A. INTRODUCTION

The purpose of this chapter is to present examples of financial resources available to the Metropolitan Transportation Authority (MTA), which may be drawn upon in the future for financing the TSM or either Build Alternative, including the funding sources available for the local share of the project’s financial commitment.

There is widespread agreement in the region that public transportation is a vital contributor to the region’s economic health. Unprecedented support for public transportation has been seen recently with the commitment to effectively lower fares in several ways, using New York City Transit’s (NYCT) automated fare-paying mechanism, MetroCard. There is also a broad consensus that the MTA capital program has brought many vital improvements to the mass transit system in the region. For these reasons, it is anticipated that the size of future capital programs and operating budgets will be consistent with current efforts. It is also anticipated that funding would come from similar types of sources as in the past 20 years.

MTA has the financial capability to build, operate, and maintain the Manhattan East Side Transit Alternatives (MESA) project. As the MESA project progresses, MTA and its funding partners will identify the specific mix of funding and financing sources that will be used for the local share of the project. It is likely that a combination of the sources detailed in the “Revenues - Regional and Local” and “Revenues - Federal” sections of this chapter will be used for the project.

MTA has consistently demonstrated substantial financial strength with its ability to raise revenues and maintain capital investment levels.

Over the last 20 years, MTA has successfully completed numerous very large, complicated capital projects funded by both federal and non-federal funding sources. Three of the more notable projects are the following:

! **Life-cycle replacement of rolling stock:** Since 1982, more than 2,855 subway cars have been purchased and more than 4,000 have been overhauled, bringing the fleet to a state of good repair and improving its mean distance between failures by 500 percent. Of recent note is the $1.7 billion purchase of 1,080 new cars to replace aging subway cars using federal funds.

! **MetroCard:** MTA recently celebrated the first anniversary of the full implementation of its MetroCard automated fare collection (AFC) system, a $778 million (in 1997 dollars) project that comprehensively upgraded the power and communications networks and replaced turnstiles at all of NYCT’s 468 subway stations, designed and installed new card-reading fareboxes on more than 4,000 buses, and installed a new generation of fare and media encoding and processing systems at various locations throughout the system. This historic
investment has permitted NYCT to offer its first-ever trip discounts, and daily, weekly, and monthly unlimited-ride options.

63rd Street Connection: One of the primary rapid transit projects expected to be completed is the 63rd Street Tunnel Connection. NYCT is currently constructing a two-track connection between the Queens Boulevard station at Queens Plaza and the tunnel’s existing terminal at Queensbridge/21st Street. This connection to both the express and local tracks of the Queens Boulevard line is expected to be completed in 2001 at a cost of about $612 million (in 1997 dollars). After the completion of the connection, potential improvements to subway service between Manhattan and Queens can be made via rerouting trains from the Queens Boulevard line to the 63rd Street Tunnel and extending the 63rd Street B and Q service to Queens Boulevard. Both of these potential service improvements would help to enhance overall passenger capacity across the East River and reduce passenger crowding on the E and F lines.

B. OVERVIEW—FINANCIAL EXAMPLES

As suggested by FTA guidelines, a financial strategy for the project would assume a 20-year period, from 2000 to 2020. Consistent with this assumption, the travel demand analysis for this project has a base year of 1995/1996 and a design year of 2020.

A financial strategy would consider the following:

Potential responses to capital funding shortfalls: For either Build Alternative, debt financing could be pursued. The use of debt financing provides the ability to advance project implementation by borrowing against projected future revenues.

Potential responses to operating shortfalls: Application of new operating funding sources, i.e., higher revenues from dedicated sources, or the implementation of new or expanded revenue sources. Examples of the revenues needed to finance the capital and operating needs of the Build Alternatives or the TSM strategy are detailed in the “Revenues—Regional and Local” section.

CAPITAL COSTS

In terms of capital costs, both the initial capital costs associated with the system improvements included in the TSM and the Build Alternatives, and the reinvestment capital costs associated with the funding of continuing, normal replacement of rolling stock and equipment will be considered in the estimate of funding required to support the project. Cost estimates are provided in Chapter 20 (Comparative Costs and Benefits). Note that these total costs do not include the possible 116th Street Station (discussed on pages 2-20 and 23-9).

Table 19-1 summarizes the capital costs in 1997 dollars for the three alternatives. Appendix C provides more detailed capital cost estimates.

OPERATING AND MAINTENANCE COSTS

Since implementation of the TSM or Build Alternatives would not affect the systemwide operations of the NYCT system, only the operating costs needed to support the new or enhanced transit service are additional. Hence, only the net change in operating costs needs to be
Chapter 19: Cost and Financial Analysis

Table 19-1
Summary of Capital Costs
(millions of 1997 dollars)

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>TSM Alternative</th>
<th>Build Alternative 1</th>
<th>Build Alternative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Capital Costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation, Structures, etc.¹</td>
<td>$38.5</td>
<td>$2,705.1</td>
<td>$3,577.6</td>
</tr>
<tr>
<td>Signals, Line Equip., etc.²</td>
<td>1.2</td>
<td>371.3</td>
<td>422.3</td>
</tr>
<tr>
<td>Rolling Stock³</td>
<td>79.3</td>
<td>389.5</td>
<td>494.7</td>
</tr>
<tr>
<td>Property Acquisition</td>
<td>0.0</td>
<td>84.4</td>
<td>84.4</td>
</tr>
<tr>
<td><strong>Total Initial Capital Costs</strong></td>
<td>$119.0</td>
<td>$3,550.3</td>
<td>$4,579.0</td>
</tr>
<tr>
<td><strong>Net Annualized Capital Costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Capital Costs⁴⁵</td>
<td>$3.4</td>
<td>$87.8</td>
<td>$114.0</td>
</tr>
</tbody>
</table>

**Notes:**
1. Includes excavation, structures, track, stations, yards, and shops.
2. Includes line equipment, signal equipment, communications equipment, power equipment, and traffic signals, signs and pavement markings.
3. Includes subway cars, articulated buses and light rail vehicles.
5. Discount rate 2.65 percent, term of 50 years, excludes reinvestment capital costs.
6. Totals do not include the possible 116th Street Station (discussed on pages 2-20 and 23-9).

Table 19-2
Projected 2020 Operating and Maintenance Costs
Increment Above No Build
(millions of 1997 dollars)

<table>
<thead>
<tr>
<th></th>
<th>TSM Alternative</th>
<th>Build Alternative 1</th>
<th>Build Alternative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Annual Operating Costs¹²³</strong></td>
<td>$6.5</td>
<td>$25.8</td>
<td>$36.7</td>
</tr>
</tbody>
</table>

**Notes:**
1. Incremental cost for alternatives only, as compared with 2020 No Build Alternative.
2. Totals do not include the possible 116th Street Station (discussed on pages 2-20 and 23-9).
3. Net annual operating costs in 1999 dollars are equal to $5.6, $27.3 and $38.1 million, respectively, for each of the three alternatives.

considered. Table 19-2 compares the Build Alternatives’ year 2020 operating costs in 1997 dollars, relative to the No Build Alternative. For the year 2020, the TSM operating and maintenance cost is $6.5 million greater than the No Build, while the Build Alternative 1 cost is $25.8 million greater and the Build Alternative 2 is $36.7 greater. It is important to note that the operating and maintenance cost for Build Alternative 1 is 1.2 percent higher than for the No Build Alternative, and for Build Alternative 2 is only 1.7 percent greater. Note that these total costs do not include the possible 116th Street Station (discussed on pages 2-20 and 23-9).
REVENUES—GENERAL

For the period 1982 through 1994, the MTA capital program was supported by a variety of funding sources—federal, state, and local aid, bonds and other debt obligations, and miscellaneous other sources. During this period, approximately 66 percent of the funding came from non-federal sources. The breakdown for the 1982 to 1994 period was:

! 35 percent federal sources;
! 26 percent state and local aid;
! 27 percent bonds and other debt obligations; and
! 12 percent miscellaneous other sources.

Federal funding support to the capital program for 1982 through 1994 was approximately $7 billion, representing 34 percent of all capital program revenues. These funds came from a variety of federal programs. MTA received approximately $5.5 billion in federal Title III funds for projects committed under the 1982-1994 capital programs. Title III funds for transit consist of formula Sections 5307 and 5309 (Fixed Guideway) funds as well as discretionary Section 5309 (New Start and Bus) funds.

New York City generally issues bonds to meet its share of capital project expenditures. In addition, the Municipal Assistance Corporation for the City of New York (MAC) provided $680 million (3 percent) in support of rebuilding MTA’s infrastructure from 1982-1994.

New York State support for capital investments totaled $2.4 billion in the 1982-1994 period. The mechanisms by which funds are provided have varied with time. Funding has come in the form of direct state appropriations and from bonds supported by direct payments made by the state (Service Contract bonds).

MTA’s current 1995-1999 capital program totals $12 billion. In becoming more self-sufficient, MTA reversed the ratio of capital funding sources from 60 percent subsidy and 40 percent self-generated to more than 60 percent self-generated and less than 40 percent subsidy. The funding breakdown for 1995-1999 is as follows:

! 29 percent federal sources;
! 12 percent state and local aid;
! 42 percent bonds and other debt obligations; and
! 17 percent miscellaneous other MTA sources.

Hand in hand with capital investments, New York State and other MTA funding partners have repeatedly shown their commitment to mass transportation through the continued support of the operations of MTA. Since the 1980’s, a mix of operating revenues has supported MTA operations. The breakdown of these revenues for the 1983-1996 time period was:

! 49 percent passenger revenues;
! 40 percent state and local sources;
! 3 percent other operating revenues;
! 6 percent bridge and tunnel surpluses; and
! 2 percent federal sources.
REVENUES—REGIONAL AND LOCAL

Both New York City and New York State will continue to have a major stake in the health of the region’s transportation network, because the region’s economy and quality of life depend on it. For example, an improved transit network increases tourism, mobility, movement of goods across roads, employment, and real estate values all over the region.

The MTA is the largest public transportation system in North America. Since 1982, MTA has consistently funded and successfully overseen three 5-year capital programs totaling $23 billion. MTA’s current 1995-1999 capital program totals $12 billion, an average annual investment of $2.4 billion. On an annual basis, financing the capital cost of Build Alternative 1 or Build Alternative 2 would represent only 3.7 percent or 4.8 percent of this annual rate of expenditure, respectively. Therefore, MTA is up to the challenge of contributing its share of the cost of either Build Alternative.

New York State Public Authorities Law permits MTA to undertake and finance projects for the benefit of the transit operations of NYCT and its subsidiaries.

MTA has access to a number of regional and local sources that are used to fund most of the capital and operating needs and that could be used as future sources of support for either Build Alternative. The non-federal share of either Build Alternative could be funded from a variety of sources, including:

- **Subway Fares and Other Operating Revenues:** Revenues derived from fares, concessions, and other sources could be used as a funding source for pay-as-you-go, or debt financing. This is an approach that the MTA and its operating agencies commonly use to assist in the financing of capital and operating needs.

- **MTA Bridge and Tunnel Tolls:** Surplus revenues from MTA B&T tolls are used to partially offset the needs of NYCT, as well as the LIRR and MNR. Toll surpluses are defined as the amount remaining from tolls and other operating revenues after payment of operating, capital, administration and other B&T related expenses. These revenues are used to provide direct funding to these constituent agencies as well as to support debt financing. Annually, the first $24 million of the operating surplus is allocated to NYCT, while any excess is equally divided between NYCT and MTA. Surplus toll revenues allocated to MTA are distributed to LIRR and MNR.

- **TBTA Investment Income Transfer:** MTA Board policy permits the annual transfer of earnings that accrue from the investment of funds deposited in the Triborough Bridge and Tunnel Authority (TBTA) debt service reserve accounts. These funds are split 60 percent to the NYCT program and 40 percent to the commuter rail program.

- **Metropolitan Mass Transportation Operating Assistance (MMTOA):** Since 1980, the following revenue sources have been available to fund operating deficits and support debt financing of MTA.

  - **Petroleum Business Tax (PBT):** A legislatively allocated portion of the business privilege tax imposed on petroleum businesses in New York State. The amount of tax
available is determined by the quantity of various petroleum products refined or sold in
the state.

! Sales Tax: A ¼ percent sales and use tax imposed within the MTA service region.

! Long Lines and Franchise Taxes: A legislatively allocated portion of two taxes
imposed on certain transportation and transmission companies, such as trucking,
telegraph, and telephone companies. The two taxes are: (a) an annual franchise tax
based on the amount of the taxpayer’s issued capital stock and (b) an annual franchise
tax on the taxpayer’s gross earnings from all sources calculated to be in the state based
on a statutory formula.

! Temporary Surcharge: A temporary surcharge on the portion of the franchise tax on
certain corporations, banks, insurance, utility, and transportation companies attributable
to business activity carried out within the MTA service region. This surcharge, which
was imposed as a temporary tax, was initially levied in 1982. It has been extended seven
times and is currently scheduled to expire by the end of 2001.

Revenues and investment income derived from these sources equaled $1,029 million in 1997.

! Dedicated Tax Fund PBT Receipts: Since 1993, the State Legislature has allocated an
amount of PBT revenues in addition to the MMTOA taxes for the state’s transit
operators. MTA receives 34 percent of the annual allocation of these revenues.

! Mortgage Recording Taxes: Since 1987, New York City and the suburban counties
within the MTA service region have allocated revenues derived from mortgage
recording taxes to the Authority. Revenues from this source can be used for operating,
capital, debt service, and reserve requirements for MTA operating agencies and the
MTA headquarters. The two taxes are MRT-1, collected at the rate of ¼ percent of the
debt secured by most real estate mortgages; and MRT-2, a ¼ percent tax imposed on
most mortgages secured by real estate improved or to be improved by structures
containing one to six dwelling units within the MTA service region. After MTA
headquarters expenses are subtracted, 55 percent of the remaining MRT-1 revenues
are allocated to NYCT. Of the remaining 45 percent, the first $20 million is allocated to
the State Highway Program and the rest is distributed to the commuter railroads;
MRT-2 revenues are first allocated to Dutchess, Rockland, and Orange counties on a
formula basis. After the allocation to these counties, the remaining balance can be used
by the commuter railroads and NYCT to satisfy MRT bond debt service requirements.

! Direct State Grants: New York State provides operating subsidies to MTA. State subsidies
from 1997 to NYCT were $158 million and to the commuter railroads were $29.2 million.

! Other Existing Taxes and Subsidies: The City of New York provides revenues to NYCT
derived from a mortgage recording tax of e percent levied on certain real estate mortgages
and a 1 percent property transfer tax.

At this point, specific funding sources for either Build Alternative have not been defined,
consistent with current policy governing the formulation of the MTA Capital Program. Strategies
regarding the types of local funding sources available for the project would be developed through
a collaborative effort among the MTA Board, New York State, and New York City.
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REVENUES—FEDERAL

As evidenced by the successor legislation to ISTEA, federal funding would continue to play a major role in the renewal and expansion of the transportation infrastructure.

Federal transit funding for the Build Alternatives may be available from several sources. Under TEA-21, the basic structure of the Federal transit programs remains essentially the same as under ISTEA, but several new programs and activities have been added and new features have been incorporated. The funding flexibility features first incorporated in the ISTEA and similar matching ratios to the highway programs have been retained. The definition of a capital project has been revised to include preventive maintenance, the provision of nonfixed route paratransit service, the leasing of equipment or facilities, safety equipment and facilities, facilities that incorporate community services such as daycare and health care, and transit enhancements.

TEA-21 provides $42.0 billion over the 6 years for transit programs. Of this amount, $29.34 billion (70 percent) is to come from the Mass Transit Account of the Highway Trust Fund while $12.65 billion (30 percent) is authorized, subject to appropriation, from the General Fund. Federal funding will come from the following Capital Investment Grants:

- **New Starts:** This funding program is for the construction of new rail or busway projects. Funding is allocated on a discretionary basis and is earmarked annually by Congress based on the reauthorization/authorization/annual appropriation process. TEA-21 authorizes a total funding of $9.18 billion for FYs 1998-2003. Not less than 92 percent is to be applied to projects for final design and construction.

- **Fixed guideway modernization:** Authorizations total $6.59 billion for this program for the 6-year period. The allocation under the first four tiers has been modified slightly from previous legislation. The total number of tiers, however, has increased to seven. The funding in these three additional three tiers will be apportioned based on actual route-miles and revenue vehicle-miles on segments at least 7 years old.

- **Bus:** A total of $3.55 billion is authorized for bus and bus-related facilities over the 6-year period.

TEA-21 supports the MESA project for alternatives analysis and preliminary engineering for fiscal years 1998 through 2003, and authorizes $5.0 million in funding. This $5.0 million is subject to the annual appropriations process.

CONCLUSIONS

One of the advantages that New York possesses is an extensive, effective transit network. The future economic growth and stability of the region has been demonstrably tied to the health of the transit system. It is expected that MTA’s funding partners will continue to ensure the stability of funding for the region’s transportation network and to make the investments that link the pieces of the network to each other, to create an interconnected, economically competitive metropolitan area in the 21st century.

Overall, a feasible financing strategy can be developed to support the TSM or Build Alternatives consistent with existing MTA financial practices, and also to meet the other needs of the system.
The costs for either Build Alternative represent a relatively small share of the total capital investments managed by MTA. Since 1982, MTA has consistently funded and successfully overseen four multi-capital programs totaling $33 billion. MTA’s current 5-year capital program totals $12.0 billion, an average expenditure of $2.4 billion per year. On an annualized basis, the capital cost of Build Alternative 1 would only represent a 3.7 percent increase in the total current capital program, and Build Alternative 2 would only represent a 4.8 percent increase.

Similarly, Build Alternative 1’s incremental operating cost of $25.8 million (in 1997 dollars) would be a small increase in the combined operating budget of all of MTA agencies. Total 1997 operating expenses for NYCT, LIRR, and MNR were $4.6 billion. The cost associated with Build Alternative 1 would represent a 0.6 percent increase to this combined budget and only 1.2 percent of the projected NYCT operating expenses for the year 2020. The cost associated with Build Alternative 2 would represent a 0.8 percent increase to this combined budget and only 1.7 percent of the projected NYCT operating expenses for the year 2020.

Finally, any financing strategy that is developed would require substantial federal participation in the construction of either Build Alternative. The magnitude of this investment demands that MTA have complete assurance that federal funds would be forthcoming once NYCT commits to the project. Conversely, FTA must have assurance that limited federal funds would be fully and productively utilized and leveraged to the greatest extent possible. A critical implementation element would be negotiated and described in a Full Funding Grant Agreement (FFGA) between MTA and FTA.