OTHER NEW FEDERAL PROGRAMS

Two legislative acts in 1965 extended the mass transit role of the Federal government in new directions. The acts dealt with (1) modern mass transport in the National Capital Region, and (2) the start of new efforts in providing high-speed inter-city transit.

The National Capital Transportation Act of 1965\(^21\) authorized $150 million in funds to help "plan, construct and provide for the operation of an areawide rail rapid transit system to serve the National Capital region."\(^22\) The legislation continued the objectives of a 1960 act\(^23\) which initiated steps to provide better transit in the Capital area for the movement of people and goods. An interstate compact among Maryland, Virginia, and the District of Columbia resulted in the formation of a regional transit authority to carry through the purposes of the 1965 legislation.\(^24\) Congressional appropriations and expenditures under this Act are summarized in Table 7.

The High-Speed Ground Transportation Study of 1965\(^25\) authorized the Secretary of Commerce to undertake a program of research and development in high-speed intercity mass transit. The legislation provided for a series of demonstrations "to measure and evaluate such factors as the public response to new equipment, higher speeds, variations in fares, improved comfort and convenience and more frequent service."\(^26\) In addition, statistics and other information would be systematically assembled which would contribute to the development of transit nationally. Of a total authorization of $90 million through fiscal 1968, $8 million would finance the statistics program, $18 million would be used for the demonstration programs, and $64 million would go for general research and development.\(^27\)

A NEW TRANSPORTATION DEPARTMENT

In 1966, Congress passed legislation creating a cabinet-level Department of Transportation.\(^28\) Although it is responsible for a variety of transportation resources, many of which are not directly related to mass transit, the department's importance lies in the direction and character it might give to coordinating transport resources generally and promoting new efforts in research and development.\(^29\) These two factors are among the responsibilities of the new Secretary of Transportation.\(^30\) Since he will also administer the interstate highway program, his success in continuing and improving the policy of coordinating highway and mass transit development established in earlier legislation will be important to urban transit of the future. The role of the Department of Housing and Urban Development in urban transit also will be reexamined in relation to the broader role of the Department of Transportation.

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23. 74 Stat. 537.
26. Ibid., p. 2.
29. The new Department is in charge of the High-Speed Ground Transportation Study previously administered by the Secretary of Commerce.
IV.

Future Mass Transit: Requirements and the Federal Role

The traditional heritage of a rural population in America had changed significantly by the early part of the 20th century. In 1920, rural population had declined to less than one-half the total population. In each of the decades that followed, the steady decline in rural population was complemented by a rapid increase in the number of urban residents. By 1960, out of a total population exceeding 179 million, urban residents accounted for almost 70 percent.¹

This growth in urban population is expected to continue into the future. Of a projected total population of 250 million in the United States by 1980, three-fourths are expected to live in urban centers situated on less than 2 percent of the total land area.² With heavier densities in urban areas, the demands placed on mass transit facilities will rise. In order to meet these demands, present mass transit facilities and equipment need to be modernized and expanded.

There seems to be little doubt that transportation requirements of rapidly expanding suburban regions will be met in the near future at least through improved highway networks and by the use of private autos. But, within city centers, mass transit is an essential part of urban life. It has been estimated that as much as two-thirds of the working population depend on it. In most urban areas, public transport accounts for between 35 percent and 45 percent of total daily movement of people to and from the general business districts. In larger cities, from 40 to 90 percent of peak-hour traffic to and from the downtown area consists of public mass transit. About half of our population is dependent on some form of local public transportation; included are school children and persons too poor, too old, or too incapacitated to drive.³

MASS TRANSIT REQUIREMENTS

The total requirements of mass transit have two aspects; those resources that are needed to maintain daily operations, and those that are needed to modernize and expand plant and equipment.  

Current Operations

The present status of mass transit operating finances is difficult to gauge. While some companies are making profits, others are plagued with deficits.

³ Selma J. Mushkin and Robert Harris, op. cit., p. 23.
There seems, also, to be little distinction in this variation of finances among public versus private companies.

Where deficits in current operations are a problem, they tend to appear among the larger urban operations, and tend also to be sizable.

In a 1965 survey of major transit operations located in urban areas, 10 of the 30 largest companies had current deficits ranging from $1,000 to almost $28 million. Those with surpluses had net incomes ranging from $117,000 to more than $4 million. Although many of the larger companies were the ones to suffer current deficits, no systematic relationship between firm size and net financial position was evident among the 35 companies surveyed (see Table 8).

Because of the heterogeneous nature of mass transit finances, and because of the inadequacy of available information, a specific projection of future operations in the aggregate is difficult. However, since the deficits of many of the systems are recurring, if not chronic, the alternatives in financing these deficits are matters of major importance. A discussion of these alternatives as well as those for an urban mass transportation program generally, appears later (Section V).

### Capital Requirements

A great deal of the equipment and facilities of mass transit, particularly rapid transit, is old and needs replacement. A survey conducted by the American Transit Association in December, 1964, demonstrated how aged the rolling stock was for a substantial part of mass transit. Included in the survey were rapid transit cars (subways), motor buses, streetcars and trolley coaches. Streetcars and trolleys, however, were being rapidly replaced by motorbuses. (See Table 9).

Among rapid transit cars, 7.8 percent of the total were at least 44 years old, 30.1 percent varied from 24 to 43 years.

### Table 8
**Net Income of Major Transit Companies in the United States**

<table>
<thead>
<tr>
<th>Company(a)</th>
<th>Population served (thousands)</th>
<th>Revenue passengers (millions)</th>
<th>Net Income(b) or Deficit(—) (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>149</td>
<td>7,782</td>
<td>1,830</td>
<td>$27,769</td>
</tr>
<tr>
<td>447</td>
<td>4,127</td>
<td>503</td>
<td>3,921</td>
</tr>
<tr>
<td>255</td>
<td>2,700</td>
<td>279</td>
<td>2,387</td>
</tr>
<tr>
<td>159</td>
<td>5,900</td>
<td>221</td>
<td>1,939</td>
</tr>
<tr>
<td>780</td>
<td>1,778</td>
<td>288</td>
<td>4,096</td>
</tr>
<tr>
<td>763</td>
<td>1,737</td>
<td>267</td>
<td>3,948</td>
</tr>
<tr>
<td>672</td>
<td>6,954</td>
<td>n.a.</td>
<td>1,654</td>
</tr>
<tr>
<td>50</td>
<td>2,595</td>
<td>n.a.</td>
<td>$17,770</td>
</tr>
<tr>
<td>699</td>
<td>2,096</td>
<td>177</td>
<td>545</td>
</tr>
<tr>
<td>384</td>
<td>1,750</td>
<td>n.a.</td>
<td>3,223</td>
</tr>
<tr>
<td>256</td>
<td>1,657</td>
<td>n.a.</td>
<td>$4,076</td>
</tr>
<tr>
<td>562</td>
<td>1,525</td>
<td>n.a.</td>
<td>$1</td>
</tr>
<tr>
<td>202</td>
<td>1,200</td>
<td>93</td>
<td>929</td>
</tr>
<tr>
<td>675</td>
<td>764</td>
<td>142</td>
<td>$8,667</td>
</tr>
<tr>
<td>492</td>
<td>1,007</td>
<td>87</td>
<td>700</td>
</tr>
<tr>
<td>515</td>
<td>1,500</td>
<td>62</td>
<td>867</td>
</tr>
<tr>
<td>669</td>
<td>896</td>
<td>53</td>
<td>$1,919</td>
</tr>
<tr>
<td>743</td>
<td>691</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>130</td>
<td>800</td>
<td>49</td>
<td>406</td>
</tr>
<tr>
<td>313 &amp; 327X</td>
<td>687</td>
<td>51</td>
<td>165</td>
</tr>
<tr>
<td>379</td>
<td>728</td>
<td>35</td>
<td>461</td>
</tr>
<tr>
<td>731</td>
<td>567</td>
<td>34</td>
<td>$395</td>
</tr>
<tr>
<td>601</td>
<td>641</td>
<td>88</td>
<td>n.a.</td>
</tr>
<tr>
<td>188</td>
<td>n.a.</td>
<td>32</td>
<td>450</td>
</tr>
<tr>
<td>329</td>
<td>1,000</td>
<td>43</td>
<td>1,714</td>
</tr>
<tr>
<td>783</td>
<td>493</td>
<td>58</td>
<td>$1,493</td>
</tr>
<tr>
<td>583</td>
<td>808</td>
<td>31</td>
<td>557</td>
</tr>
<tr>
<td>118</td>
<td>n.a.</td>
<td>46</td>
<td>502</td>
</tr>
<tr>
<td>547</td>
<td>700</td>
<td>26</td>
<td>117</td>
</tr>
<tr>
<td>752</td>
<td>n.a.</td>
<td>6</td>
<td>425</td>
</tr>
<tr>
<td>787</td>
<td>600</td>
<td>63</td>
<td>$778</td>
</tr>
</tbody>
</table>

a. American Transit Association code numbers have been used to maintain the confidential nature of the financial data for private companies. The arrangement of companies is according to operating revenues in descending order with the company having the largest revenues first.

b. After Federal Income and other taxes.

Source: American Transit Association.
Table 9
Age Distribution of Mass Transit Vehicles
December, 1964

<table>
<thead>
<tr>
<th>Year built</th>
<th>Number of transit vehicles</th>
<th>Percentage distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rapid transit cars (a)</td>
<td>Motor-buses (b)</td>
</tr>
<tr>
<td>Before 1900</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1901-1920</td>
<td>711</td>
<td>0</td>
</tr>
<tr>
<td>1921-1930</td>
<td>2,730</td>
<td>0</td>
</tr>
<tr>
<td>1931-1940</td>
<td>3,451</td>
<td>2,465</td>
</tr>
<tr>
<td>1941-1950</td>
<td>46,010</td>
<td>1,094</td>
</tr>
<tr>
<td>1951-1960</td>
<td>19,645</td>
<td>49,200</td>
</tr>
<tr>
<td>Since 1961</td>
<td>2,172</td>
<td>10,115</td>
</tr>
<tr>
<td>Total</td>
<td>9,064</td>
<td>49,200</td>
</tr>
</tbody>
</table>

a. Estimated.
Source: American Transit Association as quoted in Marge Schier, op. cit., p. 299.

and 62 percent were built during or since World War II. The total number of rapid transit vehicles in 1964 amounted to more than 9,000.

Among motor buses, 1.2 percent were 24 years or older, 78.2 percent varied from 4 to 23 years, and slightly more than 20 percent had been purchased within 3 years prior to the survey. The total number of buses surveyed was 49,200.

The useful life of transit vehicles is difficult to determine. Factors such as the conditions under which the vehicles are used, the financial ability of the operator to replace his equipment rapidly or more slowly, and the level of technology incorporated into the vehicle at the time of its purchase, all introduce considerable variation into any measure of useful life. These limitations notwithstanding, however, 35 years has been advanced as an approximation of the useful life of rapid transit cars, and 12 to 15 years for motor buses. The useful lives of trolleys and electric streetcars are academic since they are generally becoming extinct.

Given the useful lives of buses and subway cars, a further glance at Table 9 indicates that about one-third of all transit buses in operation in 1964 had exceeded their useful life, and almost 8 percent of all rapid transit vehicles were still in service despite their apparent obsolescence.

The plant and facilities of rapid transit, including trucks, tunnels and stations, are quite old and require considerable maintenance on a continuing basis. The first subway in the United States was opened in Boston, in 1897. Rapid transit service in New York City began in the 1870's, with steam-powered trains operated on elevated lines. Cleveland was the only city to open a new rapid transit line after 1945. Cleveland has also added 15 miles to its original system, and has commitments for four more miles. Boston has extended its system 13 miles.
since 1945, and has committed itself for an additional 11 miles. The Philadelphia system of 31 route miles has been extended only three miles since 1945.4

Three entirely new systems are under construction, or have been authorized, in San Francisco, California, Camden, New Jersey, and Washington, D.C. for a total of 109 route miles. The largest of these, about 75 miles in San Francisco, is presently under construction by the Bay Area Rapid Transit District. The system will include subways, aerial structures, and surface lines. The first line of the system, in the area around East Bay, is expected to open in 1968, and the entire system by 1971.5

There is little doubt that replacement of mass transit equipment, as well as the modernization and expansion of existing plant facilities, will require substantial capital outlays. However, formal surveys of mass transit's capital needs have not been common. One comprehensive survey was made in 1961. It projected mass transit's future capital requirements for the decade 1961-1971.6 This projection was recently updated by the Housing and Urban Development Department of the Federal government.7 Both these surveys reflect what appears to be the best available information on transit's capital needs.

The I.P.A. study of 1961 was based on the costs of improving public and private mass transit in ten major urban areas.8 Several categories of improvements were surveyed including rehabilitation and replacement of existing plant and equipment, the provision of new systems, and the extension of existing systems. The total cost of providing these types of improvements were estimated at $8.8 billion for the decade ending in 1971. To this amount, an estimated $1 billion was added to reflect the costs of new projects which might be initiated during the 10 year period.9

The [projection] ... contains five elements:

1. Estimates of the costs of replacement of rolling stock of all mass transportation systems over the next 10 years to bring the rolling stock inventory up to reasonable standards. Such standards include the replacement of buses more than 10 years old (allowing for some shrinkage in the size of the bus fleet), the replacement or rebuilding of all transit rail and suburban cars purchased prior to 1935, and perpetuation of the locomotive fleet in good order (allowing for the possibility that some locomotives will be put out of service by the introduction of electric multiple unit or self-propelled cars).

2. Estimated costs of rehabilitating rights-of-ways and structures of grade-separated and suburban rail systems.

3. Costs of proposals for extensions to existing rail systems in six major cities.

4. Costs of new transit or suburban rail systems now being pushed in four major cities.

4. Based on data contained in Robert L. Abrams, op. cit., pp. 1-20. Seven rapid transit lines are presently in operation in the following cities: Boston, Chicago, Cleveland, Newark, New York, Philadelphia, and San Francisco.

5. Ibid., p. 21.


8. The ten areas involved included: Atlanta, Georgia; Boston, Massachusetts; Chicago, Illinois; Cleveland, Ohio; Los Angeles, California; New York City and its environs; Philadelphia, South Jersey, and Delaware County; St. Louis, Missouri; San Francisco, California; and Washington, D.C.

9. Presumably, the costs are projected at 1961 prices.
5. An allowance of $1 billion for a number of other cities which have begun studies of the possibilities of grade-separated transit facilities for either rail or bus.\textsuperscript{10}

In updating the I.P.A. estimate, the Department of Housing and Urban Development attempted to reflect transit capital needs between 1966 and 1975. The revised total amounted to $10.9 billion, and included "$8.6 billion for rail facilities authorized or planned, $1 billion for possible future rail facilities, and $1.3 billion for bus replacements."\textsuperscript{11} The estimate for surface transit did not reflect "bus system expansion or the replacement of such facilities as shops and administrative facilities."\textsuperscript{12} The $8.6 billion estimate for rail facilities was based on the following distribution among major urban areas: Atlanta, $329 million; Baltimore, $531 million; Boston, $590 million; Chicago, $930 million; Cleveland, $60 million; Los Angeles, $900 million; New York, $2,500 million; Philadelphia, $506 million; San Francisco, $1,230 million; Seattle, $111 million, and Washington, D.C., $950 million.\textsuperscript{13}

The original estimates of the I.P.A. and the revisions by H.U.D. Department are necessarily approximations which may be rough. They do not take into account plans that are subsequently not implemented, or new proposals that have yet to reach the scrutiny of public evaluation. The effects of quality changes on present and future costs have not been discounted because of the difficulty in determining and quantifying the nature of the quality changes. Primarily, however, the impact of future price changes on the projected costs have not been compensated, and presumably, a general increase in the level of future prices would result in capital outlay projections that are correspondingly understated.

**Federal Aid**

Estimating the role of the Federal government in helping to meet the future needs of mass transit, in current and capital terms, poses many problems. Recent transit legislation offers no indication of the probable course of future Federal expenditures. There are no measurable parameters included in the legislation on which to base expenditure projections. Outlays of the recent past have been determined by policy decisions which do not necessarily reflect what may be considered hard estimates of future "requirements." The effect of the costs of fighting in Vietnam on domestic programs is difficult to evaluate; presumably smaller new programs, like mass transit aid, are easier to postpone, or even eliminate, than are the larger and more well established Federal programs. The support to mass transit from other levels of government and the private sector, are no doubt important in determining the extent of Federal assistance under the most favorable conditions. But even here, the roles of states and localities, as well as the amount of private initiative, are subject to wide variation.

**Operating Subsidies**

Federal operating subsidies have not been offered in the past, and current legislation to aid mass transit gives no indication that they will be in the future. Several attempts have been made re-
cantly to pass legislation providing subsidies. During the Second Session of the 89th Congress, two Senate bills (S2935 and S2804) were offered which would have provided Federal aid to cover the operating deficits of mass transit companies. The first bill included grants up to 50 percent of any mass transit operating deficit for a period not to exceed three years, while the second provided subsidies up to two-thirds of an operating deficit for a period of ten years. Both measures, however, were subsequently defeated in the Congress.

Subsidies for current deficit operations will not, in all likelihood, become the direct responsibility of the Federal government. Instead, the initiative on these matters will be left largely to states, localities and the private sector.

**Capital Grants**

An elaborate quantitative analysis of future Federal grants for mass transit capital needs does not seem appropriate. As noted earlier, many problems introduce too much uncertainty to produce reliable projections. An alternative, and perhaps more constructive, approach would be to indicate, in broad terms, the various options in the grant program horizon.¹⁴

One option advanced by those who believe that Federal intervention is unnecessary would be to eliminate the Federal program entirely. On the other hand, the Federal transit program, although small, has been in existence since 1961, and has promoted considerable research and development into the problems of local mass transit. Supporters of the Federal program contend that the recognition and revitalization of mass transit as a viable transport resource is due in large measure to Federal initiative. Without this initiative mass transit would, presumably, be thrust back into relative obscurity and isolation.

A second option would envision a substantially expanded Federal grant program. Given a $10 or $11 billion transit capital requirement over the next decade, the Federal government could conceivably provide as much as 50 or 70 percent of that total requirement through grants-in-aid. These amounts would be consistent with current procedures under existing transit programs that provide 50 percent Federal aid under emergency conditions, and about 70 percent aid with the existence of a comprehensive urban plan.

However, a $5 or $7 billion Federal grant program, for a period of ten years, would mean annual expenditures that are 4 and 6 times the current level of $110 million (See Table 7). The greater the pressure to reduce the growth of spending on domestic civilian programs to make funds available for national defense, tax relief, or other purposes, the less probable will be any major expansion in Federal aid for mass transit. Under substantially expanded Federal sponsorship and financing, significantly large financial assistance from states and localities, as well as meaningful private initiative, would be much less probable.

Counter-arguments, strongly endorsing large increases in Federal financing are given by those who see solutions to urban transit problems only in terms of Federal direction and planning. These proponents of massive Federal aid maintain that individual communities cannot meet the financial challenges of viable urban transit planning, and although regional approaches might provide the

¹⁴. For purposes of this more general approach, Federal capital grants are presumed to encompass demonstration grants as well.
necessary resources, political differences would limit the extent of cooperation across municipal and state boundaries. They add, further, that mass transit problems are national in scope and require concepts and solutions that are equally comprehensive. Urban congestion cuts across given areas and levels of government; purely localized solutions run the risk of fostering too much diversity and not enough complementarity.

A more moderate Federal aid program, consistent with current spending levels, offers a third option for Federal mass transit assistance. If aid expenditures were to average $150 to $300 million annually, the total Federal contribution to a 10-year $10 billion program would range from $1.5 to $3 billion. If, moreover, states and localities were to provide 70 percent of the total requirement, or $7 billion, private resources would be expected to provide up to $1.5 billion. This more moderate range of Federal assistance would, no doubt, draw criticism from both those committed to a massive Federal program, and those who seek purely local solutions to local transit problems. In other respects, however, moderate amounts of Federal aid would provide a basis for continuing Federal initiative while, at the same time, placing increasing emphasis on the roles of states and local governments.

The estimates of Federal, state and local, and private resources to meet the capital needs of future mass transit are intended only as illustrative alternatives and not as specific projections. Substantive analytical data are unavailable to give any of these estimates formal status.

15. In fiscal 1968, grant expenditures under the 1964 urban transportation legislation are expected to total $110 million. See Table 8, p. 40.

16. The 70 percent total is the amount of state and local aid projected through 1975 in a recent staff report of the Joint Economic Committee, State and Local Public Facility Needs and Financing; (Volume 1, "Public Facility Needs" 89th Congress, 2nd sess., Washington, D.C.: Government Printing Office, 1966), p. 24. No analytical description accompanies the estimate, however, and the projection is said to be based on "informed judgment" only. In addition to the 10-year projection (1966-1975), estimates of state and local transit assistance for 1970 and 1975 are also given. The balance of mass transit capital needs is expected to be financed with private resources. The staff report, therefore, implicitly precludes any Federal assistance.

17. Although the ability of private capital to finance mass transit plant and equipment purchases is limited (as noted in the next section), among approximately 1200 private companies, a $1.5 billion capital program for 10 years would mean about $125,000 annually in capital expenditures per company. This amount of average spending per company may not be unreasonable.
Alternatives in an Urban Transportation Program

In addition to a Federally sponsored program of mass transit development, several other alternatives, focusing primarily on local efforts and organization, also offer potential approaches to help solve urban transport problems. These alternatives range from suggestions on how to make mass transit self-supporting, to those that envision regional approaches based on cooperative administration, planning, and financing among normally disparate political units of government. This section summarizes the more prominent options, Federal and non-Federal, indicating their strong points and weaknesses.

**Federal Aid Alternatives**

The present program of Federal transit aid is composed of various grants and loans. Among the grants offered, those for capital and demonstration purposes are the most important. Alternatives which would either expand or eliminate the present grant program have already been examined. In addition, suggestions have been made to associate current Federal transit grants with attempts to promote regional solutions to mass transit problems.

Under one suggestion, Federal aid would be sanctioned either through existing regional transport agencies, or on the stipulation that regional organization and planning was being actively pursued and would soon be established. The expressed hope would be that this kind of Federal sponsorship would activate cooperative attacks on mass transit problems, using locally pooled resources and initiative, while, at the same time, keeping the amount of Federal assistance to a minimum. The primary role of the Federal government would be that of a catalyst. Several problems would ensue, however. One would be the need to define specifically the types of regional solutions that would be sponsored with Federal money, and the obligation to set aside political differences across municipal and state boundaries, replacing these differences with cooperation and mutual assistance.

Proposals have been made to expand the present loan program. This program was initiated under the Housing Act of 1961, and reaffirmed under the Urban Mass Transportation Act of 1964. Since...

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1. See the text above.
2. See Section III.
its inception, however, the loan program has not received widespread support. 3

Federal subsidies for the debt-service on state and local bonds, issued to finance mass transit capital purchases, offer another alternative for Federal mass transit support. 4 This option would be similar to the current Federal practice of annual grants for the debt service on local housing authority bonds. By subsidizing the debt-service on state and local transit bonds, the objective would be to stimulate large investment in mass transit plant and equipment on the part of state and local governments. The annual expense to the Federal government would not be substantial since the aid would be extended over the term of the bonds issued, presumably 30 or 40 years. If, for example, 30-year state and local bonds were issued, totaling $5 billion in the aggregate, and bearing a tax-exempt borrowing rate of 3.5 percent, the annual level debt-service on the bonds would amount to about $270 million. A Federal grant of 50 to 70 percent of this expense would mean annual aid payments of approximately $135 million and $190 million, respectively. If part of the future revenues of the facilities constructed were also applied to the debt-service, the annual payments of the Federal government would be correspondingly reduced. This general approach would substantially increase the borrowing posture of states and localities, adding to the normal borrowing to finance the construction of transportation facilities.

Suggestions have also been made to use some funds from the Federal Highway Trust Fund to help revitalize mass transit, the rationale being the need to evolve a comprehensive plan that would promote solutions to urban, as well as inter-urban, transportation problems. It is not possible to evaluate or even to summarize here all the considerations, pro and con, that this suggestion raises.

### OTHER ALTERNATIVES 5

A basic element of the proposals to promote local initiative in mass transit development with substantial or complete divorce from Federal assistance or control has often been the need to coordinate ideas, pool resources, and combine efforts toward a common objective. In conjunction with these proposals considerable interest has also been expressed in the alternatives available to mass transport companies and public agencies in promoting self-supporting operations.

#### Mass Transit and Self-support

There have been various suggestions on how mass transit operating deficits can be minimized, perhaps even eliminated. One basic problem has been to mitigate the declining trend in patronage by utilizing more effectively the relatively unused off-peak hours. For bus operators, this has meant the use of chartered bus services in a variety of ways.

Special services have also been offered on rapid transit subways to stimulate

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5. Where new transit lanes are being planned, or where those in existence are to be improved materially, some land values are likely to rise. In some cases the increments in land prices will be very large. Special assessments or other means of recapturing for the public such value increases can contribute toward the costs. The possibilities have not been explored for the purposes of this paper. Nevertheless, the potentialities in some cases will be great enough to warrant careful analysis.
off-peak business. Studies are now under way in New York City to determine the feasibility of supplementing intra-city mail service and freight deliveries by using subways as carriers during the early morning hours.6

Lower fares have also been suggested as a stimulus to increase patronage levels. Where lower fares have been charged for short transit trips alone, the results have often been favorable. Where, however, fare reductions have been instituted generally, the increases in patronage have been insufficient to provide increased total revenues. Although non-revenue benefits may have resulted, e.g., fuller utilization of facilities, solution of financial problems came no nearer.

Local practices have often contributed to the financial burdens of mass transit. Local communities have, at times, imposed various taxes, fees and charges that have weighed heavily on local transit finances. Transit companies have been required to provide services, like snow removal, street paving, and school transportation, at little or no cost to the community. Eliminating most, or all, of these practices would provide substantial benefits to some companies. Local government, however, would lose revenue. Where the municipality has provided services for operation which have been paid for by such charges, a subsidy would result from their removal.7

While the alternatives in helping to meet transit operating deficits are many, those which promote capital financing on a self-supporting basis are substantially fewer. The attitude is generally expressed that mass transit is a poor investment for private capital. The risks involved are considered too great, and more basically, the precedent has already been established of using public funds to construct new facilities and purchase new equipment. Since 1950, public funds have accounted for the vast majority of new plant and equipment purchases of mass transit.

Unfortunately, it seems that most private transportation systems today and in the future cannot operate profitably and, as a result, will not be able to attract the capital needed to provide up-to-date downtown service, not to mention expansion of a system to the suburbs. ... The fact that the establishment of an up-to-date rapid transit system will improve land values, commuting times, and the whole design of an urban area is important, but these improvements mean little to potential investors unless there is a clear commitment on the part of the public to pledge its credit to back up what may well be an unprofitable operation.8

Public Authorities

As private transit companies have fallen into financial bankruptcy, many have been replaced by various types of public authorities. These authorities are quasi-governmental agencies that finance their operations through the imposition of user charges and the issuance of revenue bonds. They are normally tax-exempt, although payments-in-lieu of real estate taxes are made to municipalities for taxable property that is subsequently brought under authority control. The basis for the in-lieu tax payments is usually the assessed value of the property prior to authority ownership. (Some authorities have the power to levy taxes and issue general obligation bonds like "special districts.") In many cases, au-

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7. Nevertheless, many cities have already eliminated or reduced the gross receipts tax on transit companies, while others have relieved transit of paying between the rails and removing snow along street-car tracks.
Authorities have been successful in financing both the capital and operating needs of their operations without resorting to government assistance.

The public authority apparatus has been adopted for mass transit operations in a number of cities: New York, Chicago, Los Angeles, Boston, San Francisco, Detroit, and Cleveland. Some authorities operate within municipal boundaries, as in the cases of the New York and Chicago Transit Authorities; others are organized and operate across municipal and state boundaries, as in the cases of the Massachusetts Bay Transportation Authority and the San Francisco Bay Area Rapid Transit District.

In Massachusetts, the Mass. Bay Transportation Authority, currently serving 78 cities and towns in the metropolitan area, was set up as a replacement for the Metropolitan Transit Authority which served only 14 communities. The basic conception of this new Authority is for a network of rapid transit lines out from the center of Boston, to the north, south, and west, plus some relocation and considerable improvements to the existing system. Current plans envision the expenditure of some $300 million, and state assistance will be available toward the debt service on borrowings up to $145 million.

In California, the San Francisco Bay Area Rapid Transit District was originally planned to spend in the neighborhood of $1 billion to build a network linking San Francisco and the East Bay. Concern has been expressed over the apparent proliferation of authorities as panaceas for mass transit ailments. Unification and coherence have traditionally been the long-range planning goals in urban mass transportation; proliferation of authorities seems to have undermined those goals. There is also the problem of controlling public authority responsibilities so that financial independence is not turned into administrative and political independence.

The query naturally arises whether further proliferation of transport agencies is not defeating the objective of achieving improved transportation for the metropolitan area. Carving out more pieces of the problem for separate treatment aggravates the basic difficulties.

The ad hoc authority operating within a special district which is larger than the municipality attempts to solve the technical, administrative, and financial problems arising in connection with a particular service, but isolating it from the complex of municipal services of which it forms a part. It may solve that problem, but only at the cost of weakening the general structure of local government in the great city and its environs whereas the real need is to strengthen it.

Unless authorities are properly conceived, then they may perpetuate the piecemeal approach to transportation in the metropolitan area.

**Municipal Federations**

Metropolitan government, or a federation of municipalities to foster joint solutions to a series of common problems, offers another alternative in operating and financing local mass transit. By pooling local resources, metropolitan governments can provide sufficient capital to operate and modernize mass transit facilities so as to serve the common needs of neighboring localities. Metropolitan governments normally provide only those services which cut across local boundaries; each municipality still maintains basic autonomy in providing purely local services.

The metropolitan government of Dade County, Florida, is based on a federation among 26 municipalities. The county performs numerous services on a re-

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9. Ibid.
11. The only other example, in the United States, is Nashville-Davidson County in Tennessee.
gional level, including the planning and development of mass transit facilities. Before the introduction of a metropolitan controlled and planned transit system in 1957, mass transit in Dade County was provided by 7 distinct private companies with overlapping services, a variety of fare schedules, and the lack of any express routes. Since 1957, however, transit has been operated on a regional basis by the Dade County Metropolitan Transit Authority which purchased the private companies with funds from a revenue bond issue. Authority services have been provided on a self-supporting basis ever since.

**States' Coordination**

Where municipal cooperation across political borders has not proved fruitful, the states have often filled the vacuum by initiating and coordinating statewide programs to develop mass transit facilities. One of the more recent examples of this statewide approach has been the efforts of New York State to initiate a multi-billion dollar program of transportation development.

New York has proposed a $2.5 billion bond issue to develop and modernize transportation in the state, including $1 billion specifically earmarked for mass transit in the major cities. The bond issue was recently approved by the voters in a referendum. In addition to the bond issue, part of the state's new program calls for a consolidation of several transportation authorities in the New York City area under a recently formed Metropolitan Commuter Transportation Authority. The consolidation will bring not only mass transit facilities into the new Authority, but highway, bridge, tunnel and commuter railroad services as well. The objective is regional coordination and development of various transportation modes. The New York State plan is among the most massive regional proposals, in financial and administrative terms, ever to be developed.

**Regional Coordination in General**

Although many attempts at solutions to mass transit problems have been made, the usual approach still remains individualistic and heterogeneous. There is widespread recognition, however, that regional cooperation and planning are basic requirements for resolving mass transit problems locally.

Essentially the difficulty is bringing the full economic capabilities of a metropolitan area to bear on its transportation problem. Metropolitan areas are at present divided into many separate government segments, frequently with the resources of the segments unequal to the needs. The balkanized metropolitan places are therefore incapable of the unified action needed to cope with problems that affect the entire area. No long-lasting solution is really feasible until government and fiscal fragmentation on the local level is overcome, and the problems which face metropolitan areas can be met by a unified approach at that level. In short, to solve metropolitan (transit) problems on the local level, the full resources of the community must be brought to bear.

Regional cooperation fosters decisions for a more rational development of different transport modes. Expressways can be better planned to complement rather than preclude mass transit services. Surplus resources of more profitable transport modes can help to support the deficiencies of less profitable facilities. In general, a unified approach in allocating transportation resources can help to keep local transit a local function.

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VI.
Summary and Conclusion

Many communities would unquestionably function more effectively if mass transit were improved. The problem in each case is predominantly local but often extending through several units of local government and even beyond state lines. Nevertheless, there are some aspects which by reasonable standards involve enough "national interest" for Federal participation. The amount of the extent of appropriate Federal interest, however, will remain debatable. Problem and policies are intimately related with those of urban areas viewed in their broadest and most complex aspects. The background of present problems has several elements.

The transit industry has evolved from a private enterprise operation to one substantially supported directly or indirectly with governmental funds. Once profitable to private investors, the industry has increasingly become characterized by recurring deficits or abandonments, particularly among the larger urban operations. Problems have consistently plagued the industry. One of especially great difficulty is the need to provide peak services at costs which continue to go up but which, because of a general decline in patronage, cannot be covered fully from user charges.

Partly because of governmental financing of streets and highways, the problems have been aggravated by competition from the automobile. Mass transit, however, offers an alternative which by most criteria can provide better utilization of resources than the auto for certain kinds of transportation in urban areas. For a number of reasons, the mass transit industry's ability and efforts to modernize have lagged significantly; as a result, much of the plant and equipment is quite old or obsolete. The suburban commuter railroads have generally encountered similar problems. Years of losses have prevented their installation and utilization of generally modern technologies. The prospects have not been bright.

The 1960's brought new Federal assistance. In a sense this helped to correct a long-standing imbalance that was characterized by a policy of "highways only" rather than "highways and city streets" in Federal aid for ground transportation. New legislation provided for demonstration grants and loans to permit experimentation and research into mass transit problems. And 1964 legislation has also provided grants for capital purchases to replace or upgrade old and obsolete equipment. The Federal government's share in most of these programs has been two-thirds of the net cost. Its expenditures for all parts of the program were $23 million in 1966; the 1968 estimate is $137 million.

Mass transit is expected to "require" perhaps $10 billion of capital investment over the next 10 years. How the needs will be met (whatever the magnitude eventually) is not clear. In terms of Fed-
eral assistance, there are several alternatives involving widely different amounts. The current program of grants for capital and demonstration purposes might be expanded. Grants might also be instituted to stimulate increased local efforts toward cooperation and mutual assistance in meeting transit requirements of metropolitan areas which include numerous separate governments. A quite different form of grant program might involve Federal subsidies on the debt-service of state and local transit bonds. The present loan program might be expanded. There would be no assurance, however, about the extent to which additional loan funds would be used and thus in fact contribute to solution.

In all cases, an issue of overriding concern would be the extent and desirability of Federal assistance. There is no unequivocal evidence to suggest that the amount of Federal financing which might be required for substantial improvement of mass transit would place large burdens on the Treasury. The size of the problem will depend in part upon the magnitude of Federal financing of highway projects.

How much of the effort needed to revitalize mass transit can be accomplished through local initiative and cooperation? Estimates differ. No single region can try the variety of experimentation or conduct the research which, it is hoped, will eventually do much to assist in improvement. Yet there is reason to believe that regional agencies, either in the form of public authorities, or by virtue of compacts among states or localities, can provide the necessary management, technical skills, and resources to help modernize and improve mass transit facilities. Problems will be encountered in organizing regional agencies. However, by setting aside differences and promoting common objectives, modernization of mass transit can become a symbol of local achievement. Action to deal with mass transit through greater cooperation, and by pooling of resources, can help in solving other problems of neighboring localities. Transit is one of the essential elements to be dealt with in improving urban life.

Even if in some cases the transit industry cannot on its own attract enough capital for modernization, the industry can do much to push ahead with tested methods, and try new ones, to mitigate operating deficits by promoting increased efficiency and better use of capacity. Some Federal demonstration grants have been used to test the hypothesis that more frequent, reliable, and attractive service would stimulate an increase in patronage. In many cases, precisely that result was observed — but at costs which must be met somehow. Conceivably, in some cases the experiments can be translated into operating realities through adoption of measures of self-help; viable solutions to mass transit problems cannot rely entirely on government financial support. Yet with even the best of response by the industry, and recognizing the realities of street-highway financing, more aid for mass transit from tax sources may be in the broad public interest.

At this time it is not possible to estimate with confidence the total of probable demands on the Federal budget. As the program appears to be developing, an annual average of $150 to $300 million over the next decade seems a probable range for Federal financing. Some elements of the total program which it is hoped may be very fruitful — those for research, experimentation, and management training — will not cost
amounts that are “large” when compared with some of the other new programs and certainly not large in relation to the highway program financed by earmarked user taxes. Mass transit, in other words, can require far more in terms of dollar outlays than need come from the Federal Treasury.