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TRANSIT OPERATING PERFORMANCE and the IMPACT of the SECTION 5 PROGRAM

November 1976

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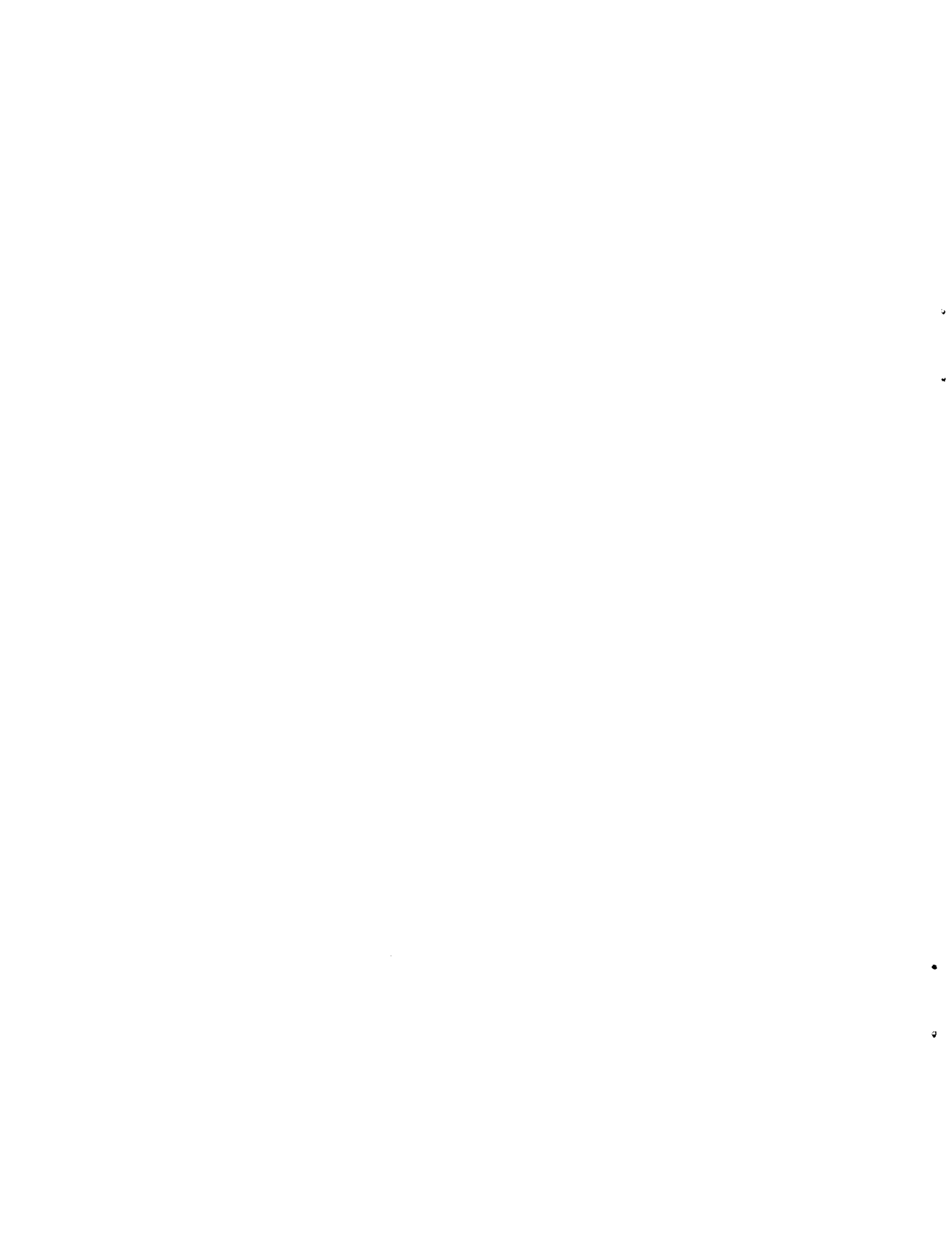
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I. Purpose

This report reviews recent transit performance and evaluates the impact of the Section 5 program on transit costs, efficiency and productivity. Specifically, the report reviews;

1. which urbanized areas are participating and to what extent;
2. what the financial characteristics of the operating assistance projects are (i.e., operating expenses, revenues, and local shares);
3. which urbanized areas apply for capital assistance projects and what the projects consist of;
4. whether any impacts on transit ridership, service, and fares can be identified;
5. whether any impacts on transit labor costs can be identified;
6. what has been happening to transit system utilization;
7. what has been happening to transit operating costs; and
8. how allocations under the current formula relate to transit ridership, service, and operating expenses.

II. Methodology and Data

While part of this analysis is based upon all Section 5 projects in all urbanized areas from November 26, 1974 through June 30, 1976, it was necessary to select a sample of urbanized areas to review financial characteristics, program impacts, and the allocation formula.

The analysis is disaggregated by the following population sizes, with the corresponding sample representation indicated:

TABLE 1
SAMPLE SELECTION

Urbanized Area Population	Total Urbanized Areas in This Category	Total Urbanized Areas Sampled	Number of Grants Reviewed Operating Capital	
over 1,000,000	25	25	55	9
500,000 to 1,000,000	22	15	21	8
200,000 to 500,000	59	21	24	9
50,000 to 200,000	173	19	20	13
TOTAL	279	80	120	39

The following characteristics of the sample should be noted:

1. All grants to urbanized areas with populations over 1,000,000 are reviewed because these areas represent 64 percent of Section 5 allocations and 79 percent of Section 5 funding approvals;
2. Urbanized areas and transit systems for which UMTA had not approved grants by June 30, 1976 are not represented;
3. There is a proportionately smaller sampling of urbanized areas under 500,000 population since they represent a very small percentage of Section 5 allocations and an even smaller percentage of grant approvals; and
4. Overall, grants representing 89 percent of Section 5 operating assistance and 98 percent of Section 5 capital assistance are reviewed in depth.

In addition, three limitations to the methodology and data should be noted:

1. Transit research is limited by the absence of reliable, consistent, and current data on service, ridership, and finances, which are the focus of this review. Most of the data in the following pages were obtained through Section 5 project files, American Public Transit Association (APTA) reports, an UMTA survey, and a survey of transit operators. Reliability, consistency, and currency are limited in all the above sources. Thus, in many cases, second-best data had to be substituted for the information desired (e.g., total ridership rather than revenue ridership, or FY 75 vehicle mileage rather than CY 75 mileage).
2. More important, financial information (i.e., operating expenses, revenues, and local shares) had to be obtained from approved project applications, which are often for a projected period. Thus, the financial data in this review may differ significantly from the actual finances at the end of the project period. (Audited financial statements are required, however, for project close-out and as the basis for Maintenance of Effort (MOE) calculations in subsequent local fiscal years.)
3. The selection of study cases limits the range of statistical tests that can be applied to the Section 5 data. As part of the data are a full enumeration, tests of significance (probability) are not meaningful. As much of the data are sampled, without known or estimated universe values, significance tests are not possible. Thus it is necessary to rely on descriptive, rather than inferential statistics.

III. Review of the Section 5 Program

From the enactment of Section 5 (November 26, 1974) through the end of Federal fiscal year 1976 (June 30, 1976) UMTA has approved 278 operating assistance and 42 capital assistance projects totalling \$541 million, which is 68 percent of the \$800 million allocated in FY 75 and FY 76. Operating assistance is \$507 million (or 94 percent of the total approvals), while capital assistance amounts to \$34 million (or 6 percent of the total approvals).

However, additional project approvals may be expected against the FY 75 and FY 76 allocations since:

1. allocations are based on the local fiscal year, which in many areas endson December 31, rather than June 30; and
2. by statute, allocations are available for obligation for two years following the close of the first local fiscal year in which they are available.

For the 25 urbanized areas over 1,000,000 population, \$515 million has been allocated for FY 75 and FY 76. Of this amount, \$407 million or 79 percent has been approved for operating assistance and \$21 million or 4 percent has been approved for capital assistance. Among these urbanized areas, only Seattle has not had any projects approved (nor has a program of projects been approved) as of June 30, 1976.

There are 22 urbanized areas with 500,000 to 1,000,000 inhabitants, of which 20 areas have had Section 5 projects approved (only Birmingham, Alabama and Springfield, Massachusetts have not been approved for projects). Of the FY 75 and FY 76 allocations of \$89 million, \$47 million (53 percent) has been approved for operating assistance and \$5 million (6 percent) has been approved for capital assistance.

Urbanized areas in the 200,000 to 500,000 population category are allocated \$100 million for FY 75 and FY 76. Of this amount, \$32 million (32 percent) has been approved for operating assistance and \$4 million (4 percent) has been approved for capital assistance. There are 59 urbanized areas in this group, 41 of which have been approved for Section 5 projects.

Only 60 of the 173 urbanized areas with populations between 50,000 and 200,000 have been approved to receive Section 5 funds. For these areas, \$18 million (19 percent) has been approved for operating assistance and \$4 million (4 percent) has been approved for capital assistance, based on FY 75 and FY 76 allocations of \$96 million.

While the above accounting of project approvals is a good indicator of program participation, it should be noted that additional project funding has been applied for or programmed, but is not yet approved.

In May of 1976, the Associate Administrator for Transit Assistance sent letters to 50 Metropolitan Planning Organizations (MPO's) and 23 States (sample letters are included in the Appendix) informing them of the availability of Section 5 funding and requesting comments on any problems inhibiting application for the funds. As of July 20, 1976 two MPO's and three States have responded. The reasons for non-utilization of allocations are manifold and variable from area to area:

1. there is no local public transit (this is true of several urbanized areas of less than 200,000 population);
2. eligibility for UMTA assistance is pending the completion of statutory planning requirements (e.g., Gastonia, NC);
3. specific project requirements (e.g., 13(c), half-fares, MOE) have not been or cannot be met;
4. a regional transit system or public takeover is imminent and the area is awaiting the completion of current activities before applying for operating assistance (e.g., Tampa, FL);
5. the local government is satisfied with existing, privately owned, unsubsidized transit service (e.g., Greensboro, NC);
6. there are difficulties in the designation of recipients of Section 5 funds (e.g., Johnstown, PA); and
7. there are other related problems which have prevented utilization up to now but which do not preclude eventual utilization of available Section 5 funds.

It may also be that many non-applicants have been unable or unwilling to increase State/local subsidies by the amount necessary to match Federal funds and to comply with the MOE requirement (which states that, to receive Section 5 funds, the current year's State/local assistance may not fall below the average for the two preceding years).

Table 2 provides an overall summary of Section 5 characteristics. Clearly, participation is greatest among the most populous urbanized areas, but falls off significantly as the size of the urbanized areas decrease. The decline is less significant for programming actions, which indicates that the gap in participation will be narrowed in the future.

TABLE 2
SELECTED CHARACTERISTICS OF SECTION 5 ASSISTANCE

Urbanized Area Population	Number with Approved Program of Projects	Number with Approved Projects	FY75 & FY76 Allocations (millions)	Approved Projects (millions)	
				Operating	Capital
25 Urbanized Areas of over 1,000,000 population	24 (96%)	24 (96%)	\$515	\$407 ^a (79%)	\$21 (4%)
22 Urbanized Areas of 500,000 to 1,000,000 population	21 (95%)	20 (91%)	89	47 (53%)	5 (6%)
59 Urbanized Areas of 200,000 to 500,000 population	49 (83%)	41 (69%)	100	32 (32%)	4 (4%)
173 Urbanized Areas of 50,000 to 200,000 population	104 (60%)	60 (35%)	96	18 (19%)	4 (4%)
TOTAL 279 Urbanized Areas	197 (71%)	145 (52%)	\$800	\$507 (63%)	\$34 (4%)

^a Not including some project approval funding which draws on FY77 allocations.

See Table A in the Appendix for similar information on the sample urbanized areas.

IV. Financial Characteristics

This section will provide an overview of the financial characteristics of transit in different population categories based upon a sample of 120 operating assistance grants to 80 urbanized areas. The overview will relate project operating grants to operating revenues, State and local operating assistance, and Section 5 funds. Table 3 provides a summary of the data that form the basis for the following analysis. More detailed tables on financing totals and ratios are contained in the Appendix, Tables B and C.

TABLE 3
ANALYSIS OF OPERATING ASSISTANCE GRANTS
FINANCING TOTALS

Urbanized Areas (number of grants analyzed)	Operating Expenses (thousands)	Operating Revenues (thousands)	Section 5 Approvals (thousands)	Local Share (thousands)
*25 of 25 UA's over 1,000,000 population (55 grants)	\$4,756,309	\$2,233,850	\$409,262	\$1,692,074
15 of 22 UA's of 500,000 to 1,000,000 population (21 grants)	154,837	77,455	26,188	49,354
21 of 59 UA's of 200,000 to 500,000 population (24 grants)	58,056	28,709	11,990	17,022
19 of 173 UA's of 50,000 to 200,000 population (20 grants)	9,999	4,452	2,383	3,637
TOTAL SAMPLE 80 of 279 UA's (120 grants)	\$4,979,201	\$2,344,466	\$449,823	\$1,762,087

*All operating assistance grants to these UA's during the review period (11/26/74 to 6/30/76) are included here, although not all operating expenses in these UA's are the basis for grants.

(Note that Section 5 approvals, revenues, and local shares do not add up to operating expenses because financing for all expenses is not known by some applicants at time of application.)

Operating Expenses and Revenues: On average, the operating ratios (i.e., revenue/expense) do not vary greatly among the different population groups. They range from 45% for urbanized areas under 200,000 population to 50% for the 200,000-500,000 and 500,000-1,000,000 range, as shown in Table 4.

TABLE 4
OPERATING RATIOS
FOR 120 SECTION 5 PROJECTS IN 80 URBANIZED AREAS

Urbanized Area Population	Percentage	Range
over 1,000,000	47	9-74
500,000-1,000,000	50	22-80
200,000-500,000	50	21-68
50,000-200,000	45	8-58
Average	47	8-80

Within each population group, however, there exist major variations. For example, in urbanized areas over 1,000,000 population, Boston covered about 27% and San Jose 9% of their expenses from the farebox. Other urbanized areas in this group with less than 40% coverage include Los Angeles (34%), San Francisco (39%), St. Louis (35%), Atlanta (38%), and Kansas City (38%). Conversely, Dallas, Milwaukee, and Buffalo covered over 70% of their expenses. A similar pattern holds for urbanized areas in the other population groups; urbanized areas with low coverage include: Sacramento, California (22%); Youngstown, Ohio (21%); Canton, Ohio (29%); Lansing, Michigan (26%); Melbourne-Cocoa, Florida (27%); Muskegon, Michigan (8%); Springfield, Ohio (27%); Seaside-Monterey, California (28%); Anderson, Indiana (25%); and Bay City, Michigan (23%). Urbanized areas with coverage over 70% include Indianapolis, Indiana (80%) and Columbus, Ohio (71%). The most striking aspect is the size of the range (from 8% for Muskegon to 80% for Indianapolis) and the fact that it cuts across all population groups. This suggests that population size alone has little to do with the revenue-expense relationship.

Operating Expenses and Local Share: Local share is the sum of State and local operating assistance to transit operators plus some non-farebox operating revenue (e.g., advertising revenue, prior-year cash surplus, contributed services, net charter and school revenue). State and local assistance may take the form of grants from general revenue or they may be specially earmarked taxes such as a sales tax, gasoline tax, or property tax. Additional funds may be supplied from bridge and tunnel surpluses; such is the case in New York, Philadelphia, and San Francisco.

TABLE 5

LOCAL SHARE AS A PERCENT OF OPERATING EXPENSES
FOR 120 SECTION 5 PROJECTS IN 80 URBANIZED AREAS

Urbanized Area Population	Percentage	Range
over 1,000,000	36	14-70
500,000-1,000,000	32	10-58
200,000-500,000	29	19-47
50,000-200,000	30	15-53
Average	35	10-73

Local share averages between 29% and 36% of the operating expenses for these projects, but again there is a wide variation within population groups. Indianapolis subsidizes only about 10% of operating expenses while San Jose subsidizes 70% and Atlanta 65%. Among the systems studied, seven urbanized areas--San Francisco, Boston, Atlanta, San Jose, Portland, Sacramento, and Muskegon--all had local shares in excess of 50%. It appears that those urbanized areas with a high local share either have a State operating assistance program (e.g., California and Michigan), locally earmarked taxes (Atlanta and Portland) or a combination of State and local subsidy programs (Boston).

Section 5 and Operating Expenses: Section 5 funds comprise from 9% to 24% of operating expenses depending upon the urbanized area size group. The Section 5 percentage increases as the urbanized area size group decreases, as shown in Table 6.

TABLE 6

SECTION 5 OPERATING ASSISTANCE AS A PERCENT OF OPERATING EXPENSES
FOR 120 SECTION 5 PROJECTS IN 80 URBANIZED AREAS

Urbanized Area Population	Percentage	Range
over 1,000,000	9	3-25
500,000-1,000,000	17	5-31
200,000-500,000	20	12-39
50,000-200,000	24	15-53
Average	9	3-53

Several urbanized areas over 1,000,000 population have exhausted their FY 75 and FY 76 allocations on operating assistance. The urbanized areas using 100% of their allocation are Detroit, Cleveland, Washington, Boston, Minneapolis, Miami, and San Jose. (Formula funds appear not to be fully utilized in New York, Chicago, and some other large areas because of the local process for sub-allocating funds among various jurisdictions or operators other than the major transit authority.) This is not true for urbanized areas under 1,000,000. In fact, only four urbanized areas of less than 1,000,000--Sacramento, Rochester, Toledo, and Asheville--have used 100% of their allocations. Yet, even though urbanized areas over 1,000,000 are utilizing the bulk of their allocations, they have not been able to cover their operating expenses to as great an extent as the smaller urbanized areas.

Although Section 5 averages only 9% of operating expenses, the median operating assistance grant is 20% of operating expenses.

Urbanized Areas Where Section 5
Accounts for 20-29% of Expenses

Urbanized Areas Where Section 5
Accounts for over 30% of Expenses

Detroit	Wichita
St. Louis	South Bend
Minneapolis	Harrisburg
San Diego	Chattanooga
Cincinnati	Colorado Springs
San Jose	Scranton
Phoenix	Jackson, Miss.
Dayton	Bakersfield
Memphis	Reading
Sacramento	Charleston, W.Va.
Oklahoma City	Evansville
Jacksonville	Santa Barbara
Toledo	Altoona
Nashville	Asheville
Flint	Wilmington, N.C.

Louisville
Richmond
Grand Rapids
Canton
Lansing
Melbourne-Cocoa
Seaside-Monterey
Anderson
Jackson, Mich.
Bay City
Muskegon

Section 5 and Local Share: Another way of viewing Section 5 is to compare the ratio of Section 5 funds to the local share. A ratio of 100% indicates an equal distribution of the project deficit between local and Federal funds and is the maximum ratio because of the 50% matching requirement; a low ratio indicates that the deficit is being borne primarily by the local community. Table 7 presents data for different size population groups. This table and the following data do not represent the ratios of Federal operating assistance to the total local transit operating subsidy. Those ratios would be much lower because many transit operations are not the basis for a Section 5 project; costs and local subsidies for those operations are not included in the project data on which this analysis is based.

TABLE 7

SECTION 5 AS A PERCENT OF LOCAL SHARE
FOR 120 PROJECTS IN 80 URBANIZED AREAS

Urbanized Areas Population	Percentage
over 1,000,000	24
500,000-1,000,000	53
200,000-500,000	69
50,000-200,000	66

The data indicate that the Federal allocations allow a more equal division of the project deficit between local and Federal resources for the smaller urbanized areas. In fact, several grants to urbanized areas in the 50,000-200,000 and 200,000-500,000 population categories are based upon a 100% match, i.e., an equal division of the deficit between Federal and local funds. These urbanized areas include Lansing, Michigan; Richmond, Virginia; Chattanooga, Tennessee; Youngstown and Canton, Ohio; Nashville, Tennessee; Wichita, Kansas; and Harrisburg, Pennsylvania. This situation does not hold for areas over 500,000, among which only Dallas, Louisville, Indianapolis, Dayton, Phoenix, and Portsmouth (Virginia) have obtained a 100% match. Table 8 presents the ratios for the 25 largest UA's.

Conclusions: The foregoing analysis by urbanized area size suggests the following:

1. The operating ratios do not differ greatly by urbanized area population size. There are major differences, however, within population size groups.
2. Local operating assistance as a percent of operating expenses does not differ greatly by urbanized area size group. Once again there are major differences within the different size groups. This suggests that population size alone is not the critical variable. State assistance programs may be a critical variable, however, since States such as Wisconsin, California, Illinois, and Pennsylvania allocate assistance on the basis of, first, operating expenses and, second, other factors.
3. Larger urbanized areas on average cover a much lower percentage of their project operating expenses with Section 5 funds than do smaller urbanized areas.
4. Smaller urbanized areas on the whole are allocated Section 5 funds enabling a more equal division of their project deficits between local and Federal funds than are the larger urbanized areas.

TABLE 8

SECTION 5 OPERATING ASSISTANCE AS A PERCENT OF LOCAL SHARE
FOR THE 25 LARGEST URBANIZED AREAS

Urbanized Area	No. of Projects	Section 5 Operating Assistance ÷ Local Share
New York	6	15%
Los Angeles	3	39%
Chicago	3	57%
Philadelphia	3	20%
Detroit	2	98%
San Francisco	6	12%
Boston	2	14%
Washington	2	31%
Cleveland	5	39%
St. Louis	1	53%
Pittsburgh	3	20%
Minneapolis	1	67%
Houston	0	--
Baltimore	2	74%
Dallas	2	100%
Milwaukee	1	70%
Seattle	0	--
Miami	2	93%
San Diego	1	57%
Atlanta	2	16%
Cincinnati	3	63%
Kansas City	2	37%
Buffalo	1	12%
Denver	0	--
San Jose	2	30%
TOTAL	55	Average 24%

V. Program Impacts--Operating Assistance

Most grant applications indicate that Section 5 operating assistance will be used to stabilize fares or to improve or maintain transit service generally, rather than in specified ways. (Occasionally, an applicant is specific, e.g., a Miami application indicates that, out of a 3.3 million grant, \$150,000 will subsidize half fares for the elderly and handicapped, \$300,000 will go into special services for the elderly and handicapped, and \$50,000 will be used to simplify fare zones.) Given that the applications do not describe specific operating projects, it was necessary to take another approach to examine program impacts.

Ideally, the impact of Section 5 assistance would be measured by comparing indicators such as ridership, service, and fares before and after assistance is received, ceteris paribus. However, ceteris paribus conditions do not exist. Transit is significantly affected by changes outside the transit operator's or local government's control--for instance, changing economic conditions and fuel availability. It can be expected that a portion of Section 5 funding will be used to offset these changes--to maintain service that would have been cut, fares that would have been raised, or local subsidies which would have increased. The impacts of Section 5 must therefore be measured as the preservation of existing service as well as expansion of service.

To illustrate the importance of these external changes: it was noted earlier that Section 5 funds average 9% of operating costs. Yet, the rise in the implicit price deflator for the Gross National Product and the CPI from 1974 and 1975 was also 9%. While there are a number of complicating factors, it is apparent that, in general, Section 5 assistance is less than the increase in expenses pressed upon transit operators through inflation. ^{1/}

This situation can be expected to change as Section 5 allocations rise rapidly through FY 78 and taper off FY 79-FY 80. Thus FY 80 allocations would be 14.6 percent of the projected 1980 operating expenses for transit, while the comparable FY 75-FY 76 figure is 10.8 percent. ^{2/}

In general, over the FY 75-FY 80 period the program will provide allocations exceeding the impact of current and moderate inflation in the future. For some of the small, less transit-intensive areas the difference will probably be substantial; for most other areas, the difference will be modest; and for the handful of transit-intensive areas, it is doubtful that Section 5 allocations will offset inflation.

^{1/} While this is true for the transit industry as a whole, Section 5 assistance does in many cases exceed 20% of operating expenses. These are primarily smaller urbanized areas; in several of the larger urbanized areas, Section 5 assistance is less than inflation. See Table C of the Appendix.

^{2/} 1980 operating expenses are projected to be \$5.7 billion, based upon 1975 APTA-reported expenses of \$3.5 billion compounded at the 1965-75 rate of 10% increase per year. ¹²

Information on service, fares and ridership was collected for the 80 urbanized-area sample for 1974 (before any Section 5 grants were approved) and 1975 (the first year assistance was received by urbanized areas.) Before discussing this information, however, it is extremely critical that the following caveat be noted:

Much of the project assistance to the 80 urbanized areas could not have been received in time to affect their 1975 operations. For example, for the overall program, of \$541 million approved for assistance through June 30, 1976, only \$152 million was approved by June 30, 1975 and some of that was for disbursement in 1976. Thus, while service and ridership data for 1974 and 1975 are presented, it is merely to establish a background for this review and a basis for future analysis.

1. Service: While service may be impacted and improved in many ways, the most general and probably the easiest indicator to measure is total vehicle miles of operation (line service only--i.e., excluding charter). Table 9 summarizes changes in service, 1974-1975, for the 80 urbanized areas sampled. There were increases in the average mileage for all four population groups, with the 15.8 percent increase among the smallest urbanized areas standing out from the more modest 2.3 to 3.9 percent increases in the three more populous groups. In absolute terms, however, the 2.1 million increase in mileage for the smaller population group is not significant while the 32 million increase in the top 25 urbanized areas is more meaningful.

Also meaningful is the fact that, of the 80 urbanized areas sampled, 59 (or 74 percent) increased the amount of service they provided in 1975.

These increases in service must be contrasted with the 1965-1973 period, which saw service (i.e., transit vehicle miles) decreasing at an average annual rate of .51% per year. Thus, we see a reversal of this historical decline beginning in 1973, followed by increases in 1974 and 1975. While it would be fallacious to attribute these increases solely to Section 5, the fact that Section 5 does contribute to the financial stability of transit and allows transit operators to expand service or reduce fares must be recognized.

2. Ridership: Ridership is the yardstick by which transit is most often judged. In this analysis, revenue ridership in 1974 is compared with 1975 revenue ridership and summarized in Table 10. Overall, ridership among the 80 urbanized areas sampled decreased by 2.4 percent between 1974 and 1975. (If New York is excluded, ridership increased by .002 percent.) However, this conceals the fact that in 70% of the urbanized areas ridership increased over that period. And most of the areas in which ridership decreased had cut back on service in 1975.

TABLE 9
CHANGES IN SERVICE, 1974-1975*

Urbanized Areas	1974 Transit Vehicle Miles (thousands)	1975 Transit Vehicle Miles (thousands)	Percent Change
25 of 25 UA's over 1,000,000 population	1,224,108	1,255,932	2.6
15 of 22 UA's of 500,000 to 1,000,000 population	101,700	105,673	3.9
21 of 59 UA's of 200,000 to 500,000 population	52,088	53,296	2.3
19 of 173 UA's of 50,000 to 200,000 population	12,977	15,031	15.8
TOTAL SAMPLE 80 of 279 UA's	1,391,374	1,430,155	2.8

See the Appendix, Table D, for a more detailed accounting by urbanized area.

* Unlike the previous financial data, which was limited to the specific transit operations receiving assistance in a sampled area, these figures are all-inclusive totals for the entire sampled areas.

TABLE 10
CHANGES IN RIDERSHIP, 1974-1975

Urbanized Areas	1974 Revenue Riders (thousands)	1975 Revenue Riders (thousands)	Percent Change
25 of 25 UA's over 1,000,000 population	4,372,456	4,268,808	-2.4
24 of 25 UA's over 1,000,000 population (excluding New York City)	2,137,456	2,154,808	+0.08
15 of 22 UA's of 500,000 to 1,000,000 population	251,180	235,760	-6.1
21 of 59 UA's of 200,000 to 500,000 population	115,501	115,580	0.1
19 of 173 UA's of 50,000 to 200,000 population	23,221	25,565	10.1
TOTAL SAMPLE 80 of 279 UA's	4,762,358	4,645,713	-2.4

See the Appendix, Table E, for a more detailed accounting of ridership by urbanized area.

As with service, the increase in ridership in the smallest urbanized areas was much greater (at 10.1 percent) than the changes in the larger urbanized areas. Some plausible reasons for the better performance among the smaller areas are that:

- a. given their smaller ridership and mileage bases, small increments can be substantial percentagewise; and
 - b. past ridership and mileage may have been further below their potential than in the larger urbanized areas.
3. Fares: The most frequent fare change stemmed from the Section 5 requirement for off-peak half fares for the elderly and handicapped. A number of urbanized areas were in compliance with the requirement before November 26, 1974 and a number have gone beyond the requirement to a free-fare policy for elderly and handicapped and/or to an extension of the lower fares throughout the day.

Other frequently encountered changes were: elimination of transfer charges; availability of discount ticket books; elimination of zone charges; and special fares for students.

A few systems increased the base fare while a few decreased it. In most cases, however, the base fare has remained constant since the availability of Section 5 assistance, despite inflationary pressures.

Conclusions: The foregoing analysis suggests:

1. Although difficult to quantify, benefits accruing from Section 5 include both new service and fare reductions and those services that would have been curtailed or fare increases that would have been instituted in the absence of Section 5.
2. Inflation has matched Section 5 assistance. (Section 5 assistance averages 9% of operating expenses; inflation was 9% from 1974 to 1975.) To the extent that Section 5 has compensated for inflation, it is responsible for the continuation of service which might otherwise have been curtailed.
3. Service increased 2.8% from 1974 to 1975. This is in direct contrast to the 1965-1973 period in which service declined 0.51% per year.
4. The widespread institution of off-peak half fares for the elderly and handicapped is directly attributable to Section 5. In most cases, base fares have remained constant despite inflationary pressures.

Finally, it should be noted that as of June 30, 1976 \$260 million in Section 5 had not been approved for grants, while a large but unknown amount had been approved but had not yet been disbursed. When these funds are expended, we can expect additional impacts.

VI. Capital Projects

Capital grants under Section 5 have been approved for about 35 urbanized areas totalling \$34.6M or 6% of all approved projects. The funds have been used to finance a multitude of different transit improvements. Buses are the most frequent purchase (about 375), but other uses include the construction of transit related buildings, acquisition of fare collection systems, communications systems, data processing equipment, maintenance vehicles and equipment, passenger amenities (e.g. shelters, benches and route signs), bus priority systems, and special buses with lifts for the elderly and handicapped.

Geographically, the capital grants have been dispersed over 17 States. However, in four states--Michigan, Ohio, California and Texas--four or more UA's have received capital assistance under Section 5. Table 11 lists the States and the dollar value of their grants.

TABLE 11
DISTRIBUTION OF UA'S RECEIVING CAPITAL GRANTS

State	Number of UA's Receiving Capital Grant	Section 5 Grants (thousands)
Texas	5	\$ 12,254
California	4	3,456
Michigan	4	2,092
Ohio	4	738
Colorado	3	7,379
New York	2	3,056
Indiana	2	831
Rhode Island	1	1,395
Tennessee	1	715
Virginia	1	597
Florida	1	454
Washington	1	300
Iowa	1	231
North Carolina	1	197
Mississippi	1	164
Alabama	1	131
Idaho	1	16
Not Sampled		571
TOTAL		\$34,577

A discussion of the various capital grants by population category follows. It should be noted that not all grants are discussed, especially if they involve routine bus purchases.

Urbanized Areas Over 1 Million Population: Six urbanized areas--Buffalo, Cincinnati, Denver, Houston, Dallas and Santa Monica--have used \$20 million in Section 5 funds for capital grants representing about 21% of the \$102 million allocated to these six areas (and 4% of the allocated funds for all urbanized areas over 1 million). Table 12 presents the relevant data.

TABLE 12
CAPITAL GRANTS FOR URBANIZED AREAS OVER 1 MILLION POPULATION

Urbanized Area	FY 75 & FY 76 Allocations (thousands)	Section 5 Grants (thousands)	Grants as Percent of Allocations
Buffalo	\$ 8,109	\$ 3,040	37.5
Denver	6,518	6,518	100
Houston	9,805	8,730	89
Dallas	6,581	884	13
Santa Monica (part of Los Angeles)	63,891	1,600	2
Cincinnati*	6,671	150	2
TOTAL	\$101,575	\$20,922	21%

* Grant not discussed in text.

Buffalo used \$3.04 million or 37.5% of its FY 75 and FY 76 allocation to finance a multitude of improvements. These include partial funding for the new intermodal transportation center, 21 new buses, and the rehabilitation of transit loops and maintenance facilities. Dallas was involved in three different capital grants. The first grant for \$148,000 was used to implement a bus priority system; the second was to construct park-and-ride facilities at a cost of \$352,000. The last grant, \$384,000, was used to make the bus system more accessible to the elderly and handicapped by purchasing 7 minibuses with wheel chair lifts and 20 bus shelters. Santa

Monica, which is part of the Los Angeles-Long Beach urbanized area, used Section 5 funds to purchase 15 air conditioned buses, a communications system (127 two-way radios, base station, and console), and a fare-collection system.

Houston and Denver merit special attention because they used their allocations exclusively for capital improvements. Houston, with the largest capital grant under Section 5, used \$8.7M (89% of its allocation) to upgrade its bus system extensively. Vehicle purchases included 130 new 51 to 53 passenger, air-conditioned buses, 12 air-conditioned minibuses, 20 van-type vehicles with lifts for the elderly and handicapped, and 8 supervisory vehicles. The grant also enabled Houston to purchase route destination signs, benches, a data processing system, and sundry office equipment. Denver, in two separate capital grants of \$2.4M and \$4.1M, used 100% of its allocation to upgrade its bus system. The first grant involved the purchase of 40 new air-conditioned buses. The second grant enabled Denver to make a number of improvements, including the purchase of 40 forty-seven passenger buses, 10 twenty-three to thirty passenger buses, 16 forty-nine passenger suburban coaches, supervisory vehicles, bicycle facilities, radios, and fareboxes.

Urbanized Areas of 500,000 to 1 Million Population: Seven urbanized areas--Indianapolis, Dayton, Providence, Fort Worth, San Antonio, Memphis, and San Bernadino--have utilized Section 5 for capital assistance. The capital grants represent about 20% of their FY 75 and FY 76 allocations, but only 6% of the \$89M allocated to all urbanized areas of 500,000 to 1 million population (see Table 13).

TABLE 13
CAPITAL GRANTS FOR URBANIZED AREAS OF 500,000 TO 1 MILLION POPULATION

Urbanized Area	FY 75 & 76 Allocations (thousands)	Section 5 Grants (thousands)	Grants as Percent of Allocations
Dayton*	\$ 3,980	\$ 165	4
Providence	4,740	1,395	29
Indianapolis*	4,140	698	17
Fort Worth	3,170	141	4
San Antonio	4,740	2,000	43
Memphis	4,030	715	18
San Bernadino*	2,820	403	14
TOTAL	\$27,620	\$5,517	20

* Not discussed in the text.

The funds were used for a variety of purposes. Memphis purchased 8 service vehicles, 9 supervisory vehicles, and a new fare-collection system. Fort Worth used its funds to purchase 30 bus shelters, 900 bus stop signs, and data-processing equipment. San Antonio had the largest capital grant in this group and it purchased 33 new, air-conditioned buses. Similarly, Indianapolis, Dayton, and San Bernadino purchased buses with their grants. Providence, R. I., on the other hand, took several steps to upgrade its bus system, by purchasing 19 new buses as part of a regular replacement cycle, 5 maintenance vehicles, 4 supervisory vehicles, and 20 bus shelters and 1,500 bus stop signs to make public transit more visible in Providence.

Urbanized Areas of 200,000 to 500,000: Nine urbanized areas in the 200,000-500,000 range have used Section 5 funds for capital assistance. These urbanized areas--Canton, Ohio; Richmond, Virginia; Spokane, Washington; Lansing, Grand Rapids, and Flint, Michigan; Austin, Texas; Davenport, Iowa; and Colorado Springs, Colorado--used \$3.19M for capital grants representing 27% of their allocations and 4% of the allocation for all urbanized areas in this group. The relevant data are presented in Table 14.

TABLE 14
CAPITAL GRANTS FOR URBANIZED AREAS OF 200,000 TO 500,000 POPULATION

Urbanized Area	FY 75 & FY 76 Allocations (thousands)	Section 5 Grants (thousands)	Grants as Percent of Allocations
Canton, Ohio	\$ 1,490	\$ 266	18%
Richmond, Va.	2,350	597	25
Spokane, Wa.	1,310	300	23
Lansing, Mich.	1,340	488	36
Grand Rapids, Mich.	1,860	426	23
Flint, Mich.	2,010	1,164	58
Austin, Tex.	1,540	282	18
Davenport, Iowa	1,370	231	17
Colorado Springs, Co.	1,060	160	15
TOTAL	\$14,330	\$3,914	27%

These nine urbanized areas--with the exception of Flint (Michigan) and Davenport (Iowa)--used their grants to purchase buses exclusively.

Flint, Michigan, in addition to the purchase of buses noted above, purchased two buses equipped with lifts for the elderly and handicapped, 50 fareboxes to replace those in the existing fleet, and 500 bus stop signs. Davenport, Iowa purchased in addition to the buses, office furniture, 29 fareboxes, and a supervisory vehicle.

Urbanized Areas of 50,000 to 200,000 Population. Thirteen urbanized areas under 200,000 have used Section 5 funds for capital assistance totalling \$2.97 million, or 31% of their allocations for FY 75 and FY 76. Table 15 lists the capital grants and allocations by urbanized area.

TABLE 15
CAPITAL GRANTS FOR URBANIZED AREAS OF 50,000 TO 200,000 POPULATION

Urbanized Area	FY 75 & FY 76 Allocations (thousands)	Section 5 Grants (thousands)	Grants as Percent of Allocations
Fayetteville, NC	\$ 822	\$ 197	24%
Montgomery, Al.	767	131	17
Boulder, Co.	500	699 ^a	140 ^a
Kalamazoo, Mi.	759	14	2
Evansville, Ind.	880	133	15
Springfield, Ohio	594	157	26
Salinas, Ca.	419	200	48
Bakersfield, Ca.	1,034	572	55
Boise, Id.	483	16	3
Binghamton, NY	988	16	2
Jackson, Miss.	1,035	164	16
Amarillo, Texas	663	217	33
Sarasota- Bradenton, Fl.	801	454	57
TOTAL	\$9,745	\$2,970	31%

a Includes some of Boulder's Transition Quarter and FY 77 apportionments.

Several systems--Montgomery, Alabama; Evansville, Indiana; Springfield, Ohio; Salinas, California; Bakersfield, California; Jackson, Mississippi; and Amarillo, Texas--used their funds to purchase buses, or buses and bus shelters. Others, notably Kalamazoo, Michigan and Binghamton, New York invested in maintenance equipment. Two urbanized areas--Fayetteville, North Carolina and Boulder, Colorado--used their Section 5 funds in unique ways. Fayetteville purchased a local bus company that was verging on bankruptcy, while Boulder in addition to purchasing 5 buses bought 6.9 acres of real estate for a garage and administrative headquarters building.

VII Transit Labor Costs and Labor Productivity

Introduction: The purpose of this section is to examine the labor component of the transit industry to provide a background for the Section 5 operating assistance projects. Because of its size in relation to other costs and total costs, it is important to examine labor more closely, for changes in labor costs immediately impact total costs and subsequent deficits.

The past twenty-five years have witnessed a decline in transit employment from 240,000 in 1950 to a low of 138,000 in 1970, followed by a gradual rise to 159,800 in 1975. At the same time as employment has been declining, labor has been successful in raising its wages; thus labor costs (excluding fringe benefits) as a percent of total costs have hovered around 67%. This percentage has been fairly constant over time with no discernible trend toward an increase or decrease. It is not possible to quantify the cost of fringe benefits because, prior to 1975, data were not aggregated. However, a study of transit costs in New York State found that pension costs constitute 8% to 11% of total operating costs and other benefits comprise from 7% to 9% of operating costs. Thus employee costs--wages and salaries, pensions and other benefits--constitute from 82% to 87% of total operating costs.¹

Labor Compensation: Labor compensation is the major cost element in transit operations. Although the industry is financially weak, labor has succeeded in increasing its average annual wages by 98% between 1967 and 1975. Data on transit earnings are presented in Table 16.

TABLE 16

TRANSIT EARNINGS

Year	Annual Earnings in Current Dollars	Annual Earnings in Constant Dollars (1972 = 100)
1967	\$ 7,222	\$ 9,140
1968	7,727	9,360
1969	8,404	9,690
1970	9,230	10,100
1971	10,014	10,430
1972	10,515	10,515
1973	11,544	10,900
1974	12,849	11,055
1975	13,993	11,075

Source APTA Fact Book, 1976 p.38. Constant dollars are based on the GNP deflator, 1972 = 100.

¹William C. Holthoff, Cost Increases, Cost Differences and Productivity of Transit Operations in New York State (NYSDOT, Albany, N.Y., 1975).

While the wage increase over the years 1967-75 has been 93%, in real terms the increase has been only 21%. Thus, a large part of the wage increase reflects the inflation that has permeated the economy since 1965 and is not peculiar to the transit industry. Conceptually, wage increases may be separated into two parts, real increases and those attributable to inflation. Transit properties have been relatively powerless to control the effects of inflation since many labor contracts contain cost-of-living clauses based upon the consumer price index (CPI). In a study of transit in 67 cities,² the Bureau of Labor Statistics (BLS) found that escalator clauses in transit contracts most commonly provide for quarterly adjustments of one cent per hour for each 0.4 to 0.6 of a point increase in the specified national or local CPI; such provisions were found in 55 of the 67 cities studied and applied to more than 90% of the workers in the survey.

Labor Productivity: Productivity is defined as the numbers of units of output produced per unit of input. The labor input here is defined in terms of the numbers of employees or employee hours.

Output is the quantity of goods or services produced. For the transit industry many studies have used the number of passengers carried as the output, but this is a measure of utilization of the transit system rather than a measure of output. Transit vehicle-mileage is a common measure of output although capacity miles is a better measure. Since data on capacity miles are not available, vehicle-miles per employee are used in Table 17 to measure labor productivity. Note that the term labor productivity is not used here as an indicator of how efficient the labor component alone is; the output (vehicle-miles) is greatly affected by congestion, operating speed, urban form, managerial scheduling skills, etc. VMT per employee is one indicator of how productively the transit operator uses the labor input given geographical, political and other conditions which vary among urbanized areas.

TABLE 17
TRANSIT LABOR PRODUCTIVITY, 1950-1975

Year	Vehicle Miles per Employee
1950	12,530
1955	12,360
1960	13,735
1965	13,850
1970	13,640
1971	13,270
1972	12,680
1973	13,040
1974	12,600
1975	12,450

Source: APTA Fact Book, 1976 pp. 36 & 38

²Bureau of Labor Statistics, Union Wages and Hours; Local Transit Operating Employees (BLS, Washington, D.C., 1975).

It was noted earlier that labor has succeeded in increasing its real wages by 21% since 1967, although VMT/employee has remained constant. The result is higher operating costs in constant as well as current dollars. Table 18 presents data on wage and salary costs per vehicle mile expressed in 1972 constant dollars.

TABLE 18
WAGE AND SALARY COSTS PER VEHICLE MILE
(1972 CONSTANT DOLLARS)

Year	Costs Per Vehicle Mile	Percent Change From Previous Year
1967	\$.67	
1968	.68	1.5%
1969	.69	1.5%
1970	.74	7.2%
1971	.78	5.4%
1972	.83	6.4%
1973	.84	1.2%
1974	.89	6.0%
1975	.89	0.0%

Source APTA Fact Book, 1976, pp. 36 and 38.

Over the past eight years wage and salary costs per vehicle mile have increased at an average annual rate of 3.6% in excess of the rise in the GNP price deflator.

To summarize the transit industry is faced with modestly increasing real labor costs, constant output (VMT) per employee, and inflation. This translates into higher operating costs on a vehicle mile basis--modestly higher in constant dollars and considerably higher in current dollars.

Comparisons with other public service employment: Based upon the Census of Government's survey of municipal employment and payrolls, transit had the highest average monthly earnings (\$1,280) of any public sector group in 1975. Transit wages increased at an annual rate of 11% during the period of 1962-75, a rate exceeded only within the housing and urban development sector (11.9%). However, when average monthly earnings and employment are distributed over city size groups a different picture emerges from the 1975 data.

1. Earnings for teachers are the highest in three groups, for water transport workers in two groups, for electric power workers in one group, and for transit workers in one group.
2. Electric power workers earn, on the average, \$96 per month more than transit employees in cities of 1,000,000 or more.
3. In cities of 50,000 to 300,000 in population, transit earnings are exceeded by monthly wages in police, water transport, and electric power services.

TABLE 19

AVERAGE MONTHLY (OCTOBER 1975) EARNINGS OF CITY EMPLOYEES
IN SELECTED FUNCTIONS, BY CITY SIZE GROUPINGS

Selected Functions	1 Million or More	500,000-999,999	300,000-499,999	200,000-299,999	100,000-199,999	50,000-99,999	Less Than 50,000	Total
HIGHWAYS	\$ 1,148							\$ 845
PUBLIC WELFARE	826							843
POLICE PROTECTION	1,405	1,141	1,112	1,079	1,080	1,122	897	1,100
PARKS & RECREATION	951							804
HOUSING & URBAN DEV.	1,106	1,067	905	813	909	948	807	1,010
AIRPORTS	1,141							951
WATER TRANSPORT	1,415	1,103	1,246	1,500	778	1,011	843	1,187
CORRECTION	1,282							1,101
LOCAL UTILITIES	1,330							1,030
WATER SUPPLY	1,208							876
ELECTRIC POWER	1,437	1,019	1,127	953	1,146	1,080	875	1,060
TRANSIT	1,341	1,220	831	925	949	895	921	1,260
WAS SUPPLY	750							858
TEACHERS	1,661	1,171	1,223	1,187	1,101	1,162	992	1,239

Regional and City Averages: To this point the analysis has concentrated upon industry-wide aggregates. While this approach is appropriate for highlighting the principal issues, it is not possible to show the effects that city size and location may have upon labor. The following analysis is based upon the annual BLS study (cited earlier) of local transit operating employees in 67 cities shows that wages advanced 11.3% or 64¢ per hour during 1975.

TABLE 20

AVERAGE HOURLY RATES BY CITY SIZE

Year	100,000-250,000	250,000-500,000	500,000-1,000,000	Over One Million	Weighted Average
1970	\$3.26	\$3.77	\$4.06	\$4.37	\$4.03
1971	3.51	4.12	4.36	4.77	4.38
1972	3.69	4.22	4.78	5.08	4.68
1973	3.98	4.65	5.08	5.44	5.04
1974	4.43	5.19	5.72	6.03	5.62
1975	4.99	5.80	6.51	6.61	6.25

Large cities, on average, tend to have higher wages for local transit employees. In 1975, the average recorded for workers in cities of 1,000,000 (\$6.61) was 2% higher than the average for cities 500,000-1,000,000 (\$6.51); 14% higher than for cities 250,000-500,000; and 32% higher than for cities 100,000 to 250,000 (\$4.99). Wage rates average \$6 or more in more than 50% of the cities with 500,000 inhabitants, but in only 10% of the smaller cities studied. Table 21 demonstrates the considerable overlap among cities of different sizes.

TABLE 21
AVERAGE WAGE RATES BY POPULATION GROUP:
Selected cities, July 1, 1975

City and population group	Average hourly rate	Change from July 1, 1974		City and population group	Average hourly rate ¹	Change from July 1, 1974	
		Cents per hour	Percent			Cents per hour	Percent
All cities	\$6.25	64	11.3	Population group III—Continued			
Population group I (1,000,000 or more)	6.61	63	10.5	Newark, N.J.	6.62	95	16.8
Chicago, Ill.	7.12	59	9.1	Norfolk, Va.	5.36	59	12.4
Detroit, Mich.	6.41	99	18.3	Oklahoma City, Okla.	3.57	18	5.3
Houston, Tex.	5.05	60	13.5	Omaha, Nebr.	5.01	60	13.6
Los Angeles, Calif.	6.25	93	17.5	Portland, Oreg.	6.36	53	9.1
New York, N.Y.	6.72	51	8.2	Rochester, N.Y.	5.96	63	11.8
Philadelphia, Pa.	5.88	75	14.6	Sacramento, Calif.	6.35	78	14.0
Population group II (500,000 to 1,000,000)	6.51	72	12.4	Toledo, Ohio	5.42		
Baltimore, Md.	6.58	70	11.9	Tulsa, Okla.	3.74	39	11.6
Boston, Mass.	7.19	78	12.1	Population group IV (100,000 to 250,000)	4.99	55	12.4
Cleveland, Ohio	5.75	46	8.7	Albuquerque, N. Mex.	5.23	100	23.6
Columbus, Ohio	4.97	49	10.9	Charlotte, N.C.	4.11	57	16.1
Denver, Colo.	5.78	46	8.6	Dayton, Ohio	5.32	54	11.3
Indianapolis, Ind.	5.35	56	11.7	Des Moines, Iowa	5.05	50	11.0
Jacksonville, Fla.	5.46	73	15.4	Erie, Pa.	4.38	37	9.2
Kansas City, Mo.	6.25	69	12.3	Evansville, Ind.	3.70		
Memphis, Tenn.	5.74	76	15.3	Fresno, Calif.	5.91	63	11.9
Milwaukee, Wis.	6.02	55	10.1	Grand Rapids, Mich.	4.36	28	6.9
New Orleans, La.	4.41	29	6.9	Jackson, Miss.	4.34	38	9.6
Phoenix, Ariz.	4.65	60	14.8	Knoxville, Tenn.	5.03	75	17.5
Pittsburgh, Pa.	6.45			Little Rock, Ark.	4.37	48	12.3
St. Louis, Mo.	6.28	27	4.5	Madison, Wis.	5.20	34	7.0
San Antonio, Tex.	4.60	85	22.7	New Haven, Conn.	5.13	64	14.3
San Diego, Calif.	7.40	135	22.2	Peoria, Ill.	5.00	13	2.7
San Francisco-Oakland, Calif.	7.00	75	12.1	Providence, R.I.	5.00	44	9.6
Seattle, Wash.	6.18			Richmond, Va.	5.44	67	14.0
Washington, D.C.	6.90	94	15.8	Salt Lake City, Utah	4.15	42	11.2
Population group III (250,000 to 500,000)	5.80	58	11.1	Scranton, Pa.	4.50	75	20.0
Atlanta, Ga.	5.74	42	7.9	Shreveport, La.	4.41	54	14.0
Birmingham, Ala.	5.49	54	10.9	South Bend, Ind.	5.56	70	14.4
Buffalo, N.Y.	5.45	51	10.3	Spokane, Wash.	5.48	68	14.2
Cincinnati, Ohio	5.61	61	12.2	Springfield, Mass.	4.84	44	10.0
Louisville, Ky.	5.42	57	11.8	Syracuse, N.Y.	5.06	55	12.2
Minneapolis-St. Paul, Minn.	6.04	42	7.5	Topeka, Kans.	4.20	59	16.3
				Trenton, N.J.	4.65	22	5.0

The use of averages, however, hides significant variations within each size group and actually it appears that population is less important in explaining some of the wage rate variations than location of city and, perhaps, variations in bargaining power among local unions. Table 22 gives a comparison of wage rates by region.

TABLE 22

1975 WAGE RATES BY REGION

Region	Average Hourly Rate	% Change from 1974
United States	\$6.25	11.3%
New England	6.23	11.8
Middle Atlantic	6.44	9.8
Border	6.42	14.3
Southeast	5.32	11.1
Southwest	4.42	11.9
Great Lakes	6.39	10.1
Middle West	5.83	7.9
Mountain	5.28	11.5
Pacific	6.50	14.5

New England - Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont; Middle Atlantic - New Jersey, New York and Pennsylvania; Border - Delaware, District of Columbia, Kentucky, Maryland, Virginia and West Virginia; Southeast - Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Tennessee; Southwest - Arkansas, Louisiana, Oklahoma and Texas; Great Lakes - Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; Middle West - Iowa, Kansas, Missouri, Nebraska, North Dakota and South Dakota; Mountain - Arizona, Colorado, Idaho, Montana, New Mexico, Utah and Wyoming; Pacific - Alaska, California, Nevada, Oregon and Washington. Hawaii was excluded from the survey.

The average wage rate for all operating employees was highest in the Middle Atlantic (\$6.44) and Pacific regions (\$6.50). These regions are significantly influenced by employment concentrations in New York (\$6.72), San Diego (\$7.40) and San Francisco-Oakland (\$7.00)--three of the four highest paying cities in the study. The lowest average was found in the Southwest. The Bureau of Labor Statistics has found in similar studies of other industries that geography rather than city size is the more important variable in determining wage rates.

VII. Changing Utilization of Transit Systems

Data on ridership are the basis for a large number of productivity and efficiency measures which are widely used to indicate that productivity of the industry has declined over time. Some of the most widely used of these measures are: riders per transit employee; riders per transit vehicle mile; and operating cost per rider.

Ridership alone, however is an inadequate basis for measuring productivity or efficiency. This is because the average ride has lengthened significantly over the last 25 years: in 1950 the average transit trip length was approximately 2.7 miles; today it is estimated to be between 5.7 and 8.5 miles. This longer trip length is obviously not a choice of transit operators. Rather, it is a direct result of the growth and changes--particularly suburbanization--in metropolitan areas since 1950.

Thus, a more accurate representation of transit productivity would include productivity trends based on passenger miles, for example:

TABLE 23
TRANSIT PRODUCTIVITY TRENDS BASED ON PASSENGER MILES^a

Year	Average Transit Passenger Trip Length (miles)	Annual Passenger Miles Per Employee	Annual Passenger Miles Per Transit Vehicle Mile	Annual Operating Cost Per Passenger Mile
1950	2.7 to 3.0 ^b	191,000 to 216,000	15.3 to 17.2	4.7¢ to 5.2¢
1975	5.7 to 8.5 ^c	248,000 to 370,000	19.9 to 29.7	4.7¢ to 7.1¢

Costs are constant dollars, derived from the GNP deflator, 1972 = 100.

^a It is difficult and expensive to obtain trip length data; consequently, there are no reliable nationwide figures for transit trip lengths. Even the ranges used here should be used carefully and qualifiedly.

^b The average trip length for 1950 used by Mayo Stuntz, Jr., and Eric Hirst in "Energy Conservation Potential of Urban Mass Transportation," was 2.66 miles. Since it is not clear whether this trip length estimate is valid for linked or unlinked trips, a slightly longer estimate of 3 miles is also used to bracket the range here.

^c In June 1976 the Bureau of the Census released advanced tabulations for three metropolitan areas in a national survey of commuting trips. They indicated median trip distances for commuting trips by transit as follows: Philadelphia, 9.6 miles; Chicago, 10.8 miles; and San Diego, 7.17 miles. These figures are the door-to-door distances, so the transit portion would be shorter to account for a walking portion. Work trips are longer on average than other trips by transit; they account for 67% to 70% of all transit trips. Because of these differences, a range of 5.7 to 8.5 miles was chosen to bracket the range of trip lengths in 1975.

IX. Transit Operating Costs

Over the past decade the cost of operating public transit has risen 157%--which is 52% in constant dollars (based on the implicit price deflator for the GNP, for which 1972 is the base year).

More important than the rise in total operating costs are the increases in unit costs. Costs per passenger and costs per vehicle mile have risen more significantly than total operating costs (see Table 24 below) because both passengers and vehicle miles declined between 1965 and 1975. Revenue passengers declined by 17% over this decade, while transit service was curtailed 1%.

TABLE 24
UNIT OPERATING COSTS FOR TRANSIT
1965 and 1975

Year	Cost/Revenue Passenger Current \$	Constant \$	Cost/Vehicle Mile Current \$	Constant \$
1965	\$0.17	\$0.23	\$0.68	\$0.91
1975	0.63	0.50	1.78	1.41
Percent Change 1965-1975	+271	+117	+162	+55

NOTE: The cost data are based upon APTA figures which include some, but probably very little, depreciation. Constant dollars are calculated according to the GNP deflator, 1972=100.

Although it is not possible to use the Section 5 project cost data for individual urbanized areas, data from UMTA surveys have been used to calculate 1974 and 1975 unit costs for the largest urbanized areas (see Tables 25 and 26).

TABLE 25

OPERATING COST PER REVENUE PASSENGER
1974 and 1975

25 of 25 UA's of Over 1,000,000 Population

Urbanized Area	Operating Cost/Revenue Passenger				Percent Change, Constant Dollars 1974-1975
	Current Dollars 1974	1975	Constant Dollars 1974	1975	
New York, bus only	\$0.50	\$0.53	\$0.43	\$0.42	-2
New York, rapid rail	.95	1.13	.82	.89	9
Los Angeles	.59	.73	.51	.58	14
Chicago	---	---	---	---	--
Philadelphia, bus only	---	---	---	---	--
Philadelphia, rapid rail	1.35	1.46	1.16	1.16	0
Detroit	---	---	---	---	--
San Francisco, bus only	.59	.72	.51	.57	12
San Francisco, rapid rail	1.20	1.25	1.03	.99	-4
Boston	---	---	---	---	--
Washington	.62	.78	.53	.62	17
Cleveland, bus only	.56	.68	.48	.54	12
Cleveland, rapid rail	.46	.53	.40	.42	5
St. Louis	.70	.79	.60	.63	5
Pittsburgh	.54	.60	.46	.47	2
Minneapolis	.57	.69	.49	.55	12
Houston	.56	.62	.48	.49	2
Baltimore	.32	.38	.28	.30	7
Dallas	.38	.42	.33	.33	0
Milwaukee	.43	.50	.37	.40	8
Seattle	.77	.92	.66	.73	11
Miami	.37	.45	.32	.36	12
San Diego	.59	.72	.51	.57	12
Atlanta	.48	.58	.41	.46	12
Cincinnati	.58	.59	.50	.47	-6
Kansas City	.59	.67	.51	.53	4
Buffalo	.35	.39	.30	.31	3
Denver	.47	.64	.40	.51	28
San Jose	.76	1.86	.65	1.47	126
U. S. Average	.55	.63	.48	.50	4

U. S. Average is based on APTA data. Constant dollars are based on the GNP deflator, 1972 = 100.

TABLE 26
 OPERATING COST PER TRANSIT VEHICLE MILE
 1974 and 1975
 25 of 25 UA's of Over 1,000,000 Population

Urbanized Area	Operating Cost/Vehicle Mile				Percent Change, Constant Dollars 1974-1975
	Current Dollars		Constant Dollars		
	1974	1975	1974	1975	
New York, bus only	\$2.48	\$2.72	\$2.13	\$2.15	1
Los Angeles	1.26	1.55	1.08	1.23	14
Chicago	--	--	--	--	--
Philadelphia	2.26	2.54	1.94	2.01	3
Detroit	--	--	--	--	--
San Francisco	1.87	2.08	1.60	1.64	3
Boston	--	--	--	--	--
Washington	1.67	1.87	1.44	1.48	3
Cleveland	1.39	1.66	1.20	1.31	9
St. Louis	1.43	1.50	1.23	1.19	-4
Pittsburgh	1.45	1.64	1.25	1.30	4
Minneapolis	1.18	1.30	1.02	1.03	1
Houston	1.04	1.07	0.90	0.85	-6
Baltimore	1.36	1.52	1.17	1.20	3
Dallas	0.71	0.83	0.61	0.66	8
Milwaukee	1.21	1.29	1.04	1.02	-2
Seattle	1.23	1.46	1.06	1.16	9
Miami	1.20	1.39	1.03	1.10	7
San Diego	1.40	1.53	1.20	1.21	1
Atlanta	1.08	1.25	0.93	0.99	6
Cincinnati	1.32	1.45	1.14	1.15	1
Kansas City	1.24	1.57	1.07	1.24	16
Buffalo	1.67	1.68	1.43	1.33	-7
Denver	1.09	1.25	0.94	0.99	5
San Jose	1.42	1.94	1.22	1.54	26
U. S. Average	1.63	1.78	1.40	1.41	1

U. S. Average is based on APTA data. Constant dollars are based on the GNP deflator, 1972 = 100.

X. The Allocation Formula

The formula currently used to allocate Section 5 funds to urbanized areas distributes them half in proportion to urbanized area population and half in proportion to urbanized area population weighted by population density. When the resulting allocations are compared to transit ridership and vehicle miles, there are considerable variations within and between population groups.

Allocations per rider (averaged over 1974 and 1975) range from 6¢ to 25¢ for different population groups:

TABLE 27
ALLOCATIONS PER RIDER

<u>Urbanized Areas</u>	<u>FY 75 & FY 76 Allocations ÷ 1974 & 1975 Revenue Riders</u>
25 of 25 UA's over 1,000,000 population	\$.06
15 of 22 UA's of 500,000 to 1,000,000 population	.15
21 of 59 UA's of 200,000 to 500,000 population	.16
19 of 173 UA's of 50,000 to 200,000 population	.25 ^a

^a Since allocations are not made directly to UA's under 200,000 population, these UA's shares are derived by applying factor weights to the Governor's apportionments.

Allocations per vehicle mile of service range from 18¢ to 43¢ for different population groups:

TABLE 28
ALLOCATIONS PER VEHICLE MILE

Urbanized Areas	FY 75 & FY 76 Allocations ÷ 1974 & 1975 Transit Vehicle Miles
25 of 25 UA's over 1,000,000 population	\$.18
15 of 22 UA's of 500,000 to 1,000,000 population	.34
21 of 59 UA's of 200,000 to 500,000 population	.36
19 of 173 UA's of 50,000 to 200,000 population	.43 ^a

a

See footnote a of Table 27.

Clearly, the less populated areas receive higher allocations per rider and per vehicle mile--because they generally have less patronage and service in relation to the larger areas. In addition, the smaller areas have as a group lower ridership per vehicle mile of service--which is one indicator of transit productivity:

TABLE 29
RIDERSHIP PER VEHICLE MILE

Urbanized Areas	1974 & 1975 Revenue Riders ÷ 1974 & 1975 Transit Vehicle Miles
25 of 25 UA's over 1,000,000 population	2.99
15 of 22 UA's of 500,000 to 1,000,000 population	2.34
21 of 59 UA's of 200,000 to 500,000 population	2.20
19 of 173 UA's of 50,000 to 200,000 population	1.74

Thus, it appears that relatively large funding per vehicle mile and per rider is allocated to the smaller urbanized areas, which have relatively low ridership per vehicle mile of service.

It should be noted before concluding this section that all three preceding calculations vary considerably within each population category. For example, allocations per rider vary from 9¢ to \$3.99 in the smallest population category. See the Appendix, Table F, for the ridership and service allocations by individual urbanized area.

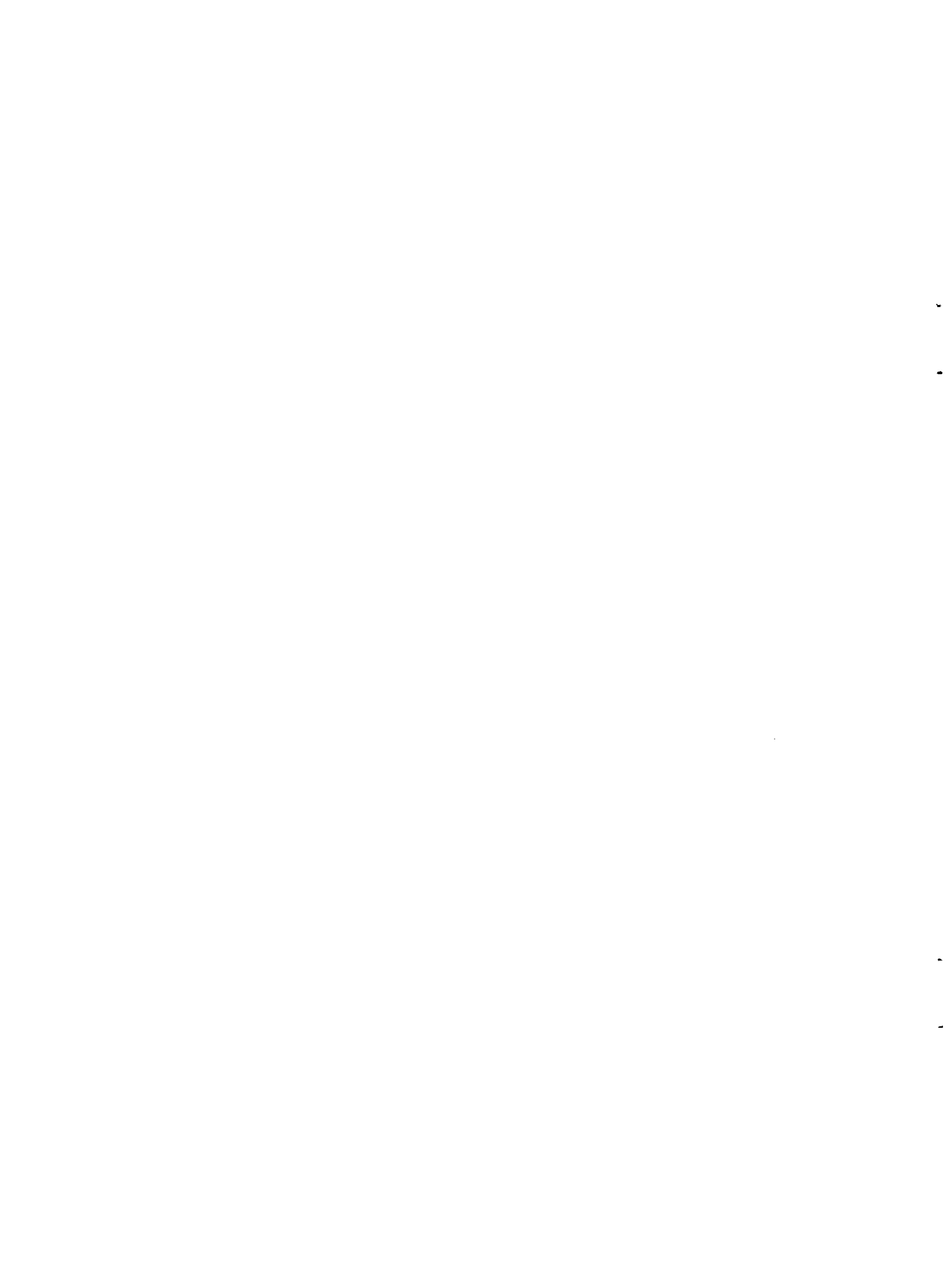


TABLE A
STATUS OF SECTION 5 FUNDS THROUGH JUNE 30, 1976

Summary

Urbanized Areas	FY75 & FY76 Allocations (thousands)	Approved Projects (thousands)		Approved Projects as Percent of Allocations
		Operating	Capital	
25 of 25 UA's over 1,000,000 population	\$515,223	\$406,574	\$20,916	83
15 of 22 UA's of 500,000 to 1,000,000 popu- lation	71,540	36,346	4,980	58
21 of 59 UA's of 200,000 to 500,000 popu- lation	37,436	18,765	3,683	60
19 of 173 UA's of 50,000 to 200,000 popu- lation	12,047 ^a	4,519	1,419	49
TOTAL SAMPLE 80 of 279 UA's	\$648,293	\$466,204	\$30,998	77
TOTAL for 279 of 279 UA's	\$800,000	\$507,239	\$34,577	68

^a Since allocations are not made directly to urbanized areas (UA's) under 200,000 population, these UA's' shares are derived by applying factor weights to the Governors' apportionments.

TABLE A (continued)

STATUS OF SECTION 5 FUNDS THROUGH JUNE 30, 1976

25 of 25 UA's over 1,000,000 Population

Urbanized Area ^a	FY75 & FY76 Allocations (thousands)	Approved Projects (thousands)		Approved Projects as Percent of Allocations
		Operating	Capital	
New York	\$143,479	\$118,635	\$ 0	83
Los Angeles	63,892	43,137	1,598	70
Chicago	51,061	48,963	0	96
Philadelphia	30,882	27,864	0	90
Detroit	27,897	27,897	0	100
San Francisco	20,585	11,885	0	58
Boston	17,414	17,414	0	100
Washington	18,383	18,383	0	100
Cleveland	11,321	13,466 ^b	0	119 ^b
St. Louis	12,510	8,494	0	68
Pittsburgh	10,758	10,357	0	96
Minneapolis	8,907	8,907	0	100
Houston	9,805	0	8,730	89
Baltimore	11,813	11,592	0	98
Dallas	6,581	3,809	885	71
Milwaukee	6,937	1,516	0	22
Seattle	7,115	0	0	0
Miami	8,732	9,275 ^b	0	106 ^b
San Diego	7,036	5,076	0	72
Atlanta	6,450	5,765	0	89
Cincinnati	6,671	4,787	148	74
Kansas City	5,641	5,063	0	90
Buffalo	8,109	493	3,037	37
Denver	6,518	0	6,518	100
San Jose	6,484	6,484	0	100
SUBTOTAL	\$515,223	\$406,574^c	\$20,916	83^c

^a Listed in descending order of population size.

^b Approved funding draws on FY 77 allocations since local fiscal year 1976 extends beyond Federal fiscal year 1976.

^c Subtotal does not include funding in excess of FY 75 & FY 76 allocations footnoted above in "b."

TABLE A (continued)
 STATUS OF SECTION 5 FUNDS THROUGH JUNE 30, 1976
 15 of 22 UA's of 500,000 to 1,000,000 Population

Urbanized Area ^a	FY75 & FY76 Allocations (thousands)	Approved Projects (thousands)		Approved Projects as Percent of Allocations
		Operating	Capital	
New Orleans, LA	\$7,290	\$ 1,061	\$ 0	15
Phoenix, AR	4,416	1,642	0	37
Portland, OR	4,805	4,507	0	94
Indianapolis, IN	4,144	2,154	698	69
Providence, RI	4,741	3,000	1,395	93
Columbus, OH	4,782	1,496	0	31
San Antonio, TX	4,737	2,665	2,007	99
Louisville, KY	4,564	4,121	0	90
Dayton, OH	3,978	1,668	165	46
Norfolk, VA	3,422	502	0	15
Memphis, TN	4,034	3,220	715	98
Sacramento, CA	3,433	3,434	0	100
Rochester, NY	4,015	4,014	0	100
Oklahoma City, OK	2,719	500	0	18
Jacksonville, FL	2,395	2,362	0	99
SUBTOTAL	\$71,540	\$36,346	\$4,980	58

^a Listed in descending order of population size.

TABLE A (continued)

STATUS OF SECTION 5 FUNDS THROUGH JUNE 30, 1976

21 of 59 UA's of 200,000 to 500,000 Population

Urbanized Area ^a	FY75 & FY76 Allocations (thousands)	Approved Projects (thousands)		Approved Projects as Percent of Allocations
		Operating	Capital	
Toledo, OH	\$2,786	\$ 3,575 ^b	\$ 0	128 ^b
Albany, NY	2,890	867	0	30
Nashville, TN	1,954	1,954	0	100
Richmond, VA	2,354	1,569	597	92
Youngstown, OH	2,299	1,719	0	75
Syracuse, NY	2,444	1,319	0	54
Grand Rapids, MI	1,857	1,405	426	99
New Haven, CT	2,073	490	0	24
Tacoma, WA	1,787	672	0	38
Flint, MI	2,013	381	1,164	77
Wichita, KS	1,708	358	0	21
South Bend, IN	1,613	567	0	35
Austin, TX	1,539	308	282	38
Baton Rouge, LA	1,415	226	0	16
Canton, OH	1,491	586	266	57
Harrisburg, PA	1,398	956	0	68
Spokane, WA	1,311	192	300	38
Lansing, MI	1,344	795	488	95
Chattanooga, TN	1,086	775	0	71
Colorado Springs, CO	1,055	236	160	38
Scranton, PA	1,019	604	0	59
SUBTOTAL	\$37,436	\$18,765^c	\$3,683	60^c

^a Listed in descending order of population size.

^b Approved funding draws on FY 77 allocations since local fiscal year 1976 extends beyond Federal fiscal year 1976.

^c Subtotal does not include funding in excess of FY 75 & FY 76 allocations, footnoted above in "b."

TABLE A (continued)
STATUS OF SECTION 5 FUNDS THROUGH JUNE 30, 1976
19 of 173 UA's of 50,000 to 200,000 Population

Urbanized Area ^a	FY75 & FY76 Allocations (thousands) ^b	Approved Projects (thousands)		Approved Projects as Percent of Allocations
		Operating	Capital	
Jackson, MISS	\$1,035	\$ 191	\$ 164	34
Melbourne-Cocoa, FL	834	72	526	72
Bakersfield, CA	1,024	140	572	70
Reading, PA	1,115	731	0	66
Charleston, WV	848	820	0	97
Raleigh, NC	770	241	0	31
Evansville, IN	880	119	0	14
Santa Barbara, CA	799	172	0	22
Muskegon, MICH	523	197	0	38
Springfield, OH	590	70	157	38
Seaside-Monterey, CA	603	429	0	71
Altoona, PA	549	283	0	52
Anderson, IN	388	218	0	55
Jackson, MICH	399	83	0	21
Bay City, MICH	448	155	0	35
Asheville, NC	351	351	0	100
Lynchburg, VA	343	128	0	37
Lewiston-Auburn, ME	266	42	0	16
Wilmington, NC	282	77	0	27
SUBTOTAL	\$12,047	\$4,519	\$1,419	49

a Listed in descending order of population size.

b Since allocations are not made directly to urbanized areas (UA's) under 200,000 population, these UA's shares are derived by applying factor weights to the Governors' apportionments.



TABLE B

ANALYSIS OF OPERATING ASSISTANCE GRANTS

FINANCING TOTALS

Summary

Urbanized Areas (number of grants analyzed)	Operating Expenses (thousands)	Operating Revenues (thousands)	Section 5 Approvals (thousands)	Local Share (thousands)
25 of 25 UA's over 1,000,000 population (55 grants)	\$4,756,309	\$2,233,850	\$409,262	\$1,692,074
*15 of 22 UA's of 500,000 to 1,000,000 population (21 grants)	154,837	77,455	26,188	49,354
*21 of 59 UA's of 200,000 to 500,000 population (24 grants)	58,056	28,709	11,690	17,022
*19 of 173 UA's of 50,000 to 200,000 population (20 grants)	9,999	4,452	2,383	3,637
TOTAL SAMPLE 80 of 279 UA's (120 grants)	\$4,979,201	\$2,344,466	\$449,823	\$1,762,087

* Not all operating assistance grants to these cities during the review period (11/26/74 to 6/30/76) are included here.

TABLE B (continued)
ANALYSIS OF OPERATING ASSISTANCE GRANTS
FINANCING TOTALS
25 of 25 UA's over 1,000,000 Population

Urbanized Area (number of grants)	Operating Expenses* (thousands)	Operating Revenues* (thousands)	Section 5 Approvals (thousands)	Local Share (thousands)
New York (6)	\$2,577,573	\$1,248,712	\$118,635	\$799,300
Los Angeles (3)	233,165	79,560	43,137	110,447
Chicago (3)	301,872	167,657	48,963	85,253
Philadelphia (3)	332,416	163,426	27,864	141,012
Detroit (2)	112,230	53,917	27,897	28,582
San Francisco (6)	191,577	75,233	11,885	101,609
Boston (2)	198,262	54,174	17,414	126,674
Washington (2)	168,025	89,528	18,383	60,114
Cleveland (5)	95,444	47,105	13,466	34,716
St. Louis (1)	37,601	13,201	8,494	15,907
Pittsburgh (3)	125,331	63,023	10,357	51,950
Minneapolis (1)	37,363	15,138	8,907	13,317
Houston (0)	--	--	--	--
Baltimore (2)	74,356	47,065	11,592	15,700
Dallas (2)	27,233	19,378	3,809	3,809
Milwaukee (1)	14,018	10,350	1,516	2,152
Seattle (0)	--	--	--	--
Miami (2)	51,583	27,381	9,275	9,942
San Diego (1)	22,555	8,562	5,076	8,917
Atlanta (2)	55,275	13,607	5,765	35,903
Cincinnati (3)	21,863	9,441	7,636	7,636
Kansas City (2)	29,955	11,369	5,063	13,523
Buffalo (1)	17,965	13,305	493	4,168
Denver (0)	--	--	--	--
San Jose (2)	30,647	2,718	6,484	21,443
SUBTOTAL (55)	\$4,756,309	\$2,233,850	\$409,262	\$1,692,074

* Not all operating expenses and revenues in these UA's are the basis for grants.

TABLE B (continued)
 ANALYSIS OF OPERATING ASSISTANCE GRANTS
 FINANCING TOTALS

16 of 22 UA's of 500,000 to 1,000,000 Population

Urbanized Area (number of grants analyzed)	Operating Expenses (thousands)	Operating Revenues (thousands)	Section 5 Approvals (thousands)	Local Share (thousands)
New Orleans, LA (1)	\$21,039	\$12,620	\$1,061	\$7,358
Phoenix, AR (1)	5,928	2,425	1,642	1,861
*Portland, OR (1)	12,226	4,258	1,660	6,308
*Indianapolis, IN (1)	7,744	6,119	812	812
*Providence, RI (2)	4,663	2,446	864	1,353
Columbus, OH (1)	10,448	7,411	1,496	1,540
San Antonio, TX (2)	14,306	8,202	2,665	3,438
Louisville, KY (2)	13,335	4,961	4,121	4,254
*Dayton, OH (1)	5,580	2,714	1,433	1,433
Norfolk, VA (1)	3,032	2,029	502	502
*Memphis, TN (2)	15,978	8,311	3,171	4,483
Sacramento, CA (1)	17,098	3,732	3,434	9,859
*Rochester, NY (2)	14,256	7,879	2,705	3,606
Oklahoma City, OK (2)	1,936	894	500	533
*Jacksonville, FL (1)	7,268	3,454	1,782	2,014
SUBTOTAL (21)	\$154,837	\$77,455	\$26,188	\$49,354

* Not all operating assistance grants to these cities during the review period are included here.

TABLE B (continued)
 ANALYSIS OF OPERATING ASSISTANCE GRANTS
 FINANCING TOTALS

21 of 59 UA's of 200,000 to 500,000 Population

Urbanized Area (number of grants analyzed)	Operating Expenses (thousands)	Operating Revenues (thousands)	Section 5 Approvals (thousands)	Local Share (thousands)
*Toledo, OH (2)	\$5,389	\$1,772	\$1,433	\$2,185
Albany, NY (1)	7,203	4,875	867	1,461
*Nashville, TN (1)	2,508	1,339	584	584
Richmond, VA (1)	8,633	5,496	1,569	1,569
*Youngstown, OH (1)	1,986	413	774	777
Syracuse, NY (3)	8,054	5,069	1,319	1,776
*Grand Rapids, MICH (1)	876	289	271	316
*New Haven, CT (1)	2,828	1,540	454	534
Tacoma, WA (1)	3,949	1,417	672	1,860
Flint, MICH (1)	1,527	490	381	656
*Wichita, KS (1)	1,116	536	290	290
*South Bend, IN (1)	2,135	681	526	928
*Austin, TX (1)	1,690	702	211	786
Baton Rouge, LA (1)	1,547	869	226	345
Canton, OH (1)	1,645	470	586	586
*Harrisburg, PA (1)	1,162	627	268	268
*Spokane, WA (0)	--	--	--	--
Lansing, MICH (2)	2,487	643	795	1,024
*Chattanooga, TN (1)	1,299	676	311	311
Colorado Springs, CO (1)	1,171	392	236	543
*Scranton, PA (1)	851	413	217	223
SUBTOTAL (24)	\$58,056	\$28,709	\$11,990	\$17,022

* Not all operating assistance grants to these cities in the review period are included here.

TABLE B (continued)
 ANALYSIS OF OPERATING ASSISTANCE GRANTS
 FINANCING TOTALS

19 of 173 UA's of 50,000 to 200,000 Population

Urbanized Area (number of grants analyzed)	Operating Expenses (thousands)	Operating Revenues (thousands)	Section 5 Approvals (thousands)	Local Share (thousands)
Jackson, MISS (1)	\$904	\$495	\$191	\$213
Melbourne-Cocoa, FL (1)	197	54	72	72
Bakersfield, CA (1)	487	154	140	202
*Reading, PA (1)	993	539	227	227
*Charleston, WV (1)	1,248	662	285	285
*Raleigh, NC (1)	237	164	37	37
Evansville, IN (1)	603	345	119	139
Santa Barbara, CA (1)	646	301	172	172
*Muskegon, MICH (2)	511	41	197	273
Springfield, OH (1)	230	63	70	75
*Seaside-Monterey, CA (1)	387	108	139	139
*Altoona, PA (1)	336	194	71	71
*Anderson, IN (1)	239	59	84	90
Jackson, MICH (1)	259	92	83	92
*Bay City, MICH (1)	407	92	151	155
*Asheville, NC (1)	455	260	98	98
Lynchburg, VA (1)	1,370	680	128	508
Lewiston-Auburn, ME (1)	222	126	42	53
Wilmington, NC (1)	268	115	77	77
SUBTOTAL (20)	\$9,999	\$4,452	\$2,383	\$3,637

* Not all operating assistance grants to these cities during the review period are included here.

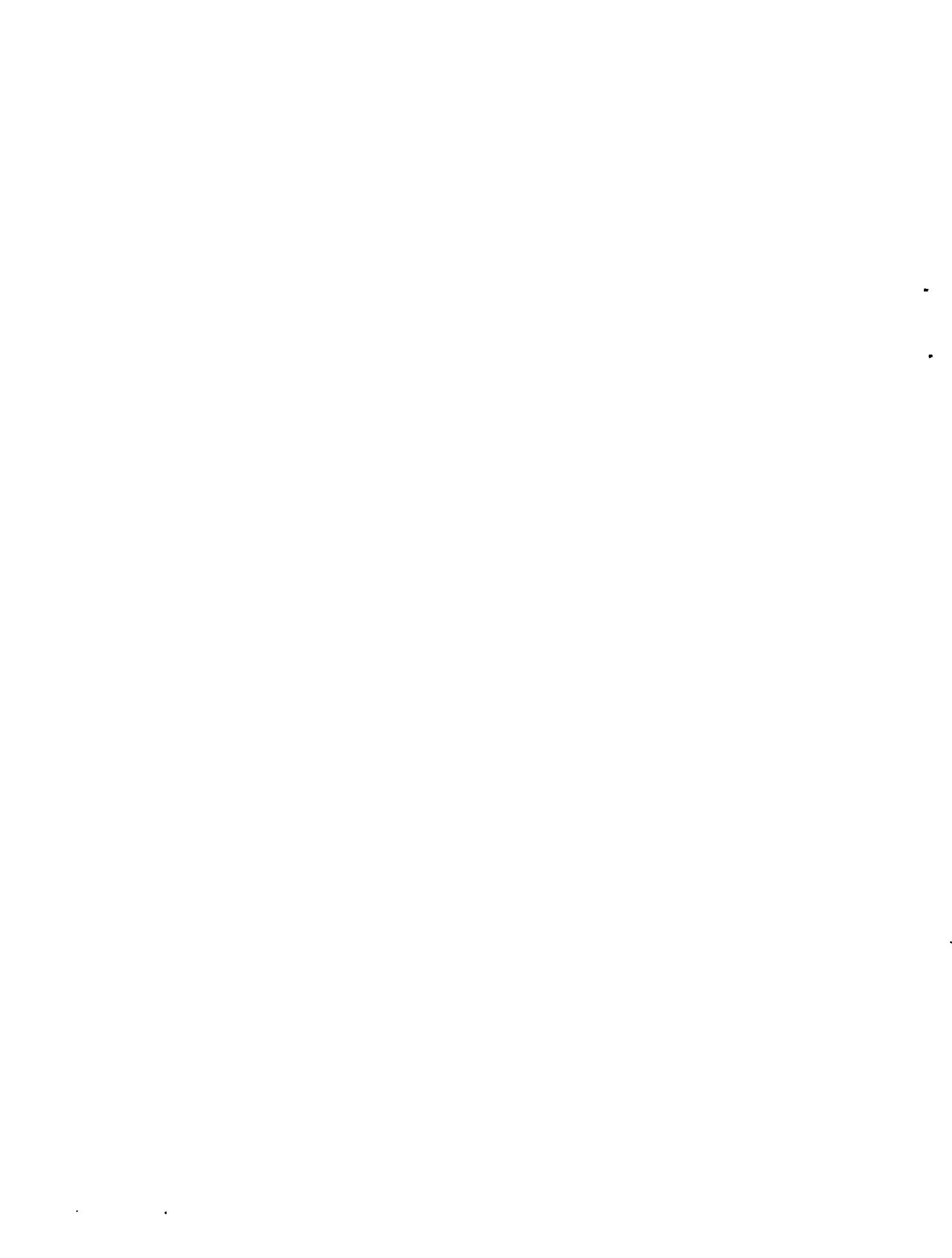


TABLE C
 ANALYSIS OF OPERATING ASSISTANCE GRANTS
 FINANCING RATIOS
 Summary

Urbanized Areas (number of grants analyzed)	Operating Revs. as Percent of Operating Exps.	Section 5 Approvals as Percent of Operating Exps.	Local Share as Percent of Operating Exps.	Percent of Operating Exps. Unaccounted For
25 of 25 UA's over 1,000,000 population (55 grants)	47	9	36	8
*15 of 22 UA's of 500,000 to 1,000,000 population (21 grants)	50	17	32	1
*21 of 59 UA's of 200,000 to 500,000 population (24 grants)	50	20	29	1
*19 of 173 UA's of 50,000 to 200,000 population (20 grants)	45	24	30	1
TOTAL SAMPLE 80 of 279 UA's (120 grants)	47	9	35	8

* Not all operating assistance grants to these cities during the review period (11/26/74 to 6/30/76) are included here.

TABLE C (continued)
 ANALYSIS OF OPERATING ASSISTANCE GRANTS
 FINANCING RATIOS
 25 of 25 UA's over 1,000,000 Population

Urbanized Area (number of grants)	Operating Revs. as Percent of Operating Exps.	Section 5 Approvals as Percent of Operating Exps.	Local Share as Percent of Operating Exps.	Percent of Operating Exps. Unaccounted For
New York (6)	48	5	31	16
Los Angeles (3)	34	19	47	0
Chicago (3)	56	16	28	0
Philadelphia (3)	49	8	42	1
Detroit (2)	48	25	25	2
San Francisco (6)	39	6	53	2
Boston (2)	27	9	64	0
Washington (2)	53	11	36	0
Cleveland (5)	49	14	36	1
St. Louis (1)	35	23	42	0
Pittsburgh (3)	50	8	42	0
Minneapolis (1)	41	24	35	0
Houston (0)	--	--	--	---
Baltimore (2)	63	16	21	0
Dallas (2)	71	14	14	1
Milwaukee (1)	74	11	15	0
Seattle (0)	--	--	--	---
Miami (2)	53	18	19	10
San Diego (1)	45	22	40	0
Atlanta (2)	38	10	65	0
Cincinnati (3)	43	22	35	0
Kansas City (2)	38	17	45	0
Buffalo (1)	74	3	23	0
Denver (0)	--	--	--	--
San Jose (2)	9	21	70	0
SUBTOTAL	47	9	36	8

TABLE C (continued)
 ANALYSIS OF OPERATING ASSISTANCE GRANTS
 FINANCING RATIOS

15 of 22 UA's of 500,000 to 1,000,000 Population

Urbanized Area (number of grants analyzed)	Operating Revs. as Percent of Operating Exps.	Section 5 Approvals as Percent of Operating Exps.	Local Share as Percent of Operating Exps.	Percent of Operating Exps. Unaccounted For
New Orleans, LA (1)	60	5	35	0
Phoenix, AR (1)	41	28	31	0
* Portland, OR (1)	35	14	51	0
* Indianapolis, IN (1)	80	10	10	0
* Providence, RI (2)	52	19	29	0
Columbus, OH (1)	71	14	15	0
San Antonio, TX (2)	57	19	24	0
Louisville, KY (2)	37	31	32	0
* Dayton, OH (1)	49	26	25	0
Norfolk, VA (1)	67	17	16	0
* Memphis, TN (2)	52	20	28	0
Sacramento, CA (1)	22	20	58	0
* Rochester, NY (2)	56	19	25	0
Oklahoma City, OK (2)	46	26	28	0
* Jacksonville, FL (1)	48	24	28	0
SUBTOTAL (21)	50	17	32	1

* Not all operating assistance grants to these cities during the review period are included here.

TABLE C (continued)

ANALYSIS OF OPERATING ASSISTANCE GRANTS
FINANCING RATIOS

21 of 59 UA's of 200,000 to 500,000 Population

Urbanized Area (number of grants analyzed)	Operating Revs. as Percent of Operating Exps.	Section 5 Approvals as Percent of Operating Exps.	Local Share as Percent of Operating Exps.	Percent of Operating Exps. Unaccounted For
* Toledo, OH (2)	33	27	40	0
Albany, NY (1)	68	12	20	0
* Nashville, TN (1)	53	23	23	1
Richmond, VA (1)	64	18	18	0
* Youngstown, OH (1)	21	39	39	1
Syracuse, NY (3)	62	16	22	0
* Grand Rapids, MICH (1)	33	31	36	0
* New Haven, CT (1)	54	16	19	0
Tacoma, WA (1)	36	17	47	0
Flint, MICH (1)	32	25	43	0
* Wichita, KS (1)	48	26	26	0
* South Bend, IN (1)	32	25	43	0
* Austin, TX (1)	42	12	47	1
Baton Rouge, LA (1)	56	15	22	3
Canton, OH (1)	29	35	36	0
* Harrisburg, PA (1)	54	23	23	0
* Spokane, WA (0)	--	--	--	--
Lansing, MICH (2)	26	32	41	1
* Chattanooga, TN (1)	52	24	24	0
Colorado Springs, CO (1)	33	20	47	0
* Scranton, PA (1)	49	25	26	0
SUBTOTAL (24)	50	20	29	1

* Not all operating assistance grants to these cities during the review period are included here.

TABLE C (continued)
 ANALYSIS OF OPERATING ASSISTANCE GRANTS
 FINANCING RATIOS
 19 of 173 UA's of 50,000 to 200,000 Population

Urbanized Area (number of grants analyzed)	Operating Revs. as Percent of Operating Exps.	Section 5 Approvals as Percent of Operating Exps.	Local Share as Percent of Operating Exps.	Percent of Operating Exps. Unaccounted For
Jackson, MISS (1)	55	21	24	0
Melbourne-Cocoa, FL (1)	27	36	37	0
Bakersfield, CA (1)	31	28	41	0
*Reading PA (1)	54	23	23	0
*Charleston, WV (1)	53	23	23	1
*Raleigh, NC (1)	69	16	15	0
Evansville, IN (1)	57	20	23	0
Santa Barbara, CA (1)	46	27	27	0
*Muskegon, MICH (2)	8	44	53	0
Springfield, OH (1)	27	30	33	0
*Seaside-Monterey, CA (1)	28	36	36	0
*Altoona, PA (1)	58	21	21	0
*Anderson, IN (1)	25	35	38	2
Jackson, MICH (1)	36	32	36	0
*Bay City, MICH (1)	23	37	38	2
*Asheville, NC (1)	57	22	22	0
Lynchburg, VA (1)	50	9	37	4
Lewiston-Auburn, ME (1)	57	19	24	0
Wilmington, NC (1)	42	29	29	0
SUBTOTAL (20)	45	24	30	1

* Not all operating assistance grants to these cities during the review period are included here.

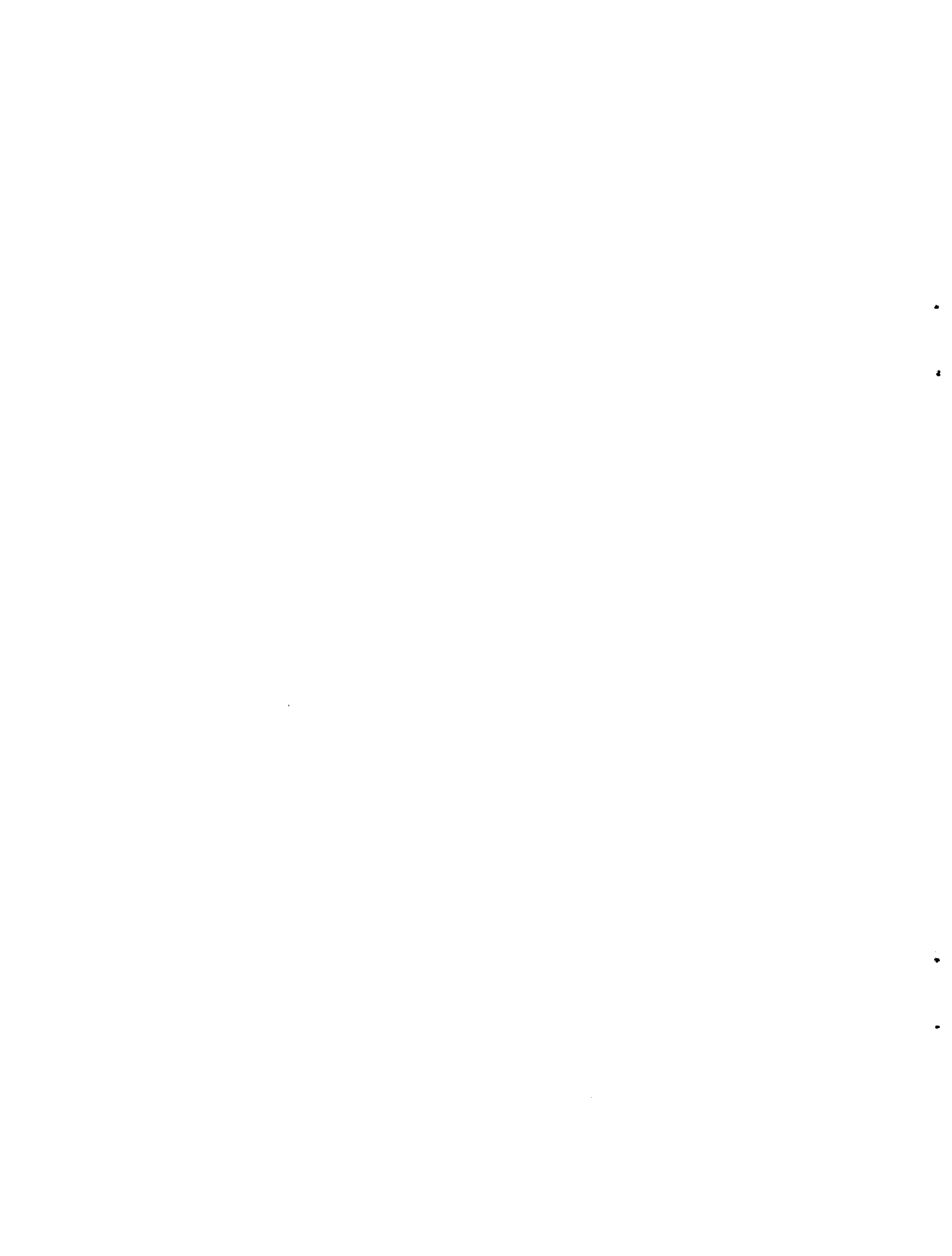


TABLE D
CHANGES IN SERVICE, 1974-1975

Summary

Urbanized Areas	1974 Transit Vehicle Miles (thousands)	1975 Transit Vehicle Miles (thousands)	Percent Change
25 of 25 UA's over 1,000,000 population	1,224,108	1,255,932	2.6
15 of 22 UA's of 500,000 to 1,000,000 population	101,700	105,673	3.9
21 of 59 UA's of 200,000 to 500,000 population	52.088	53,296	2.3
19 of 173 UA's of 50,000 to 200,000 population	12,977	15,031	15.8
TOTAL SAMPLE 80 of 279 UA's	1,391,374	1,430,155	2.8

TABLE D (continued)
 CHANGES IN SERVICE, 1974-1975
 25 of 25 UA's over 1,000,000 Population

Urbanized Area	1974 Transit Vehicle Miles (thousands)	1975 Transit Vehicle Miles (thousands)	Percent Change
New York	423,899	420,443	-0.8
Los Angeles	74,600	78,600	5.3
Chicago ^a	136,985	137,827	0.6
Philadelphia	85,309	81,165	-4.9
Detroit	39,504	35,649	-9.8
San Francisco	76,830	81,783	6.4
Boston	45,670	45,078	-1.3
Washington	46,100	53,600	16.2
Cleveland	22,980	23,489	2.2
St. Louis	21,700	23,300	7.3
Pittsburgh	39,386	40,231	2.1
Minneapolis	22,800	26,900	17.8
Houston	13,400	15,900	18.9
Baltimore	25,800	27,700	7.3
Dallas	14,000	13,200	-5.6
Milwaukee	17,400	17,000	-2.0
Seattle	22,045	23,867	8.2
Miami	15,800	16,500	4.6
San Diego	11,400	13,700	20.7
Atlanta	24,000	26,500	10.3
Cincinnati	12,900	13,900	7.6
Kansas City	9,700	8,900	-7.9
Buffalo	9,000	10,100	11.2
Denver	10,100	14,400	41.8
San Jose	2,800	6,200	119.0
SUBTOTAL	1,224,108	1,255,932	2.6

^a Chicago Transit Authority only (excludes commuter rail and non-CTA bus mileage of approximately 34 million due to lack of 1975 data).

TABLE D (continued)

CHANGES IN SERVICE, 1974-1975

15 of 22 UA's of 500,000 to 1,000,000 Population

Urbanized Area	1974 Transit Vehicle Miles (thousands)	1975 Transit Vehicle Miles (thousands)	Percent Change
New Orleans, LA	13,994	12,200	-12.9
Phoenix, AR	3,152	3,792	20.0
Portland, OR	14,394	18,273	26.9
Indianapolis, IN	4,683	5,402	15.4
Providence, RI	6,275	6,131	-2.3
Columbus, OH	6,743	7,467	10.7
San Antonio, TX	6,498	6,886	6.0
Louisville, KY	4,918	4,118	-16.3
Dayton, OH	3,675	3,727	1.4
Norfolk, VA	5,311	5,879	10.7
Memphis, TN	9,490	9,593	1.1
Sacramento, CA	8,703	8,378	-3.7
Rochester, NY	6,809	6,860	0.7
Oklahoma City, OK	1,503	1,466	-16.3
Jacksonville, FL	5,552	5,511	-0.7
SUBTOTAL	101,700	105,673	3.9

TABLE D (continued)

CHANGES IN SERVICE, 1974-1975

21 of 59 UA's of 200,000 to 500,000 Population

Urbanized Area	1974 Transit Vehicle Miles (thousands)	1975 Transit Vehicle Miles (thousands)	Percent Change
Toledo, OH	4,358	4,669	7.1
Albany, NY	5,450	5,789	6.2
Nashville, TN	3,567	3,605	1.1
Richmond, VA	5,698	5,720	0.4
Youngstown, OH	1,108	1,353	22.1
Syracuse, NY	4,231	4,110	-2.9
Grand Rapids, MICH	1,153	1,313	13.9
New Haven, CT	3,219	3,213	-0.2
Tacoma, WA	3,080	3,115	1.1
Flint, MICH	1,060	1,070	0.9
Wichita, KS	1,708	1,734	1.5
South Bend, IN	1,609	1,576	-2.1
Austin, TX	3,505	3,517	0.3
Baton Rouge, LA	1,420	1,611	13.5
Canton, OH	970	1,091	12.5
Harrisburg, PA	1,630	1,678	2.9
Spokane, WA	3,219	2,417	-25.0
Lansing, MICH	815	1,034	26.9
Chattanooga, TN	2,080	2,114	1.6
Colorado Springs, CO	1,009	1,275	26.4
Scranton, PA	1,199	1,292	7.8
SUBTOTAL	52,088	53,296	2.3

TABLE D (continued)
 CHANGES IN SERVICE, 1974-1975
 19 of 173 UA's of 50,000 to 200,000 Population

Urbanized Area	1974 Transit Vehicle Miles (thousands)	1975 Transit Vehicle Miles (thousands)	Percent Change
Jackson, MISS	1,029	930	-9.6
Melbourne-Cocoa, FL	365	326	-10.7
Bakersfield, CA	719	977	35.9
Reading, PA	1,194	1,236	3.5
Charleston, WV	2,025	2,298	13.5
Raleigh, NC	864	880	1.9
Evansville, IN	763	836	9.6
Santa Barbara, CA	721	1,533	112.6
Muskegon, MICH	324	408	25.9
Springfield, OH	273	273	0
Seaside-Monterey, CA	314	461	3.9
Altoona, PA	623	690	10.8
Anderson, IN	156	551	253.2
Jackson, MICH	356	370	
Bay City, MICH	328	468	42.7
Asheville, NC	783	771	-1.5
Lynchburg, VA	1,354	1,216	-10.2
Lewiston-Auburn, ME	289	308	6.6
Wilmington, NC	497	499	0.4
SUBTOTAL	12,977	15,031	15.8

TABLE E
 CHANGES IN RIDERSHIP, 1974-1975
 Summary

Urbanized Areas	1974 Revenue Riders	1975 Revenue Riders	Percent Change
25 of 25 UA's over 1,000,000 Population	4,372,456	4,268,808	-2.4
15 of 22 UA's of 500,000 to 1,000,000 Population	251,180	235,760	-6.1
21 of 59 UA's of 200,000 to 500,000 Population	115,501	115,580	0.1
19 of 173 UA's of 50,000 to 200,000 Population	23,221	25,565	10.1
TOTAL SAMPLE 80 of 279 UA's	4,762,358	4,645,713	-2.4

TABLE E (continued)

CHANGES IN RIDERSHIP, 1974-1975

25 of 25 UA's over 1,000,000 Population

Urbanized Area	1974 Revenue Riders	1975 Revenue Riders	Percent Change
New York	2,235,000	2,114,000	-5.4
Los Angeles	160,000	166,000	3.7
Chicago ^a	381,637	369,700	-3.1
Philadelphia	274,000	255,000	-6.9
Detroit	87,872	95,949	9.2
San Francisco	200,000	202,000	0.7
Boston	151,947	151,159	-0.5
Washington	123,000	128,000	3.6
Cleveland	61,000	61,000	0
St. Louis	44,000	45,000	2.3
Pittsburgh	106,000	110,000	4.8
Minneapolis	48,000	50,000	5.7
Houston	24,000	28,000	13.4
Baltimore	109,000	110,000	1.3
Dallas	27,000	26,000	-6.0
Milwaukee	49,000	44,000	-9.2
Seattle	35,000	38,000	7.2
Miami	51,000	52,000	1.0
San Diego	27,000	29,000	8.2
Atlanta	56,000	58,000	2.9
Cincinnati	30,000	38,000	12.9
Kansas City	21,000	21,000	3.3
Buffalo	42,000	43,000	2.0
Denver	24,000	28,000	14.3
San Jose	5,000	6,000	22.8
SUBTOTAL	4,372,456	4,268,808	-2.4

^a Chicago Transit Authority only (excludes commuter rail and non-CTA bus ridership of approximately 90 million due to lack of 1975 data).

TABLE E (continued)
 CHANGES IN RIDERSHIP, 1974-1975
 15 of 22 UA's of 500,000 to 1,000,000 Population

Urbanized Area	1974 Revenue Riders	1975 Revenue Riders	Percent Change
New Orleans, LA	66,000	47,000	-28.8
Phoenix, AR	5,730	6,374	11.2
Portland, OR	20,703	25,012	20.8
Indianapolis, IN	10,330	10,830	4.8
Providence, RI	17,253	16,986	-1.5
Columbus, OH	13,913	13,924	0.1
San Antonio, TX	18,720	19,330	3.3
Louisville, KY	13,270	11,656	-12.2
Dayton, OH	7,894	8,156	3.3
Norfolk, VA	16,545	16,406	-0.8
Memphis, TN	15,558	15,292	-1.1
Sacramento, CA	12,510	13,108	4.8
Rochester, NY	17,589	16,706	-5.0
Oklahoma City, OK	1,280	1,180	-7.8
Jacksonville, FL	13,885	13,800	-0.6
SUBTOTAL	251,180	235,760	-6.1

TABLE E (continued)

CHANGES IN RIDERSHIP, 1974-1975

21 of 59 UA's of 200,000 to 500,000 Population

Urbanized Area	1974 Revenue Riders	1975 Revenue Riders	Percent Change
Toledo, OH	12,904	12,508	-3.1
Albany, NY	12,138	11,432	-5.8
Nashville, TN	7,080	7,179	1.4
Richmond, VA	19,269	19,551	1.4
Youngstown, OH	1,067	1,323	24.0
Syracuse, NY	11,454	11,414	-0.4
Grand Rapids, MICH	1,533	1,803	17.8
New Haven, CT	8,098	7,968	-1.6
Tacoma, WA	6,467	6,641	2.7
Flint, MICH	1,793	2,196	22.5
Wichita, KS	2,007	2,088	4.0
South Bend, IN	3,527	3,538	0.3
Austin, TX	5,670	6,027	6.3
Baton Rouge, LA	2,967	3,475	17.1
Canton, OH	1,700	1,900	11.8
Harrisburg, PA	4,029	4,073	1.1
Spokane, WA	6,612	4,385	-33.7
Lansing, MICH	1,705	1,968	15.4
Chattanooga, TN	2,682	2,967	10.6
Colorado Springs, CO	940	1,168	24.3
Scranton, PA	1,859	1,976	6.3
SUBTOTAL	115,501	115,580	0.1

TABLE E (continued)

CHANGES IN RIDERSHIP, 1974-1975

19 of 173 UA's of 50,000 to 200,000 Population

Urbanized Area	1974 Revenue Riders	1975 Revenue Riders	Percent Change
Jackson, MISS	2,238	1,886	57.1
Melbourne-Cocoa, FL	85	124	45.9
Bakersfield, CA	956	1,274	33.3
Reading, PA	2,819	3,104	10.1
Charleston, WV	3,587	4,365	21.7
Raleigh, NC	1,614	1,327	-17.8
Evansville, IN	1,041	1,113	6.9
Santa Barbara, CA	1,870	2,938	57.1
Muskegon, MICH	107	205	91.6
Springfield, OH	308	306	-0.6
Seaside-Monterey, CA	476	749	57.4
Altoona, PA	1,608	1,560	-3.0
Anderson, IN	184	326	77.2
Jackson, MICH	464	478	3.0
Bay City, MICH	220	360	63.6
Asheville, NC	1,910	1,806	-5.5
Lynchburg, VA	2,600	2,410	-7.3
Lewiston-Auburn, ME	447	468	4.7
Wilmington, NC	687	766	11.5
SUBTOTAL	23,221	25,565	10.1

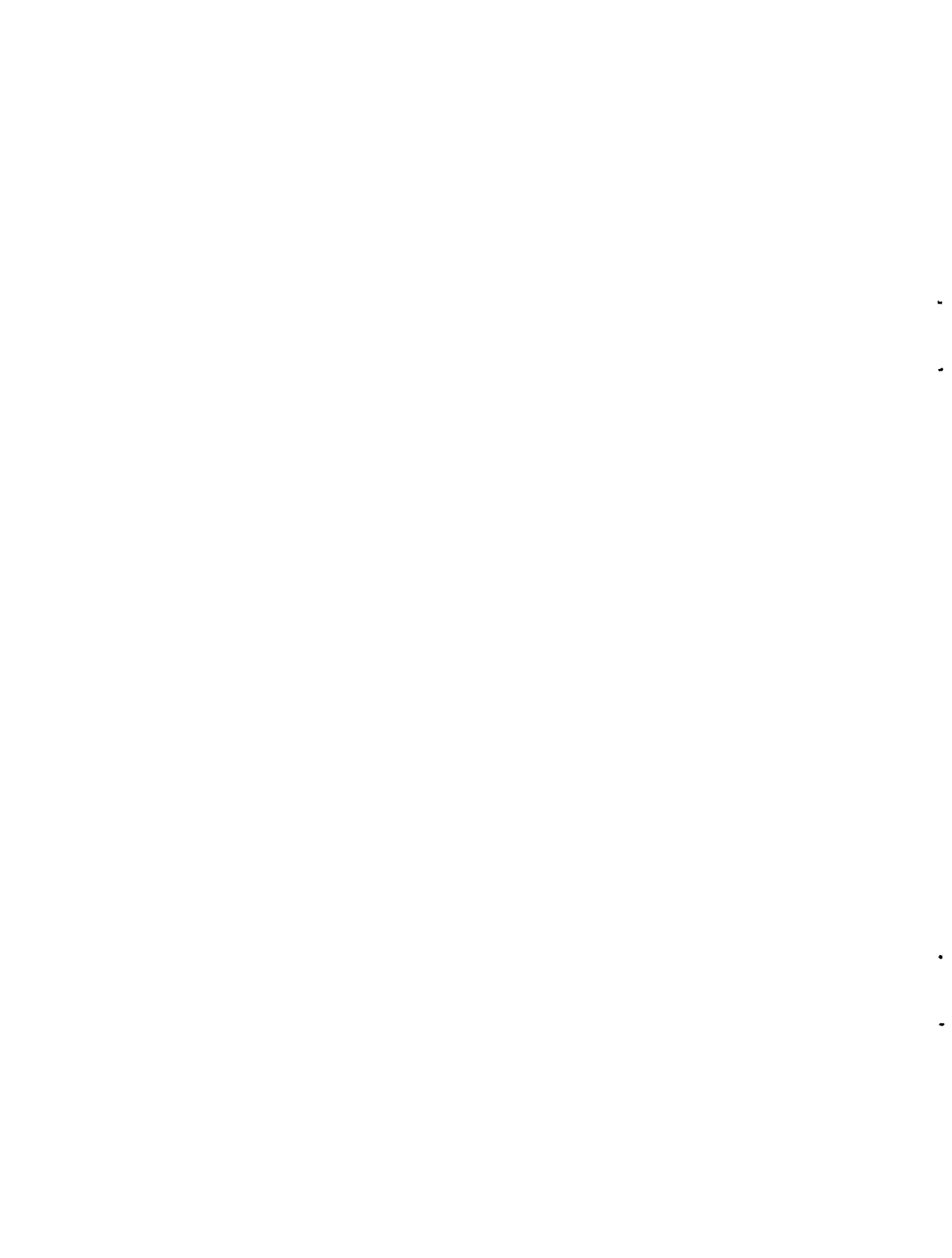


TABLE F
 ALLOCATIONS PER RIDER AND PER VEHICLE MILE
 Summary

Urbanized Areas	1974 & 1975 Rev. Riders (thousands)	FY75 & FY76 Allocations ÷ Rev. Riders	1974 & 1975 Transit Vehicle Miles (thousands)	FY75 & FY76 Allocations ÷ Transit Vehicle Miles
25 of 25 UA's over 1,000,000 population	8,815,264	\$.06	2,943,943	\$.18
15 of 22 UA's of 500,000 to 1,000,000 popu- lation	486,940	.15	207,373	.34
21 of 59 UA's of 200,000 to 500,000 popu- lation	230,179	.16	104,484	.36
19 of 173 UA's of 50,000 to 200,000 popu- lation	48,786	.25 ^a	28,008	.43 ^a
TOTAL SAMPLE 80 of 279 UA's	\$9,581,170	\$.07	\$3,283,808	\$.20

^a Since allocations are not made directly to urbanized areas (UA's) under 200,000 population, these UA's shares are derived by applying factor weights to the Governors' apportionments.

TABLE F (continued)
 ALLOCATIONS PER RIDER AND PER VEHICLE MILE
 25 of 25 UA's over 1,000,000 Population

Urbanized Area	1974 & 1975 Rev. Riders (thousands)	FY75 & FY76 Allocations ÷ Rev. Riders	1974 & 1975 Transit Vehicle Miles (thousands)	FY75 & FY76 Allocations ÷ Transit Vehicle Miles
New York	4,349,000	\$.03	1,237,242	\$.12
Los Angeles	326,000	.20	153,200	.42
Chicago ^a	930,337	.05	345,812	.15
Philadelphia	529,000	.06	166,474	.19
Detroit	183,821	.15	75,153	.37
San Francisco	402,000	.05	158,621	.13
Boston ^b	303,106	.06	90,748	.19
Washington	251,000	.07	99,700	.18
Cleveland	122,000	.09	46,469	.24
St. Louis	89,000	.14	45,000	.28
Pittsburgh	216,000	.05	79,617	.14
Minneapolis	98,000	.09	49,700	.18
Houston	52,000	.19	29,300	.33
Baltimore	219,000	.05	53,500	.22
Dallas	53,000	.12	27,200	.24
Milwaukee	93,000	.07	34,400	.20
Seattle	73,000	.10	45,907	.15
Miami	103,000	.08	32,300	.27
San Diego	56,000	.13	25,100	.28
Atlanta	114,000	.06	50,500	.13
Cincinnati	63,000	.10	26,800	.25
Kansas City	42,000	.13	18,600	.30
Buffalo	85,000	.10	19,100	.42
Denver	52,000	.13	24,500	.27
San Jose	11,000	.59	9,000	.72
SUBTOTAL	8,815,264	\$.06	2,943,943	\$.18

^a 1975 commuter rail data was not available, so it was assumed equal to 1974 data for both ridership and mileage.

TABLE F (continued)

ALLOCATIONS PER RIDER AND PER VEHICLE MILE

15 of 22 UA's of 500,000 to 1,000,000 Population

Urbanized Area	1974 & 1975 Rev. Riders (thousands)	FY75 & FY76 Allocations ÷ Rev. Riders	1974 & 1975 Transit Vehicle Miles (thousands)	FY75 & FY76 Allocations ÷ Transit Vehicle Miles
New Orleans, LA	113,000	\$.06	26,194	\$.28
Phoenix, AR	12,104	.36	6,934	.64
Portland, OR	45,715	.11	32,667	.15
Indianapolis, IN	21,160	.20	10,085	.41
Providence, RI	34,239	.14	12,406	.38
Columbus, OH	27,837	.17	14,210	.34
San Antonio, TX	38,050	.12	13,384	.35
Louisville, KY	24,926	.18	9,036	.51
Dayton, OH	16,050	.25	7,402	.54
Norfolk, VA	32,95k	.10	11,190	.31
Memphis, TN	30,850	.13	19,083	.21
Sacramento, CA	25,618	.13	17,081	.20
Rochester, NY	34,295	.12	13,669	.29
Oklahoma City, OK	2,460	1.11	2,969	.92
Jacksonville, FL	27,685	.09	11,063	.22
SUBTOTAL	486,940	\$.15	207,373	\$.34

TABLE F (continued)

ALLOCATIONS PER RIDER AND PER VEHICLE MILE

21 of 59 UA's of 200,000 to 500,000 Population

Urbanized Area	1974 & 1975 Rev. Riders (thousands)	FY75 & FY76 Allocations ÷ Rev. Riders	1974 & 1975 Transit Vehicle Miles (thousands)	FY75 & FY76 Allocations ÷ Transit Vehicle Miles
Toledo, OH	25,412	\$.11	9,027	\$.31
Albany, NY	23,570	.12	11,339	.25
Nashville, TN	14,259	.14	7,172	.27
Richmond, VA	38,820	.06	11,418	.21
Youngstown, OH	2,390	.96	2,461	.93
Syracuse, NY	22,868	.11	8,341	.29
Grand Rapids, MICH	2,336	.79	2,466	.75
New Haven, CT	16,066	.13	6,432	.32
Tacoma, WA	13,108	.14	6,195	.29
Flint, MICH	3,988	.50	2,130	.95
Wichita, KS	4,095	.42	3,442	.50
South Bend, IN	7,065	.23	3,185	.51
Austin, TX	11,697	.13	7,022	.22
Baton Rouge, LA	6,442	.22	3,031	.47
Canton, OH	3,600	.41	2,061	.72
Harrisburg, PA	8,102	.17	2,308	.60
Spokane, WA	10,997	.12	5,636	.23
Lansing, MICH	3,673	.37	1,849	.73
Chattanooga, TN	5,749	.19	4,194	.26
Colorado Spgs., CO	2,108	.50	2,284	.46
Scranton, PA	3,835	.27	2,491	.41
SUBTOTAL	230,179	\$.16	104,484	\$.36

TABLE F (continued)

ALLOCATIONS PER RIDER AND PER VEHICLE MILE
19 of 173 UA's of 50,000 to 200,000 Population^a

Urbanized Area	1974 & 1975 Rev. Riders (thousands)	FY75 & FY76 Allocations ÷ Rev. Riders	1974 & 1975 Transit Vehicle Miles (thousands)	FY75 & FY76 Allocations ÷ Transit Vehicle Miles
Jackson, MISS	4,124	\$.10	1,959	\$.20
Melbourne-Cocoa, FL	209	3.99	691	1.21
Bakersfield, CA	2,230	.46	1,696	.60
Reading, PA	5,923	.19	2,430	.46
Charleston, WV	7,952	.11	4,323	.20
Raleigh, NC	2,941	.26	1,744	1.08
Evansville, NC	2,154	.41	1,599	.55
Santa Barbara, CA	4,808	.17	2,254	.35
Muskegon, MICH	312	1.68	732	.71
Springfield, OH	614	.96	546	1.08
Seaside-Mont., CA	1,225	.49	775	.78
Altoona, PA	3,168	.36	1,313	.88
Anderson, IN	510	.76	707	.55
Jackson, MICH	942	.42	726	.55
Bay City, MICH	580	.77	796	.56
Asheville, NC	3,716	.09	1,554	.23
Lynchburg, VA	5,010	.07	2,570	.13
Lewiston-Auburn, ME	915	.29	597	.45
Wilmington, NC	1,453	.19	996	.28
SUBTOTAL	48,786	\$.25	28,008	\$.43

^a Since allocations are not made directly to urbanized areas (UA's) under 200,000 population, these UA's shares are derived by applying factor weights to the Governors' apportionments.





**DEPARTMENT OF TRANSPORTATION
URBAN MASS TRANSPORTATION ADMINISTRATION
WASHINGTON, D.C. 20590**

Dear

On December 26, 1974, the Administrator of the Urban Mass Transportation Administration announced the immediate availability of formula grant funds for capital and operating assistance for public transportation in urbanized areas, under the provisions of Section 5 of the Urban Mass Transportation Act of 1964, as amended. These formula grant funds were authorized in the National Mass Transportation Assistance Act of 1964, signed into law on November 26, 1974. Our records indicate that a programming action required as a precedent to applying for these Section 5 formula grant funds has not yet been taken by several urbanized areas in your State.

I am writing to you and to the appropriate Metropolitan Planning Organizations to bring the Section 5 programming requirement to your attention and to offer our assistance in initiating the necessary actions to apply for these funds. I would also request that you help us understand issues delaying the implementation of the Section 5 program by describing any problems which may have occurred in seeking to secure Section 5 funds in your State in our procedures.

First, let me summarize the Section 5 program and application steps. These funds are available on a formula basis to the Governor or his designee for use in urbanized areas of under 200,000 persons, and can be used for either capital or operating purposes. The Federal share is 80% for capital and 50% for operating assistance projects. Formula funds currently available to your State, for use in urbanized areas throughout the State, are listed in an attached table.

Programming of Section 5 projects is undertaken through the development of a Transportation Improvement Program (TIP) as described by the joint UMTA/FHWA regulation 23 CFR 450 Subpart C (enclosed). Section 5 projects to be included in the TIP annual element must be initiated by recipients designated under the Section 5 provisions. In addition, any Section 3 capital assistance projects proposed to be implemented in the area must be included in the TIP.

Once the TIP has been agreed to by participating agencies, through a cooperative process involving local transit operators, units of general purpose local government and appropriate State agencies, it is endorsed by the Metropolitan Planning Organization and submitted to UMTA for review. UMTA approval of Section 3 and Section 5 programs of projects included in the annual element constitutes a finding that our planning requirements have been met and makes possible the subsequent submission of individual project applications.

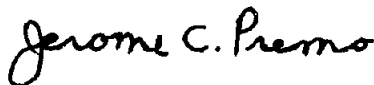
The attached documents are intended to assist you initiating Section 5 activities:

- UMTA guidelines for formula grants;
- State Apportionment tables;
- UMTA instructions for applying for capital and operating assistance; and
- Joint UMTA/FHWA regulations concerning urban transportation planning and programming.

If you have any questions, please call
472-2440 in Washington, D. C.

at (202)

Sincerely,



Jerome C. Premo
Associate Administrator for
Transit Assistance

Attachment

ADMINISTRATION OF THE SECTION 5 PROGRAM

In February, 1976 the Administrator established a Program Review Task Force to review and evaluate UMTA grant delivery policies and procedures, to identify issues in grant management and make recommendations to resolve them, and to produce a revised External Operating Manual and Internal Procedures Handbook reflecting a new, integrated grant management process.

Review of the Sections 3, 5 and 9 grant systems suggested several steps toward more effective management of the resource, short of legislative change. These steps were based on five areas of need:

1. to move the UMTA grant approval process from a project-by-project basis to a broader program basis;
2. to intervene in local programming decisions only when required by of specific Federal mandates or resource allocation issues;
3. to make key decisions regarding Section 3, 5 and 9 all at one time;
4. to limit paper work and documentation; and
5. to provide clear funding targets for local decisions when it is possible.

As a result of the Task Force work, UMTA has developed a new streamlined grant management system which moves much of the Federal decision making to the annual UMTA program review for each urbanized area, thus reducing the current project-by-project process for capital and operating grants. The review is based on the annual Transportation Improvement Program (TIP) and supporting information, and is illustrated in the attached diagram. A revised operating manual has been prepared incorporating the following:

1. Identification of a group of general assurances, usually statutory requirements, which can be filed one time rather than with each grant application (e.g., half-fare requirement for elderly).

PROPOSED UMTA GRANT APPROVAL PROCESS (URBANIZED AREAS)

A-40

MOVES MAJOR UMTA DECISIONS TO ANNUAL BASIS, ON 275 ANNUAL SUBMISSIONS

ELIMINATES 800-1000 SEPARATE PROJECT DECISIONS

FY 1977 ANNUAL PROGRAM REVIEW ³ BY URBAN AREA (275)

FY 1977 PROJECT APPLICATIONS FOR SECTION 3&5 FOR FY 1977

PRODUCED FROM SECTION 9 GRANT IN FY 1976

ONE TIME ¹ GENERAL ASSURANCES FOR SEC 3&5

ALLOCATE SEC 3, 5 ² & 9 FUNDS FOR FY 1978

TIP/AE APPROVAL ⁵
TSM APPROVAL
LONG RANGE PLAN REVIEW
SYSTEM DESCRIPTION DECISIONS ⁴

UMTA DETERMINATIONS:
--TITLE 5 CIVIL RIGHTS
--A-95
--ELDERLY & HANDICAPPED
--PUBLIC HEARING
--FUNDING MIX (FAUS/IN./SEC 3&5)
--EIS (NEGATIVE DECS)
--PRIVATE ENTERPRISE
--STANDARD CONDITIONS FOR BUS GRANTS

UNIFIED WORK PROGRAM FOR FY 1978

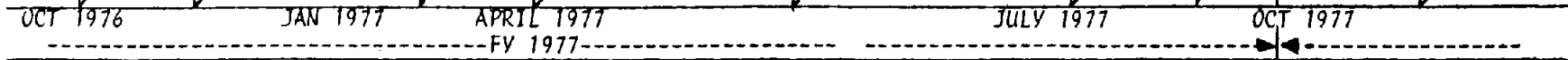
SECTION 9 GRANT FOR FY 1978

ALTERNATIVES ANALYSIS

--LOCAL SHARE
--13 (c)
--PROJECT JUSTIFICATION (NON-ROUTINE PROJECTS)
--FULL EIS

SECTIONS 3&5 GRANT AWARDS FOR FY 1977

ALLOCATE SECTION ² 3, 5 AND 9 FUNDS



FOOTNOTES:

- 1 PROVIDES FOR ONE-TIME ASSURANCES--ELIMINATES REDUNDANT PROJECT ASSURANCES
- 2 PROVIDES MARK FOR SECTION 3 FUNDS FOR BUSES, AND FOR OPERATING ASSISTANCE--12 MONTH LEAD TIME
- 3 PROVIDES FOR ANNUAL PROGRAM DECISIONS BY URBAN AREA AND UMTA IN LIEU OF PROJECT BY PROJECT DECISIONS
- 4 CONSOLIDATES SEVERAL PROJECT EXHIBITS INTO ANNUAL SUBMISSION; LINKS TO TIP/AE
- 5 ELIMINATES SEPARATE PLANNING CERTIFICATION

2. Provision of funding marks for Section 3 capital funds for routine bus purchases, Section 5 funds, and Section 9 planning funds, at the same time early in the fiscal year. Projects financed from non-allocated funds would still be included in the TIP (e.g., rail starts), but would be treated separately from allocated bus projects. Efforts will also be made to provide the existing rail cities with funding marks for rail modernization at this stage, but this cannot be done on a formal basis.
3. Conduct of an annual review by UMTA on the urbanized area's program of projects for Section 3 and 5, during which the TIP, Transportation System Management Plan, E&H plan, long-range plan, involvement of private operators, and supporting system description material are all submitted and reviewed together. UMTA determinations formerly made on a "retail" basis for each project will now be made on a "wholesale" basis in the TIP (e.g., Title VI, A-95, E&H compliance, etc.). Further for operating assistance grants and for bus purchase requests--using Section 3 funds administratively apportioned--certain standards would be reviewed at this stage (e.g., minimum vehicle age for replacement) obviating the need for a specific project justification step later.
4. After this UMTA review and approval of the TIP, TSM plan, and other elements of the annual plan, the issues raised in that process would be incorporated into work elements of the MPO's next Unified Work Program and Section 9 grant.
5. Finally, specified grant applications for Section 3 projects approved in the TIP (other than routine bus purchases) would be reviewed and approved. At this stage only, 13(c) non-Federal share, EIS circulation and public hearing requirements remain to be met. Project justifications would continue to be required in this step for capital grants other than routine bus purchases, but over time it is hoped that justifications for other routine categories of capital grants could be reduced to standards and be incorporated at the TIP review stage.

This streamlined process will result in the issuance of a single Section 3, 5 and 9 manual integrating the various programs, incorporating recent regulations and policy statements on grants, consolidating Section 3 and 5 forms, and eliminating out-dated, ambiguous and duplicative materials.

In addition to the changes the new External Operating Manual (EOM) will also include new Maintenance of Effort (MOE) Procedures.

Section 5(f) of the UMT Act requires as a condition of project eligibility that State and local funds and certain non-farebox revenues applied to eligible operating expenses in the project year shall not be less than the average contribution from such sources in the two immediately preceding fiscal years.

Until recently, UMTA required audited financial statements for each of the two preceding fiscal years as an independent verification of the MOE. However, such statements were usually not completed until several months after the local fiscal year had ended. New procedures were approved by the Administrator on June 8, 1976 by which Section 5 projects could be approved prior to the applicant's submission of audited financial statements for the immediately preceding fiscal year. Under this procedure, MOE is determined conditionally, and disbursement of Section 5 funds is limited to 80% of the UMTA share or the grantee's eligibility based upon 6 months of actual expense, whichever is less.

Procedures have also been changed to permit the computation of MOE on an areawide basis (instead of an operator specific basis) when there are several operators requesting assistance under one application. This simplifies MOE review and encourages the participation of as many operators as possible in the Section 5 program.

Other Administrative Actions

Other management highlights of Section 5 include:

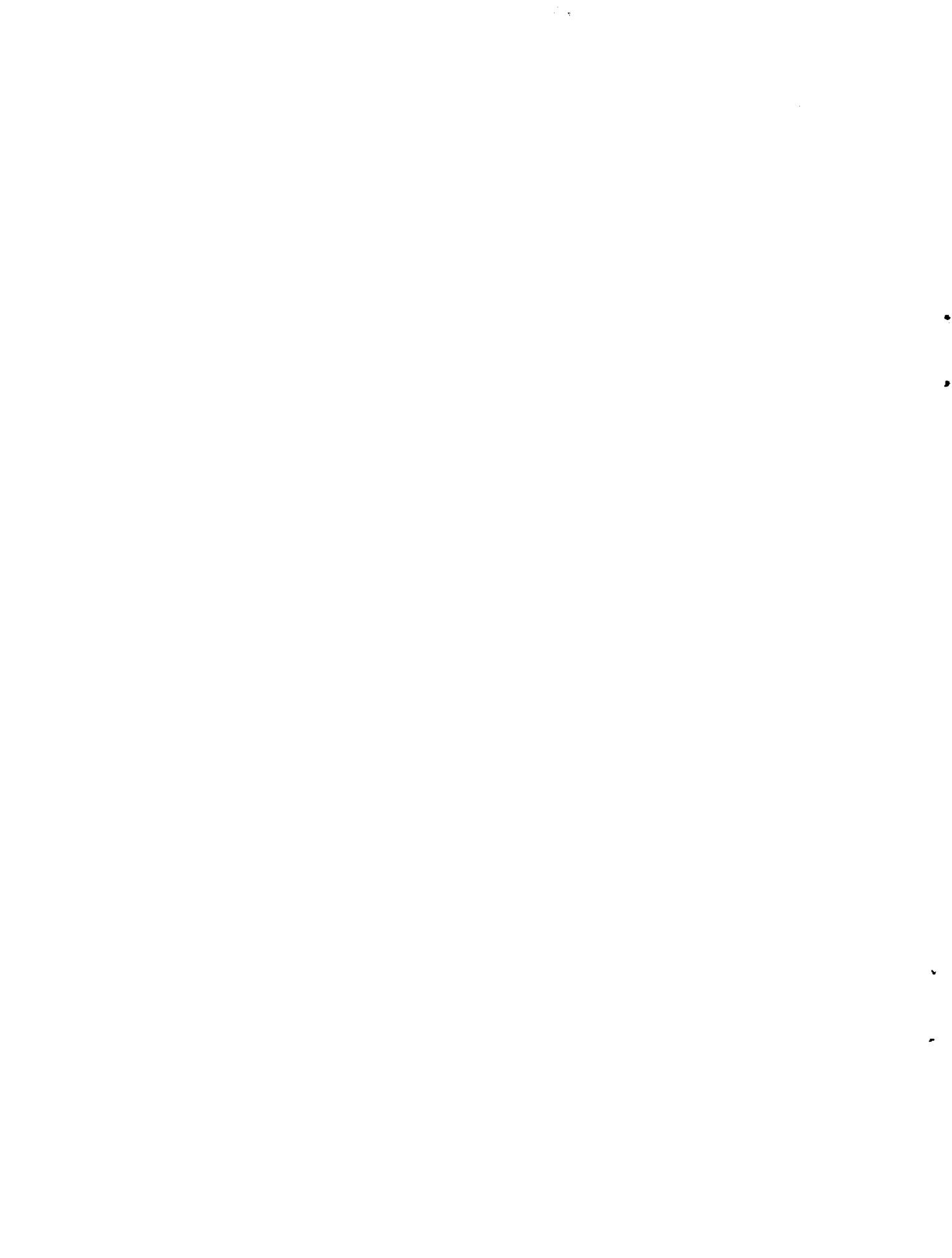
1. Personnel Workshop by Transportation Representatives. Since the infancy of the program Section 5 has conducted workshops in Washington and in the field to acclimate Section 5 staff with State and local government officials, and develop a good working relationship between the two as well as provide further guidance on the requirements and nuances of the Section 5 program.
2. Special Procedures for Releasing Section 5 Grants. Due to the frequent critical nature of the Section 5 operating assistance projects, procedures have been developed with UMTA offices providing sign-offs during the grant circulation process and with OST Offices of Congressional Relations and Public Affairs to expedite the release of crucial grants. The circulation time of many grants has been remarkably reduced.

3. Survey of Non-Participation. In May of 1976, a survey was made of urbanized areas for which either designation, programming, or project application activity had not been initiated. The letter reiterated the existence of the Section 5 program and the availability of funds to these urbanized areas. It also solicited feedback why these areas were slow in participating in the Section 5 program and offered any UMTA guidance that may be helpful.

4. Clarification of financial requirements. (a) A new project budget format is provided which walks an applicant through the steps that Section 5 staff currently uses in determining the eligible amount of UMTA funds. In effect, the applicants will now prepare these budgets rather than the Section 5 staff do the work based on inconsistent and incomplete financial statements; (b) A new format for documenting MOE is provided in the form of "Level of Effort Schedules" (LOE) for the project year and each preceding fiscal year. These schedules will identify non-operating expenses not to be counted in the MOE determination, and to separate the consideration of LOE for each required period; and (c) As discussed before, the MOE section describes a new procedures by which operating assistance can be approved conditionally in lieu of audited statements. On this basis, designated recipients can apply for the following year's project before the current year is over.

5. Integration of Section 3 and Section 5 Capital Assistance Projects

Procedures have been developed where applicants for Capital Assistance projects to be funded under Section 3 and Section 5 may submit the request under one single application. Heretofore, the usual practice has been to break up the project into 2 requests by showing the portion of the project to be funded under Section 3 and under Section 5 in separate application requests.



Terminology and Concepts

This portion of the appendix defines the terms used in Chapter II of this report: efficiency, productivity, and operating ratio.

Efficiency

Efficiency is defined as a rate at which a certain output is produced per unit of resource input:

$$\text{efficiency} = \frac{\text{quantity of product produced}}{\text{quantity of resource consumed}}$$

Efficiencies are named on the basis of the resource input in the ratio. For example, "vehicle-miles per employee", "passengers per employee", and "annual operating cost per employee" are each labor resource efficiencies.

Input and output measures form the basis of efficiency measures. For the purpose of this report, the output of transit service is measured by two criteria:

1. the amount of movement offered or performed,
2. the number of passengers attracted.

The movement (work) performed during a given period of time can be given in units of train-miles, vehicle-miles, passenger-miles, seat-miles, and space-miles. (The number of spaces on a vehicle is the total vehicle capacity: seats plus standees.) The units of passenger-miles, passengers (reflective of system utilization) and vehicle-miles are three measures of output used in the present evaluation.

The input required for the provision of transit service is measured in terms of several resources. The types of resources which are studied in transit service evaluation--and the units by which they are measured--necessarily depend on the objectives of the analysis and the availability of data in a convenient form. Resources which typically are included in an analysis of transit service are:

1. Cost (operating or capital) measured in either current or constant dollars;
2. Equipment (rolling stock, maintenance equipment, etc.) measured in unit-hours or number of units;
3. Materials (supplies, stores, etc.) measured in variable units depending on specific needs;
4. Labor (operating, maintenance, administrative, clerical) measured in dollars, employees, employee-hours worked or employee-hours paid.

5. Energy (electricity, gas, fuel) measured in BTU's, gallons or other appropriate measures.
6. Urban space (right-of-way width, or total right-of-way area) measured in feet or square miles.

In some instances, all resources consumed are classified as either labor or capital (non-labor), where capital resources are measured in dollar value.

For this evaluation, two measures of resource are examined:

1. annual operating cost (in dollars)
2. total number of employees (labor).

Productivity

The productivity of a transit service may be defined for several resources (labor productivity, vehicle productivity, etc.) and for components of a total system (e.g. line productivity, system productivity). By definition, productivity is an efficiency of production, where the output is measured in the most basic units of transit service: passengers attracted or work accomplished (vehicle-miles, passenger-miles, etc.). Thus, "train-miles per year per employee", "passengers per employee per year" and "passenger-miles per year" are productivity measures and efficiencies as well. The unit "operating cost per employee per year", however, is a labor efficiency measure but not a productivity because cost is not a basic "product" of transit service.

For this report, two efficiency measures (both labor productivities) are examined:

1. annual vehicle-miles per employee
2. annual passenger-miles per employee.

The rationale for the selection of these measures is discussed in Chapter II.

It is recognized that for a complete analysis of system efficiency, all input-output combinations which have mutual influence must be examined. However, because reliable data are limited, such a complete analysis is not possible in most cases.

Operating Ratio

Finally, operating ratio is a term used to describe the basic financial status of a transit service and is defined by:


$$\text{Operating Ratio} = \frac{\text{total annual revenues}}{\text{total annual expenses}}$$

The operating ratio value can fluctuate widely between systems due to modal operating cost differences, fare policy, and external influences such as geographic location of the system.

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