems experienced, UMTA's review and approval process is apparently inadequate. UMTA should develop a better understanding of what constitutes fair and adequate warranty provisions so it can provide advice and guidance to local authorities. UMTA should also be able to provide advice and guidance to the authorities on proper administration procedures to assure that the benefits of warranties, funded in large part by Federal funds, are fully realized. In December 1979 we issued a report 2/ pertaining to the need for better management and administration of warranties by UMTA and its grantees.

1/"Better Management of METRO Subway Equipment Warranties Needed," PSAD-79-41, Feb. 27, 1979.

2/"Transit Equipment Warranties Should Be Enforced," PSAD-80-12, Dec. 7, 1979.

ORGANIZATIONAL INDEPENDENCE
BENEFICIAL TO INTERNAL AUDIT FUNCTION

Since August 1979 MARTA's internal audit group reports directly and simultaneously to its General Manager and Board of Directors; thus, the internal audit function is independent of other organizational functions. This organizational independence has permitted the audit group to report on internal matters with a minimum of influence from other organizational groups. This permits more timely reporting without influence from other organizational levels. The audit group has no direct enforcement power for its recommendations; but, because it reports its findings to the highest level in MARTA, more positive responses and actions are anticipated. We believe that the audit group's organizational alignment is a significant factor in achieving independent, effective audits of internal affairs.

CHAPTER 4

CONCLUSIONS, RECOMMENDATIONS, AND AGENCY COMMENTS

CONCLUSIONS

Experiences under MARTA's phase A grant have revealed weaknesses in both UMTA's administration of the grant and MARTA's management of the project. In some instances, more thorough UMTA review and guidance could have eliminated, or at least lessened, MARTA's management weaknesses. But MARTA has also demonstrated a commitment to effective management by establishing an independent internal audit function which UMTA should require other local transit authorities to adopt.

Specifically, we have concluded that:

- UMTA waived prior approval requirements for some procurement actions even though MARTA procedures were inadequate.
- UMTA authorized MARTA to proceed with project development beyond phase A using primarily local funds that may be reimbursed under future project grants if approved. However, these authorizations do not include restrictions and incentives included in the phase A grant agreement that assure complete development of items in the no-prejudice authorization and that limit Government participation in cost overruns to extraordinary costs, such as eminent domain proceedings or inflation beyond certain percentages.
- MARTA's administration of the railcar contract has been ineffective, characterized by informal agreements and payment of progress payments before designated milestones were achieved.
- MARTA's contract warranty program needs improvement, and UMTA's review and guidance in this area has been inadequate.
- MARTA, without prior UMTA approval, is spending more to replace public housing units than the established just compensation value.
- The MARTA internal audit group has the necessary independence which enables it to report audit results to the highest organizational elements with a minimum of influence from other organizational functions.

RECOMMENDATIONS

We recommend that the Secretary of Transportation direct UMTA's Administrator to

- assure that local transit authority procurement and procurement-related practices and procedures are adequate before UMTA waives its prior review and approval requirements;
- incorporate into its no-prejudice authorizations restrictions and incentives similar to those included in MARTA's phase A grant agreement to limit Government participation in cost overruns to extraordinary costs, such as eminent domain proceedings or inflation beyond certain percentages;
- direct MARTA, in future procurements, to formally incorporate all contract changes into the contract;
- assure that contracts are being properly administered in accordance with contract provisions;
- develop a better understanding of warranties and prepare and implement guidelines to assist rapid transit authorities in preparing warranty provisions and establishing a contract warranty program to assure that warranty provisions are properly enforced;
- require that an organizationally independent internal audit function be established at other transit authorities receiving Federal grants; and
- disallow for Federal participation the cost of the replacement housing experienced by MARTA in excess of the established just compensation value.

AGENCY COMMENTS AND OUR EVALUATION

Department of Transportation officials provided us with comments on this report. Officials did not take issue with any of the factual data or our conclusions, but they believed they were restricted from implementing our recommendations because they were contradictory to attachments O and P of OMB Circular A-102. In their opinion, these attachments to the Circular limited Federal involvement in grantee internal operations.

We contacted OMB for clarification and its interpretation of the Circular's limitations and requirements. OMB officials stated that the Department of Transportation and UMTA on a previous occasion used Circular A-102 as an excuse for not implementing audit recommendations dealing with grantee procurement practices. OMB determined that the excuse was without merit.

OMB officials stated that attachment O should not be construed as limiting grantor agencies from requiring grantees to adopt and maintain good procurement practices. In fact, OMB pointed out that grantees are required to maintain adequate controls over Federal grants and that grantor agencies should determine on a case-by-case basis if the grantee has established proper procurement practices. If the grantee has not done so, it is the grantor agency's responsibility to advise the grantee to take corrective action and if necessary assist the grantee in doing so.

OMB officials also stated that attachment P should not restrict grantor agencies from requiring establishment of independent internal audit functions. In fact, they stated this is normally required to maintain proper control over Federal funds. It appears, in this case, that the Department of Transportation and UMTA are confusing an independent audit requirement performed by someone outside of the transit authority with an independent internal audit function. Attachment P pertains only to audits by outside, independent auditors.

OMB reviewed each of the recommendations stated above, and in their opinion there is no conflict between attachments O and P of OMB Circular A-102 and the recommendations.



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