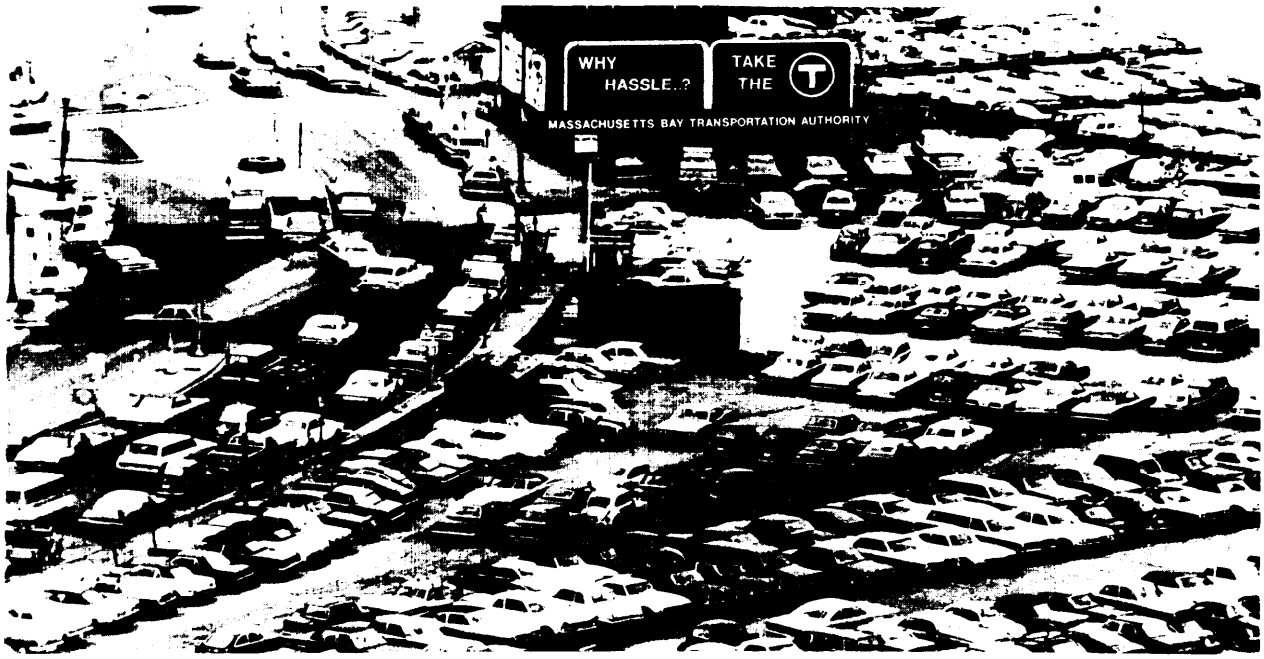
Assessment of the Planning and Decisionmaking Process



INSTITUTIONAL CONTEXT

The institutional context for transit decision-making in the Boston region is complex because of the sheer number of jurisdictions in the area and the presence of the State capital. However, over the past few years a relatively effective institutional structure has evolved in which the State Executive Office of Transportation and Construction (EOTC) plays the lead role, working closely with the region's Central Transportation Planning Staff.

Forum for Decisionmaking

Historically, transportation decisions in Boston were made by semiautonomous highway and transit agencies and local governments. Recent agency reorganization programs have centralized transportation policymaking in EOTC and clarified transportation planning and project development responsibilities in the Boston area.

Historically, the Massachusetts Bay Transit Authority (MBTA), the MBTA Advisory Board, and the General Court (the State legislature) shared the power to identify and implement new capital improvement projects. The General Court must approve new bonding authority by a two-thirds affirmative vote. Since such authority traditionally has been granted on a project-by-project basis, the General Court has retained a substantial measure of control over the timing and location of new capital improvement projects. Considering that $389 million in bonding authority was authorized during the first 10 years of MBTA's existence (1964-73), the General Court has enjoyed considerable leverage over MBTA's construction program.

As of January 1, 19'75, however, an additional major actor has been inserted into the decision-making process. On that date the Exectuive Office of Transportation and Construction (EOTC) assumed responsibility for preparation of the region's annual program for mass transportation. Because the Secretary of Transportation and Construction is appointed by and serves at the pleasure of the Governor, the executive branch of

State government is now directly involved in the transit planning and decisionmaking process. As its transit planning responsibilities have shifted to EOTC, MBTA has come to function primarily as a transit operating agency. The MBTA Advisory Board, however, still participates in transit policymaking, albeit in a minor way, through its statutory power to approve MBTA's capital improvement program.

EOTC holds a powerful position in Boston's transportation decisionmaking by virtue of its responsibility y for all transportation issues—highway, rail, port, and airport. Since the governmental reorganization plan of 1971, EOTC has consolidated under one administrative roof a number of agencies, boards, and commissions that previously were autonomous in terms of setting transportation policies and operating transportation facilities within the Boston area. These entities include the Department of Public Works, MBTA, Massport, Masspike, and certain transportation functions of the Metropolitan District Commission.

In March 1975, ETOC'S lead role in regional transportation planning was officially sanctioned when the EOTC Secretary was named chairman of the five-agency collective Metropolitan Planning Organization. Thus the EOTC Secretary is ultimately responsible for the distribution of all Federal transportation grants within the area. EOTC provides an effective centralized forum for creation and coordination of basic transportation policy. This forum has led to more efficient transportation planning and management of operations.

The Department of Public Works (DPW), like MBTA, has transferred much of its policymaking function to EOTC. Although DPW retains a considerable amount of power—due to its size budgetary resources, and political connections throughout the State—major policy and project decisions are made by the Secretary of EOTC. Similarly, although DPW'S Bureau of Transportation Planning and Development maintains a large staff of transportation planners, CTPS has taken the lead role in technical transportation planning in the Boston area.

Because it is the region's A-95 review body and coordinates the area's land use planning efforts, the Metropolitan Area Planning Council (MAPC) might be expected to take a relatively strong position in regional transportation decision making. However, due to the jealously guarded independence of local cities and towns in the Boston area, MAPC usually exercises a cautious, advisory role in the region's affairs. This approach has tended to limit the influence exerted by MAPC in recent years on transportation planning and decisionmaking, on both a technical and policy level.

Since its creation in 1974 the Central Transportation Planning Staff (CTPS) has become the vehicle for most technical transportation planning work in the region. CTPS is an interdisciplinary group of technical specialists modeled after the BTPR study team. The structure facilitates close coordination between transportation and land use planning.

Although officially responsible only for the technical aspects of the planning process, CTPS tends to become involved in policy matters through a close working relationship with EOTC. When EOTC recently was given responsibility for preparing the region's annual transit development program, it delegated this task to CTPS.

The Joint Regional Transportation Committee (JRTC) acts principally as an advisory body. Through this organization DPW, MBTA, and MAPC—along with numerous delegates from cities and towns as well as private organizations—can review decisions reached by EOTC and CTPS. JRTC does not have a technical staff and has no specific planning responsibility other than its reviewing and advisory duties.

Accountability of Decisionmakers

The recent statutory reallocation of transit decisionmaking responsibilities, discussed in the preceding paragraphs, tends to focus considerable attention on the Office of the Secretary of Transportation and Construction and—ultimately—on the Governor's office as well. The Governor is the only elected official involved in transit-related decisions who is responsible to the entire regional electorate, and therefore the gubernatorial election is the public's most direct formal check on the decisionmaking process.

Lodging the power for transit decisionmaking in a Governor's appointee has several advantages in terms of accountability. Decisionmakers are most directly accountable if the public can vote them in and out of office. The EOTC secretary is not elected, of course, but his direct superior is. For the past several years Massachusetts Governors have

been deeply involved in Boston transportation issues. The Governor and the secretary therefore, are not only more directly accountable than the other transportation decisionmakers in the area but they bring greater visibility to the process. In addition, the Governor and EOTC can view issues with more of a truly regional perspective than representatives from local jurisdictions, who understandably tend to give first priority to more parochial interests and obligations.

MBTA is directed by a board of directors who, although initially appointed by the Governor, serve for a fixed term and have no direct accountability to the electorate. However, the chairman of the board of directors, who also functions as the chief executive officer of MBTA, does serve at the pleasure of the Governor.

By virtue of voting to approve financing for major transit projects, the State legislature influences transit decisions. These legislators are subject to election and therefore can be held accountable for their actions. However, representatives of the State legislature are accountable only to their limited geographic constituencies and—since many representatives are elected from districts outside the MBTA area—a large number have no political ties to the residents and voters of the MBTA district itself.

Similarly, members of the MBTA Advisory Board are appointed by each of the 79 member cities and towns of the MBTA district. Their accountability is also limited to the local area which they represent. Likewise, each MAPC representative owes allegiance to one of the 101 cities and towns participating in that agency.

The Joint Regional Transportation Committee (JRTC) is an advisory body in which nearly half the committee members represent various interest groups. Although the structure may improve the extent to which the full range of public viewpoints is brought to bear on the transit decisionmaking process, there are no formal channels for members of the public to exercise approval or disapproval of the way their interests are being represented, The Central Transportation Planning Staff (CTPS), because it consists of technicians, is further removed from accountability.

Public Involvement

BTPR constituted a major experiment of nationwide significance in its approach to developing an open, participatory study process. The BTPR philosophy has been carried over to the newly established JRTC and CTPS.

The BTPR process greatly expanded and refined the process of citizen and public agency participation in the transportation planning process. Numerous individuals, groups, and agencies that previously had little interest or means for becoming involved in transportation decision making were provided with a forum in which conflicting views could be debated and resolved. While not without flaws, the process of discussion, negotiation, compromise and—most important y—mutual education was greatly facilitated.

BTPR involved many private groups and individuals beyond the traditional and relatively well-organized economic and political interests that traditionally participated in the formulation of regional transportation policies. The Steering Group that developed the BTPR Study *Design* was a broadly representative body with delegates from cities and towns, State agencies, and private organizations throughout the Boston area. It continued in operation during the BTPR in a policy advisory capacity as the BTPR "Working Committee." Many of the same groups continue to be involved in transportation planning through membership on the Joint Regional Transportation Committee.

On the other hand, criticism of the BTPR approach to community participation was voiced by organizations and individuals who were dissatisfied with the study's findings and felt their interests were not adequately represented. In particular, groups fearful that curtailing highway programs would harm Boston's economy, and particularly the viability of the downtown, charged that the prohighway point of view was under-represented in the participation scheme. The Boston Chamber of Commerce, for example, produced its own evaluation of the economic effects of eliminating the Southwest Corridor, recommending that the highway—which would have provided the I-95 connection between Boston's CBD and Providence and New York to the south—should be built. The Chamber's report made little impact on BTPR decisionmakers, but post-BTPR citizen involvement campaigns have been careful to welcome groups such as the Chamber of *Commerce and* other traditional urban-development-oriented organizations into the process.

The BTPR community involvement philosophy has been incorporated in the procedures and

institutions that have been established since 1973—notably in the Joint Regional Transportation Committee, as well as in project-by-project "working committees" formed from representatives of local and regional groups and public agencies having a stake in specific project decisions. Staff support for active and continuing community participation is provided by the Central Transportation Planning Staff and, as a matter of policy, all planning budgets or consultant contracts are expected to set aside 10 percent of project planning resources for the purposes of community liaison and technical assistance.

Although project public hearings continue to provide a definite formal point of public presentation and comment, numerous smaller briefings, working meetings, and presentations are normally held as a matter of course for every major and most minor planning studies. The comments and criticisms which surface during this involvement process have an important impact—although one difficult to measure—on decisions reached by the responsible decisionmakers.

Nevertheless, the considerable public opposition to MBTA's proposed $30 million Red Line extension to the South Shore is evidence of the need to devote more attention to the early identification and resolution of potential community-based opposition.

TECHNICAL PLANNING PROCESS

With the growth of an increasingly open transportation planning process, as well as the involvement of politically and technically astute community and public agency participants, transit planning in Boston since BTPR has been characterized by greater technical detail and clarity. A broad set of goals has evolved, and at least a beginning has been made toward a thorough evaluation of alternative project designs. However, lack of attention to innovative transit improvements and the tendency to disregard transit's possible harmful impacts both are potential obstacles to continued progress.

Goals and Objectives

Prior to BTPR, transit goals for the Boston region were relatively narrowly focused. In contrast, BTPR's goal-setting process was broadly participatory and has led to a comprehensive set of formal objectives intended to guide the refinement of proposals for transit improvements.

When MBTA was authorized in 1964, its enabling legislation set forth a general statement of the new agency's purpose. MBTA was expected to "develop, finance, and operate the mass transportation facilities and equipment in the public interest . . . and to achieve maximum effectiveness in complementing other forms of transportation in order to promote the general economic and social well-being of the area and of the Commonwealth."[16]

MBTA's 1966 *Program for Mass Transportation* elaborated on these broadly stated goals in the course of explaining the advantages of its proposed transit improvements. As stated in the 1966 program, MBTA's transit objectives were overwhelmingly oriented towards cost-efficient "hardware" improvements which would attract additional patronage by improving both the image and the convenience of the region's transit system. Primary emphasis was given to rapid rail transit extensions, new equipment, and modernization of existing stations. "Outmoded" systems—such as commuter rail service—were to be reemphasized unless "satisfactory cost reductions" could be achieved. No mention was given either to regional or transit station area land use considerations, to planning process concerns, or to the identification and minimization of adverse impacts that might be associated with a given improvement project. While these and other nontransportation issues are recognized in the sections of the 1966 program containing detailed descriptions of improvement projects, they are conspicuously absent from the overall statement of objectives.

In terms of the social and economic bases of the 1966 program, MBTA relied exclusively on the land use and travel forecasts prepared by the Eastern Massachusetts Regional Planning Program (EMRPP). Although the EMRPP study helped advance the national state-of-the-art in the application of transportation planning and travel behavior theory, it miscalculated the future changes in the Boston area's distribution of population and

[16] Section 5 (a) of Chapter 161A of the General Laws.

employment. 17 The EMRPP assumed that continued low-density suburbanization of population and employment was both desirable and inevitable—assumptions that are being called into question by environmentalists and urban community representatives in the Boston area. MBTA's 1966 *Program for Mass Transportation* reflected this assumption by giving priority to building attractive and efficient rapid transit extensions to growing suburban communities rather than improving services and facilities in established residential communities in and around the regional core.

BTPR provided a forum for articulating and debating alternative transportation and land use goals for the Boston region. As a result of the BTPR study, new goals and objectives have been developed to guide MBTA's planning projects. These goals reflect a broad range of social, economic, environmental, and transportation issues and have been incorporated into MBTA's 10-*Year 'Transil Deve/opmenl Program*— 1974-83 to assist in carrying out the region's emerging transportation policy of greater emphasis on transit.

One of the MBTA's principal goals calls for emphasizing improved access to existing areas of dense development, particularly the downtown, in order to support efforts to reduce sprawl and concentrate development at nodes. The central business district is considered a "unique regional and indeed national resource" to which "State and city policy" encourages workers to commute by transit. Another important goal, addressing the question of equity, calls for "an integrated network of public transportation facilities and services" in which "intensive coverage of dense close-in residential areas is as important as extensions into the suburbs. " Environmental objectives also are presented, such as the use of existing transportation rights-of-way. These newly defined goals and objectives provide a point of reference for evaluating specific transit programs and improvement projects within the Boston region

I'The miscalculations were not due to lack of technical expertise. EM RPP's analyses were based on reasonable estimates of future conditions; they continue to be an invaluable source of information on transportation planning in the Boston region. These projections proved wrong because of inherent difficulties in forecasting future shifts in public policies, values, and priorities for growth and development.

Development and Evaluation of Alternatives

Unlike areas that do not have an existing transit system in operation, the Boston region is not engaged in a debate over basic transit systems alternatives. Each of the major elements in the existing system—rapid rail, commuter rail, express and local bus service—is recognized as a necessary component of a total system. Moreover, changes in any single component in the existing system are limited to a degree by the practical necessity of joining with other existing facilities. Thus, the rapid rail extensions join with existing terminals or with other major intermediate station locations.

BTPR carried out the most significant alternatives analysis in Boston transportation planning history. This significance is not due to the depth of analysis of transit alternatives. BTPR was fundamentally a highway study, in which the transit alternatives examined were in large part MBTA's long-standing rapid transit proposals. Instead, the strengths of BTPR lay in its procedures for alternatives analysis and citizen involvement processes.

The entire alternatives selection process was carried out at a corridor level, in each of the four transportation corridors considered by the BTPR. First, as many transportation alternatives as possible were generated for each corridor. Each suggestion—from planners, citizens, the business community, or other sources—was developed at a broad sketch plan level of detail, and the less promising options were eliminated. The remaining alternatives were studied in greater depth. The evaluation process was iterative, building time into the study schedule for reexamining alternatives that had been passed over and for adding new options. When the final decisions evolved, a full environmental impact statement was made for each set of final alternatives.

BTPR's citizen participation program used four vehicles for citizen involvement. The strongest forum was the Working Committee, a widely representative group that worked with planners for over 3 years—all the way from the designing of the work program and setting goals to the period of final design at the conclusion of the alternatives evaluation. More conventional forums included formal public hearings and a great number of informal meetings with private individuals and local groups with specific smaller-focus problems. Finally, there was a number of community

organizers hired individually to help citizens who felt excluded from the study proceedings.

Since BTPR, three issues have figured most prominently in MBTA's development and evaluation of alternatives. One issue involves the selection of projects for study. Another concern is the question of setting priorities among the proposed projects. The final issue relates to the procedures to be followed in the project-level technical work.

The current transit program incorporates MBTA's long-standing rapid transit proposals, supplemented by a renewed emphasis on the retention and improvement of commuter rail service. Several reasons account for the survival of the MBTA projects over nearly 10 years marked by changing public opinion and a major transportation planning program, Most importantly, until recently transit proposals were considered noncontroversial, and no major interest group opposed them. The public—and BTPR—were concerned primarily with highways, which threatened far more serious impacts than the MBTA transit proposals 18 but did not challenge the earlier ones, which still dominate MBTA's list.

The selection of projects to appear on MBTA's longstanding list of rapid transit proposals, which was updated most recently for the 10~-Year Development *Program,* appears to have been influenced in some cases by considerations beyond strictly defined transportation needs. As in previous MBTA plans, major improvement projects are distributed among all important transit corridors, although in some cases the need for a particular project has been questioned. For example, extension of the Blue Line to the North **Shore is included** in the program, although BTPR found that no extension would be needed due to the presence of commuter rail service in the corridor. In a different kind of case, MBTA had budgeted funds to allow depressing the Orange Line when it is relocated to the Penn Central right-of-way embankment, even though the added cost will be $40 to $60 million. In both instances, MBTA appeared to be responding to public demand for top-quality transit service and improved community quality. The proposed options may in fact be the most desirable ones, but the questions they raise create pressure for undertaking a thorough reevaluation as the next step in the planning process.

The popular appeal of conventional rail rapid transit may account for MBTA's continued emphasis on extending and improving its transit system with attractive new equipment. The 10-Year *Transit Development Program* reflects relatively little attention either to programs for expanding bus service and other lower-cost transit alternatives or to technological and service innovations.

Regardless of the grounds for selecting projects, once the list is compiled the question becomes how to set priorities among them: funds spent in one corridor will not be available in another. MBTA's strategy has been to give equal weight to three categories of improvement projects:

- **Improvements to Existing System**

  Urgent remedial improvements
  Construction of new bus garages
  Continued updating of revenue equipment fleet
  Continued modernization of existing plant
  Continued station modernization

- **Commuter Rail Improvements**

  Increasing the adequacy of the revenue equipment fleet
  Improving rights-of-way now owned by MBTA
  Acquisition and improvement of additional rights-of-way
  Terminal and service facilities improvements

- **Extensions to Electrified System**

  Completion of Red Line to South Braintree
  Extensions to Orange Line
  North Shore Blue Line improvements
  Extension of the Red Line beyond Harvard Square
  Relocation of Orange Line

While this listing provides a generalized statement of priorities within each category, there is no discussion of potential trade-offs and no schedule showing the sequence of improvements over the next decade. MBTA assumes that projects in each category will be pursued concurrently, both to permit implementation of some while the in-

[18] See page 16.

evitable delays and reversals hold up progress on others, and to be in a position to take advantage of the maximum amount of Federal aid as it may become available even on short notice. Thus, a final definition of priorities has been postponed pending a clarification of project approval requirements and receipt of Federal funding assistance, By hedging the priority question in these ways, MBTA avoids promising to move forward with one project at the expense of another.

With respect to the project-level evaluations of alternative location, design, and modal options, MBTA is relying on project study teams organized in concert with the Central Transportation Planning Staff to investigate the impacts and benefits of specific alternatives. The goal is to develop a local consensus on a preferred alternative, taking into account non transportation as well as transportation factors in a broad-based evaluation process.

Three project study teams are in the process of organization or have already begun technical work. These include the Southwest Corridor study of the Orange Line relocation, the North Shore study of the Blue Line extension to Lynn, and two studies in the Northwest Corridor concerning the Red Line extension from Harvard Square to Route 128 in Lexington. As yet, the work has not progressed to the point where the technical products can be critically evaluated.

1n the past, at least, there has been a tendency to compare the transit improvement programs with the impacts of previous highway system plans rather than to conduct an assessment of transit proposals on their own merits. This attitude is reflected in the resistance of State transportation officials to recognize that major new transit facilities often involve significant social, economic, and environmental impact issues. This approach, if it continues to exist, could hinder the application of technically sound evaluation procedures in the recently initiated studies. However, each of these major studies has been structured to allow in-depth consideration of a full range of alternatives,

Financing and Implementation

As noted, MBTA has not addressed the question of priorities in detail. In part, this issue has been avoided by assuming the maximum availability of Federal aid, with the implicit assumption that local funding will be authorized as needed to match available Federal funds.

Implementation of the 10-Year Transit *Development Program* is estimated to cost a total of $1.75 billion, with the Federal share amounting to $1.4 billion, and the local share $350 million (see Table 2). Funding at these levels will require a marked increase over previous levels of expenditure in the Boston area for both locals and the Federal Government. Between 1965 and 1973, Federal transit assistance to MBTA averaged $32 million per year, while local funding averaged $15 million per year (see Tables 2 and 3). The current program would require Federal funding at an average rate of $140 million per year with local funding at $35 million per year,

Under current legislation, the Federal transit program could not provide the $1.4 billion sum without seriously undercutting assistance to other urban areas. However, some $600 million in Federal funds is expected to become available through the interstate transfer provisions of the 1973 Federal-Aid Highway Act, leaving only $800 million to be obtained from UMTA'S regular program—a figure that appears reasonable within the context of increased Federal funding support for transit.

In terms of local funding, only $100 million of the total $350 million projected for the lo-year program has been authorized by the State legislature. Thus, it is assumed that the remaining $242 million will be authorized when needed in the future. Given the State's current financial crisis, it is unclear whether these funds will be forthcoming without difficulty, especially since the State traditionally has assumed responsibility for a major share of MBTA's debt service requirements. If the State continues to assist MBTA in defraying current operating costs, it may become increasingly unwilling to compound its financial obligations unless it can be demonstrated that the new projects will result in operating cost savings or efficiencies.

Most critically, however, MBTA's lo-year cost estimates are stated in 1974 dollars and therefore are lower than the real costs will be, depending on when the projects are carried out. The program explicitly assumes that the level of Federal aid will be increased during the next decade "at a rate at least equal to the rate of inflation," and it is implicit that State funds also will keep pace with inflation. Any difficulties in meeting the stated funding requirements, of course, will grow more serious as costs rise.

TABLE 2.—Massachusetts Bay Transportation Authority 1974-83 Transit Development Program Capitai Improvements in Miiiions of Doiiars

Project	Total for Period	Local Share		Federal Share					
		Funded	Unfunded	Total	FY 74-75	FY 76	FY 77	FY 78	FY 79-83
IMPROVEMENTS TO EXISTING SYSTEM									
Plant Modernization	$221.9	$31.1	$13.3	$177.5	$74.1	$19.0	$39.8	$6.0	$38.6
Power System Improvements									
Consolidated Bus Garages									
Plant Maintenance Centers									
Plant Improvements-Ill									
Communications									
Fare Collection									
Private Bus Carrier									
Blue Line Improvements									
Green Line-n									
Tracks and Signals									
Haymarket-North									
South Bay									
Plant Improvements—IV-V									
Station Modernization	53.0		10.6	42.4			25.0		17.4
Rolling Stock Modernization*	27.0	5.4		21.6	21.6				
New Streetcars and Trackless Trolleys	27,0	1.9	3.5	21.6	8.7		12.9		
New Buses	68.0	5.1	8.5	54.4	20.5	4.0	4.3	4.3	21.3
SUB-TOTAL	396.9	43.5	35.9	317.5	124.9	23.0	82.0	10.3	77.3
COMMUTER RAIL IMPROVEMENTS									
R-O-W Improvements	52.0	10.4		41.6	10.0	15.0	16.6		
Rolling Stock	28.0	5.6		22.4	7.0	8.4	7.0		
Terminals and Terminal Facilities	20.0	4.0		16.0	5.0	5.0	6.0		
SUB-TOTAL	100.0	20.0		80.0	22.0	28.4	29.6		
ELECTRIFIED EXTENSIONS									
Blue Line									
North Shore	"82.0	10.0	6.4	65.6	4.0	6.0	26.8	28.8	
Back Bay	80.0		16.0	64.0					64.0
Orange Line-North, Oak Grove-North	70.0	6.4	7.6	56.0	3.5	10.0	21.0	21.5	
Red Line-Northwest									
Harvard-Arlington Heights	293.0	3.0	55.6	234.4	14.0	26.0	40.0	87.2	67.2
Arlington Heights									
Route 128									
Lexington	39.0	1.0	6.8	31.2	.3	1.6	5.0	5.0	19.3
Orange Line-Southwest									
So. Cove-Forest Hills	248.0	2.0	*47.6*	198.4	12.0	28.0	40.0	98.0	20.4
Forest Hills-Needham	63.0	*12.6*		50.4	3.0	17.0	30.4		
Replacement Service									
South End	"58.0	.5	11.1	*46.4*			25.4		21.0
Roxbury	""275.0	.5	54.5	220.0			20.0	20.0	160.0
Red Line-South Shore									
So. Braintree	42.0	8.4		33.6	33.6				
SUB-TOTAL	1,250.0	44.4	205.6	1,000.0	70.4	88.6	208.6	260.5	371.9
PROGRAM TOTAL	1,746.9	107.9	241.5	1,397.5	217.3	140.0	320.2	270.8	449.2
Federal Aid Received in FY 74 prior to 5-1-74.		17.5							
		$234.8							

● Modernization of Red Line and replacement of Orange and Blue Line fleets would result in a $62M project cost.
.* High estimate.

TABLE 3.—Massachusetts Bay Transportation Authority Statement on Federal Grants and Loans-Approved Projects March 15, 1974

PROJECT DESCRIPTION	DOT PROJ. No.	TYPE OF GRANT	DOT SHARE	LOCAL SHARE	TOTAL
1965					
Station Modernlzatlon	MA-03-0001	Capital	$6,077,280	$3,038,640	$9,115,920
1966					
Bus Acqulsltlon (150)	MA-03-0002	Capital	3,136,654	1,568,327	4,704,981
Haymarket Tunnel	MA-03 -OO03	Capital	12,000,000	6,000,000	18,000< 000
			$15,136,654	$7,568,327	$22,704,981
1967					
Haymarket Solls Inst.	MA-06-0008	Demonstration	$160,000	$80,300	$240,900
Southwest Corridor Study	MA-09-0001	Technical Stu.	484,484	242,242	726,726
			$645,084	$322,542	$967,626
1968					
South Shore RT	MA-03-0004	Capital	$34,547,333	$17,273,667	$51,821,000
South Shore RT	MA-03 -0(M)4	Relocation	617,000	—	617,000
Tralning Grant	MTTR-2	Managerial	19,976	6,658	26,634
			$35.184.309	$17.280.325	$52.464.634
1969					
Haymarket North	MA-03-0005	Capital	*$50,862,000*	*$25,431,000*	*$76,293,000*
Southwest Corridor Amend	MA-09-0001	Technical Stu,	13,333	6,667	20,000
Central Area *Systems* Stu	MA-09-0002	Technical Stu,	522,067	261,034	783,101
HN Solls Instr Amend	MA-06-0008	Demonstration	144,971	72,486	217,457
Service Development	MASS-MTD-7	Demonstration	35,178	8,252	43,430
Tralnlng Grants	MTTR-3	Managerial	15,303	5,102	20,405
			$51,592,852	$25,784,541	$77,377,393
1970					
Tralnlng Grants	MTTR-4	Managerial	$10,238	$3,412	$13,650
1971					
SS Rapid Transit Amend	MA-03-0004	Capital	$3,657,263	$1,828,632	$5,485,895
So. Bay Maintenance Cen	MA-03-0007	Capital	18,800,000	9,400,000	28,200,000
Systemwlde Modernlzatlon	MA-O3-OO1O	Capital	3,000,000	1,500,000	4,500,000
Bus Acqulsltlon (310)	MA-03-0011	Capital	8,100,250	4,050,125	12,150,375
Valldatlon Study	MASS-MTD-8	Demonstration	346,616	51,422	398,038
Valldatlon Study Amend	MASS-MTD-8	Demonstration	35,100	7,296	42,396
Tralnlng Grants	MTTR-5,6,7,8,9	Managerial	22,738	7,579	30,317
			$33,961,967	$16,845,054	$50,807,021
1972					
Bos Trans. Plan. Review	MA-O9-OO1O	Technical Stu.	$1,693,500	$846,750	$2,540,250
Light Rad Veh. Spec.	MA-06-0015	Demonstration	109,084	20,841	129,925
So Bay Maln. Cen. Amend. ,	MA-03-0007	Capital	320,000	180,000	480,000
Sta. Modernlzatlon Phase II	MA-03-0013	Capital	9,565,086	4,782,544	14,347,630
Green Line Improvements	MA-03-0015	Capital	25,413,333	12,706,667	38,120,000
Non-Revenue Equipment	MA-03-0021	Capital	568,940	284,470	853,410
			$37,669,943	$18,801,272	$56,471,215
1973					
Light Rail Veh Spec. Amend	MA-06-0015	Demonstration	$24,514	$8,486	$33,000
Green Line Vehicles ,	MA-03-0022	Capital	32,800,000	16,400,000	49,200,000
Plant Improvements PH I	MA-03-0017	Capital	1,573,146	786,574	2,359,720
Rapid Transit Cars (80)	MA-03-0025	Capital	18,410,600	9,205,300	27,615,900
Safety Improvements	MA-38-0025	Capital	10,601,640	5,300,820	15,902,460
Plant Improvements ,	MA-03-0026	Capital	7,933,092	3,966,548	11,899,640
Trackless Trolleys-50 PH II	MA-03-0028	Capital	1,781,500	890,750	2,672,250
Haymarket North Amend,	MA-03-0005	Capital	13,126,410	6,653,206	19,689,616
Penn Central Acquisition	MA-03-9001	Loan	19,500,000	0	19,500,000
			$105,750,902	$43,121,684	$148,872,586
1974					
Rest Orange Line Str.	MA-03-0029	Capital	$4,456,872	$1,114,218	$5,571,090
Transit Development Prog.	MA-09-0016	Technical Stu.	1,200,000	300,000	1,500,000
			$5,656,872	$1,414,218	$7,071,090

Source MBTA, *10-Year Transit Development Program, 1974-83,* **Boston: 1974, pp, II I-3—III-4**

TABLE 4.—Federal Assistance to Boston Transit Programs From F.Y. 1962 to May 31, 1975

Type of Assistance	Federal Share	Total Costs
Capital Grants	$322,852,000	$650,620,000
Capital Loans	19,500,000	19,500,000
Interstate Transfers	33,040,000	41,300,000
Technical Studies	4,965,000	7,108,000
Total	$380,357,000	$718,528,000

Source: Urban Mass Transportation Administration

In summary, MBTA's financial plan rests on assumptions that may not be reliable. If Federal and local funding does not become available in the amounts that are needed, MBTA will be faced with the necessity of making hard choices among the many improvement projects that have been described in its current lo-year development program.