
# League of Women Voters of Minnesota Records

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Version 3
August 20, 2018

TWIN CITIES AREA METROPOLITAN TRANSIT COMMISSION
FINANCIAL SUMMARY FOR
FY 1972 AND FY 1973

I. Capital Program and Bonding Authority

II. Annual Operating Expenses - Taxing Authority

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Table A - MTC Capital Program: FY 1971 - FY 1976
Bus Service Improvement Program

Table B - Estimated Debt Service Levies
Bus Service Improvement Program

Table C - MTC Work Program: FY 1972 - FY 1973

I. Capital Program and Bonding Authority

The 1971 Legislature authorized the MTC to incur, and levy tax for, annual debt service requirements of up to $3 million per year. Depending upon the length of bond maturities issued--ranging up to a maximum of 40 years--it is estimated that the MTC could incur total bonded indebtedness of up to $35 - $40 million dollars.

On September 28, 1971, the MTC issued $6.1 million in Certificates of Indebtedness ranging up to a maximum maturity of 14 years, with the final payment in 1985. The debt service on this first MTC issue begins with heavy debt service levies in the early years 1972 - 1979 (between $1 million and $600,000) and dropping to around $400,000 after 1980. (See Table B) This provides for a 9 year average amortization of the debt on new buses.

In addition, it is anticipated that an additional $8.5 million in bonds will have to be sold during the five years--1972 - 1976--to pay for the local one-third share of the five-year capital program for the Bus Service Improvement Program. This will require an average annual debt service levy of about $1 million per year. (See Tables A and B)

Therefore, of the total authorization of $3 million per year in tax levies for debt service, approximately $2 million per year will be required to carry out the Bus Service Program over the next five years, including paying off the local share of the acquisition of the bus company. This leaves approximately $1 million per year in residual debt service--bonding power which is available to the MTC for additional bus hardware (over and above the existing system) or for initial capital costs of a long-range transit development program. (See Table B)

II. Annual Operating Expenses - Taxing Authority

The 1971 Legislature authorized the MTC to levy property taxes for general purposes of up to 2.9 mills. This is estimated to raise approximately $4.77 million in cash in calendar year 1972. (See Table C) However, MTC operates on a fiscal year which will end June 30, 1972. Substantial cash flow from the 1972 property tax will not begin to flow in until August of 1972. Therefore, during FY 1972 the MTC may be required to operate out of the current cash surplus of approximately $1.7 million which has accumulated from the past Wheelage Tax collections, and issue tax anticipation notes against the anticipated receipts from the property tax.

The FY 1972 MTC Budget (See Table C) calls for net operating expenses (i.e. not including debt service, and after Federal grant receipts are netted out) of approximately $3,250,000. This consists of $440,000 for Transit planning (local one-third after Federal grants and including planning staff), $2,320,000 for bus service (TOD operating subsidy and suburban operator subsidies), and $490,000 for general staff expenses and administrative costs (not including planning staff).

Revenues will be available of approximately $4,770,000 from the property tax levied on January 1, 1972, and about $160,000 from other miscellaneous sources. In addition, a surplus of approximately $1.7 million was available at the start of the year. Thus, as of June 30, 1972, it is estimated that the MTC will have a surplus on the books of approximately $3,380,000, consisting mainly of property tax receivables, anticipated to be received August - December 1972. Of this, approximately $2.38 million has been designated as appropriated for carry-over into FY 1973, representing the estimated collections for the second half of the calendar year July - December 1972, which will be the first half of MTC FY 1973. The remaining $1 million remains as unappropriated surplus at present, and available for additional transit projects.

The FY 1973 Work Program (See Table C) submitted to the Legislature will require approximately $4.5 million in local funds. This includes approximately $1,150,000 for transit planning, research and development, $2,820,000 for bus operations (TOD plus suburban operators), and $530,000 for MTC staff and general expenses. At the minimum, therefore, an additional $1.12 million will be required to be levied in 1973 for the remaining funds necessary for FY 1973.

Thus, the 1973 maximum levy of 2.9 mills, if it produced approximately $5 million (assuming an escalation of about 5%), would then have a surplus capacity of $3.88 million. Some part of this would need to be carried over into FY 1974. The remainder would be available for unappropriated surplus and for additional transit projects. (See Table C)

# BACKGROUND ON TRANSIT

Metropolitan Transit Commission

1971 Annual Report Draft

## OPERATING IMPROVEMENTS

Since its inception in 1967 the MTC has recognized the need to provide a mass transit system that is dependable, convenient and an attractive alternative to total reliance on the automobile. In 1968 a comprehensive study of transit needs was initiated, and as a result a five-year improvement program was adopted by the MTC. During the Fiscal Year ending June 30, 1971, significant progress was made in implementing major elements of that improvement program.

### AQUISITION OF TWIN CITY LINES, INC.

The first step toward the improvement of transit services was the acquisition of the area's major transit carrier, Twin City Lines, Inc., which carried 95 per cent of the area's transit riders. In July, 1969, the MTC began negotiating with the owners of the company. After several months of negotiations failed to produce satisfactory progress, and a 25 day drivers' strike during November-December, 1969 crippled transit services for more than 15,000 daily riders, the MTC initiated condemnation action to acquire Twin City Lines.

On August 19, 1970, a condemnation panel announced its decision setting the price for purchase of Twin City Lines assets at $6.51 million. In the meantime, in June, 1970 the U. S. Department of Transportation's Urban Mass Transportation Administration announced approval of a $9.7 million grant to cover two-thirds of the acquisition price plus the first year of capital improvements.

Since the owners of Twin City Lines refused to accept the court-established price, on September 19, 1970, under a court order, the MTC took over operation of the Twin City Lines system, renamed the MTC/Transit Operating Division. Takeover was accomplished in one night. By morning the public could see 600 buses in service with the now-familiar "T" logo. ATE Management and Service Company, a private transit management firm, was hired by the MTC to operate the Transit Operating Division.

RIDERSHIP GAINS

The first year of public ownership resulted in the reversal of a 25-year downward trend in ridership, unbroken since the end of World War II. For the year just prior to public ownership, the bus company experienced a ridership decline of 13 per cent from the previous year.

Under the MTC bus ridership began to recover. In five of the six months from January, 1971, through the end of the fiscal year there were marginal increases over the same months the year previous. While the monthly increases were not great (the largest amounting to 2.6 per cent), they were consistent; and indicated that public ownership's emphasis on service rather than profits could encourage more people to become bus riders.

During the six month period January-June, the bus system carried more than 200,000 additional passengers over the same period a year earlier. This improvement in ridership ran counter to transit industry declines averaging 7 per cent which were experienced in most other major cities.

FIVE-YEAR IMPROVEMENT PROGRAM

The acquisition of Twin City Lines by the MTC signaled the start of the largest capital and operating transit improvement program in the Twin Cities since the conversion from streetcars to buses in 1953. The five-year improvement program adopted by the Commission in 1969 was initiated with the assistance of the two-thirds funding grant from the U. S. Department of Transportation.

1971 improvements included:

NEW BUSES -- The major item in the improvement program calls for purchase of 465 new buses over a five-year period, at the rate of 93 per year. The MTC goal is to reduce the average age of the fleet from the present 14 years to just over five years. New buses have air conditioning, front, rear and right-side destination signs, and power-assisted exit doors. Of the 93 buses in each year's purchase, fifteen are equipped with a larger engine, high speed transmission and special seating for express bus service. The first order of

fifteen new buses arrived in July 16, 1971, and were put into service at a ceremony presided over by Governor Wendell Anderson. The balance of the first year's order arrived in September and are now in service.

ENVIRONMENTAL IMPROVEMENTS -- Transit service in general is recognized as a factor in improving the urban environment by reducing traffic congestion and pollution. During 1971 the MTC made additional environmental improvements. One, mentioned earlier, was the purchase of new buses to reduce the average age of the fleet, thereby eliminating pollution from older vehicles with less efficient engines. Going a step further, ten of the first new buses have been equipped with a special Environmental Improvement Package (EIP), consisting of an experimental, exhaust-emission kit. If actual testing of the EIP indicates a reduction in pollution in comparison to the remainder of the new buses, it will be installed system-wide. In addition, the QT buses operating in Minneapolis were equipped with propane gas engines to further reduce pollution. Finally, the MTC adopted special fleet maintenance practices, including high quality fuel and lubricants, regular tune-ups, and a fuel additive "masking" agent; all aimed toward reducing the odor, visibility, and pollution of diesel exhaust.

PASSENGER SHELTERS -- The MTC began a program of improved passenger facilities by installing four prototype waiting shelters at major bus stops. These shelters were installed in the fall of 1970, to test the various architectural designs, and the methods of heating and lighting which were developed in two years of planning. Based on the results of these tests, specifications have been written for a total of 150 shelters to be installed over a five-year period, at the rate of approximately 30 per year.

BUS STOP SIGNS -- To provide patrons with bus stop information, and to "advertise" the existence of service along the routes, prototype bus stop signs were developed and tested. More than 7,000 new bus stop signs are

planned as another part of the capital improvment program, to be installed on all MTC and suburban bus company routes.

INFORMATION PROGRAM -- Good transit service requires easy access to reliable information about that service. During 1971 a new telephone information center was constructed, additional telephone information operators were hired and trained, and additional telephone lines were installed, tripling the annual call-handling capacity from one to three million.

EXPANDED SERVICE -- One of the most important improvements being made by the MTC is the expansion of the area served by transit. Within five days of acquisition, seven new express bus routes to the Minneapolis and St. Paul campuses of the University of Minnesota were inaugurated, and because of their success two additional routes were added. In response to many requests new service was scheduled in other sectors. Senior citizens were provided with special reroutings which brought the buses closer to their high-rise residences. A ten-cent fare reduction for senior citizens was tested during non-peak hours on Thursdays. Legislation was passed in 1971 providing free transit service for senior citizens during non-peak hours every day of the week after January 1, 1972.

QT BUSES -- On March 6, 1971, the MTC began a small bus circulation experiment in downtown Minneapolis, designated as the QT (for Quick Transit). The MTC purchased twelve new 17-passenger buses, to operate on two continuous loop routes, one on the Nicollet Mall and the other on Fourth and Fifth Streets. The aim of this demonstration project is to evaluate the feasibility of similar people-mover circulation systems in other high activity centers.

These and other service improvements and extensions of routes resulted in a 28 per cent increase in route miles since acquisition in September, 1970.

SUBURBAN BUS SERVICE

While the MTC, formerly Twin City Lines, provides the major share of transit services, small private bus companies continue to provide bus service to and from the suburbs. On August 26, 1970, the MTC adopted a Policy Statement for suburban bus operators, which stressed that the "development of increased ridership on these carriers is in the interest of the public and an objective of the MTC." The eight-point policy, in summary, provides that the MTC will assist suburban bus companies in operations, management, promotion of ridership, expansion of compatible services, equitable regulations, and where necessary and requested, subsidies or acquisition.

In keeping with this policy the MTC continued to provide equipment, financial and managerial assistance to Dickenson Lines, Inc., a private bus company serving the suburbs in Anoka and Washington Counties. In three years of assistance from the MTC, Dickenson Lines has increased ridership by 45 per cent. Expanded service includes a circulation route in Brooklyn Center, operated by Dickenson Lines and jointly sponsored by the City of Brooklyn Center and the MTC.

On February 1, 1971, the MTC acquired the operating rights formerly held by North Hennepin Transit Corp., under the terms of the policy statement. Service to the northwest suburbs of Minneapolis has since been integrated into the fare plan, transfer arrangements and overall operation of the MTC Transit Operating Division. Routes have been reorganized, fares have been actually reduced in some areas, and a new crosstown service has begun providing direst access to Brookdale Shopping Center.

## TRANSIT DEVELOPMENT

The necessary framework for developing a comprehensive regional transit system has been established. Basically, long-range transit development will occur through an evolutionary process growing from the existing bus system. The initial 13-point improvement program, to be completed in 1975, will be followed by intermediate improvements from 1975 to 1980, relying heavily on the addition of new, peak-hour express service. The ultimate goal will be the development of a regional transit system, which will be based on fixed-guideway, fast-link service in high-demand corridors between major diversified centers.

During 1971 the MTC refined its long-range planning and adopted a transit system concept. The Commission also undertook various demonstration projects to begin implementing the four major elements of the family of vehicles plan.

## SYSTEM PLANNING

Transit Planning is developing in accordance with the family of vehicles concept, which the MTC adopted as part of its official policy statement, Transit in Transportation. As displayed in Fig. __, the family of vehicles system concept includes four elements:

1. Fixed guideway, fast link service in the region's high demand transit corridors.
2. Express bus, fast link service as an interim facility and as the major transportation element in those corridors not able to support fixed guideway facilities.
3. Local and feeder bus service to complement fast link service.
4. Circulation and collection/distribution service within major centers.

The general objectives, policies and system concept plan stated in Transit in Transportation were approved by the Metropolitan Council as consistent with the transportation and land development policies of the Metropolitan Development

Guide and as a framework on which the MTC will develop and implement transit improvements.

Also published in 1971 were seven technical reports and a summary report entitled Transit Options for the Twin Cities Metropolitan Region.

The transit system concept plan which has now been adopted will make an important contribution to the total regional transportation plan to be developed in 1972 through the interagency Transportation Planning Program (TPP participants include the MTC, the Metropolitan Council, Minnesota Highway Department, and the counties and municipalities of the metropolitan area).

Another important factor influencing future transportation planning will be the Twin Cities portion of the National Transportation Needs Study, which will attempt to define the total transportation requirements of the region up to the year 1990.

IMPLEMENTATION PLANNING

Implementation planning programs are already underway to begin operating each of the elements of the family of vehicles system plan.

FAST LINK FIXED GUIDEWAY -- On June 8, 1971, the Urban Mass Transportation Administration of the U. S. Department of Transportation approved a technical studies grant to assist the MTC in developing performance specifications for the fixed guideway component of the regional transit system.

The result of the project, which should be completed by May, 1972, will be a set of performance specifications regarding the size, speed and station area requirements of a rapid transit system. These specifications will help the MTC to determine if a vehicle system is presently available to serve the needs of the Twin Cities area or if a new or modified system must be built and tested.

EXPRESS BUS -- An express bus element of the family of vehicles system is being evalated as part of the I-35W urban corridor demonstration project sponsored by the U.S. Department of Transportation. Utilizing the bus-on-metered-freeway concept, traffic on the highway will be monitored electronically and entrance

ramps will be controlled so that the number of cars on the freeway does not exceed capacity and cause severe traffic congestion. At the same time, buses will be allowed onto the freeway via special access ramps. The planning phase of the project is now being completed. Tentative conclusions are being formulated for application to other freeways. T.H. 55 (Hiawatha Avenue Freeway) in Minneapolis and T.H. 3 (Lafayette Street Freeway) in St. Paul are candidates for future freeway metering applications.

The Metropolitan Transit Commission is also working with the Minnesota Highway Department to include an exclusive busway in the design of the proposed I-394 (T.H. 12) west of Minneapolis. This busway could provide true fast link service with a minimum of additional right-of-way.

COLLECTION-DISTRIBUTION -- Additional local bus service improvements are being sought as part of the TOPICS urban highway system (Traffic Operations Program to Increase Capacity and Safety). Transit-related improvements eligible for federal aid through TOPICS include bus turn-outs, shelters, and bus stop signs, all of which would make local bus service more attractive. Other local bus improvements are included as part of the five-year capital improvement program (see page __).

The MTC also intends to evaluate a new concept of personalized local bus service, called dial-a-ride. The dial-a-ride service is best suited to low density areas and is based upon flexible routing of small buses in response to phone calls from area patrons. Demonstration of the concept is going on elsewhere in the country, and will be evaluated for the Twin Cities region.

CIRCULATION/DISTRIBUTION -- The final element of the family of vehicles system -- service within major centers -- will be implemented through three separate planning projects: one for Minneapolis, one for St. Paul and one for an outlying center. The projects will define the service requirements within each center, various alternatives which may be available, their impacts and the time frame for implementation.

## PUBLIC INVOLVEMENT

A successful transit program requires an informed and involved community. During 1971 the MTC initiated new programs and stepped up existing efforts in broadening public understanding of transportation problems, and increasing public participation in their solutions.

Perhaps the clearest example of two-way dialogue between the community and transit planners occured through the work of the 41-member citizens' Advisory Committee on Transit (ACT). Its members, from all parts of the metropolitan area, brought local perspective to transit in "shirtsleeve" planning meetings at least once and often twice a month.

Committee findings and recommendations were important in developing the document, Transit in Transportation, a Commission policy statement published in January.

In addition to the work of the full ACT, two smaller task forces -- one concerned with operational matters, the other with long-range planning efforts -- undertook in-depth study. These continuing efforts will be vital to the MTC's ongoing program.

Both task forces visited with key metropolitan legislators, extending the community-planner dialogue one step further.

Other means were used to tell the MTC story during 1971. An advertising campaign was launched to encourage a fovorable customer service image. Its primary objective was to arrest the decline in passenger use and to attract new riders.

Newspaper and radio advertisements, in addition to bringing out the vocal talents of thousands who sang, "We're Getting There," told the community what the MTC was doing with the publicly-owned bus system, and how the bus-riding habit could better the individual and the community.

By emphasizing that improvements would take time, and advertising them only after they had actually been made, the MTC worked to restore public confidence in the bus system, while instilling realistic hopes among system users.

The advertising campaign received top honors in annual competition of the Advertising Club of Minnesota. As a significant element of the total improvement program, advertising had a strong impact on the public and thus helped to produce transit ridership increases.

The MTC's newsletter was distributed each month to more than 7,000 community leaders and others interested in transit. It gave detailed explanations of all elements of both the short- and long-range programs of the MTC.

A Speakers' Bureau, made up of members of the Commission, the Advisory Committee and staff, brought the MTC story to more than 400 audiences and more than 20,000 people. By word and picture the Speakers Bureau outlined the present and future plans for mass transit and discussed them with state, metropolitan, county and municipal government bodies; service clubs; neighborhood organizations; business groups; schools and colleges.

These groups, by and large, turned out to be transit's strongest and most visible supporters during the legislative session.

Community contact was made on other levels, including direct liaison between MTC staff and key municipal employees in scores of cities and suburbs.

Seminars and other community meetings were used to offer in-depth analysis of transportation planning. One series included thorough, day-long presentations discussing the system concept planning studies.

In response to perhaps the most significant political issue of urban America, pollution, an environmental information program was developed and implemented through the speakers' bureau, agency publications, and other media. It demonstrated that mass transit is a positive factor in the urban environment.

Finally, two local television stations produced and carried programs telling the MTC story.

# the transit development program:

## summary of action, 1973-1990

Metropolitan Transit Commission
February, 1973

# introduction

Residents of the Twin Cities Metropolitan Area like it here. They know the region offers a high quality of life that is the envy of other regions. Yet even today the symptoms of serious urban problems are becoming more and more visible: unchecked, disorganized growth, air pollution, decay of older areas, rapidly rising taxes, and traffic congestion.

One vital component of a healthy urban area is a modern, efficient and well-balanced transportation system. Its importance is illustrated by its potential effect on the whole range of urban problems: haphazard land use, traffic congestion, air and noise pollution and inadequate mobility.

To retain the quality of life that has come to characterize this region, to protect it through the coming decades and into the next century, planning is necessary now, to guarantee that all the elements of urban strength, including transportation, are there when they are needed.

More than planning, DECISIONS are needed now. Time is running out on our ability to solve these problems **before** they overwhelm us.

This report summarizes the Transit Development Program adopted by the Metropolitan Transit Commission, as this agency's response to identified transportation needs.

The MTC's proposed future transit system and all its diverse elements are described, and a step-by-step plan for implementation is outlined.

Some key questions are dealt with: what are the benefits of the proposed system? what are its costs? what steps need to be taken immediately?

This report, and the more complete documents it is based on, are intended to assist the community's decision-making.

This report was prepared from a series of transit studies conducted by the Metropolitan Transit Commission and financed in part through grants received from the United States Department of Transportation under the Urban Mass Transportation Act of 1964, as amended.

41L

bus improvements

## some background

The Metropolitan Transit Commission, formed in 1967, immediately initiated short-range and long-range transit improvement studies in cooperation with the Metropolitan Council and the Minnesota Highway Department.

The short-range program is visible everywhere, and is an unqualified success. More than $30 million in federal grants have been received for purchase of the former Twin City Lines, 607 new buses, 190 heated passenger shelters, and other improvements.

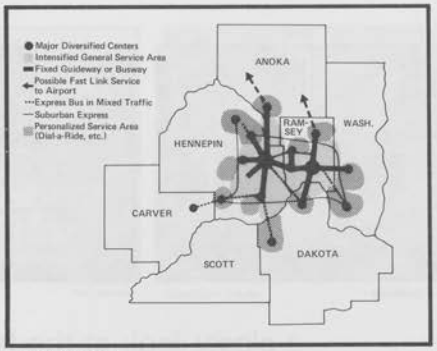
Long-range planning, including bus system demonstrations and extensive appraisals of new transit technology, has been underway since 1968.

In 1971, the Commission made these determinations about future transit, subsequently approved by the Metropolitan Council:

- Bus transit will play a vital role in any future transit system and will be required to provide the major service for at least the next 10 years.
- All major capital investment for bus service will be compatible with, and look to, a time when fixed guideway transit service will be in operation.
- A regional system including fixed guideway service is deemed necessary.
- The newest and best available technology at the time of construction should be used.

These determinations helped shape a "family of vehicles" system concept plan: a practical means to capture the benefits of new technology, and to recognize the diversity of Twin Cities travel needs. The "family" concept will enlarge the region's public transportation service area, and focus the system to increase employment, shopping, cultural, recreational and other opportunities for the area's residents.






system concept map

## more about system concept

The "family of vehicles" system concept developed by the MTC, and approved by the Metropolitan Council, consists of:

- Rapid transit operating on its exclusive right-of-way (automated fixed guideway) as the backbone of the system to provide fast-link service in the heavily populated corridors between selected major centers. As a supplement, buses operating on exclusive busways are to be considered in those corridors where new or expanded freeways are planned.

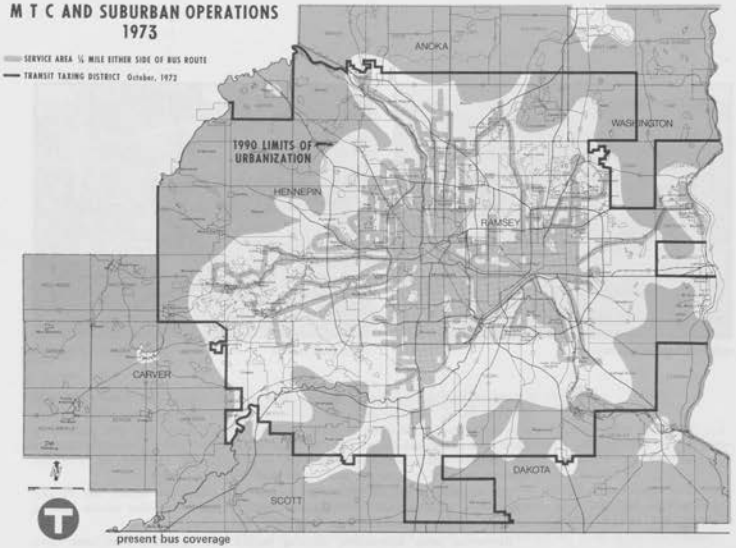
- Express buses operating in mixed traffic for fast link service in less-congested corridors.

- Local and feeder bus service to provide service to the major centers as well as along outlying arteries, and to provide maximum access to the fast link service.

- Circulation/distribution service within certain major centers, such as downtowns and new outlying major diversified centers.

Vehicles such as those illustrated on Pages 4 and 5 typify what might actually be used to fulfill the system concept.

To meet regional development goals, to provide increased transit service, to achieve proper integration of all elements of a total transportation system, the transit plan prepared by the MTC is programmed for staged development to the year 1990.




present bus coverage

## the plan and the community: a good match

Major new facilities that have been outlined in the preceding pages are illustrated in the map on Page 7. Service will be provided within the 1990 limits of urbanization, with the outer areas and their lower densities served with express bus systems.

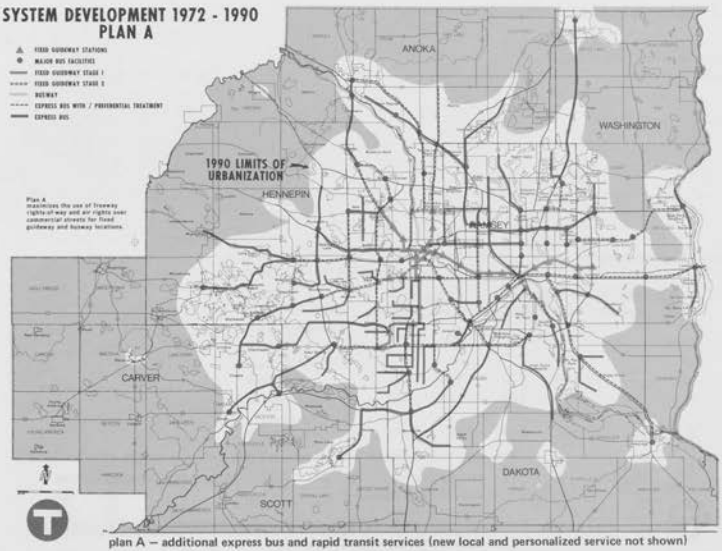
Major transit stations, with kiss-ride and park-ride facilities, and terminals for other local bus services such as Dial-A-Ride, must be strategically located. In dense urban corridors, fixed guideway stations are located to serve major focal points for community activities.

Focusing transit on major activity centers will help guide development in patterns that best meet economic and social goals of the community. It will further the goal of providing access for the most people to these vital destinations.

Focusing on centers will also insure that the benefits of transit are shared community-wide. People living in outlying areas who wish to work, shop, or be entertained closer to home will have that option. Likewise, central city residents who wish to have access to suburban job opportunities will not be impeded for lack of transportation.

This system plan "personalizes" transit to the extent that it recognizes that there is a great variety of travel needs to be met in a variety of ways. There are mid-day shopping trips and rush hour work trips, both to the downtowns and suburban centers. There is a broad range of other possibilities; the plan achieves the goal of providing mobility to the entire metropolitan area.






plan A – additional express bus and rapid transit services (new local and personalized service not shown)

## staged system development

Having identified the medium- and long-term public transportation needs, the MTC has set forth a series of six basic tasks to be completed by 1990 to provide a high level of service, and to assist in sustaining and improving the region's quality of life.

TASK ONE, from 1973-75, calls for immediate improvements to bus systems, with emphasis on highway-related facilities such as 180 shelters, signs, stations, special signals, bus turnouts, and park-ride lots for 2,200 autos.

TASK TWO, in 1973, is to delineate the space needed, including right-of-way, air space and tunnels, for the regional fixed guideway and busway systems.

TASK THREE, from 1973-90, will establish a program for conservation of resources including low-emission diesel engine improvements, internal transit circulation, and other efforts to reduce the number of auto trips.

TASK FOUR, from 1974-81, is to design, construct, equip and place in operation the region's 37-mile first stage of the fixed guideway system.

TASK FIVE, 1976-81, calls for making further major improvements to the bus system consistent with plans for the fixed guideway system.

TASK SIX, 1982-90, calls for expansion of all aspects of the system including completion of the 78-mile system of fixed guideways and busways.

This multi-staged program will produce a transit system consisting of:

| PRODUCTS By: | 1972 | 1975 | 1981 | 1990 |
|---|---|---|---|---|
| Miles of Fixed Guideway | | | 37 | 57 |
| Miles of Busway | | 6 | 19 | 21 |
| Total of Busways and Guideways | | 6 | 56 | 78 |
| Miles of Highway w/Bus Preferential Treatment Facilities | | 40 | 110 | 180 |
| Additional Route Miles of Express Bus Service | 345 | 650 | 740 | 900 |
| Shelters, Small & Medium | 32 | 180 | 334 | 494 |
| Bus Stations | | 40 | 88 | 100 |
| Guideway and Busway Stations | | | 32 | 44 |
| Parking Spaces | 400 | 2,200 | 11,000 | 19,000 |
| Annual Ridership | 55 million | 62 million | 110 million | 137 million |

## cost

To the average taxpayer, the critical question is "How much will it cost me?" The quick answer is, less than $30 per family per year for the local share of the MTC's proposed transit development program, plus the tax contribution for the two-thirds federal funding that is available to all transit systems in the country.

Since all areas compete for federal funds, it is important to obtain the most federal funding for local transit, by relying on both federal highway and federal urban transportation assistance. In adopting its federal-aid highway programs, Congress has indicated its willingness to fund such transit-related highway facilities as busways, metered freeways, bus lanes, shelters, signs, bus turnouts, and loading areas. Under the urban public transportation assistance programs, Congress has also identified transit needs as including construction of fixed guideway systems and purchase of buses.



Staged development of transit systems as described in the previous section can be achieved at the following costs:

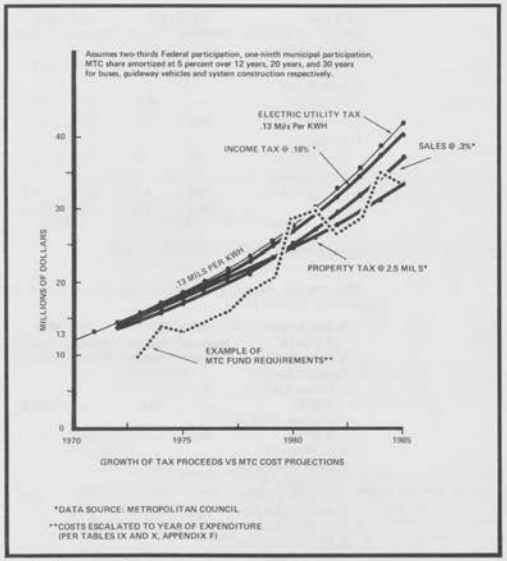
| CAPITAL COSTS[1] ($ millions) | 1973-1975 Highway | 1973-1975 Transit | 1976-1981 Highway | 1976-1981 Transit | 1982-1990 Highway | 1982-1990 Transit |
|---|---|---|---|---|---|---|
| 1. Fixed Guideway System | — | 31.4 | — | 519.7 | — | 331.7 |
| 2. Buses & Bus Equipment | — | 18.5 | — | 27.0 | — | 30.3 |
| 3. Busway System | 30.0 | — | 35.7 | — | 9.2 | — |
| 4. Preferential Bus Facilities | 7.6 | .8 | 11.6 | 1.3 | 6.8 | .8 |
| 5. Other Highway-Related Transit | 18.6 | 2.1 | 29.0 | 3.2 | 24.1 | 2.7 |
| | 56.2 | 52.8 | 76.3 | 551.2 | 40.1 | 365.5 |
| Program Totals | $109.0 | | $627.5 | | $405.6 | |

[1] Costs 1972 price levels

One possible method of allocating costs among federal, state, regional and local agencies is detailed here.

| ALLOCATION OF COSTS[1] ($ MILLIONS) | 1973-1975 Highway Program | 1973-1975 Transit Program | 1976-1981 Highway Program | 1976-1981 Transit Program | 1982-1990 Highway Program | 1982-1990 Transit Program |
|---|---|---|---|---|---|---|
| 1. Federal Programs | | | | | | |
| a. Transit (UMTA) @ 67% | — | 35.4 | — | 369.3 | — | 244.9 |
| b. Highway (FHWA) @ 70% | 39.3 | — | 53.4 | — | 28.1 | — |
| 2. State Programs | | | | | | |
| a. 50% Contribution for Capitol & U of M Stations | — | — | — | 13.0 | — | — |
| b. Highway Program | 16.9 | — | 22.9 | — | 12.0 | — |
| 3. Local Resources | | | | | | |
| a. Assume Municipal funding from Benefit Districts | — | 3.3 | — | 47.7 | — | 32.6 |
| b. MTC Capital Improvement Programs | — | 14.1 | — | 121.2 | — | 88.0 |
| | 56.2 | 52.8 | 76.3 | 551.2 | 40.1 | 365.5 |

[1] Costs 1972 price levels




**growth of tax proceeds**



On a community scale, initial funding of the major transit development program must be sufficient to carry out the first stage program, and assure its continued operation, providing for a realistic pattern of inflation in future years. The MTC would carry responsibility for all operation costs, unless the federal government begins providing operating assistance at some future date.

Direct benefits to local governments include their share of increased property valuation in districts immediately surrounding the fixed guideway station areas and retail sales improvements in the major centers and other activity areas. Thus, financial participation from municipalities served by major transit facilities would appear justifiable.

To illustrate the impact of this proposal on the region's tax structure, any of the following applied only in the Metropolitan area would produce the MTC share for capital costs plus the projected operating support:

- A 13/100-cent per kilowatt-hour electric utility tax
- A 2/10 percent income tax
- A 3/10 percent sales tax
- A 2.5 mill property tax

Each of these has sufficient yield to support the necessary capital and operating needs, and sufficient growth to offset rising costs because of inflation of 6 percent per year. These potential tax resources would finance the complete transit program through 1985 including all bus systems, the first stage fixed guideway system, and the initial phases of the second stage system.

This combination of capital facilities plus many service improvements will produce the most cost effective system, one capable of attracting 110 million riders by 1982 (compared to 55 million annually today), and one which captures the benefits of practical automation where needed.

the good life

# benefits

Many of the benefits to individuals and to the community of a modern, efficient, and balanced transportation system are readily apparent. To cite one obvious example, increased mobility will be achieved for many of the 94,000 households in 1985 without cars, and the 800,000 residents who will be too old, too young, or handicapped and who will not be able to drive.

In its transit development program the MTC has identified the major social, environmental and economic benefits that will result from implementation of its system plan, and has grouped them into three categories: increased accessibility, benefits to neighborhoods and communities, and conservation of natural resources.

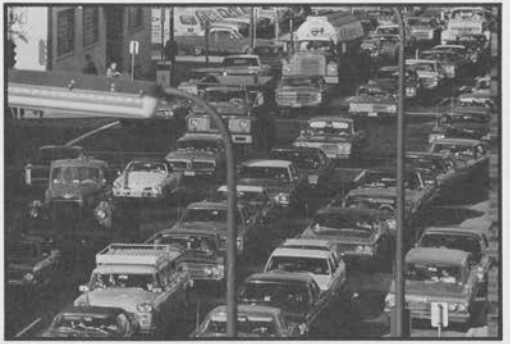
An improved transit system will IMPROVE ACCESSIBILITY for the transit-dependent resident, who will represent about one-third of the area's population.

Those who do have automobiles will, in many instances, for the first time have a choice of transportation mode. Benefits for the transit rider will include more frequent service with better equipment, shelters, and attractive and convenient transfer stations with diverse activities and services. For the traveler who continues to use his automobile, extensive use of the transit system by others means reduced highway congestion.

An important benefit will be better use of time, including reduced travel time. In addition, and less tangible, time spent riding can be used more productively than time spent driving—no one reads a newspaper or composes a letter behind the wheel of his car. Further, businesses will lose fewer productive hours of manpower when inclement weather and congestion slows or blocks commuting on highways.

Finally, and of vital importance to the cost-conscious household, commuters that forsake the region's highways and streets in favor of the transit system stand





the good life?

to save more than $800 each annually from reduction in car ownership, and lower operating, insurance and parking costs.

A modern and competitive transit system will BENEFIT NEIGHBORHOODS AND COMMUNITIES by permitting efficiencies to be gained in urban development, consistent with regional development goals.

More efficient development and better land use will generate potential savings in the cost of providing utility service, including sewer, gas, electricity and telephone, to more compact areas.

Further, a reduction is envisioned in the need for additional freeways within the I-494/694 beltway. The 1972 Metropolitan Development Guide proposes the elimination of four freeways from the 1968 Metropolitan Thoroughfare System Plan, at an estimated present-value cost saving of $242 million. In practice, this can be accomplished only by developing a viable alternative: good public rapid transit.

With greater transit patronage, traffic safety will be noticeably improved. When the MTC's planned system is fully operative, savings attributed to increased transit usage in lives, injuries and property damage will be appreciable.

CONSERVATION OF NATURAL RESOURCES is a transit benefit whose significance is growing every day. With mounting national concern over the increasing rate of petroleum consumption and shrinkage in the world's known oil reserves, significant decreases in the rate of consumption can be achieved with improved transit and the resulting decline in auto dependency.

Reduced air pollution will be especially important in core areas of fully developed major centers, particularly downtown Minneapolis and St. Paul as well as in major traffic corridors. In these areas, automobiles contribute an estimated 65 percent of the total air pollution.

Ambient noise level reductions, and a decrease in pedestrian conflict are other environmental benefits.

# your move

The benefits described here—choice of mobility, cost savings, a cleaner, more comfortable environment—can be realized only when the region is committed to a transit system plan, and its implementation is adequately financed.

Given the resources, the Metropolitan Transit Commission is committed to carrying out the major tasks that have been outlined, and which are described in greater detail in the appendix.

Be aware. Be informed. Be vocal. It's YOUR future.



# appendix: what happens now

The plan outlined in this summary has now been defined in fairly precise terms. Implementation commits the Metropolitan Transit Commission and the region to numerous specific projects within the six broad tasks that were outlined. This section includes an expanded description of those tasks, plus enumeration of many of the projects that will follow:

**TASK ONE, 1973-75: IMMEDIATE IMPROVEMENTS. It is desired mass transportation facilities be improved to carry at least 62 million people annually on public transportation in 1975. To achieve this goal, transit operators, public and private, are encouraged to adhere to the Family of Vehicles transit service concept through the use of modern express buses operating in mixed traffic, and additional local and collection service in outlying communities and in the central tributary areas. During this period, capital investments in highway-related facilities such as shelters, signs, stations, special signals, electronic control systems, plus turn-outs and park-ride lots, should average $10 million annually for the three-year program. Transit investments in buses and other mobile equipment, marketing, operating subsidies, and maintenance expenditures should not exceed $11 million annually. Such improvements should be made in accordance with the Commission's Service Standards policy.**

ACTION REQUIRED, 1973 — Conduct full-scale peak-hour bus demonstration in I-35W corridor over 12 months. In other corridors begin the addition of 100 route miles annually of peak-hour express bus service, and acquire 50 additional express buses. Continue to implement the bus improvement program, providing 60 small shelters and 500 parking spaces for park-ride use. Initiate QT service in outlying major diversified centers as justified by technical studies. Initiate or demonstrate Dial-A-Ride service where appropriate. Modify and expand local bus service and install street related facilities such as shelters and bus turnouts in six specific service areas: North Ramsey County, West suburban Hennepin County, Anoka County, St. Paul Highland Park, Minneapolis Northeast, St. Paul East side and eastern suburbs.

ACTION REQUIRED, 1974 — Continue expansion of peak-hour express bus service. Construct a bus layover center in downtown Minneapolis. Construct bus lanes in the two downtowns. Initiate a new and improved network of express bus and limited stop service, including all-day service in certain high patronage locations. Acquire 50 new express buses and 30 small circulation vehicles. Continue bus improvement program, including 43 small shelters, 14 larger neighborhood shelters, and an additional 500 park-ride spaces.

ACTION REQUIRED, 1975 — Continue expansion of peak-hour express bus network. Address a major marketing effort at the reverse commuter, emphasizing job opportunities in outlying areas. Re-orient local bus service in certain outlying areas to provide focus in the more developed outlying major diversified centers. Construct a regional station in an outlying major diversified center and two downtown transportation terminals. Construct, in cooperation with highway agencies, preferential bus treatment facilities including additional bus-metered freeways. Complete bus improvement program, including 20 small shelters, five neighborhood shelters, and 800 additional parking spaces.

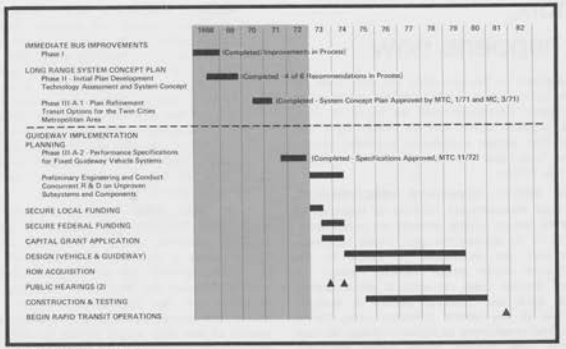
**TASK TWO, 1973: DELINEATION OF REGIONAL BACKBONE SYSTEM: The Commission will initiate the necessary economic, social, environmental and preliminary design studies to delineate the space needed (right-of-way, air space, tunnels) for the regional guideway system (fixed guideways and busways). These route and station locations will be determined through a community involvement process culminating in a public hearing. Completion of this task should permit positive orderly urban development to occur in the station areas and permit the Commission to start assembly of the necessary transit space through 1). purchase or lease of transit space (right-of-way, etc.), 2). reservation of transit space through appropriate state and federal programs, or 3). use of the official map process by the appropriate local government.**

ACTION REQUIRED, 1973 — Prepare and present to the Minnesota Legislature data supporting the MTC's program. Complete preliminary design of fixed guideway system, including preliminary engineering, economic, social and environmental studies, site planning, ridership forecast and financial plan.

**TASK THREE, 1972-90: CONSERVATION OF RESOURCES. Conservation measures should be initiated immediately, particularly in the heavily developed areas, for improving air quality and preservation of petroleum and other natural resources.**

ACTION REQUIRED — Complete modernization of bus fleet with the latest low emission features. Develop the transit systems in such a way as to encourage fewer and shorter auto trips. Development of internal transit circulation systems in the two downtowns and outlying major diversified centers, using low polluting small buses and, where feasible, automated people-mover systems. Development of contingency plans for effective use of transit and car pools during periods when shortages of petroleum products prevail.

**TASK FOUR, 1974-81: DEVELOPMENT OF THE FIRST STAGE OF THE FIXED GUIDEWAY SYSTEM. Operation of a fixed guideway fast link transit system is desired in 1981 to contribute significantly to the system performance (at least 110 million riders in 1982). Regional and local costs of such a program should not**




schedule for development

**exceed $190 million. The system should be financed on a "pay as you go" basis where possible. The system should a). make maximum use of the newest proven technology, b). be continually improved and augmented by the use of new technology and techniques as they become available, and c). meet the goals of the Commission's plan at the lowest achievable cost.**

ACTION REQUIRED — See illustration.

**TASK FIVE, 1976-81: INTERMEDIATE BUS SYSTEMS. By 1981, bus systems can be developed to carry at least 75 million people annually. During the period 1976-81, capital investments in highway-related facilities such as shelters, signs, stations, special signals, electronic control systems, planned turn-outs and loading areas for buses, and park-ride lots should average $8 million annually. Transit investments in buses and other mobile equipment, marketing, operating subsidies and additional maintenance expenditures should average $8 million annually. All major capital improvements should be compatible with plans for the fixed guideway systems.**

ACTION REQUIRED — Extensive operation of preferential bus treatment facilities on highways should begin early in this period. The annual rate for developing parking spaces should be more than double that of the 1973-75 program to accommodate an increasing number of rural and distant suburban commuters. Install regional bus terminals into major outlying centers as required. Continue installation of shelters and intermediate stations. Acquire additional bus lanes in the two downtowns as needed. Further development of QT bus service in outlying major centers should continue. Expand personalized service such as Dial-A-Ride in neighborhoods and into major diversified centers.

**TASK SIX, 1982-1990: EXPANSION OF FAMILY OF VEHICLES SYSTEM. By 1990, the transit system should carry at least 137 million riders annually. A 78-mile backbone system of fixed guideways and busways should serve the heavily populated corridors. Express buses operating in mixed traffic would continue to provide limited stop fast link service in low patronage corridors, for access to employment, cultural, and other activity areas within the corridor. A minimum of 800 route miles should be provided by these express bus services.**

ACTION REQUIRED — Review new technology for best solutions for corridors yet to receive fixed guideway or busway transit service. Perform preliminary design for these corridors. Conduct the necessary engineering, administrative and construction assignments to produce incremental additions to the system during the 1982-90 period.

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TRANSIT NEWS
Published Monthly by
Twin Cities Area Metropolitan
Transit Commission
330 Metro Square Building
St. Paul, MN 55101
Telephone (612) 227-7343

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Editor

## actions of the commission

At its regular meetings in May the Commission:

AUTHORIZED the development of specifications for new print shop equipment and the remodeling of the print shop at the Snelling garage.

REQUESTED the presentation of a plaque commending John Hammel, an MTC driver named the most courteous employee in downtown St. Paul in a contest sponsored by the Downtown Council.

AUTHORIZED Medicine Lake Lines, Inc. to adjust its fares, effective June 10, to include 5- and 10-cent zone fare increases, and to remove a discount for tokens.

RECONSIDERED an earlier decision and voted to install express-type deluxe seats on all new buses presently on order.

FIVE SPECIALLY DESIGNED bus shelters were installed on the new Hopkins Mall in May, through cooperation of the Metropolitan Transit Commission and the City of Hopkins. Posing, as a shelter was going in, were MTC Commissioner Loring Staples, who represents Suburban Hennepin County; Mayor Henry Pokorny, and Councilman Jerre Miller.

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# transit news

VOLUME 3 JUNE, 1973 NUMBER 11

# Solons assure bus upgrading

A continually expanding bus improvement was assured by the Minnesota Legislature when it acted on May 21, the final day before recessing until next January. The Minnesota Senate deferred until January, however, the question of implementation of the MTC's proposed regional rapid transit system.

By unanimous vote in the Senate and near-unanimous vote in the House of Representatives, the Legislature sent to the Governor a measure which increases the maximum property tax the MTC may levy for operating subsidies, from .97 mills to 1.45 mills. The tax is levied in the transit taxing district of the seven-county metropolitan area; generally, the urbanized portion of the region.

Proceeds of the increased levy, which will raise MTC property tax income from $5.6 million to about $8.8 million, will be used for the following purposes:

- $850,000 will be used to expand the bus system beyond present plans, including more express buses for suburbs, better crosstown service, and buses into new areas.
- $1.9 million will support increased operating deficits for the overall bus system. This permits continuation of the fare stabilization program, initiated by the Legislature and the MTC in 1971, which froze fares at their 1969 level.
- A restructured fare zone plan will be implemented, at a cost of $425,000. The plan, based on concentric circles from two downtowns, removes inequities in the present fare zone structure, and results in decreased fares for many riders.

Another bill which passed in the House directed the MTC to begin implementing its regional, fixed guideway rapid transit system. The Senate, however, did not consider that bill, thereby holding the matter over until next January.

MTC Chairman Doug Kelm said he was pleased with this spring's legislative outcome, and will look forward to working with the Senate on a regional transit plan early next year.

**MTC BUS DRIVER** John Hammel, left, was named the most courteous employee in downtown St. Paul in a contest sponsored by the Downtown Council. A bus driver for 26 years, Hammel was given a $500 gift certificate at the awards dinner at the St. Paul Hilton Hotel. Shown with him at the dinner are his wife Laura and Charles Croft, Director of Operations and Transportation for the MTC Transit Operating Division.

# transit around the world

BOLOGNA, ITALY - With a population of 500,000 people and 200,000 cars, Bologna is facing crucial traffic problems. In an attempt to curb the use of private cars in the city, Bologna has initiated free bus rides during morning and evening rush hours, enlarged pedestrian walkways in the center city and has banned private motor traffic in some city streets.

The free bus rides during rush hours were started in April. By 1975 the system will be expanded to provide free transportation all day. Among the new bus passengers are many suburbanites who leave their cars near outlying bus stops and take the bus into the city.

Meanwhile, the price of the season ticket good for a month's rides on all of Bologna's 46 bus lines at any time has been reduced from $20 to $5. The ticket is transferable and therefore can be used by different members of a family or group.

If 20 per cent of Bologna's citizens switch from auto to bus transportation, the City estimates the community will save at least $25 million yearly. This money can then be used for other goods and services or for paying higher municipal taxes.

A similar experiment with free municipal transportation was tried in Rome for two brief periods last year. The number of bus riders increased as many persons who normally walked short distances took the free buses. But few motorists left their cars at home to take the bus and the traffic jams continued. Rome has since dropped the free ride program.

Advocates of the no-fare system argued that the experiment never had a fair chance in Rome, because the debt-ridden city had not bought enough buses to insure regular, reliable service.

# HHH, MTC combine for diesel fuel

Twin Cities bus service is no longer threatened by the possibility of empty fuel tanks, according to Doug Kelm, Chairman of the Metropolitan Transit Commission.

Word came from the office of Sen. Hubert Humphrey, that the MTC's supplier, American Oil Company (Amoco), was persuaded to furnish more than 5 million gallons of diesel fuel over the next year to fully meet the Commission's requirements.

Amoco, the only bidder on a diesel fuel contract awarded in May, earlier had specified a maximum delivery of 3.8 million gallons, at a price of 14.9 cents a gallon.

Unless an additional 1.2 million gallons were found, Kelm said, weekend, night and possible mid-day service was threatened.

MTC officials, Sen. Humphrey's staff, and several departments of the federal government prevailed upon the supplier to furnish the needed fuel, according to Chairman Kelm.

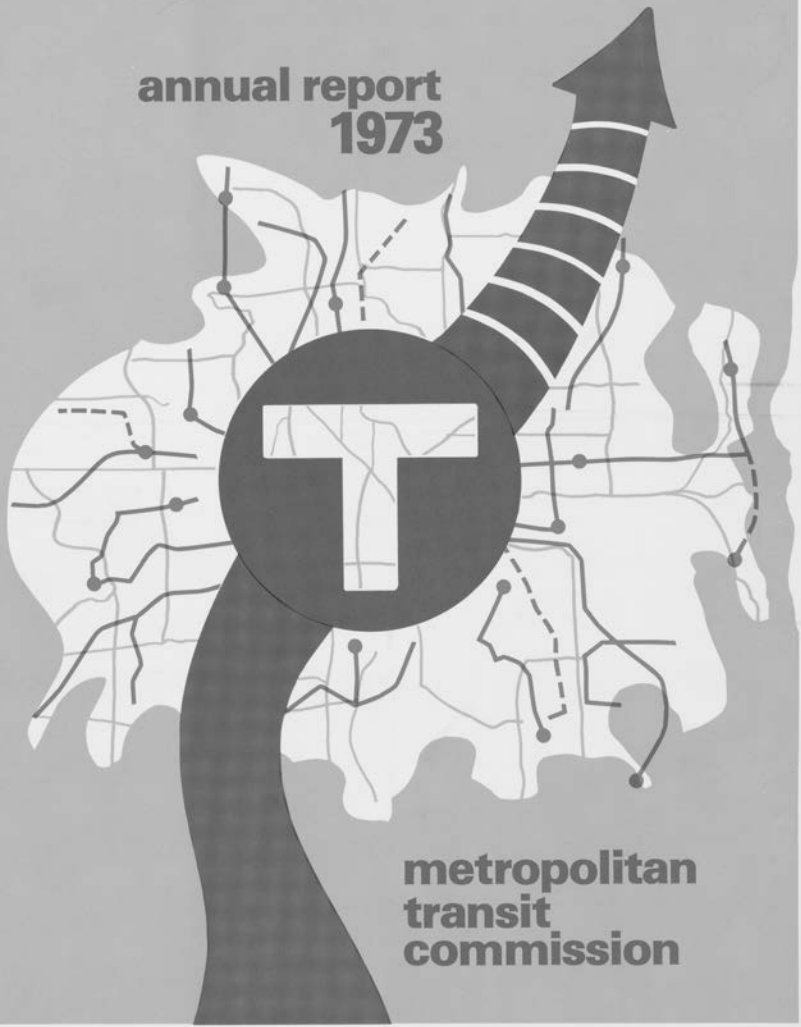
"Since we acquired the bus system nearly three years ago, we have substantially increased service," Kelm said. "We intend to accelerate our improvement program during the coming year.

"Moreover, automobile travel is threatened by gasoline shortages, raising the possibility of even heavier demands on the bus system. Under these circumstances it would be utterly intolerable for a region's bus system to have to cut back service."

Kelm said the MTC is grateful to the federal officials involved as well as the supplier for working out a satisfactory solution.

**THE I-35W URBAN CORRIDOR** freeway demonstration is progressing, with construction underway for special ramps which will allow preferential freeway access for buses. Last December the Metropolitan Transit Commission began 14 new express routes from south Minneapolis and South suburbs as the first phase of the federally-funded experiment to improve the efficiency of a congested freeway. Other parties in the demonstration, besides the MTC, are Hennepin County, the Minnesota Highway Department and the Metropolitan Council.

# annual report 1973



metropolitan transit commission

chairman's letter 1
operations 2
planning 4
marketing and public information 7
financial 8
balance sheets 10
staff and commission 16

# contents

# chairman's letter

# chairman's letter 1

TO: The Honorable Wendell Anderson, Governor of Minnesota; the Minnesota Legislature; government officials; interested citizens:

In the six short years since the Metropolitan Transit Commission was created, transit in the Twin Cities metropolitan area has achieved a certain respectability that had long been forgotten.

Not since the streetcar era of nearly three decades ago have people of all descriptions been discovering public transportation, using it, and enjoying it, as in the last couple of years. Transit has experienced a rebirth, it has proved again as it did at the turn of the century that it can have a positive effect on how we live, how we move about, how our community grows. The early '70's have been an exciting era for us at the MTC.

But even while we were taking over a struggling bus company and making the most of it, something else of equal importance was going on: plans were taking shape for a new and comprehensive transit system that would be responsive to the area's future needs, into the next century.

The two processes were really closely related, for only through improving an inadequate bus system could transit prove its worthiness in the first place. And only from actual operating experience, with actual customers reflecting a diverse list of actual needs and desires, can future plans be laid that have anything more than theoretical value.

The planning process has been a long one, properly so, in view of the overwhelming importance of correct decisions. And now we in the Twin Cities have an opportunity that many other cities have missed: we can avoid becoming a crowded, noisy, choking, unmanageable metropolis; we can preserve all that is good about living here.

Polls, public hearings, surveys, studies, and decisions by our leaders at every level of our government have made clear that residents of this metropolitan area want a rational, efficient, controlled pattern of growth that will maintain this as the greatest urban area in the country. Nineteen seventy-three found the MTC ready with the transit plan that will help promote that pattern of regional development. The House of Representatives has already concurred. We are confident that the Senate and the Governor of the State of Minnesota will do the same. It is time for transportation action, and the MTC has established its fitness to lead the way.

Doug Kelm

Doug Kelm
Chairman

During fiscal year 1973, which ended June 30, 1973, the MTC continued its short-range capital improvement program. With two-thirds funding supplied by the U.S. Department of Transportation, Urban Mass Transportation Administration, 222 new buses joined the fleet, bringing to 710 the total number of buses in operation. The new buses brought a level of comfort and convenience previously unknown to transit patrons. And more buses are to come. A contract has been awarded for an additional 296 buses, to conclude the MTC's initial fleet renewal program. When delivery is complete in spring of 1974, the average age of MTC buses will have been reduced to about five years, compared to more than 15 years when public ownership began in 1970.

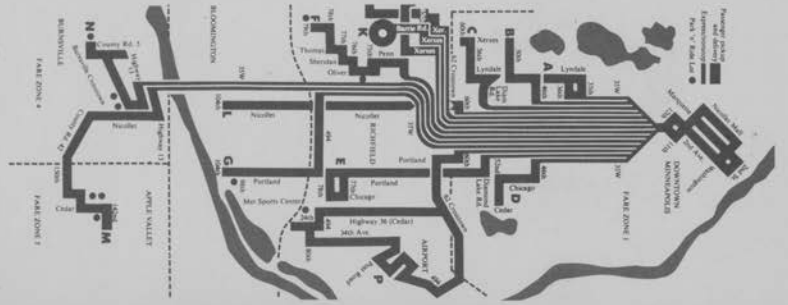
Under public ownership, the fleet has gotten not only newer, but larger, making possible several important service expansions. In December the first phase of the federally-sponsored I-35W express bus service went into operation. Some 57 buses make local stops in south Minneapolis and suburban communities in Hennepin and Dakota Counties, then enter the freeway and whisk commuters downtown as speedily as private automobiles. Later this year, MTC buses will be given preferential access to the freeway on metered ramps, reducing the bus rider's commuting time even further.

Other major service expansions were in Anoka, Washington and Ramsey Counties. Altogether, by the end of 1973 there were 930 miles of bus routes, compared to 521 at the time of public acquisition in 1970.

Also by the end of 1973 there was a transfer agreement with most suburban operators permitting full-value transfers, further expanding the availability of transit.

The MTC's shelter program continued in 1973. To date 55 enclosed, heated shelters are in place, with another 100 to follow. Even the old, familiar bus stop itself is getting a new look. Several thousand bus stops now sport the "T" logo. Streets served by more than one route also have route numbers posted. At key transfer points special information signs show schedules and route maps.








Fourteen express bus routes serve the I-35W corridor, site of a federally-funded demonstration to test the potential of high quality express service. Freeway metering, which takes effect this winter, will provide preferential access to the freeway for buses. Ridership on the express routes started out high, and has climbed higher.

A bus would be only a piece of hardware without an operator to keep it on the road or a mechanic to care for it in the shops. During 1973 many new employees came "on board" at the MTC/Transit Operating Division. To help them better understand their jobs and better serve the public, training programs have undergone considerable revision. A new bus driver is now given six weeks of instruction both in the classroom and behind the wheel.

An employee news magazine, "On the Line," and a suggestion system were also introduced during 1973.

But the real story of operating progress during 1973 is told through the ridership figures. A total of 56,651,869 passenger trips were made during 1973, up from 53 million in 1972. A pattern of increasing patronage has been clearly established, in sharp contrast to ridership declines that had persisted for a quarter-century before public ownership.

A special success story was the I-35W service. In the first six months of operation, passenger volume grew 70 per cent to 20,000 per week at the end of June. Even better, ridership has nearly doubled on routes in Anoka County formerly operated by a private firm.

The success pattern established this past year, and the two that preceded it, clearly indicate transit's ability to attract riders, and with continuing improvements, to do bigger and better things for area residents in years to come.

With the Metropolitan Council-approved system concept plan as a foundation, the MTC adopted in December, 1972, its "Transit Development Program: 1973-1990," which mapped a strategy for timely development of transit facilities in the Twin Cities area. This program, which will serve as the guide in the implementation of the "family of vehicles" concept, identifies short-range, intermediate, and long-range actions required to provide a high level of transit service through the coming years.

Steady increases in patronage form the basis for present and proposed transit improvements. The estimated ridership increase of 3 million for calendar-year 1973 confirms program forecasts associated with bus system expansion. The need for expanded transit service was emphasized by the MTC's work with the Minnesota Pollution Control Agency on plans for reducing levels of air pollution. In addition, potential energy shortages mean that the MTC will need to carry increased numbers of riders who find that gasoline for their automobiles is no longer readily available or only at prices which make public transit an even better bargain than it is today.

Faced with these immediate needs, short-range programs covering the next few years focus on improvement and expansion of the existing bus system. In FY 1973, innovative "route-ridership" studies were undertaken in parts of Anoka, Hennepin, and Ramsey Counties. These studies seek ways to upgrade bus operations through improved and additional routes and services, coupled with needed highway improvements, including bus turnouts, waiting shelters, and other fixed facilities to provide a high level of transit service for the residents of these areas.



Both short- and long-range transit service plans were developed for the area west of Minneapolis, in which the Minnesota Highway Department is undertaking a major study of alternatives for construction of proposed I-394. Some short-range transit recommendations have already been implemented through the establishment of a crosstown route in St. Louis Park and upgrading of services leading into downtown Minneapolis.

The MTC developed an intermediate plan for the region calling for continued bus expansion, so that by 1981 buses will carry at least 75 million riders annually. Between 1976 and 1981, capital investments in highway-related facilities such as shelters, signs, stations, special signals, electronic control systems, park-ride lots and bus turnouts and loading areas should average $8 million a year. All capital improvements will be planned for compatibility with plans for a fixed guideway system.

An electrified fixed guideway system with supplementary transit services is the focus of the MTC's long-range program. During 1973 significant progress toward such a system was made by the MTC and other agencies working cooperatively with the Commission.

The Commission established performance specifications to detail the vehicle system for the fixed guideway backbone, and expects to begin preliminary engineering in 1974. Key features in the specifications include full automation, off-line stations, short intervals between vehicles, small vehicles carrying up to 40 seated passengers. A study now underway will analyze the feasibility of using low-cost tunneling techniques in the Twin Cities area, capitalizing on the presence of extensive areas of soft sandstone overlaid with a hard limestone cap.



The major diversified centers concept of the Metropolitan Council forms the basis for the MTC's regional transit plan. Under the major centers concept, new development of all types will tend to concentrate in regional "centers," many of which are already taking form. Such a development pattern affords greater efficiency, checks urban sprawl, and contributes positively to the diverse life styles of the region.

Minneapolis completed its Central Area People Mover Study, recommending an automated circulation/distribution vehicle system coordinated with the regional fixed guideway system and the downtown skyway system. St. Paul also completed its Central area Circulation and Distribution Study, which includes several proposals to improve mobility in the downtown area. Nearing completion is the University Area Transit Study to determine the need for, and feasibility of, construction of a circulation system to connect the three Twin Cities campuses and surrounding areas.

Implementation of the varied recommendations from studies completed or in process will provide improved transit service to all the residents of the Twin Cities area — both those dependent upon transit and those who desire an alternative to the private automobile. Findings of the studies, changed economic conditions, growing concern for pollution, and increasing energy shortages will also require updating and revision of the MTC's Transit Development Program during the coming year.

## 6 planning T planning T planning


Downtown centers of Minneapolis and St. Paul, with their highly concentrated activities, pose unique challenges for transportation systems. Internal circulation and distribution — the ability to get around quickly, easily, and inexpensively — is of great importance within these and other activity centers. Minibus routes are today's answer to internal circulation. Both cities have developed plans for deploying new technology in the future.

Planning and implementing improved transit requires thorough marketing efforts. Its success depends on an interested and informed public, able to express its needs effectively. Many steps were taken toward these goals in FY 1973.

As in past years, an advertising campaign was designed to promote improvements as they occurred. Newspaper and radio ads told potential patrons about new service and how they could benefit from it. Particularly effective were direct mail campaigns, which permitted the MTC to reach directly all households near new bus routes. A "free ride" coupon was used to encourage these potential patrons to try transit.

One of the MTC's knowledgeable information operators was frequently stationed at busy locations throughout the metropolitan area. With the help of a transportable booth, she explained individually to hundreds of people each day how they might serve their travel needs with transit.

Establishing a partnership between the public and private sectors, the MTC worked with major corporate employers to seek ways to encourage employees to use transit. Solutions ranged from employee surveys to special displays to establishment of new routes. One employer offered all of its employees one free ride.

Other public information programs, not tied specifically to bus service improvements, were vital toward creating greater awareness of transportation problems and their possible solutions.

A speakers' bureau, led by Chairman Doug Kelm and including Commissioners and staff, made 118 public presentations. Most were centered on an automatic slide show which dramatically and visually depicted the MTC's short- and long-range plans. Neighborhood associations, political clubs, business and civic groups, and school classes were among the frequent audiences.

Specifically directed at school children was a pilot project conducted with the cooperation of the Minneapolis School District, that involved development of a social studies unit on urban transportation. Over the next year the MTC will encourage other school districts to incorporate the unit into their junior and senior high programs.

On the grade school level, the MTC stepped up an extensive field trip program, including tours of the Transit Operating Division, which achieved "high marks" from pupils and teachers.

The Citizens Advisory Committee on Transit, made up of 41 citizens from throughout the metropolitan area, continued to meet monthly and advise the Commission from a general public perspective on timely transit issues. The Committee spent about half the year studying possible ridership incentives that would attract auto commuters. Its report was issued in July.

## marketing & public information 7

The primary source of outside revenue for the MTC is an ad valorem property tax levied upon the Metropolitan Transit Taxing District, generally the urbanized portion of the seven-county metropolitan area. For FY 1973 the mill levy for the Transit Commission was 1.3 mills, consisting of .93 mills ($5,235,813) for general operations and .37 mills ($2,068,242) for debt service on outstanding obligations.

During 1973 the Commission received $724,126 in federal grants to assist its activities; consisting of $157,674 for technical studies, $104,928 for the I-35W express service demonstration, and $461,524 for capital expenditures. Miscellaneous revenue, primarily from investment income and sale of non-expendable equipment, was $385,861.

Revenue from operation of the transit system amounted to $14,008,550, the largest single source of income for the Commission.

In September, 1972 the Commission sold $4.8 million of General Obligation Certificates of Indebtedness, maturing February 1, 1974 through 1982, at a net average interest cost of 3.85 per cent. This provided the necessary funds for the MTC local share of capital costs for new buses, new support and maintenance equipment, and renovation of facilities, for approximately a year.

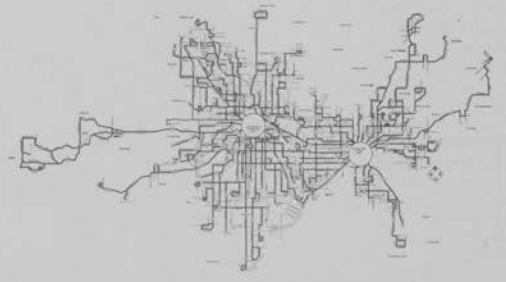
Total expenditures of the Commission during 1973 were $25,087,382 consisting of $537,326 for planning and administrative costs of the governmental division, $243,145 for technical consultants and other agency costs, $1,879,561 for debt redemption and financing costs on long-term indebtedness, $1,035,843 for capital improvement expenditures, $255,067 write-off for uncollectable property tax receipts, $195,401 for supported programs and operations, including assistance to privately-owned suburban carriers, and $20,941,039 for operating expenses of the bus system (including $1,716,021 depreciation on capital equipment and facilities).

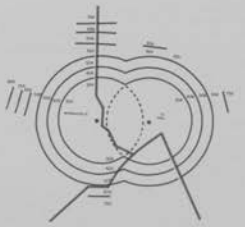
The 1973 Legislature authorized the Commission to levy up to 1.45 mills for general operations, in addition to the amount required for debt service. The MTC levy for collection in 1974 will be for the maximum authorization. During FY 1974 the Commission intends to implement a new fare zone plan based on a concentric circles concept, which is anticipated to cost approximately $490,000 per year in reduced revenue. The 1974 Capital Budget provides for delivery of up to 346 new transit buses during the year for system expansion and fleet renewal. Also, the budget anticipates completion of the acquisition of Twin City Lines, Inc., now pending before the Minnesota Supreme Court, and possible takeover of one of the privately-owned suburban carriers. The Commission sold $5.6 million of additional General Obligation Certificates of Indebtedness on October 3, 1973, to help finance the capital program for 1974.

At the end of 1973 the Commission had 20 employees in the governmental division and 1323 employees in the Transit Operating Division.









The MTC's present bus system now includes 930 miles of routes, nearly double the figure when buses were under private ownership. Taking effect Jan. 1, 1974, is a new fare zone plan, based on circles equidistant from the centers of downtown Minneapolis and St. Paul.

# balance sheet

**June 30, 1973**
**with comparative total figures for June 30, 1972**

| | June 30, 1973 | | | | | | | June 30, 1972 |
|---|---|---|---|---|---|---|---|---|
| | General fund | Debt service fund | Capital fund | Transit Operating Division | General fixed assets | General long-term debt | Total | Total |
| **Assets:** | | | | | | | | |
| Cash | $ 3,244 | 380 | 1,801 | 183,282 | — | — | 188,707 | 334,271 |
| U.S. Government securities and certificates of deposit, at cost (approximates market) | — | 454,948 | 1,494,662 | — | — | — | 1,949,610 | 2,117,717 |
| Accounts receivable | 1,112 | — | — | 140,441 | — | — | 141,553 | 165,776 |
| Property tax receivable | 4,370,521 | 1,726,442 | — | — | — | — | 6,096,963 | 4,764,544 |
| Reserve for uncollectible Property tax | (104,716) | (41,365) | — | — | — | — | (146,081) | — |
| Due from Federal Government | 262,309 | — | 523,893 | — | — | — | 786,202 | 6,122,053 |
| Due from other funds | 364 | — | 1,173,540 | 841,999 | — | — | 2,015,903 | 947,337 |
| Accrued interest receivable | 89 | 3,686 | 76,841 | — | — | — | 80,616 | 55,916 |
| Materials and supplies, at cost (first-in, first-out) | — | — | — | 263,636 | — | — | 263,636 | 213,862 |
| Prepaid expenses | 1,103 | — | — | 135,389 | — | — | 136,492 | 48,702 |
| Transportation properties, equipment, furniture, fixtures, etc. (less accumulated depreciation for Transit Operating Division) (note 5) | — | — | — | 18,015,273 | 58,542 | — | 18,073,815 | 10,636,895 |
| Capital projects in progress (note 6) | — | — | 843,805 | — | — | — | 843,805 | 9,206,982 |
| Assets on deposit with Minnesota State Treasurer | 51,437 | — | — | — | — | — | 51,437 | — |
| Assets held by fiscal agents or in escrow (note 2): | | | | | | | | |
| Cash | — | — | 500 | — | — | — | 500 | 692 |
| U.S. Government securities and certificate of deposit, at cost (approximates market) | — | — | 1,628,965 | — | — | — | 1,628,965 | 1,641,184 |
| Amount to be provided for retirement of debt (note 4) | — | — | — | — | — | 8,700,000 | 8,700,000 | 5,400,000 |
| Total assets | $ 4,585,463 | 2,144,091 | 5,744,007 | 19,580,020 | 58,542 | 8,700,000 | 40,812,123 | 41,655,931 |
| **Liabilities, reserves and fund balances:** | | | | | | | | |
| Certificates of indebtedness payable (note 4) | $ — | 1,500,000 | — | — | — | 8,700,000 | 10,200,000 | 6,100,000 |
| Accounts payable | 106,174 | — | 81,102 | 543,436 | — | — | 730,712 | 783,970 |
| Due to other funds | 2,011,289 | — | 4,614 | — | — | — | 2,015,903 | 947,337 |
| Accrued expenses | 30,368 | 237,479 | 142,565 | 968,110 | — | — | 1,378,522 | 10,149,181 |
| Excess of pension liabilities over fund assets (note 8) | — | — | — | 2,965,738 | — | — | 2,965,738 | 3,054,645 |
| Reserves: | | | | | | | | |
| For appeal on condemnation award (note 2) | — | — | 1,627,500 | — | — | — | 1,627,500 | 1,627,500 |
| For injury and damage claims | — | — | — | 213,388 | — | — | 213,388 | 234,953 |
| For sick leave | — | — | — | 140,000 | — | — | 140,000 | 140,000 |
| Fund balances: | | | | | | | | |
| Invested in capital projects in progress (note 6) | — | — | 843,805 | — | — | — | 843,805 | 9,206,982 |
| Invested in general fixed assets | — | — | — | — | 58,542 | — | 58,542 | 164,174 |
| Appropriated for existing capital projects | — | — | — | — | — | — | — | 202,563 |
| Appropriated for general research programs | — | — | — | — | — | — | — | 98,133 |
| Appropriated for debt service | — | 406,612 | — | — | — | — | 406,612 | 261,847 |
| Federal grants and commission contributions to Transit Operating Division, less applicable amortization (note 7) | — | — | — | 14,749,348 | — | — | 14,749,348 | 7,117,889 |
| Appropriated for excess condemnation award (note 2) | — | — | 1,510,000 | — | — | — | 1,510,000 | — |
| Accumulated net deficit from capital projects | — | — | — | — | — | — | — | (1,712,601) |
| Unappropriated fund balances | 2,437,632 | — | 1,534,421 | — | — | — | 3,972,053 | 3,279,358 |
| Total liabilities, reserves and fund balances | $ 4,585,463 | 2,144,091 | 5,744,007 | 19,580,020 | 58,542 | 8,700,000 | 40,812,123 | 41,655,931 |

See accompanying notes to financial statements.

## general fund

**Statement of Revenues and Expenditures and Changes in Fund Balance Year ended June 30, 1973 with comparative figures for 1972**

| | 1973 | 1972 |
|---|---|---|
| Revenues: | | |
| Property tax | $ 5,235,813 | 4,983,364 |
| MTA wheelage tax | 203 | 98,641 |
| Interest income | 16,061 | 115,276 |
| Federal grants | 262,602 | 323,389 |
| Contributions by other governmental units | 19,990 | 23,163 |
| Sundry revenues | 881 | 13,604 |
| Transfer from Debt Service Fund | — | 730,094 |
| Total revenues | 5,535,550 | 6,287,531 |
| Expenditures: | | |
| Personal services | 328,267 | 292,306 |
| Administrative overhead | 103,491 | 85,602 |
| Travel and expenses | 39,163 | 40,536 |
| Professional services — general | 66,405 | 40,791 |
| Professional services — projects | 243,145 | 420,730 |
| Supported programs | 296,405 | 81,840 |
| Uncollectible property tax | 194,661 | — |
| Miscellaneous | (500) | 2,911 |
| Transfer to Debt Service Fund | — | 41,321 |
| Transfer to Transit Operating Division | 5,204,372 | 2,940,396 |
| Total expenditures | 6,475,409 | 3,946,433 |
| Excess of revenues over expenditures (expenditures over revenues) | (939,859) | 2,341,098 |
| Fund balance at beginning of year | 3,377,491 | 1,036,393 |
| Total fund balance at end of year | 2,437,632 | 3,377,491 |
| Appropriated for general research programs | — | 98,133 |
| Unappropriated fund balance at end of year | $ 2,437,632 | 3,279,358 |

## debt service fund

**Statement of Revenues and Expenditures and Changes in Fund Balance Year ended June 30, 1973 with comparative figures for 1972**

| | 1973 | 1972 |
|---|---|---|
| Revenues: | | |
| Proceeds from issuance of general obligation certificates of indebtedness, $6,100,000 less discount allowance $28,060 | $ — | 6,071,940 |
| Proceeds from issuance of temporary notes | — | 6,000,000 |
| Property tax | 2,068,242 | 1,082,593 |
| Interest income | 16,990 | 13,614 |
| Transfer from General Fund | — | 41,321 |
| Total revenues | 2,085,232 | 13,209,468 |
| Expenditures: | | |
| Principal payment — certificates of indebtedness | — | 6,000,000 |
| Principal payment — temporary notes | — | 6,000,000 |
| Principal payment — general obligation certificates (note 4) | 1,500,000 | 700,000 |
| Incidental cost of issuance of bonds | 10,044 | 27,666 |
| Interest expense | 369,517 | 274,474 |
| Uncollectible property taxes | 60,906 | — |
| Transfer to General Fund | — | 730,094 |
| Total expenditures | 1,940,467 | 13,732,234 |
| Excess of revenues over expenditures (expenditures over revenues) | 144,765 | (522,766) |
| Fund balance at beginning of year | 261,847 | 784,613 |
| Fund balance at end of year | $ 406,612 | 261,847 |



See accompanying notes to financial statements.

## capital fund

**Statement of Revenues and Expenditures and Changes in Fund Balance Year ended June 30, 1973 with comparative figures for 1972**

| | 1973 | 1972 |
|---|---|---|
| Revenues: | | |
| Interest income | $ 277,467 | 99,642 |
| Proceeds from issuance of certificates of indebtedness, $4,800,000 less bond discount $2,958 (note 4) | 4,797,042 | — |
| Federal Grants | 461,524 | 5,958,381 |
| Disposition of buses and automobiles | 45,954 | 11,748 |
| Miscellaneous income | 8,315 | 41,916 |
| Total revenues | 5,590,302 | 6,111,687 |
| Expenditures: | | |
| Small bus system | 117,432 | — |
| Acquisition and improvement: | | |
| Acquisition of Twin City Lines, Inc. — condemnation costs (note 2) | 126,948 | 15,268 |
| Public information program | 50,917 | 57,317 |
| Major maintenance equipment | 233,256 | 42,901 |
| Garage improvement program | 10,293 | 166,991 |
| Passenger waiting shelters | 54,248 | 91,126 |
| Bus system improvements: | | |
| Bus fleet renewal program | 54,084 | 8,650,466 |
| Passenger waiting shelters | 53,900 | — |
| Service and maintenance equipment | 274,366 | 143 |
| Garage modification | 23,443 | — |
| Public information | 8,905 | — |
| Pollution control equipment | 11,377 | — |
| Transit Operating Division capital expenditures | 16,674 | 28,300 |
| Total expenditures | 1,035,843 | 9,252,512 |
| Excess of revenues over expenditures (expenditures over revenues) | 4,554,459 | (3,140,825) |
| Fund balance at beginning of year | (1,510,038) | 1,630,787 |
| Total fund balance (deficit) at end of year | 3,044,421 | (1,510,038) |
| Appropriated for excess condemnation award (note 2) | 1,510,000 | — |
| Appropriated for existing capital projects | — | 202,563 |
| Unappropriated fund balance (deficit) at end of year | $ 1,534,421 | (1,712,601) |

## transit operating division

**Statement of Operations and Changes in Fund Balance Year ended June 30, 1973 with comparative figures for 1972**

| | 1973 | 1972 |
|---|---|---|
| Operating revenues: | | |
| Passenger revenues | $ 13,070,862 | 13,276,582 |
| Charter and contract revenues | 717,163 | 708,131 |
| Advertising and other revenues | 220,525 | 201,395 |
| Total operating revenues | 14,008,550 | 14,186,108 |
| Operating expenses: | | |
| Equipment maintenance and garage | 3,132,072 | 3,009,133 |
| Transportation | 11,531,644 | 9,924,969 |
| Traffic and advertising | 513,951 | 429,035 |
| Insurance and safety | 469,084 | 445,898 |
| Administration and general | 2,890,138 | 2,379,504 |
| Operating taxes | 688,129 | 504,860 |
| Depreciation | 1,716,021 | 1,084,547 |
| Total operating expenses | 20,941,039 | 17,777,946 |
| Operating deficit | (6,932,489) | (3,591,838) |
| Transfer from General Fund to subsidize 1971 deficit | — | 350,680 |
| Fare stabilization subsidy from General Fund | 5,204,372 | 2,589,716 |
| Amortization of Federal capital grants and commission capital contributions (note 7) | 1,627,113 | 999,863 |
| Special operating subsidies: | | |
| 35W Urban Corridor Demonstration | 101,004 | — |
| Federal demonstration for airport express | — | 2,259 |
| | — | 350,680 |
| Fund balance at beginning of year | — | (350,680) |
| Fund balance at end of year | $ — | — |



See accompanying notes to financial statements.

## Notes to Financial Statements

**June 30, 1973**

**(1) Summary of Significant Accounting Policies of the Twin Cities Area Metropolitan Transit Commission (MTC)**

**MTC Financial Structure** — The financial structure of MTC consists of four funds and two groups of accounts: (1) General Fund — to account for general tax revenues and general expenses, (2) Debt Service Fund — to account for debt service on long-term borrowing, (3) Capital Fund — to account for capital program expenditures, (4) Transit Operating Division — an enterprise fund to account for operations of the bus system, (5) General Long-term Debt — to record outstanding long-term indebtedness, and (6) General Fixed Assets — to record non-operating capital assets held at cost.

**Federal Grants** — The MTC receives concurrence from the Urban Mass Transportation Administration (UMTA), U. S. Department of Transportation, for all federal government grants, but UMTA requires support for all expenditures from MTC prior to the release of funds. Therefore, MTC's policy is to record UMTA's portion of the expenditure as accrued revenue receivable at the time final commitment is made for specific expenditures.

**Capital Projects in Progress** — Until completion, projects are recorded in the capital fund as Capital Projects in Progress, and as Investments in Capital Projects in Progress. Upon completion such expenditures are transferred to (1) the Transit Operating Division where they are capitalized in transportation property accounts or (2) the General Fixed Asset Group of accounts (see notes 5 and 6).

**Property and Equipment** — The Transit Operating Division, accounting on an enterprise fund basis, carries its land, buildings, buses and equipment at cost and provides for depreciation on a straight-line basis at rates which are sufficient to prorate the cost over their estimated useful lives. Major additions and betterments are charged to the property account while replacements, maintenance and repairs which do not improve or extend the life of the respective assets are expensed currently.

**Federal Capital Grants and Capital Contributions to TOD** — The terms of the Urban Mass Transportation grants to MTC for acquiring the assets of Twin City Lines, Inc. and making capital improvement to the system prohibit MTC from recovering the cost of tangible assets so acquired from passenger revenues. Accordingly, the amount of the applicable grant and the related MTC contribution is being amortized to operations in amounts equal to depreciation on transportation properties acquired by the use of those funds, less the amount of pension fund payments assumed to apply to reduction of the pension liability assumed (see notes 7 and 8).

**Operating Subsidies** — The MTC authorized the transfer of funds from the general fund to the Transit Operating Division (TOD) in the amount necessary to offset operating losses incurred by TOD.

**(2) Transit Operations Acquired**

On September 18, 1970, the MTC acquired the assets and assumed certain liabilities of Twin City Lines, Inc. by condemnation. Twin City Lines, Inc. and the MTC appealed the initial award of $6,510,000 and on October 11, 1972 a jury of the District Court of Hennepin County, Minnesota awarded $10,136,700 to Twin City Lines, Inc. At the trial the judge directed the jury not to consider offsets to the gross value, as the condemnation commissioners had done, for pension fund liability and other obligations assumed by the MTC upon takeover. This decision has been appealed by the MTC to the Minnesota Supreme Court. Upon takeover, three-fourths of the original award was paid to Twin City Lines, Inc. and one-fourth ($1,627,500) was placed in escrow pending the outcome of the appeal. Subsequent to the latest decision by the court, the MTC has appropriated approximately one-third of the additional award or $1,510,000 (two-thirds to be received from Federal grants) pending the outcome of the appeal to the Minnesota Supreme Court.

The Transit Operating Division (TOD) was formed by MTC for the purpose of conducting transit operations. Pending the final outcome of the appeal, the assets acquired and the liabilities assumed have been recorded in the accounts based upon the Condemnation Commissioners' findings. Should the amounts be materially increased or decreased as a result of the appeal, the financial statements of the Transit Operating Division will be restated to give retroactive effect to such change.

**(3) Property Tax Revenues**

Minnesota Statutes, Chapter 473A, as amended, provides that the MTC may levy upon all taxable property within the metropolitan transit taxing district as defined therein, a property tax for general purposes of the transit commission. During 1973 MTC levied a direct ad valorem tax of .93 mills or $5,235,813 for general operations.

**(4) Financing of Transit Capital Program**

Since January, 1970, the MTC has received approval of three federal capital grants from the Urban Mass Transportation Administration of the U.S. Department of Transportation. The three grants — providing for the small bus circulation system (QT) in downtown Minneapolis, the acquisition of Twin City Lines, Inc., and six years of capital improvements to the bus system — are for a total of $27,980,283, over the period 1970-1976. This provides up to two-thirds of a capital program during that period with an estimated total cost of $41,970,425. The balance of this amount, $13,990,142, is to be financed over the six-year period from local sources, but not from revenues obtained from use of the transportation properties.

On September 28, 1971, the Commission sold $6,100,000 of general obligation certificates of indebtedness dated October 1, 1971, at a net average interest cost of approximately 4.28%. Interest is payable semi-annually beginning August 1, 1972, and the certificates mature serially on February 1, 1973 through 1985.

On August 23, 1972, the Commission sold an additional $4,800,000 of general obligation certificates of indebtedness dated September 1, 1972, maturing serially on February 1, 1974 through 1982, with a net average annual interest cost of approximately 3.84%.

In 1972, for collection in 1973, the MTC levied upon all taxable property in the transit taxing district as of January 1, 1973, a direct ad valorem tax of $2,068,242 for bonded debt (.37 mills). This is being paid into separate sinking funds established to pay the principal of and interest on the certificates, and covers the August 1, 1973, and February 1, 1974, interest payments, and the maturities due February 1, 1974 in an amount of $1,500,000.

At present three applications for additional federal capital grants have been submitted to UMTA and are pending approval.

**(5) Transportation Properties, Equipment, Furniture, Fixtures, etc.**

Transportation properties, equipment, furniture, fixtures, etc. consisted of the following at June 30, 1973:

| | Transit Operating Division | General Fixed Assets | Total |
|---|---|---|---|
| Land and buildings used in transit operations | $ 3,926,278 | — | 3,926,278 |
| Motor bus equipment | 16,646,412 | 10,347 | 16,656,759 |
| Other equipment, furniture, fixtures, etc. | 774,923 | 46,598 | 821,521 |
| Leasehold improvements | — | 1,597 | 1,597 |
| Total | 21,347,613 | 58,542 | 21,406,155 |
| Accumulated depreciation | 3,332,340 | — | 3,332,340 |
| | $18,015,273 | 58,542 | 18,073,815 |

**(6) Capital Projects in Progress**

Capital projects in progress at June 30 consisted of the following:

| | 1973 | 1972 |
|---|---|---|
| Small bus system | $ — | 2,936 |
| TCL acquisition | — | 15,266 |
| Public information program | — | 44,226 |
| Bus fleet renewal | — | 8,815,124 |
| Bus stop signs | 45,367 | 33,220 |
| Passenger waiting shelters | 199,274 | 91,126 |
| Major maintenance equipment | 395,437 | 9,648 |
| Garage modifications | 200,727 | 156,991 |
| Accounting equipment | — | 28,300 |
| Auto fleet renewal | — | 143 |
| | $ 843,805 | 9,206,982 |

**(7) Federal Capital Grants and Commissions Capital Contributions to Transit Operating Division**

Reconciliation of Federal capital grants and commission capital contributions to the Transit Operating Division, less applicable amortization is as follows:

| | 1973 | 1972 |
|---|---|---|
| Balance at beginning of year | $ 7,117,889 | 4,553,842 |
| Add — contributions | 9,279,699 | 3,622,678 |
| Deduct transfers to Capital Fund for sale | (21,127) | (58,759) |
| | 16,376,461 | 8,117,752 |
| Less amortization for year | 1,627,113 | 999,863 |
| Balance at end of year | $14,749,348 | 7,117,889 |

**(8) Pension Plan**

The Transit Operating Division maintains a retirement plan covering substantially all of its employees, which was assumed upon acquisition of Twin City Lines, Inc. As of January 1, 1973, the date of the most recent actuarial study, the unfunded liability of the plan for services prior to that date approximated $10,539,327 ($8,475,804 in 1972). The increase in the unfunded liability is a result of increased pension benefits granted. Net pension expense charged to operations in the year ended June 30, 1973 amounted to $1,272,715 ($1,095,033 in 1972), and additional payments of $88,907 ($84,684 in 1972) were charged to the liability previously recorded. Contributions provide for the payment of the normal cost and amortization of the unfunded liability over a period of approximately 19 years.

At the time of takeover by the MTC, a liability of $3,259,533 was recorded as a portion of the acquisition cost based upon the condemnation commissioners' findings, although at January 1, 1971, the date of the actuarial study nearest acquisition, the unfunded liability was $9,111,934.



PEAT, MARWICK, MITCHELL & CO.
CERTIFIED PUBLIC ACCOUNTANTS
1700 IDS CENTER
MINNEAPOLIS, MINNESOTA 55402

Twin Cities Area Metropolitan Transit Commission
St. Paul, Minnesota:

We have examined the balance sheets of the various funds and of the Transit Operating Division of the Twin Cities Area Metropolitan Transit Commission as of June 30, 1973 and the related statements of revenues and expenditures and changes in fund balance and the statement of operations and changes in fund balance for the Transit Operating Division for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

The assets of the Transit Operating Division were acquired from Twin City Lines, Inc., on September 18, 1970 by condemnation. The amount awarded has been distributed to the various accounts included in the accompanying financial statements based upon the Condemnation Commissioners' findings; however, the amount awarded has been appealed by Twin City Lines, Inc. and the Twin Cities Area Metropolitan Transit Commission and the final outcome is not determinable at this time (see note 2 of notes to financial statements).

In our opinion, subject to the final outcome of the matter set forth in the preceding paragraph, such financial statements present fairly the financial position of the various funds and of the Transit Operating Division of the Twin Cities Area Metropolitan Transit Commission at June 30, 1973 and the revenues and expenditures and changes in fund balances (and the results of operations and changes in fund balance for the Transit Operating Division) for the year then ended in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

August 24, 1973

Peat, Marwick, Mitchell & Co.

| | |
|---|---|
| Camille D. Andre | Executive Director |
| Darol R. Cridlebaugh | Director of Finance and Administration |
| John R. Jamieson | Director of Transit Development |
| Robert S. Shiff | Director of Operations and Regulations |
| Harry W. Springer | General Manager, Transit Operating Division |
| David J. Therkelsen | Public Information Officer |





Doug Kelm

Leonard Levine Walter Saxum

Loring Staples, Jr. Ed Hjermstad

Leonard Thiel Dean Fenner

Glenn G.C. Olson Bruce Nawrocki

metropolitan transit commission
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55101

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minneapolis, minn.

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## actions of the commission

At its Nov. 21 and Dec. 5 meetings, the Commission:

AUTHORIZED MTC participation in establishing a ten cent fare zone in downtown St. Paul to link the central business district with the state capitol complex and with the Harriet Island parking area. The MTC, the State Department of Administration and the City of St. Paul will share equally the operating losses of the plan up to $1,444 each.

AMENDED the agreement with the City of St. Paul for operation of the QT shuttle bus system to extend the current operation of the QT until March 31, 1974.

PROVIDED financial assistance up to $1,000 for the operation of transit service from the Carver County area to Minneapolis and the University of Minnesota. The agreement with the Jonathan Association will be for a six months trial period.

APPROVED a change in the transfer policy to permit same-way, "stop-and-shop" transfers. Previously, transfers were issued so passengers could use intersecting bus routes, but they could not continue a trip on the same route they started on.

CONTINUED a policy permitting transfers between MTC buses and privately-owned suburban operators, including South and West St. Paul Transit Corp., which had not participated in the exchange program previously.

EXTENDED for two years the contract of ATE Management Co. to operate the MTC Transit Operating Division. ATE was originally engaged just prior to public acquisition of the bus system in 1970.

AUTHORIZED Valley Transit, Stillwater, to continue operating service to Croixwood Homes, Stillwater, for an additional six months.




TRANSIT NEWS
Published Monthly by
Twin Cities Area Metropolitan
Transit Commission
330 Metro Square Building
St. Paul, MN 55101
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# transit news

VOLUME 4 DECEMBER, 1973 NUMBER 5


## ENERGY: There will be bus service

With the nation's attention focused on the now-critical energy shortage, the role of public transit is of exceeding importance. In the Twin Cities, several immediate questions have been raised: Is there enough fuel to run buses, or will bus service have to be cut back? What can the MTC do as it becomes more difficult or impossible to make certain trips by automobile? What is the longer-term outlook for the Twin Cities area?

To the most urgent question, whether buses will continue to run, MTC Chairman Doug Kelm says emphatically, yes. By invoking provisions of the mandatory fuel allocation program of the federal government, and with cooperation of state authorities if needed, the MTC will find ways to obtain sufficient quantities of diesel fuel for this winter.

Fuel will be sought not only to sustain service at present levels, but to support service expansions that will become necessary as more and more people turn to bus riding.

Limited equipment availability means that major service expansions cannot be made until the first of 296 new buses now on order begin arriving in March. In the meantime, emergency measures such as adjusting schedules so that buses carry maximum loads–even though that may mean more standees–may be taken. Various other emergency steps are now being discussed with the Minnesota Legislature.

The nearly 300 new buses now on order were originally intended to replace aging equipment, but for at least the duration of the energy crisis they will be used to expand the system. Consequently, when delivery is complete the fleet will have grown nearly 50 per cent, to more than a thousand buses. That growth will, in turn, permit further service expansion.

A new fare zone plan, availability of commuter tickets, an experimental 10-cent fare in downtown St. Paul and the Capitol Complex, and a highly visible advertising program will all have been implemented by Jan. 1, 1974 and are likely to increase bus ridership.

The MTC is working cooperatively with about 40 of the largest Twin Cities employers in "Operation BUS-iness," a major effort to encourage corporate employees to come to work by bus.

These short-term measures are designed to ease the burden of the energy shortage for many Twin Cities residents. Chairman Kelm acknowledged they are by no means a solution to the energy problem. That solution can only come, he said, with a permanent commitment to reduce the area's dependence on the private automobile; that commitment, in turn, implies a decision to finance and construct a dramatically improved system of public transportation.

# Changes in operations start Jan. 1

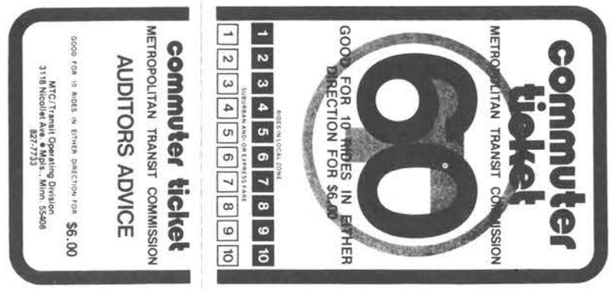
A little late for Christmas, but in time for the white sales, the MTC is offering Twin Cities bus riders several new "presents" by Jan. 1, 1974.

First, and no surprise, is a new fare zone plan, based on concentric circles equidistant from the centers of the two downtowns (presently, zones are based on municipal boundaries). Though most passengers will not be affected, about 10 per cent of the fares will go down. The most significant reduction will be for trips between Minneapolis and St. Paul, which up to now have required a one-way double-fare of 60 cents but which will cost 40 cents as of New Years' Day.

Persons who travel to outlying areas requiring higher fares and odd amounts of change will benefit from the second new feature, introduction of a commuter ticket. Instead of paying a single fare of, say, 60 cents each time, a rider will be able to buy a ticket good for 10 rides, at—using the same example—a price of $6. The MTC has experimented for the past year with commuter tickets in the I-35W corridor. Though they were not widely used by close-in riders with lower fares, more than half of those commuting longer distances chose the convenience of the commuter ticket.

A third feature will permit bus riders to get off the bus, shop, run errands or transact business for an hour, and get back on the bus with no additional fare payment. Persons wishing to use this "stop-and-shop" feature may simply request a transfer, which up until now has been good only for intersecting bus routes.

Finally, and this item did arrive before Christmas, a special 10-cent fare zone now links downtown St. Paul, the Capitol complex and parking areas to the north and south. For a 120-day trial period, persons may ride Route 5, 7 and 16 within the zone for a dime. The zone is defined by Como Avenue and Rice Street on the north, and Water Street just south of Harriet Island on the south.




**A SAMPLE COMMUTER TICKET**
*Available in January for outer fare zones*

# transit around the world

**CALIFORNIA'S BART SYSTEM**
*Environmentally, a boon to Bay Area*

OAKLAND, CALIF. - With just a little more than a year's operating experience behind them, officials of BART (Bay Area Rapid Transit) are attempting to evaluate and project the environmental impact of this, the first new regional transit system installed in any U.S. city in 60 years. Some of their observations are reported here.

BART will have a significant effect on the environment in four areas: energy consumption, air pollution, noise production, and its impact on land development. BART offers substantial advantages or savings over the automobile in all but one of these areas—noise production—and even here, though a well-muffled automobile will produce slightly less noise than a BART train, the train is less noisy than freeway traffic.

BART scores high in making efficient use of the available energy supply. The system reports an energy consumption rate of 1,130 British Thermal Units (BTU's) per passenger mile, compared to 10,000 BTU's for an automobile averaging 1.3 passengers. BART's total consumption of energy is about three-tenths of one percent of the Bay Area total; by way of comparison, it is estimated that the automobile accounts for approximately one-fourth of the total energy demand.

In addition to the noise comparisons cited earlier, BART officials have determined that at night, when two- and three-car trains are running, the noise level is slightly higher than that of a passing automobile. Interior noise is comparable to that of a busy office, and well below the level inside a commercial jet.

BART's ultimate impact on air pollution has not been determined. Projections indicate, however, that 30 per cent of its passengers will be people who formerly made the same trips by automobile. These passengers will drive a total of 550,000 fewer miles per day, and will generate 12.6 fewer tons of pollutants each day. Since smog is formed by a chemical reaction at certain critical levels of emissions, these 12.6 tons on some days may make the difference between smog and no smog.

Of considerable importance is BART's impact on the development and redevelopment of the communities it serves. Downtown San Francisco is being revitalized, and new signs of life are evident in downtown Oakland, Berkeley and other cities on the line. Resurrecting cities and major centers as attractive and pleasant places to live and work is the first and most important step in stemming the sprawl that daily engulfs open space, aggravating energy shortages.

# Transit of top priority

Public awareness of the need for and benefits of mass transportation in the Twin Cities area remains very high, according to a recent survey of St. Paul and Minneapolis residents.

The random sampling of 510 persons in Minneapolis and 369 persons in St. Paul, all age 12 and older, was conducted by Media Statistics, Inc., for several local broadcast stations in July of this year. The persons were asked, "Thinking of all the things which you, yourself, consider important, what would you say are the most important problems or needs of the Minneapolis/St. Paul area at this time?"

In both cities the largest single response, by a sizeable margin, was the category, "public transit; streets/roads/freeways; traffic." In Minneapolis 49.8 per cent of the respondents were most concerned about this area, with pollution and environmental concerns a distant second, 24.7 per cent. In St. Paul 33.8 per cent placed highest priority on the public transit category; crime and law enforcement was second with 23.0 per cent.

This survey reflects a consistent pattern of local residents perceiving transit as the highest priority problem now facing the community. Other polls taken during the past several years have shown public willingness to use transit if certain conditions are present in the system.

Heated passenger waiting shelters, waiting time of no more than 15 minutes, and transferring only once during a ride were all listed as top priorities for transit use by suburban residents polled in February 1972. The Center for Urban and Regional Affairs (CURA) at the University of Minnesota questioned persons from 1,100 households throughout the Twin Cities suburban area to determine the potential bus ridership in these areas. They wanted to learn what level of service was necessary to induce suburban residents to use transit on a regular basis.

Results of the survey indicated that one suburban family in five was willing to dispose of at least one automobile, given adequate transit. Only 18 per cent of those contacted considered the fare to be of paramount importance. Most, in fact, stated they would pay 50 cents for a one way trip, a cost in excess of the actual fare in most areas surveyed.

Similar priorities were demonstrated in a survey conducted by Simpson & Curtin, transportation consultants for the MTC, in September of 1968. Designed to measure the attitudes of randomly selected people in the metropolitan area where transit was available, the survey results pointed out the importance of bus service close to both home and work, with one to two blocks the most acceptable distance. Walking distance required and the number of transfers involved during a trip largely influenced these respondent's decision to use public transit.

A survey taken today, with greatly increased concern for fuel shortages, would probably show even greater interest in public transit as a necessary alternative to the automobile.

## Spokesman says

# Shortage spurs transit demand

In a recent interview the transit industry's principal spokesman, Dr. William J. Ronan, president of the Institute for Rapid Transit, addressed himself to questions that are being raised as the worsening energy crisis put more pressure on public transportation. Here is an excerpt:

"Q. Some people fear that the Urban Mass Transportation Administration, with its comparatively limited capital funds of around $1 billion a year, will have to put this money increasingly into short-term solutions—buses—at the expense of such long-term solutions as urban fixed-rail systems."

"A. I don't think all of this means that UMTA has to stop the funding of urgently-needed mass transit projects. What it does mean is that for new systems in particular the application of criteria will be very stringent.

"Since this is not a short-term crisis, but is going to be with us from now on, and because the solutions probably lie in the area of more electrical energy, we certainly should not be postponing coming to agreement on what needs to be done in the great metropolitan areas in order to secure ourselves for the long future.

"So we're going to have to come up with more in the way of energy resources, and this again puts emphasis on public transport, because the kind of energy we are looking to is basically electrical energy.

"The core city areas of so many of our metropolitan areas have been under a threat from the urban spread and the automobile; now the existence of these rail systems is going to greatly advantage these core cities because it's going to mean that people who live there can get to work, it's a good place for business headquarters, you will not be dependent on the peripatetic nature of the automobile when and if rationing comes.

"The impact of the crisis, therefore, will be to highlight the advantages of mass transportation generally and rail transportation in particular. One of the reasons for this is the greater efficiency in terms of energy use by these facilities. The hauling of people by rail is a lot less expensive, in terms of energy consumption, than by private automobile or by bus. The same is also true of railways with respect to freight movement, for that matter."




TRANSIT NEWS
Published Monthly by
Twin Cities Area Metropolitan
Transit Commission
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January 1974


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# transit news

VOLUME 4 JANUARY, 1974 NUMBER 6


## actions

At its December 19th, January 2nd and January 16th meetings, the Metropolitan Transit Commission:

AMENDED an agreement with the 3M Company to provide for six months additional operation of the subscription bus service between the 3M Center and the White Bear area, with the MTC's 50 per cent share of the operating losses not to exceed $2,350 during the six months extension.

RATIFIED the action of the Regulations Committee granting temporary authority to extend Minneapolis Route 15 easterly to serve the Veterans Administration hospital, the GSA building, the airport and Control Data Corporation.

APPROVED a financial assistance contract with South-West St. Paul Transit Company, for a period up to three months, commencing on January 1, 1974, which will pay for all or a part of current transit operating losses of the company as considered necessary or desirable by the MTC.

AUTHORIZED a change in operating regulations to permit senior citizens who begin a trip during the free-fare period to complete that trip, even if a transfer after the 3 p.m. cut-off is involved. Previously transfers were not issued to persons over 65 riding free.

AUTHORIZED participation with Dakota and Washington Counties, the Minnesota Highway Department and local municipalities in a route ridership improvement project covering northern Dakota County and southern Washington County.

## what's going on...


**...all around the world? A scorecard of transit activity elsewhere is inside.**

# transit around the world

Cities all over the world are relying as never before on new rapid transit systems to contribute to a better urban life. This trend will accelerate as fuel shortages are aggravated. At least 34 North American cities have planned, constructed or are constructing new rapid transit systems, in addition to scores of cities in other parts of the world. What follows is a capsule summary of transit development activity in other urban areas.

**ATLANTA**—A 56-mile rapid transit system, with 40 stations, is under construction. Twenty miles are elevated, 27 at grade, and nine subway. About 65 per cent of the system is adjacent to and on existing rail rights-of-way. A supplemental busway component of 14 miles will feed rapid transit lines. Vehicles will operate 24 hours a day at intervals as short as 90 seconds. The system will include parking lots for 34,000 cars.

**AUSTIN**—A rail rapid route is in the planning stage.

**BALTIMORE**—The first 28-mile phase of a 71-mile rapid transit system is to be completed by 1980. First phase includes five miles of subway.

**BOSTON**—Massachusetts Bay Transportation Authority is extending rapid transit routes by 50 miles and has ordered additional equipment. A Dover Street Transportation Facilities Complex in South Boston will be an integral part of the expansion of mass transit to the South Shore.

**BUFFALO**—The Niagara Frontier Transportation Authority has received a $1.2 million grant for preliminary design of the proposed rapid transit line in the Buffalo-Amherst (N.Y.) corridor. The 12.7 mile line will carry 117,000 riders on a typical weekday in 1975. Nineteen stations are planned.

**CHICAGO**—Fourteen miles of rapid transit line is under construction, in addition to the 90 miles in service. Antiquated and obsolete Loop elevated structures may ultimately be removed in favor of a new subway system. Land has been reserved to extend a rapid transit line to O'Hare Field in the median strip of the expressway. The Dan Ryan rapid transit line may be extended to serve more communities.

**CLEVELAND**—A study has recommended the construction of additional rapid transit by 1990 to supplement 19 miles already in service. In some corridors rail right-of-way is available.

**DAYTON**—A mix of tram-like light rail and electric buses is proposed.

**DENVER**—Financing for an 89-mile fixed guideway system with 68 stations has been approved for completion in 1983. It will serve heavily-traveled areas of Denver, Boulder and Greeley. A bus improvement program will accompany construction of the new system.

**DETROIT**—An 81-mile rapid transit system, fed by 12 miles of personal rapid transit, is proposed.

**EDMONTON**—A light rail system of 10 miles has been suggested for this city of 281,000. It would consist of three routes with 37 stations.

**HAMILTON**—An urban transportation policy set forth by Ontario Premier William Davis calls for installation of three rapid transit routes, with an initial length of 17 miles.

**HARTFORD**—The city has a proposal to build, maintain and operate a monorail transportation system in downtown Hartford. Three two-car trains would circle a short, elevated downtown loop, stopping at six stations and making the trip every 11 minutes. Each two-car unit would carry 45 seated passengers. Twenty-five-foot, electrically powered cars would operate on rubber tires along the 9,500-foot route.

**HONOLULU**—A 22-mile fixed-guideway system using small, 36-passenger vehicles has been proposed. Most of the system will be elevated. System will be fed by buses.

**HOUSTON**—In addition to bus fleet renewal and service expansions, Houston officials are considering a system using fixed guideways and some busways.

**KANSAS CITY**—Consultants are completing the first year of a 2½ year mass transit study; recommendation is due in mid-1975.

**LOS ANGELES**—Mayor Tom Bradley has begun a program for early implementation of a large-scale rapid transit system. Los Angeles is experimenting with exclusive bus lanes in some corridors and reserving the right-of-way for future rapid transit.

**MEXICO CITY**—Twenty-six miles of rubber-tired subway has been constructed, with new extensions planned.

**MIAMI**—Greater Miami is moving to construct a high-speed intermediate-size electric transit system with funds that were overwhelmingly approved in a November, 1972 election. The Dade County transportation department has already begun the final engineering and environmental impact study of the 59-mile aerial system, which has been in the planning stage since 1969.

**MONTREAL**—Under construction is 29 miles of rapid transit which will be added to the present 16-mile system. Rubber-tired vehicles operate on the system.

**MORGANTOWN**—A 2.2-mile people-mover system has been constructed on the University of West Virginia campus and is being tested. Small vehicles carrying up to 21 passengers operate at speeds up to 30 miles an hour.

**NEW YORK CITY**—For the 1970's New York committed $1 billion for mass transit expansion, primarily the construction of 12 new subway lines.

**OTTAWA**—Premier William Davis' urban transportation policy calls for construction of an 11.4-mile rapid transit system.

**PHILADELPHIA**—A new line to the airport and a high-speed route to northeast Philadelphia are among the planned expansions of the rapid transit system. New equipment and thousands of park-and-ride spaces are also planned. The highly successful Lindenwold Line may be extended.

**PITTSBURGH**—New service and refurbished vehicles have been scheduled for South Hills light rail transit lines. The rubber-tired "Skybus" has completed its demonstration phases and may be expanded to a 21-mile system, and later to 76 miles.

**ROCHESTER**—A 19-mile light rail transit system has been proposed, in addition to four express highways, with buses in mixed traffic on three of them and possibly an exclusive busway on the fourth.

**ST. LOUIS**—Some 86 miles of rapid transit has been proposed, to be supplemented with feeder buses.

**SAN DIEGO**—A 35-mile system links Solana Beach, Imperial Beach to downtown.

**SAN FRANCISCO**—Total completion of the BART system is expected in 1974. In addition, the San Francisco Municipal Railway has ordered 80 new light rail vehicles and is completing construction of light rail lines.

**SEATTLE**—A short monorail constructed for the 1962 World's Fair and an automated circulation system, that would interface with a future fixed-guideway system, is under study.

**SHAKER HEIGHTS**—An extension to the 13.2 mile rapid transit system is being studied.

**TORONTO**—The Toronto Transit Commission operates a family of vehicles which includes trams, trolley-buses, diesel buses and an extensive subway rapid transit system. In 1972 the system carried a total of 346 million people, in a city with a population of 2 million. Plans call for extension of the rapid transit system.

**VANCOUVER**—A two-stage expansion is proposed, initially with expansion of the trolleybus system and later subway construction in heavily-traveled corridors.

**WASHINGTON, D.C.**—The city's 98-mile rapid transit system is under construction, with initial services scheduled for 1974.

## World cities boast modern rapid transit

Many cities in Europe, Asia and other parts of the world have always regarded efficient public transit systems as essential to every-day life. Here is a partial listing of cities other than those in North America that have modern transit systems:

Buenos Aires, Argentina; Rio de Janeiro, Brazil; Sao Paulo, Brazil; Caracas, Venezuela; Peking and Hong Kong, China; Bombay and New Delhi, India; Kitakyushu, Sendai and Yokohama, all in Japan; Melbourne, Australia, Auckland, New Zealand; Graz, Linz and Vienna, all in Austria; Antwerp, Brussels, Gent and Liege, all in Belgium.

Sofia, Bulgaria; Copenhagen, Denmark; Cairo, Egypt; Helsinki, Finland; St. Etienne and Paris, France; the German cities of Bielefeld, Bochum-Gelsenkirchen, Bergisch Gladbach, Braunschweig, Bremen, Dusseldorf, Frankfurt, Freiburg-im-Breisgau, Hamburg, Hannover, Karlsruhe, Koln, Mainz, Munchen, Nurnberg, Rhein-Ruhr-Statbahn, Rhein-Sieg Statbahn, Stuttgart.

London and Tyneside, Great Britain; Budapest, Hungary; Milano and Torino, Italy; Amsterdam, Den Haag and Rotterdam, all Netherlands; Oslo, Norway; Poznan, Poland; Lisbon, Portugal; Capetown and Johannesburg, South Africa; Barcelona, Spain; Gotoberg and Stockholm, Sweden; Bern, Geneva and Zurich, all in Switzerland; Beograd, Yugoslavia.

In the U.S.S.R., Baku, Dnepropetrovsk, Leningrad, Nabereshnyje Tscheiny, Moscow, Karaganda, Temir-Tau, Angarsk, Biysk, Izhevsk, Karpinsk, Khabarovsk, Komsomolsk, Krasnoturinsk, Osinnikia, Perm, Saratov, Ufa, Volgograd.

## NEW DIRECTION

*(Continued from page 1)*

The basic framework was established by the Metropolitan Planning Commission and expanded upon by its successor, the Metropolitan Council which must be given the necessary implementation tools. The Council decision to further promote the development of "Major Diversified Centers" has much to recommend it: the economical and efficient provision of the entire range of municipal services; the reduction in the number and length of trips, the easy availability of a full set of private and public facilities; and the exciting potential for providing a diversity of urban designs and life styles among a variety of such centers. And it's important to note that we have more than enough vacant land within the urbanized area to accommodate all the population and commercial growth expected to occur during the rest of this century. The completion of the Council's work in providing a development framework is extremely urgent and must be expedited.

The Metropolitan Transit Commission must be authorized to refine its past studies, provide a transit master plan, and move on to implementation. It is practically self-evident that a properly structured transit system can be a major tool in structuring the metropolitan area. If, for example, we build a system with a fine network of fixed guideways to try to compete with the automobile on its own terms, we may provide a good replacement service, but we will continue to promote an urban structure that is failing in its mission. The MTC has developed a transit plan designed to promote the development and redevelopment of major centers throughout our region. In its details, it certainly can be improved and refined; but we cannot now fall prey to timidity or procrastination. These are at best luxuries we cannot afford. It is time for decision.

Artistotle observed that "people came together in the city to survive; they stayed on to live the good life." It may be that man will once again come to the city to survive. Let us make certain that in this urban region at least he will also live the "good life."

## STATEMENT *(Continued from Page 2)*

worked out to meet immediate transportation problems anticipated as a result of petroleum shortages and rationing. Second, both agencies recognize the need to expand bus service in advance of the operation of a future regional rapid transit system and will work toward accelerating expansions.

Finally, both agencies will work to keep the process of long-range implementation moving expeditiously. "Now that the field of transit alternatives seems to be narrowing," the joint statement says, the MTC should perform detailed technical planning, with general policy direction from the Council.

The statement cites the Council's announced intentions to establish a more detailed development framework, building upon the earlier "major diversified centers" concept, and private studies documenting the need to control urban sprawl.




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# transit news

VOLUME 4 FEBRUARY, 1974 NUMBER 7


# new direction: a time for decision

by
Doug Kelm

Reprinted from St. Paul Dispatch-Pioneer Press

How ironic that the automobile forces us at last to confront the real problem of our cities: the gradual destruction of an urban structure which once provided the "good life". The unfortunate petroleum shortage, long predicted, may therefore be, in the long run, a blessing in disguise, though it results in some temporary hardship.

The automobile, with its highways and freeways, was supposed to provide unlimited mobility. What it has provided is scattered development requiring more vehicular trips, involving steadily increasing distances. Walking trips and bike trips have nearly disappeared. We drive many miles to shop, to work, to worship, and for recreation. Many areas do not even have sidewalks. Households have not one car, but several. What was once called the "love affair" with the automobile has turned into a shotgun wedding. With scattered development has come increased costs to extend roads, sewer, water, electricity, telephone, transit, and other services. Duplication of facilities such as schools, hospitals, and shopping centers has also resulted in a diversion of financial resources that could be better spent to provide citizens better housing, jobs, and a decent environment. The end product is an urban structure requiring infinite mobility, undermining completely the true accessibility to the good life our urban society could and should provide.

Some perspective on the impact of the automobile can be gained by examination of comparative data:

In 1972, 3.2 million babies were born in the United States, but we produced 9.2 million cars! There were 0.4 million immigrants, but 1.6 million auto imports! There were 2.0 million deaths, but 7.0 million cars junked! One is struck with the immensity of our national expenditure to feed, care for, and dispose of this mechanical creature. Moreover, since World War II, this country has spent $230,000,000,000 on highways.

The auto has brought with it some blessings, and will continue to do so. But it is also the principal user of urban land, the principal polluter of air, the principal consumer of petroleum, the principal cause of accidental death, and the principal source of deficit in our balance of payments.

Just a few years ago, Wilbur Smith and Associates prepared a report for the Automoblle Manufacturers Association asserting that additional urban expressways would reduce congestion because people, business, and industry could spread farther and farther out. They also said that "revitalizing of downtown areas largely depends on better accommodation of the motor car." Time has shown the shortsightedness of that view. Today we no longer ask the city to come to terms with the automobile and the highway. Indeed, it appears that the auto and highway may at last be forced to come to terms with the city!

One wishes that we were finally coming to grips with the questions of urban structure through a rational deliberative process. Such is not the case, and this is the irony to which we earlier alluded. We are taking a new, and hopefully bold, look at ourselves because we have muddled our way into an energy crisis which simply will not go away . . . a crisis that is in no small part caused by the automobile and our insistence on using it whenever and wherever we please, no matter the consequence to the community as a whole.

Perhaps this insistence is symptomatic of an attitude prevalent in America. While our "rugged individualism" has kept us free and, at times, made us great, it has also contributed to the dilemma in which we find ourselves. The question raised today is whether Americans are sufficiently possessed of a spirit of cooperation and sacrifice to adequately meet this crisis and in the future accept some limitations on their freedom of choice.

I remain confident that in this region the people sufficiently understand the nature of the problem and have the will and spirit to chart a new course. We are also fortunate that here the disease has not progressed so far that only radical surgery can save the patient. Greater controls may be necessary, not only to conserve energy, but to obtain rational land use and protection of our environment.

Nonetheless, in a free society, more sophisticated policies than regulatory devices are possible and preferable. We must begin now to apply inducements such as tax incentives, modernized building codes, pollution taxes, land banks, incentive zoning, reasonable mortgage money for rehabilitation, and grants for creative urban design experiments. These examples are hardly a comprehensive list of possible inducements. But whether by regulation or by inducement, such programs are futile without a development framework that will result in an urban area that really works.

*(Continued on Page 4)*

## actions of the commission

At its Feb. 6 meeting the Metropolitan Transit Commission:

AWARDED a contract for $29,700 to Globe Ticket Co., Philadelphia, for printing of 45 million transfers. Globe was low among three responsive bidders.

PROVIDED for a six-month extension of the St. Louis Park Crosstown QT, with an expected deficit of $34,000, to be shared by the MTC and the City of St. Louis Park. The small-bus service was continued despite disappointing patronage, because recent technical studies have recommended a more extensive version of the route in the near future.

EXTENDED Minneapolis Route 35N from its former terminal at Savage to the City of Prior Lake for a six month trial period.

RECEIVED final reports on route-ridership improvement projects for Hennepin, Anoka and Ramsey Counties. In each case, recommendations call for significant service expansions, many phased to occur over the next year.

APPROVED a contract with Setter, Leach and Lindstrom, Inc., architect/engineers, to provide professional services for the renovation of employee areas at three garages. Renovation and refurnishing of the garages will be accomplished with assistance through the Urban Mass Transportation Administration's capital assistance program.

# Low-cost tunneling realistic for future transit system

Locating underground a significant portion of the Twin Cities' regional transit system is feasible, according to a low-cost tunneling study prepared for the Metropolitan Transit Commission.

Performed by a team of geologists and civil engineers from the University of Minnesota's Department of Mineral and Civil Engineering, the study concluded that, because of the region's unique underground geology, 33 miles of underground tunnels can be constructed at a cost of $45 million less than earlier work by the MTC, which contemplated only 6 miles of subway.

A sandstone layer lying beneath a limestone cap is highly conducive to tunneling, the report said. This geology eliminates some safety and bracing problems and makes it unnecessary to have complex machinery in a tunnel while removing material beneath the limestone roof. As a consequence, costs are a fraction of those normally associated with underground construction. In effect, a transit system can be built with substantially more subway than earlier contemplated, yet at a reduced total cost.

Increased underground mileage and reduced overall transit system cost is attributed by the report to the lower costs of underground construction, less right-of-way acquisition, and less surface route grading, landscaping and aerial construction.

Placing substantial portions of a transit system underground will produce operational, environmental and economic benefits. The system would have greater immunity to weather conditions. There would be minimal intrusion into residential and commercial areas, during both construction and operation. And while costs would be lower, adjacent land values would rise, expanding the local tax base.

MTC Chairman Doug Kelm stressed the significance of the study team's findings in the area of neighborhood impact and community aesthetics. "Literally hundreds of community meetings have convinced us beyond all doubt that, to the extent possible, this area's transit system should be underground," Kelm said.

The two principal investigators on the study were Drs. Charles Nelson and Donald Yardley of the University of Minnesota. The MTC conducted the study in cooperation with the City of Minneapolis, City of St. Paul, and the Minnesota Highway Department.

# Statement stresses need for decision

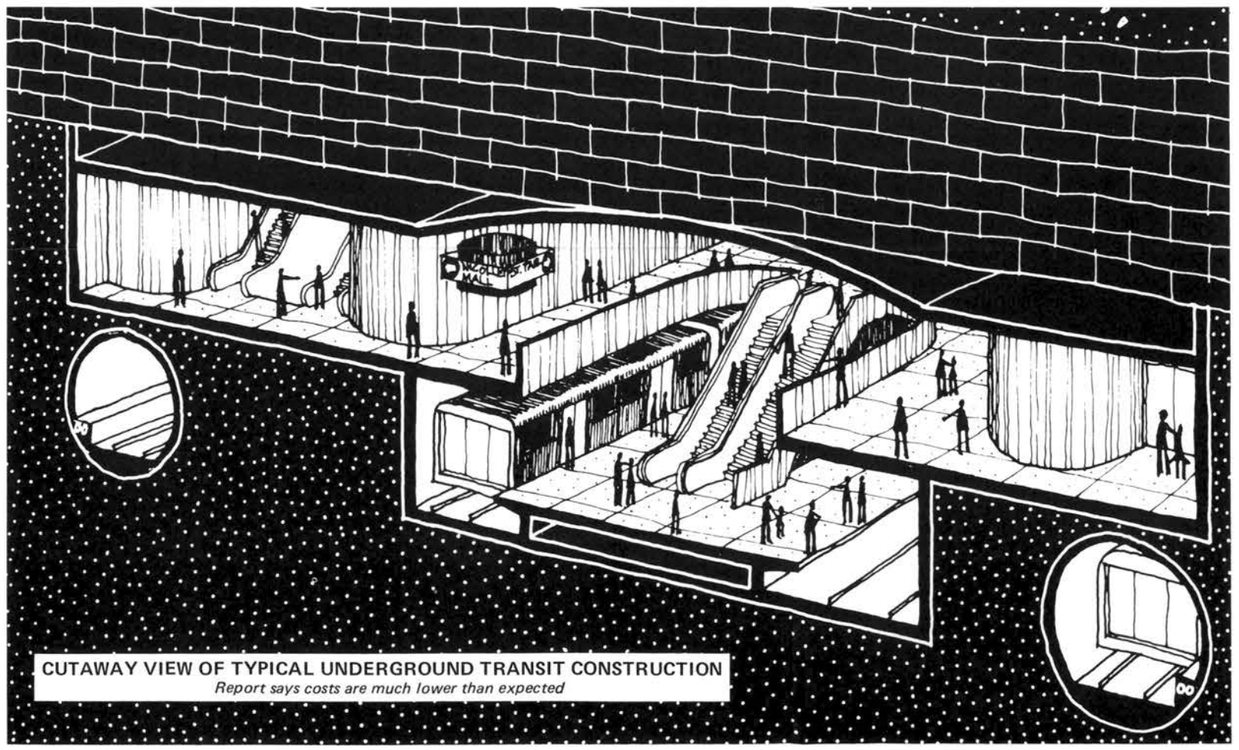
Prompted by the petroleum shortage and by legislative and citizen insistence on creating a balanced transportation system, the chairmen of two metropolitan agencies have directed their staffs to move ahead on transit planning and implementation.

John Boland, Chairman of the Metropolitan Council, and Doug Kelm, Chairman of the Metropolitan Transit Commission (MTC), issued a joint statement citing the necessity for "renewed cooperation" between the two agencies. "We can no longer afford the luxury of inconclusive debate," the statement said.

Staffs of the respective agencies have been directed to work cooperatively in three areas:

First, and most importantly, an emergency action program is being

*(Continued on Page 4)*



**CUTAWAY VIEW OF TYPICAL UNDERGROUND TRANSIT CONSTRUCTION**
*Report says costs are much lower than expected*

## transit around the world

BIRMINGHAM, ALA. - A free-ride zone downtown, modern, new equipment, and a novel approach to solicit consumer desires has started transit in Birmingham on the road to respectability.

Birmingham's 156-bus transit system came under public ownership last August. At that time the Birmingham-Jefferson County Transit Authority began meeting its most urgent need, buying new equipment to replace an ancient fleet. New buses with air conditioning are gradually being brought into the system. Buses in the system are being repainted in a bright new color scheme.

The "Birmingham Green Zone" plan was then developed, defining most of downtown—150 square blocks—as a free-ride area. Anyone boarding and leaving within the zone travels free. Birmingham officials see this approach as key to exposing large numbers of people to improvements that are being made.

To determine passenger likes and dislikes, the Transit Authority began a program called "Tell Us Where to Go." Hundreds of useful suggestions have been generated through this process; many will help shape a major realignment of routes and schedules.

A color-coded timetable has been designed, with each section of the city having a different color for each route timetable serving that area. Individual timetables are further differentiated by a photograph of some landmark on each route.

On behalf of the Transit Authority, the Birmingham bus system is managed by ATE Management and Service Co. Resident Manager is Charles W. Croft, whose previous assignment with ATE was as Director of Operations and Transportation for the Twin Cities Area Metropolitan Transit Commission.

League of Women Voters of Minnesota, 555 Wabasha, St. Paul, Minnesota 55102 - February 1974

Address on Transportation in Minnesota
by Ray Lappegaard, Commissioner, Minnesota Highway Department
at Focus on State Government Forum
Sponsored by the League of Women Voters of Minnesota
YWCA, St. Paul, Minnesota - February 19, 1974

I would like to first congratulate your group today on the choice of your topic, Focus on State Government, partly because I have been associated with State Government for somewhat more than half of my working life, the other half being in private industry. It is also my belief that State Government does have the means for truly meeting and solving many of the problems with which we are currently faced and also, I think, provides the governmental structure most likely to meet and solve many of the problems of the future. I say this in full knowledge of the fact that for many years our states have not been particularly noted for their ability to deal with some of the problems of society, particularly those in metropolitan areas. However, I believe the reapportionment of state legislatures across the country had done much to change this situation and we are now finding a much stronger voice in the activities of State Government from the metropolitan areas, particularly those suburban areas of our metropolitan centers. Also, I hope a stronger recognition on the part of all government officials - and I hope, also, on the part of the public as well - that our needs, our wants, and our desires as citizens are interrelated whether we live in an urban area or in a rural area. If my somewhat optimistic hopes are realized, it seems to me then that a focus on State Government is eminently desirable and sensible at this time and we can look forward to a strengthening of the response that State Government makes to the needs of its citizens.

My primary topic of discussion here is, of course, transporation with emphasis on highway transportation since that is the area of responsibility I have in State Government. During the early part of 1972, we began looking at the over-all highway needs for the State of Minnesota. A previous study had determined highway improvements, desired by Minnesotans, came to a cost of 3.2-billion dollars. This was at a time when we faced a somewhat reduced income since the monies that had been available from a bond issue authorized in 1967 were running out. Whereas we had been spending about 75-million dollars per year on the Trunk Highway System, not including the Interstate, we would be looking forward to spending an amount of 55-million dollars per year beginning in 1973. We were, in short, faced with the classic dilemma of most governmental programs. A demand for more services than the funds could possibly provide.

It seemed to us that of the 55 million we could look forward to receiving, at least 15 million would have to be retained for contingency projects - roads that were damaged by acts of nature or sudden problems that we could not easily foresee would have to be repaired on an emergency basis. This would leave a total of 40-million dollars available for construction in the area of improvements. When we talk about construction today we are very seldom talking about building new roads on new land. We are primarily concerned with upgrading current roads and while in some instances this means straightening them, widening them, some cases building four-lane roads where two-lane roads now exist, in the main, we are not talking about brand new roads in new areas of the state.

This 40-million dollars, if you divide it into the 3.2 billion which people around the state say we needed to make all the improvements desired, meant that we would be engaged in an 80-year program. This seemed unrealistic and unreasonable. So we started a new approach saying, "What would we spend our first dollar on if we only had one dollar to spend?" After agreeing that maintaining our existing roads would be the absolutely first priority, we then got around to selecting those improvements or the construction projects that we should do.

To do this we used three primary criteria; they were, first, projects that would help economic development in outstate Minnesota. This wasn't just because we were trying to help those who live outside of the metropolitan area. It was our feeling that this would also help metropolitan residents. One of the best ways to reduce congestion and some of the other problems we face in the Twin Cities Metropolitan Area is to reduce the desirability on the part of citizens in rural communities to move here, to cut down on the in migration, if

you will. One way to do this is to provide a stronger economic base for individuals in those rural communities. So our first criteria was to support economic development in outstate Minnesota.

The second was to provide for recreational travel, recognizing this was a valuable resource in Minnesota's industry and also that it is a prime necessity for Minnesotans who very much enjoy the recreational pursuits that Minnesota has to offier and, third, simply measurements of the use which is made of our roads. In other words, the amount of traffic that is meaurable, which indicates the high volume roads that are most in need of upgrading.

With these three criteria then, we developed what has come to be called the "Backbone System" of highway priorities for the State of Minnesota. This is a much shorter system than would be the case if we were to meet all the requested improvements, but it is also a system that in our opinion serves the majority of Minnesotans in terms of these three criteria taken together. It is, we think, a realistic plan.

Now, of course, the Backbone System has been further affected by the energy crisis we are now experiencing. In the first instance we anticipate a reduction in the revenues we will receive from the tax on gasoline sales. Secondly, we are experiencing a tremendous increase in the cost of materials that go into road making and bridge construction. Consequently, we are getting less for our dollar.

In summary, however, our Backbone plan provides a good plan, I think. It is the result of responsible, objective analysis to provide the most highway facilities for the limited number of dollars that will be available to us. A sensible allocation of resources in this special service area.

Now with regard to metropolitan areas the Highway Department had a long involvement with transit in the seven-county metropolitan area of the Twin Cities. Without taking time to detail that involvement it dates back about 15 years. Data collected by the Highway Department has been used in much of the transit analysis that has been done in this area. It is not true that Highway Department personnel are opposed to transit. We are very much supportive of efforts to improve transit service in the Twin City area. Cooperation with other agencies of government, particularly local levels of government, is well documented and most sincere. No responsible highway engineer would suggest that we can build roads sufficiently large to handle peak-hour traffic without congestion. This would be an unconscionable misuse of resources. We do, however, support a balanced approach to transportation which will recognize that for the foreseeable future we will still be relying on the automobile. Recognizing this, we agree with the Citizens League in its study of transit that a particularly important and immediately available resource is at hand if only we can exploit it and that is the number of empty seats in the private vehicle fleet that is moving around and through the metropolitan area. If we can increase ridership in private vehicles to a significant degree, we can, in turn, reduce congestion, limit pollution, and reduce the other adverse effects caused by automobile travel.

We are heavily engaged in promoting car pooling; first, among State employees themselves, those housed in the Capitol complex of buildings. To some degree we have been successful, but it is too early to measure adequately. On a more ambitious level, at the request of Governor Anderson, we have arranged for providing a service to all residents of the metropolitan area who would like to consider car pooling. With your phone bills, and some of you may have already received them, close to 800,000 questionnaires have been or will be sent out. This questionnaire calls for your name, address at home and your place of employment. Those which are returned to us will be coded and a computer will then be used to match up individuals who reside fairly close to each other and work at a place near each other. This is a tremendously complicated matching program, since we have the metropolitan area divided into 1,281 traffic analysis zones and we must make a match at both ends of the work trip in order to support this car pooling idea. To the individuals who return the questionnaire to the department, following the computer run, will provide a list of individuals of up to ten in number with their phone numbers, so that they may be called and the possibilities of developing a car pool can then be explored. It is entirely voluntary. There is no commitment if you do fill in this questionnaire. We strongly urge you to do so. If only to keep it for insurance in case a more severe restriction on gasoline comes about in the near future.

Another effort at improving the utilization of vehicles, particularly for the work trip, the most congested travel period we have, has been the van-pooling idea. Under this concept the employer will purchase a van capable of carrying 10 to 12 persons and, in effect, loan it to one of their employees. This employee will then contract with other employees to pick them up, taken them to work, and then home again. The individuals thus served are charged a fee, collected by the company, and usually if more than the number of passengers required to reach a break even point are carried. The addition fees are profit to the driver. In addition, the driver for a small charge is allowed the use of the van during off hours.

Thus we have a transportation system that serves a significant number of people and does so without cost to the employer or cost to the public. The 3M Company is trying to expand its fleet of vans now but is having difficulty in getting delivery on the vans that it wants. The van-pooling concept was developed in the Highway Department not too long ago. The individual who oversees the project for 3M Company is a former Highway Department employee.

Looking ahead is very difficult at this time. The data we receive regarding the energy resources available to us in the future is confusing. We have a problem in getting data that seems accurate and useful to us. As you are well aware, there are a number of people who do not believe a serious problem exists. At the same time others are assuring us that the problem is even more severe than it appears. Consequently, we are experiencing considerable difficulty in trying to suggest what course we should follow for the immediate future.

It seems to me that one of the key items to be considered in trying to make sure we take those steps which will be most helpful is knowledge of what people really want and what they will truly accept. This is not to avoid dealing with our own responsibilities. It is simply that these questions are basic to making the right decisions in terms of governmental services and the trend these services should take.

For example, it has long been a national goal to provide for the strengthening of rural America. The dispersal of population in a sense, not necessarily the movement of people away from the concentrated metropolitan centers but hopefully a restraint on the continued influx of people into these metropolitan areas has long been a national goal. I suppose the best way to describe it is that we should strive to make it possible for an individual to live a life that is satisfying economically, socially, culturally in a rural community rather than making it necessary to move to a metropolitan area to satisfy these desires.

Much of the technology available today makes it possible for a more dispersed population to realize these satisfactions. Conceivably, this could be augmented by technology still to come. Electronic communication makes it possible to conduct conferences, to view messages while discussing them and, in short, makes possible a considerable amount of work that now requires an individual to travel to someone else's office. If the same work can be accomplished without the necessary travel, obviously offices can be located wherever people wish to have them, rather than in close proximity to the people with whom they wish to work. Accompanying these thoughts is the subject of land use and land-use controls which is becoming more and more a subject of discussion these days. We are on the verge, it seems to me, of considering very seriously the possibility of restricting the uses to which land can be put by the owner of that land in the public interest. This, in turn, relates to a stronger effort on the part of governmental bodies in general to engage in what might be called comprehensive planning.

Here in Minnesota we have our Regional Development Commissions. In the metropolitan area it has a special name - the Metropolitan Council. We are looking to these commissions to play a helpful role in reconciling the many desires on the part of municipalities and counties to improve their situation for the benefit of their residents. We think this is a highly desirable movement, especially when we recognize that in the United States on the average there are 41 units of government for every 100,000 persons. In the Ninth Federal Reserve Region, of which Minnesota is a part, there are 195 units of government for every 100,000 people. Obviously, this means any state-wide program has a tremendous problem in integrating and reconciling its concerns with those of local government. The regional commissions can hopefully provide an area of service in coordination and indeed integration of desirable programs for several municipalities.

In this connection we have made it very clear that those of us in the Highway Department who are concerned primarily with transportation facilities sincerely believe that transportation planning should be subordinate to comprehensive planning. We are strongly supportive of efforts to plan comprehensively, to engage in land-use planning and indeed land-use controls, if that be the wish of the public, and following which we can provide our expertise in the area of transportation planning in a way that will be supportive of the over-all comprehensive plan.

In this connection we are strongly supportive of the idea of developing a Department of Transportation for the State of Minnesota. Such a department would include the Department of Highways, the Department of Aeronautics, some parts of the Public Service Commission's work dealing with transportation and school bus safety from the Department of Education.

Perhaps more important than integrating these now separate units of government would be the base that a Department of Transportation would provide for approaching transportation problems on a multimodal basis. By that we mean we would consider the problem of transportation between Point A and Point B, not in terms of how do we get a highway built or how do we get a railroad built, but rather, what method or what mode of transportation will best serve this particular need regardless of what type of mode that might be.

It would provide the basis for state-wide assistance to transit activities, particularly in the other metropolitan centers of the State which are not served by a transit commission as is this metropolitan area. It would hopefully provide a means of focusing attention on the contribution that railroad traffic might be able to make move in specific instances. It will permit us to contrast, for example, some form of support for a rail line that the railroads would like to abandon as uneconomic, as opposed to building the multimillion dollar road that would be nedessary if the rail line were abandoned. It would provide a basis for studying the question of other transportation facilities, including pipelines and utility lines to try to develop integrated corridors of transportation. To make possible the integration of trails of various types that many of our people express a great interest in and a desire for which other transportation facilities.

It seems unwise to continue what amounts to competition between governmental agencies by keeping various departments of government focused on single modes of transportation. Far better, it seems to me, to make opportunities available for State employees to solve problems in the best way possible, regardless of the mode involved. We have within the existing Highway Department a tremendous pool of technical talent which certainly can be used to solve problems involving other kinds of transportation than simply highways.

We see an exciting future ahead, albeit beset with problems, problems that are extremely severe and may well call for considerable change in the way in which we live today. Nevertheless, we approach them with the thought that solutions can be found, that we can suggest alternative choices to the people we serve.

For many years, the only admonition given to highway departments was to build as many roads as fast as possible, as cheaply as possible. They have done a great job in carrying out those instructions. Now that we think differently about such roads and about such facilities, it seems to me we should be as clear as possible in telling our governmental servants what we want them to do. They in turn, can help us make this choice by suggesting some of the alternatives. We will be trying to do that in the Highway Department and I hope in a short time to come in the Department of Transportation. As we determine the wishes of the public, we shall do our very best to implement and make those wishes reality.

# First-time riders find bus is better

Doug Kelm, Chairman of the Metropolitan Transit Commission, recently received this letter from St. Paul Municipal Court Judge Joseph P. Summers:

> Dear Doug:
>
> Having become a regular bus rider for the first time in many years, I would like to commend the Commission for the truly startling improvements in scheduling, equipment, and all-around service which have occurred since its assumption of ownership. It was a real revelation to me how much better things are than they used to be.
>
> Keep up the good work.
>
> Sincerely,
>
> Joe Summers

Apparently Judge Summers took a "show me" attitude towards MTC claims of service improvements under public ownership. He was shown.

So have many other individuals, who made that first ride with perhaps understandable skepticism. That has, in fact, been the MTC's greatest marketing challenge: attracting riders to the bus for the first time, so they can experience for themselves the fact that dramatic changes for the better have been made.

Maintaining a high profile through advertising carefully designed to attract that "first-timer," along with special promotions such as free-ride coupons distributed when new service is initiated, have done much to generate ridership increases; many of the new riders have never traveled by bus before, or at least not since long before public ownership.

Chairman Kelm says the trend is encouraging. And skeptics, he adds, are especially welcome.




TRANSIT NEWS
Published Monthly by
Twin Cities Area Metropolitan
Transit Commission
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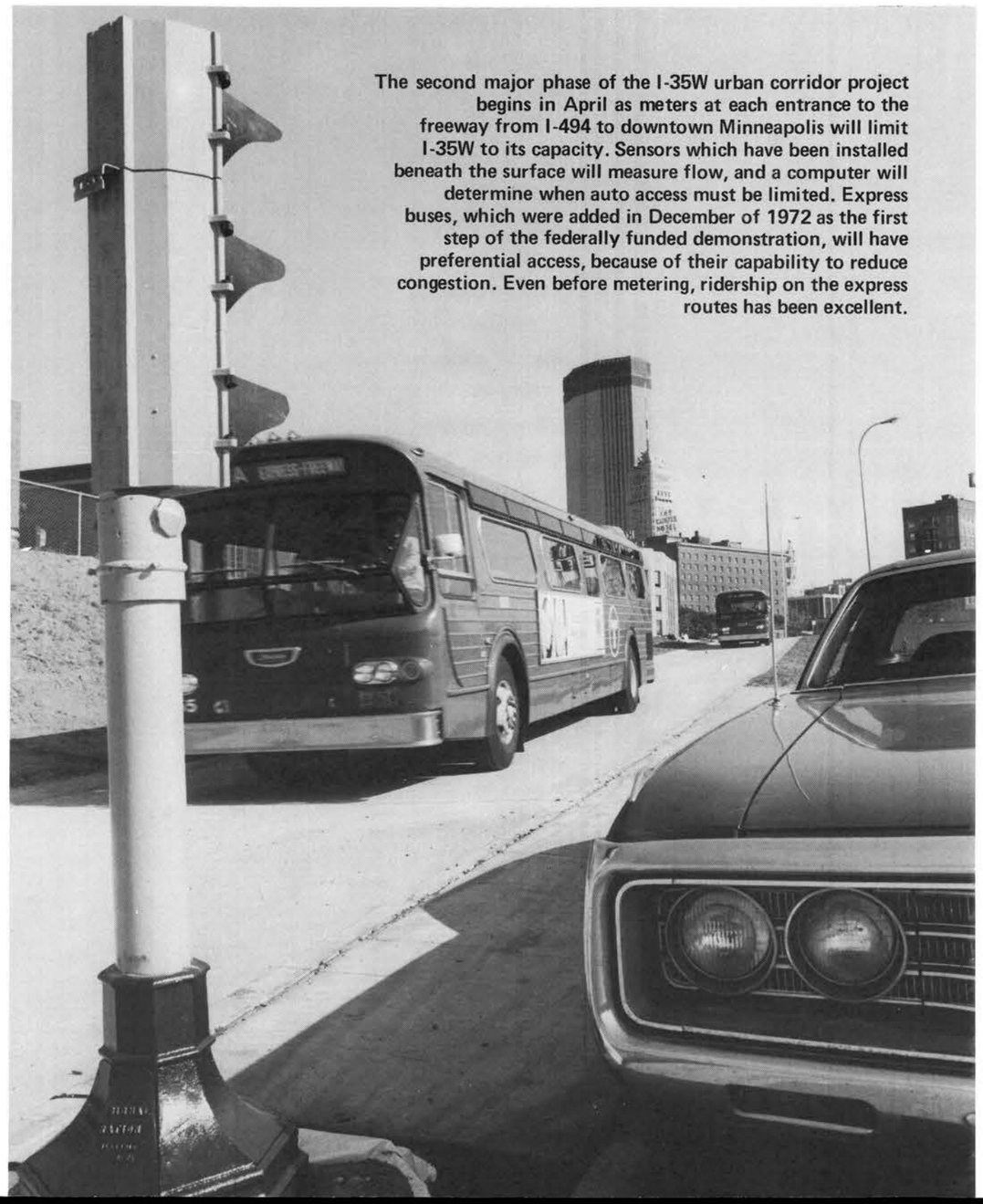
# transit news

VOLUME 4 MARCH, 1974 NUMBER 8

**The second major phase of the I-35W urban corridor project begins in April as meters at each entrance to the freeway from I-494 to downtown Minneapolis will limit I-35W to its capacity. Sensors which have been installed beneath the surface will measure flow, and a computer will determine when auto access must be limited. Express buses, which were added in December of 1972 as the first step of the federally funded demonstration, will have preferential access, because of their capability to reduce congestion. Even before metering, ridership on the express routes has been excellent.**

# ATA board elects Kelm

The American Transit Association has announced the election of Doug Kelm, Chairman of the Twin Cities Area Metropolitan Transit Commission, to ATA's Board of Directors.

ATA, founded in 1882, is the national organization representing the urban transit industry. Its 250 members include public and private operators of transit systems.

Kelm was elected chairman of the Governing Boards Division of ATA last fall. Additionally, he is on the Board of Directors of the Institute for Rapid Transit, another major industry organization.

Robert Sloan, Executive Vice President of ATA, said of Chairman Kelm's election, "The entire transit industry looks to the Twin Cities area as having one of the finest bus systems anywhere. ATA members feel the kind of leadership Doug Kelm has demonstrated in the Twin Cities will be equally valuable to the national association."

## transit around the world

ST. LOUIS - This city's regional coordinating council has proposed 11 miles of subway from Clayton to downtown St. Louis and East St. Louis as the start of a 100-mile rapid transit system.

Under the plan, electric vehicles would average 40 miles an hour, including stops, and run at three-minute intervals during rush hours; 10 to 15-minute intervals at other periods.

With daily ridership of 96,000 expected by 1995, the system would link major employment centers, hospitals, universities, shopping districts, cultural centers, and entertainment locations. An extensive supplemental bus network, combined with future extensions, would make up the complete regional system.

The estimated $300-$350 million first-stage cost would be 80 per cent federally financed, though a staff report cautioned that "other regions are ahead of us in the competition for federal funds needed to support transit development, and progress must be made in this community while opportunities still exist."

St. Louis, the report said, is one of the few major cities in the nation without a rapid transit line under construction or in operation.

In a related item, St. Louis Mayor John Poelker has asked the Missouri State Legislature to establish a mass transportation fund. A three-cent gasoline tax would be distributed to mass transit systems for operating expenses or capital improvements.

Mayor Poelker's counterpart in Kansas City, Charles B. Wheeler, said of the proposal: "It is logical to think that the farmers who fought the gasoline tax for city mass transit may see some wisdom in the legislation if it will protect rural gasoline supplies."

# Nixon transit proposal asks $15.9 billion

The Nixon administration has proposed a new six-year, $15.9 billion mass transit plan, which the President referred to in his State of the Union Message as "the largest federal commitment ever to the improvement of public transportation."

Under the plan, two sources of transit funding would take on increasing importance over the next three years. First, assistance from general funds would be increased from this year's $900 million to $1.4 billion in the fiscal year beginning July 1, 1974; $1.5 billion the following year, and $1.6 billion in FY 1977.

Of these general funds, $700 million would be retained by the U. S. Department of Transportation each year for capital funding on a discretionary basis. The balance would be apportioned to the states according to a formula based on population, and could be used for transit capital investments, operating subsidies, and transit-related highway projects.

The second source of growing importance would be $1.1 billion in urban highway funds available each year, for capital improvements only. These funds are available to bus and rail purchases, under the provisions of the 1973 Federal Highway Act, but reports from around the country indicate no instance of release of such funds.

Under the Nixon plan, in the three fiscal years after 1977 $2.7 billion would be available annually, all from general funds, and all but $700 million would be available for operating subsidies as well as capital improvements.

Support for transit operating subsidies is a reversal of long-standing Nixon administration policy, and comes in the wake of a more critical need for immediate transit improvements in many urban areas because of energy shortages.

## Most within three years

# Area studies call for major bus expansion

Within the next three years, bus service in several subregions will be greatly expanded, and in some cases more than doubled, if recommendations from recently completed studies are implemented.

Recommendations from the Hennepin County Route Ridership Improvement Study, Ramsey County Route Ridership Improvemen Study, and Anoka County Transit Study have been presented to the Metropolitan Transit Commission and adopted, pending availability of sufficient funds to support higher operating deficits.

Each study analyzed travel behavior within study areas, assessed the adequacy of existing bus routes to serve travel demand, and recommended service improvements–and in many cases major overhauls–to correct deficiencies. The studies also recommended improvements in areas other than bus service, including provision of heated passenger shelters, and construction of road-related improvements such as bus turn-outs.

Performed by a local consulting firm, each study looked not only at immediate needs, but also intermediate requirements over the next ten years.

County and municipal units of government as well as highway officials were formally involved in each study, as was a citizen advisory committee.

About two years ago the Commission began undertaking a series of subregional studies that would ultimately allow comprehensive and systematic evaluation of the needs of each portion of the Twin Cities metropolitan area. Most of the studies are either in progress or funded.

## actions of the commission

At its Feb. 20 and Mar. 6 meetings, the Commission

AWARDED sale of $8 million tax anticipation certificates of indebtedness of 1974 to the First National Bank of St. Paul and the First National Bank of Minneapolis. Proceeds will fund current MTC obligations pending receipt of tax revenues.

APPROVED an incentive payment to ATE Management & Service Co. in the amounts of $1,116.33 for 1972 and $7,302.24 for 1973. ATE manages the bus system for the MTC; incentive payments are based on ridership increases.

AUTHORIZED contracts with W. C. Gilman and Co. for the appraisals of tangible and intangible assets of the Bloomington Bus Co. and South-West St. Paul Transit Co.

AUTHORIZED the submission to UMTA of a preliminary grant application for $25.4 million in federal funds for system improvements, including the purchase of 319 buses and 450 passenger waiting shelters.

RATIFIED the Regulations committee action to make permanent the extension of Minneapolis route 5C to 49th and Knox Ave. N.

REQUESTED the Chairman to consult with the Chairman of the Metropolitan Council for the purpose of trying to resolve any differences in the proposed South Hennepin County transit study and report back to the Commission.

DIRECTED staff to examine the feasibility of initiating route ridership studies in all areas within the transit taxing district not presently included in a route ridership study.

ADOPTED a resolution pledging cooperation with the Minnesota Highway Department in preliminary engineering of exclusive transit facilities in the I-394 west suburban corridor.

## transit around the world

**A TRANSIT STATION IN MONTREAL, QUEBEC**
*Each features distinctive architecture*

MONTREAL, QUEBEC–Following up on its initial success, the Montreal Metro is embarking on a $630 million, 32.5 mile extension of its rubber-tired subway system that will triple the system's size in five years.

Though the city's population has stabilized at about 2 million since the subway was opened in 1966, transit ridership is up about 8 per cent. Statistics indicate that most of the increases are new transit users, not merely people switching from buses or streetcars to the Metro.

In addition to frequent service, ultra-modern equipment, and quiet operation, a wide variety of station designs have been credited with attracting not only riders but worldwide attention as well.

The Metro's expanded network will extend the system to 16 other communities on Montreal Island. Some 430 new cars, all equipped for automatic train operation, will be purchased as well.

Montreal officials had been discussing the need for rapid transit for a number of years before the 1960 election of Mayor Jean Drapeau, but had never secured needed financing from the Canadian and province governments.

Mayor Drapeau determined that Montreal could "go it alone," and it did: the original 13.7 mile system was built in five years for $213 million, virtually all locally financed.

The operating deficit for Montreal's various transit systems will be about $28 million this year, but it appears that the Province of Quebec may help fund it.There are indications that the Province will contribute $20 million to new construction and $2 million without strings.




**TRANSIT NEWS**
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# transit news

VOLUME 4 MAY, 1974 NUMBER 10


# Once upon a dime

There've been some changes made. At its April 24 meeting the the Metropolitan Transit Commission approved several alterations to improve the internal circulation service that has been provided in recent years in downtown St. Paul and Minneapolis.

In St. Paul, the QT bus service will be replaced altogether with a 10-cent fare zone serving the entire Capitol and loop area of the city. All trips made on any MTC bus entirely within the zone will cost a dime.

The effect will be to expand the downtown circulation area, but without the additional expense of the QT buses, which had proven costly both to the MTC and the City of St. Paul, which were sharing deficits from the small-bus operation. The new 10-cent zone will be put into effect June 3.

A more limited 10-cent zone, established last January, was well received by people making short trips between the Capitol and downtown, and between fringe parking areas and downtown.

In Minneapolis, 10-cent QT bus service on the Fourth-Fifth Street crosstown route will be restored between 8:30 and 11:30 a.m. This service had been discontinued in the fall of 1971 because of low patronage, but was recommended for revival because of the June 1 opening of the City of Minneapolis' fringe parking ramps on Fifth Avenue South. The Nicollet Mall QT route will continue unchanged.

## actions

At its April 24 and May 1 meetings the Metropolitan Transit Commission:

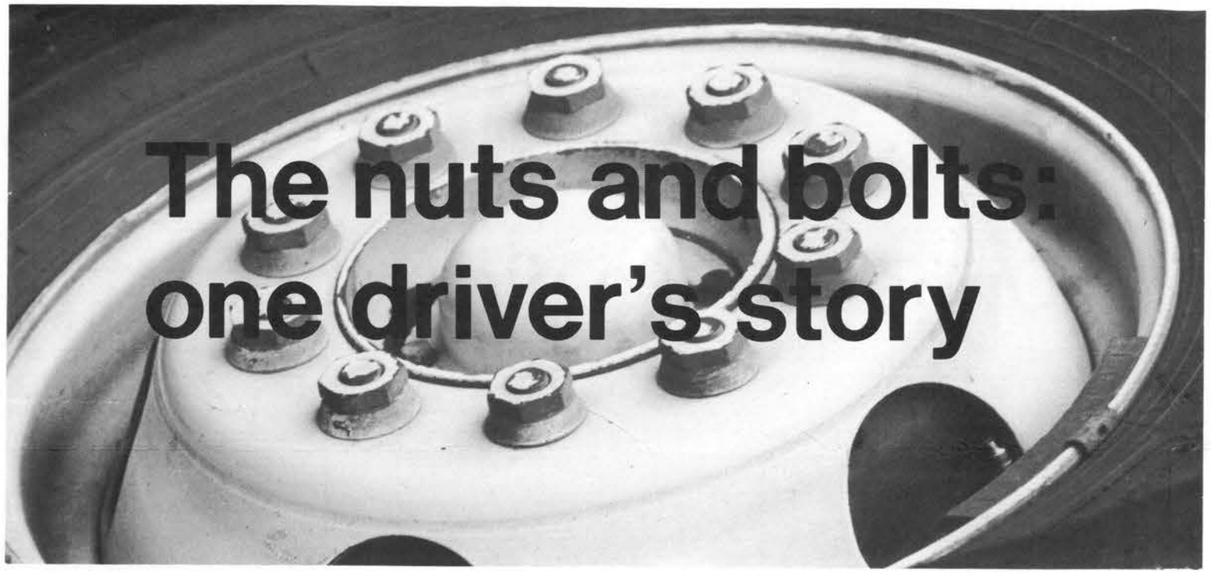
APPROVED a petition of Medicine Lake Lines to provide service on a new route on Hwy. 101 in Plymouth, and agreed to subsidize the service up to $3,000 for the first six months. The MTC's Transit Operating Division had also petitioned to provide the service.

PROVIDED an additional subsidy of up to $1,582 to the Jonathan Association for transit service to Minneapolis and the University of Minnesota operated by the Association. The MTC had earlier committed $1,000 to help support the service for its first six months; the Association has received authority to operate service for an additional three months, until Aug. 31.

AMENDED an agreement with the Scott-Carver Economic Council to share deficits of local transportation services for the elderly, with MTC maximum participation increased from $7,500 to $9,044 for its 50 per cent share of losses.

RATIFIED Regulations Committee approval of a request from Valley Transit to operate for one additional year a service extension to the Croixwood Homes area in Stillwater. Fare will be reduced by a dime to 25 cents; Orrin Thompson Inc. will provide financial assistance.

FUNDED start-up costs for a study of small vehicle fixed guideway systems which the 1974 Minnesota Legislature requested. Collecting background information will be done during May, to develop a study design, at a cost of up to $5,000.



# The nuts and bolts: one driver's story

**(Editor's Note: A bus driver drives a bus, right? Well, yes, but there is a little more to it than that, as Kathy Moriarty found out on a recent, extended bus ride. Miss Moriarty, an employee of the MTC Governmental Division, is a senior in journalism at the University of Minnesota.)**

You've heard the "Blue Collar Blues" theory, that countless thousands of workers view their jobs as a necessary burden. Dick Ryan, a bus driver for the Metropolitan Transit Commission, speaks well of his job and recommends it to others.

Ryan has been driving buses around Minneapolis since 1961, first for Twin City Lines and, since 1970, for the MTC. Besides driving, Ryan works with new drivers in the training program at the Snelling garage, and frequently speaks to grade school children about his job and the responsibilities of a bus driver.

The responsibilities are many more than immediately meet the eye of the average bus rider. The safety of their passengers is a paramount concern and drivers must also be watchful of other vehicles in traffic, bike riders, motorcyclists and pedestrians. Ryan stresses the importance of safety when discussing his job with school children, and also encourages them to study math to prepare for the considerable paper work demanded by the job.

I visited with Dick Ryan during the morning hours of his weekday run through Minneapolis and I became aware of the numerous tallies the drivers must make. A record of the number of senior citizens, students, and transfer passengers is kept on a daily basis in addition to arrival times at various points along the route and at the end of the line. The addition of various fare zones and the stop-and-shop transfers have also kept drivers busy explaining the features to riders.

Ryan said he would not work on a job he did not enjoy and that the advantages of his job outweigh the disadvantages. The variety of hours, routes and passengers keeps the job from becoming monotonous for him, and being outdoors and in contact with people are fringe benefits of his work.

A bus driver's hours are long and Ryan said drivers must be able to live with the great flexibility of scheduling. Many are on call for twelve hours a day and often must work split shifts or drive several routes in one day. New drivers who leave usually do so one to three months after they are out on the road.

Reasons for leaving range from the variable schedules to difficulty in coping with the traffic or the numerous situations which arise with passengers. "Getting along with people and accepting the fact that the passenger is always right are two facets of the job which are difficult to teach in training courses," Ryan said.

Ryan thinks that the transit system has improved in the Twin Cities and the extension and addition of service to many suburban areas is one of the biggest accomplishments of the MTC.

Because he is interested in his job, Ryan has definite opinions about the new features introduced by the MTC during the past three and one half years of public ownership. Free rides for senior citizens are a good idea, but additional running time should be given to compensate for slower start-up times, he said. Passenger waiting shelters might not be needed if people would check bus schedule. And he foresees the adoption next year of free rides for persons under 18 as a source of great frustration for bus drivers.

Generally, he has good feelings about the work. Although vacations and longer shifts are decided on the basis of seniority, the new drivers and the seasoned veterans are shown fairness and equality in the choice of routes and work hours. The bus system is improving and he is proud to be part of it.

Dick Ryan likes his job and says so.

**(Editor's note: Transit News will, from time to time, feature various people who make a transit system go. Opinions expressed are those of the individual.)**

> "Getting along with people and accepting the fact that the passenger is always right are two facets of the job which are difficult to teach in training courses."
>
> **— Dick Ryan, MTC bus driver**



**DICK RYAN TELLS HOW IT IS WITH THE DRIVERS**
*Interviewer is Kathy Moriarty*

TWO MAYORS had different notions on which way the I-94 express bus should go recently. Larry Cohen, left, and Al Hofstede, Mayors of St. Paul and Minneapolis, respectively, were on a VIP tour of the corridor, which also included Sen. John Chenoweth and MTC Commissioners Glenn Olson, Walter Saxum and Bruce Nawrocki.




TRANSIT NEWS
Published Monthly by
Twin Cities Area Metropolitan
Transit Commission
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St. Paul, MN 55101
Telephone (612) 227-7343

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JUNE 1974


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# transit news

VOLUME 4 JUNE, 1974 NUMBER 11


## actions of the commission

At its May 1, 15 and June 5 meetings, the Commission:

AUTHORIZED the purchase of an additional reserve supply of 100,000 gallons of diesel fuel and the leasing of storage tank capacity for the reserve supply.

AUTHORIZED the executive director to file an application with the U. S. Department of Transportation for a grant of $21,642,000, to finance 80 per cent acquisition of buses and other elements of the current bus improvement program.

RATIFIED the action of the Regulations Committee providing permanent authority to operate transit service to the Yorktown Development area in Edina.

RESOLVED to extend the weekday time limit for free fares for senior citizens from 3 p.m. to 3:30 p.m.

APPROVED a resolution granting financial assistance to Bloomington Bus Company, commencing February 1, 1974, until August 1, 1974, or takeover, whichever is earlier, to pay for all or a part of current transit operating losses of the company.

AUTHORIZED execution of a purchase agreement with Bloomington Bus Company for fifteen motor coaches, plus other equipment, and its transit operating rights, for $249,000, with $10,000 to be paid upon execution of the purchase agreement and the remaining $239,000 upon actual takeover or on August 1, 1974, whichever is later.

APPROVED the study design for the regional express bus network with a supporting system of park-ride lots, and allocated $49,200 for the project.

APPOINTED a committee to negotiate for acquisition of South and West St. Paul Transit, Inc. The Commission has already negotiated an agreement with Bloomington Bus Co., for takeover in late summer.

EXTENDED a small-bus route, which has been operating in St. Louis Park for the past year, southeast to Southdale Shopping Center in Edina, effective July 15. The extension implements one recommendation from last year's Suburban Hennepin County Route Ridership Improvement Project.

AUTHORIZED a $240,000 program for handicapped riders, beginning with two specially-designed buses for use by October and eight more buses by next January.

SELECTED the firm of Barton-Aschman Associates, Inc., as consultant for the Northern Dakota County/Southern Washington County Route Ridership Improvement Project, at a total cost not to exceed $26,700.

## Cities may exchange highway, transit funds

Proposed regulations by which metropolitan areas may substitute mass transit projects for construction of interstate highway segments have been announced by the Urban Mass Transit and Federal Highway Administrations of the U. S. Department of Transportation.

Under existing law the Highway Commissioners of each state were to notify the Federal Highway Administration (FHWA) of intended action on each designated interstate segment which has not yet been advertised for bids.

On July 1, the Federal Highway Administrator must remove from the Interstate System all segments for which he has not received proper notification, unless he finds a segment essential to a unified and connected total system. By July 1, 1975, states are required to provide the FHWA a schedule for completion of their interstate segments, along with adequate assurances they will be constructed. If this information is not received, the segments will be removed from the total system.

If a state does not intend to construct a particular interstate segment, it has several alternatives. One is to turn back federal moneys that would have been allocated to the project, and receive an equivalent amount for a public mass transit project.

If such a substitution is desired, the State Governor and concerned local governments must submit to FHWA a request that the segment be withdrawn, and specifically state an intent to substitute a mass transit project for the withdrawn segment.

In order to acquire funding, the Urban Mass Transit Administration (UMTA) would still have to approve the specific substitute transit project.

# U.S. grant will probe marketing

Improved transit marketing techniques will be developed under a $466,000 research contract awarded by the Urban Mass Transportation Administration, U. S. Department of Transportation, to Grey Advertising of New York.

The project will produce methods for measuring the effectiveness of transit marketing programs, that include market research, transit service planning, revisions of fares and schedules, and promotional activities.

The 34-month project will include development of demonstration site criteria, selection of two appropriate sites for demonstrations conducting market research, and the planning and conduct of the two demonstrations.

Resulting from the project will be a Mass Transit Marketing Manual, incorporating the results of the demonstrations, including any new techniques for marketing mass transit. In addition, the contractor will plan, locate and carry out a pair of two-day training sessions for public and private transit personnel.

A National Mass Transit Marketing Committee consisting of industry and government personnel will offer advice and other assistance during the project.

UMTA Administrator Frank Herringer said that providing satisfactory alternatives to the automobile is basic to solving a wide range of urban problems, such as fuel shortages, traffic congestion, pollution, and high center-city unemployment rates. Market research and more effective marketing techniques will help discover these alternatives, he said.

Carmichael-Lynch, Inc., the MTC's Bloomington-based advertising agency, was a finalist for the contract award.

## What is marketing?

**According to the Urban Mass Transportation Administration, "effective transit marketing is . . . a comprehensive and coordinated management function that includes six basic elements:**

**1. Systematic market research to identify the personal characteristics, tripmaking patterns, travel demands, and attitudes of salient market segments.**

**2. Transit planning to develop routes, service modes, and other operational elements consistent with the satisfaction of recognized market needs.**

**3. Service development (e.g., fare structures, schedules, passenger amenities, etc.) to increase the attractiveness of transit services and promote favorable attitudinal response.**

**4. User information and communications to increase the awareness and accessibility of transit service.**

**5. Promotional elements to enhance the public perception of transit as an attractive, high-quality urban service.**

**6. Monitoring and evaluation of marketing effects to instruct further activities."**

**Another more succinct way of putting it is to describe a complete cycle: Determine who can use and benefit from the product, find out what this group needs in order to use the product, design the product accordingly, and tell the target group about it.**

# transit around the world

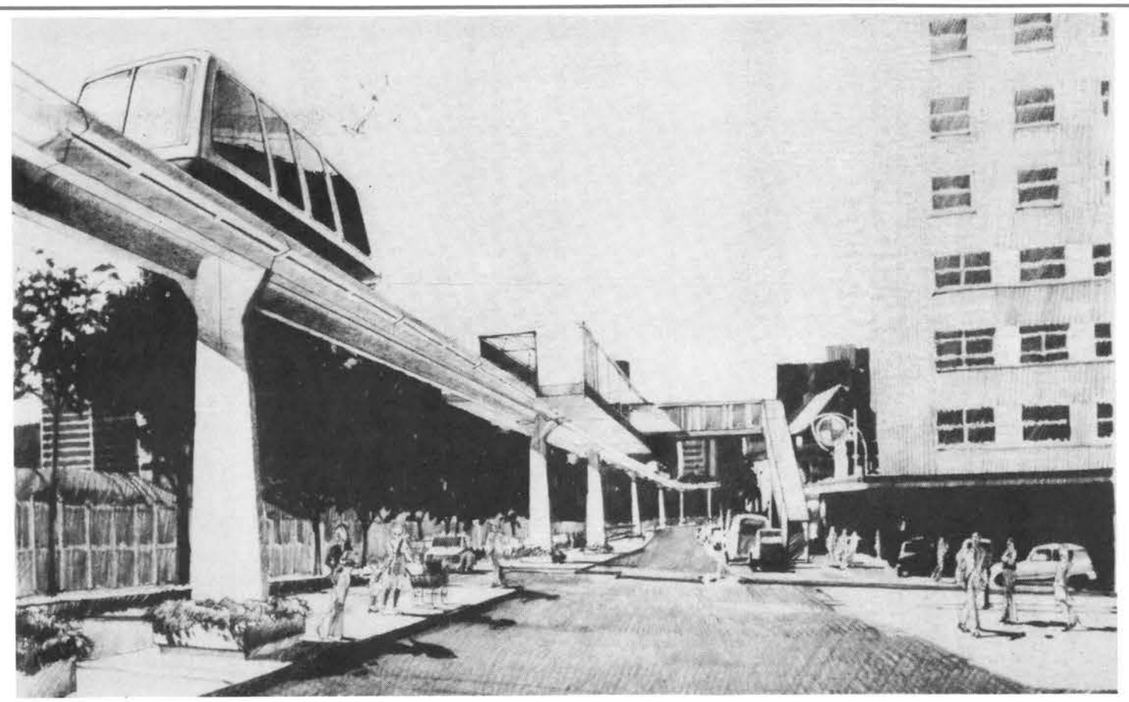
NANCY, FRANCE – The first full-scale construction of a transit system deploying small, automated vehicles will take place in this French city.

A Denver firm, Transportation Technology, Inc. (TTI), will build 130 small vehicles, each with capacity for 24 passengers. Vehicles will operate on a 14.1-mile guideway, linking 19 stations.

About one-third of the system will be underground, with the remainder consisting of elevated guideway. Vehicles will float on air pads a fraction of an inch above the guideway.

TTI will cooperate with a French management, engineering and industrial firm to install the estimated $80 million system.

The Denver firm is affiliated with Otis Elevator Co., the largest manufacturer of elevators, escalators and moving walkways in the United States. It was one of four developers of small-vehicle systems to display its wares with full-scale working models at Transpo-'72, near Washington, D.C.



**SMALL-VEHICLE SYSTEM ON A STREET IN NANCY, FRANCE**
*Artist's rendering of vehicle, guideway and station*

# Small vehicle experts testify

Safety, cost and reliability of new automated fixed guideway transit systems were areas of major concern expressed by manufacturers and transit consultants meeting in St. Paul last month.

Representatives from Boeing, Rohr Corporation, Ford Motor Co., Uniflo, and LTV Aerospace were among about 30 technical experts who participated in a Small Vehicle Fixed Guideway study conference conducted by the Metropolitan Transit Commission as the initial information collection effort for its study of small vehicle fixed guideway transit systems. The Minnesota Legislature has directed the Commission to analyze small vehicle transit plans for the Twin Cities area.

Participants in the three day conference advised the MTC and the Metropolitan Council of the importance of retaining safety and reliability specialists consultants early in the engineering phase. They recommended extensive testing of the system once it was installed, before proceeding with full scale implementation. Representatives from transit authorities in Los Angeles, San Diego, St. Louis, and Detroit also discussed the many problems that can appear in a new system, and cited the numerous difficulties that arose in the testing program for small vehicles in Morgantown, W. Va.

Manufacturers stated that costs of system installation and implementation are difficult to predict accurately, but emphasized to local officials that cost estimates should be based on future dollars with allowances for inflation.

Based on information received from the conference participants regarding small vehicle planning and insights based on transit operating experience in other cities, the MTC will now complete the development of the study design for the Small Vehicle Fixed Guideway Project, with project completion scheduled for December, 1974.

Additional travel, social, economic, and geographical data will be collected prior to development of routing concepts and preliminary screening of small vehicle alternatives. Final system analysis will take place in late fall, and the MTC and the Metropolitan Council will make formal reports of their findings and recommendations to the Legislature in early 1975.

## transit around the world

ROCHESTER, N.Y. - A cooperative venture between public and private transit operators in this city has resulted in a rapidly growing Park and Ride express bus route. Several suburban communities now have commuter bus service extending 40 miles into adjacent Genesee County.

The Rochester-Genesee Regional Transportation Authority, a state-created public agency, and Empire Trailways Co., a private operator, coordinated efforts in research and development of the route. The "Sunrise Service" began in November of 1973, initially to carry employees of the Eastman Kodak Co. to and from work between Genesee and Monroe Counties and major Kodak locations in Rochester.

Since the first of the year, the route has expanded to serve employees of Rochester Products, a Division of General Motors Corporation. The two transit carriers have a cooperative agreement for the development of any new service in the metropolitan area, and hope to expand further with the commuter runs.

Residents of Rochester and outlying areas have benefited from the dual efforts of the private and public sectors of the transit industry. Officials of both systems view their experience as proof that these sectors can and should work together to solve the growing transportation problems now confronting urban areas.

## Speakers available

**Program chairmen who are beginning to arrange fall calendars for their organizations may wish to schedule presentations about mass transit in the Twin Cities area: what's happening now with the bus system, and the longer-range planning that is underway on approaches to future rapid transit. Chairman Doug Kelm and other MTC representatives are available. Call Dave Therkelsen, 227-7343.**

**Another timely subject is clean air, and the Metro Clean Air Committee, as part of a federally-funded education program, has speakers and a slide show available, describing local approaches to better air quality, including use of public transportation. The presentation was developed in cooperation with the MTC. To schedule the MCAC presentation call Barb Hughes, 871-7332.**

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# transit news

VOLUME 4 JULY, 1974 NUMBER 12


## actions

At its June 26, 1974 meeting, the Commission:

ADOPTED the proposed consolidated annual budgets for FY 1975, and a capital transit improvement program for the fiscal years 1976-1980.

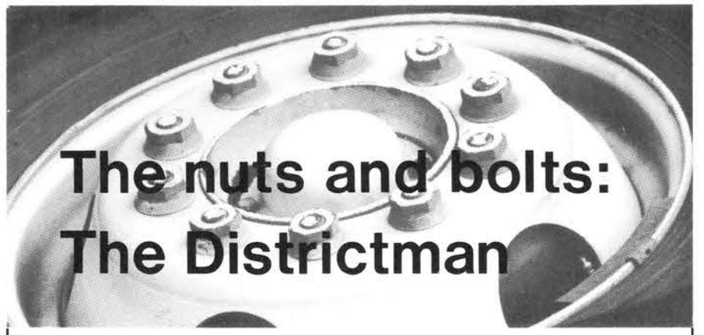
APPROVED MTC participation in the installation of a passenger waiting shelter at the St. Paul-Minneapolis International Airport in cooperation with the airport and intercity bus companies. MTC's share in the purchase and installation of the shelter will not exceed $1,500.

EXTENDED financial assistance to Bloomington Bus Company until August 3, 1974, at which time the MTC will take over the transit service of the Company.

AUTHORIZED implementation of a second subscription bus service route to serve the 3M Company and White Bear Lake area on a shared cost basis. MTC and 3M will each pay 50 per cent of the operating losses of the service, up to $3,213 each, for the first six months of operation of the service. MTC and 3M will establish the route and the fare collection procedure.

APPROVED a study design under which the Small Vehicle Fixed Guideway Projected, directed by the Legislature to be undertaken, will be conducted.

RECEIVED a report that federal participation in the current bus improvement program will be slightly in excess of $10 million. Because of earlier, anticipated higher funding levels, purchase of buses that had been programmed for next year will be reduced by 26 to a total of 179.



## The nuts and bolts: The Districtman

**If there's trouble on the line, it's the Districtman's job to make things right. What kind of trouble, what kind of solutions? See story inside.**

## Ridership gains theme of budget

A $78 million budget for the fiscal year beginning July 1 was approved by the Metropolitan Transit Commission at its June 26 Commission meeting.

Action of the 1974 Minnesota Legislature directed the MTC to accelerate its ongoing bus improvement program, and provided taxing authority for that purpose. The stepped-up improvements are the main theme of the budget.

According to Camille D. Andre, MTC Executive Director, improvements to be made are expected to generate a 12 per cent increase in ridership, and total miles of bus operations will increase by 15 per cent.

Additional equipment, facilities, and personnel are necessary to improve the quality of service. Purchase of 305 new buses to replace and add to present equipment and construction of a new garage to house the buses are included in the budget.

Major sources of MTC revenue include bus fares, $16,000,000; property taxes, $20,700,000; federal grants, $29,400,000; state grants, $3,100,000; proceeds from bond issues, $4,100,000; and other revenues, $900,000.

Under legislation passed this year, the MTC may levy up to 2.87 mills within the transit taxing district for general purposes, and .09 mills for special purposes, including a demonstration program on transportation for the elderly and handicapped.

# *The Districtmen**


***a.k.a. The Troubleshooters** **Snowy winter days, summertime storms, and mild spring afternoons all can pose problems of various sorts for a bus operation. Why mild spring afternoons? Because even on such temperate days detours occur, as do unexpected traffic jams and other natural and not-so-natural phenomena. Whatever the problem on the line, one or more of 13 districtmen is expected to find a solution.**

**(Editor's note: This is one of a series of stories highlighting the jobs of various people who work together to make a bus system go. It was written by Kathy Moriarty, an employee of the MTC Governmental Division who is a journalism senior at the University of Minnesota.)**

His job title is districtman, but he also answers to the nickname "Snooper" or simply "Car Number 8".

He is the driver's friend when buses break down or routes are detoured, but he also checks on their observance of rules, safe driving habits, and adherance to the schedule and reports misbehavior to the driver's supervisors.

Zane Younger is one of 14 districtmen employed by the MTC/Transit Operating Division. Working out of Nicollet Garage, he patrols the streets of Minneapolis, ready to assist drivers and passengers when problems arise in bus operations.

When I climbed into Younger's car for my tour of duty, hail was pounding down on the roof and winds up to 60 m.p.h. were rocking the car. A storm had hit suddenly, and one o'clock in the afternoon resembled the middle of the night, except maybe darker.

The severe weather made Younger's day more crisis-ridden than usual. Fallen trees and downed power lines blocked bus routes, and Younger had to improvise detours and get word to the drivers.

The radio connected to the dispatchers' office at Nicollet crackled with reports of extensive tree damage on the south side of Minneapolis. Investigating one such call, Younger radioed back that a fallen tree could not be moved because of a downed power line. He devised an alternate route for the bus line and reported in to the main office. A similar situation arose when a tree fell on a parked car and blocked off a major street in Minneapolis.

While we cruised the city, Younger explained that the districtman's job is to assure that service continues on schedule, despite rain, sleet, gloom of night or traffic jams, to borrow a phrase. Accidents, stalled buses, or a driver running off schedule could easily cause the system to break down; districtmen must report such happenings quickly, and get additional buses out on the route if necessary to minimize disruption.

As the storm subsided and most of the damage was reported, Younger began checking on the 13 routes which he covers in his district. Complaints about missed bus stops, or buses running early or late are transmitted to him by radio. In each case he submits a report on the driver after checking the time schedules at various points along the route. As part of the districtmen's routine, passenger load counts and checks on bus intervals are made and passed along to alert the scheduling department of any problems.

Younger posted signs marking detours and bus stops and then we drove out to Fairview-Southdale Hospital. Much of his work involves liaison with municipal officials and construction foremen regarding detours of buses and street identification. On this particular day, he needed to confirm an arrangement with the hospital while France Avenue was closed.

As rush hour approached, we made our way toward downtown Minneapolis to supervise the peak hour traffic, when bus usage is especially heavy. A major departure point for buses is at Second Avenue and Second Street, where approximately 100 buses pull out between 4 and 6 p.m. Often several districtmen share duty during rush hour in anticipation of problems with the many short line buses and also the long express route service. Buses from the Nicollet and Northside garages congregate at this terminal each morning and afternoon. Peak hours also find a greater number of buses and districtmen on hand in downtown St. Paul, Younger said.

As service is extended and the bus fleet increases in size, Younger said additional personnel and equipment, including two-way radios on buses, will be necessary to keep the system working effectively.

# Transit veterans mark retirement

Two men prominent in the transit field—one as a professional, the other as a leading citizen advocate—have recently retired from active employment.

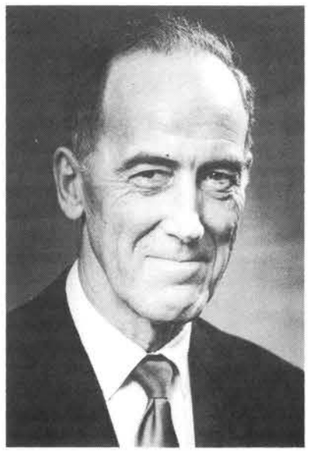
Dahill

John L. Dahill retired in May as Director of Research for the MTC Transit Operating Division. Arthur J. Helland, vice chairman of the MTC Advisory Committee on Transit, retired in June from his regular employment as assistant vice president with Farmers and Mechanics Savings Bank.

Dahill's involvement in Twin Cities transit predates public ownership of the bus system by many years: in addition to serving on the staff of MTC's Transit Operating Division since its inception, he worked for the former Twin City Lines and all of its predecessors, back to 1947 when he started in the field as a management trainee.

H. W. Springer, MTC/TOD General Manager, regards Dahill as the key figure during the transition from private to public ownership; he was, during part of that period, assistant general manager. In his many active years in transit Dahill developed a reputation for thorough acquaintance with all aspects of the business, and great meticulousness, according to Springer.

Helland, who was a charter member in 1970 of the citizens' Advisory Committee on Transit, is regarded by many as a "super-citizen." He is Chairman of the Minneapolis Planning Commission and has been active in civic affairs in Minneapolis for many years. Helland's assignment with the bank was also in community and public affairs; typically he attended more than 300 meetings and special events each year.

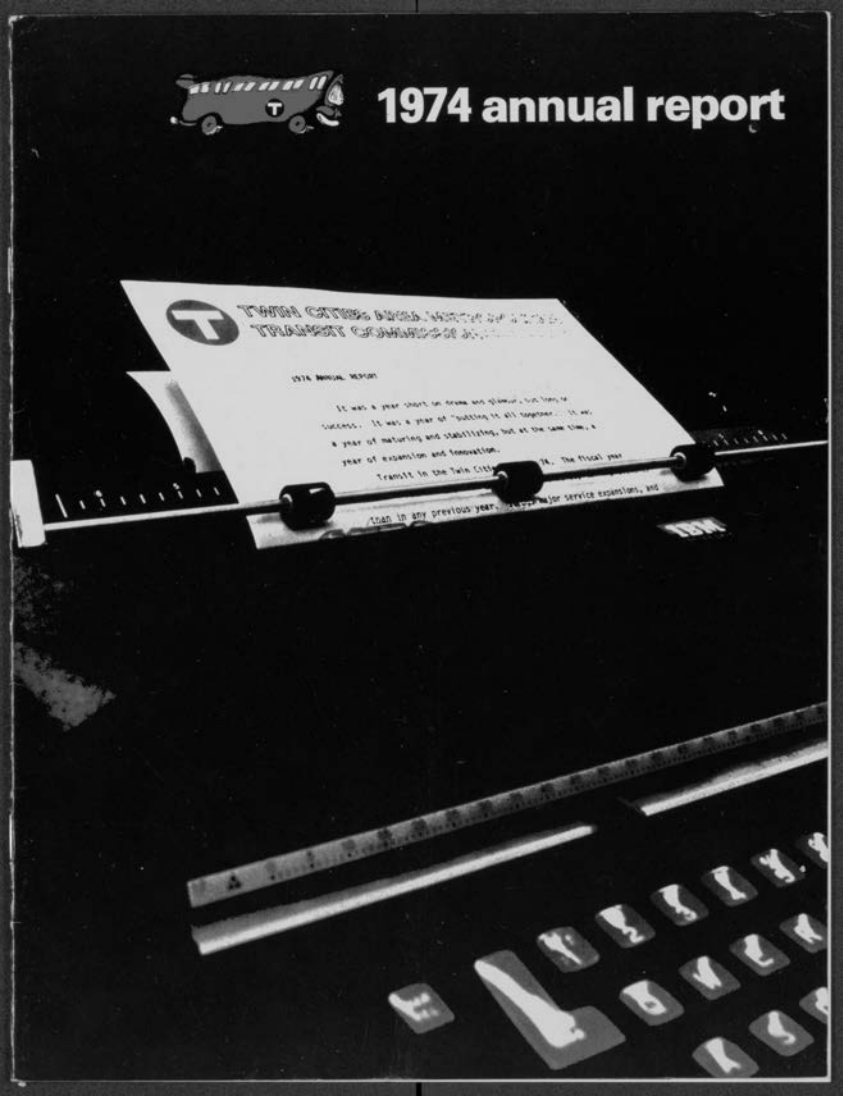


Helland

Combined with his career as a banker, Helland rose to prominence in the field of real estate appraisal. For more than 40 years he was involved in appraising, was president of an international appraisers' organization, and taught real estate appraisal at several colleges.

Helland will continue as ACT vice chairman.

# 1974 annual report



TO: The Honorable Wendell Anderson, Governor of Minnesota; the Minnesota Legislature; Government Officials; interested citizens:

During the fiscal year ending June 30, 1974, transit, like everything and everyone else, was affected by one external reality — the energy scare. Although actual gasoline shortages in the Twin Cities area were not nearly so great as in other urban areas many people decided to consider alternatives to their automobiles. Motorists by the thousands gave transit a try, and liked it. To a great extent, they stayed with transit, even after concern for energy supply diminished.

Rather than a cause for rejoicing, however, those interested in mass transit must, like everyone else, deal seriously with the sobering fact that never again will Americans be able to afford the casual, wasteful use of energy as they have over the past two or three decades. Though last winter's energy crisis did not live up to some of the more exaggerated advanced billings, its message was clear to even the most ostrich-like among us: we must find more efficient ways to move from place to place. Energy officials in Washington are blunt in telling us that by 1985 this country cannot place its primary reliance on a petroleum-based transportation system.

Thanks to the mandate of past legislative sessions, and the wherewithal to fulfill it, the MTC was able to respond well in 1974 as thousands of Twin Cities residents searched for that alternative to relying solely upon their cars. For the first time, in many cases, the bus was where they wanted it to be, when they wanted it to be there.

Thanks also to the obviously serious intent of the legislature to resolve the long-range issues affecting mass transit, what most people hope will be the final study prior to a decision on a future rapid transit system was begun; its results will be known within a couple of months.

With all of the interest in transit that has become manifest, many claims are made as to the wonderful things it can do for society, some of them of the panacea variety. Can a transit system, properly developed, be all things to all people? We doubt it. Can it be a significant, indeed a controlling, factor in making our cities fine places in which to live? Of that we are certain.

More than in any previous year, 1974 was the year in which there was less talk about what transit can achieve, and more sheer hard work toward realizing what it will achieve. On behalf of 1,429 hard workers in the employ of the MTC, we offer this report, in hopes that it foreshadows even higher levels of achievement in each succeeding year.

Doug Kelm

Doug Kelm
Chairman

and Commissioners:

Dean Fenner
Ed Hjermstad
Leonard Levine
Bruce Nawrocki
Alice Rainville
Walter Saxum
Loring Staples, Jr.
Leonard Thiel

It was a year short on drama and glamour, but long on success. It was a year of "putting it all together." It was a year of maturing and stabilizing, but at the same time, a year of expansion and innovation.

Transit in the Twin Cities Area, 1974. The fiscal year that ended June 30, 1974 saw more extensive capital improvements than in any previous year. It saw major service expansions, and the completion of subregional studies calling for more expansion yet. There were commuter tickets, a new fare zone plan, and freeway express service between the downtowns of Minneapolis and St. Paul. A bold new advertising program challenged the motorist to leave his car behind and get on the bus — and more than a few did. What is probably the last technical study before a regional decision on future rapid transit was initiated.

Except for the bright new advertising proram, FY 1974 saw precious little glamour. The year was better characterized by a lot of hard work on many fronts to make transit significantly better today, and still better tomorrow.

What follows in this report is a description of what made bus ridership rise another 8 per cent, where matters stand with respect to planning a future transit system, and a glimpse at Fiscal Year 1975 and an indication why it is virtually certain to eclipse even the successes of 1974.


## Philosophy Turned Around

No one would claim the present-day bus system is everything it should be. Yet somehow it is hard to believe that in less than four years the Twin Cities has gone from all old buses to mostly new buses, from a shrinking service area to vigorous expansion, from a "get by as cheaply as possible" philosophy to a point of view that, while it may not be possible to have amenities such as bus shelters on every corner, they can be liberally sprinkled all over town. And from perennially declining ridership to steady increases.

## Capital Improvements = Inviting Ride

Some capital improvements in FY 1974 — notably acquisition of buses and construction of passenger shelters — equalled or exceeded the combined totals of the three previous years of public ownership.

A total of 296 new buses — one-tenth of the nation's total production for the year — were acquired and put into service. Added to the 315 that had been purchased in the last three years, the 1974 order insured that any time you traveled by bus, you had about an 80 per cent chance of riding a brand new one.

It's not newness itself that counts, of course. It's the fact that the new buses, in contrast to their ancestors, are inviting, climate-controlled and dependable. And they bespeak first-class comfort, as they must to attract people from equally luxurious automobiles.

When public ownership began in the fall of 1970, buses were, on the average, 14 years old. With the purchase since then of 611 new vehicles, that average age has been reduced to four years. That's tops in the country.

Whatever their condition prior to public ownership, at least there were buses. That's more than can be said about heated passenger shelters in the '60's: There weren't any.

But today, there are 143 plexiglass-enclosed shelters, most of them heated and lighted, throughout the metropolitan area. Some 72 of them were built in 1974.



## Hitting Close To Home

Better physical facilities do much to attract ridership, but the bus, whether old or new, and with or without a shelter, has to come close to where potential patrons live. For many years the Twin Cities suffered the paradox of an expanding community and a shrinking transit service area. Recent years have seen an attempt to "catch up" with development patterns, and an extension of service to areas whose residents may have forgotten what a bus looks like.

During 1974 20 new routes, or extensions of existing bus lines, brought the total system route mileage to 1,023, nearly double the pre-public ownership figure of 521 miles. Some of the most significant additions include suburban crosstown service in St. Louis Park, and service extensions to Prior Lake, Burnsville, Eagan, Shakopee, Rosemount, Mahtomedi, Brooklyn Center, Woodbury, Eden Prairie, Stillwater and other areas.

Worth special mention is expansion of high-speed express service on freeways. All-day express service on I-94, between downtown St. Paul and downtown Minneapolis, began in April, dramatically improving the accessibility of the two cities by transit.

And Freeway Flyers on I-35W, besides increasing in number, gained the advantage of preferential access: since spring, peak-hour access to the freeway by car has been restricted according to traffic flow, but buses, using specially-constructed ramps, have been able to bypass metered traffic lights and gain instant access to I-35W.

This transit portion of the I-35W metered freeway experiment led all MTC services last year in ridership gains. Weekly ridership on the 16 express routes rose during the year from 20,000 to 30,000; the 30,000 levels were, in fact, approached even before buses had the advantage of preferential access, surpassing all projections. Sponsors of the experiment, besides the MTC, include the Metropolitan Council, Minnesota Highway Department, and the federal government.

In various geographic areas, subregional studies were conducted to lay out further needs for expansion over a ten-year period. These Route Ridership Improvement Studies, completed in central Hennepin County and Anoka and Northern Ramsey Counties, made comprehensive evaluations of service requirements, including staging, and also presented the need for street-related improvements such as bus pull-outs, and capital facilities such as shelters and park-ride sites.


## New Wrinkles

More service, with better equipment — that's part of 1974's story of bus improvements. There were some new approaches to providing service, also. Here are some items from the "new wrinkles" category:

- A new concentric circle fare zone system reduced fares for thousands of riders traveling daily between Minneapolis and St. Paul, who previously paid a double fare, and also lowered fares for some suburban riders. The new plan represented a change from municipal boundaries as a basis for fare charges to a system based primarily on distance traveled.
- A ten-cent fare zone is being demonstrated in downtown St. Paul. Within the downtown Capitol-complex district, people may ride any MTC bus for a dime.
- Commuter tickets good for ten rides made riding more convenient, trading the necessity of exact change for the convenience of pre-paid fares.
- Same-way, "stop-n-go" transfers mean you can get on a bus, get off to buy a loaf of bread or drop the kids at the baby sitter, and get back on a subsequent bus without paying an additional fare.




## Selling Transit

Vigorous marketing of improvements and innovations continued last year, but with one major new twist: the bus system became "The Greater Metropolitan Car Pool."

By 1974, the MTC was prepared to claim that it had improved the bus system sufficiently so it could compete with the automobile, with no apologies. A sporty, bright-yellow Deusenberg painted on the sides of a bus showed up on TV and on the streets, and helped plant the notion that mass transit is first class transit.

Radio, newspapers and direct mail also helped get the word out: that in an era of rising prices, fuel shortages and environmental consciousness, riding the bus is the smart thing to do.

One phase of the MTC marketing program involved about 50 of the largest companies in the Twin Cities, many of which undertook creative programs to build bus ridership among their employees. Besides promoting transit through internal means, dozens of firms hosted a special MTC bus information booth and attendant, for two or three days at a time, to provide their employees with the most complete information possible.

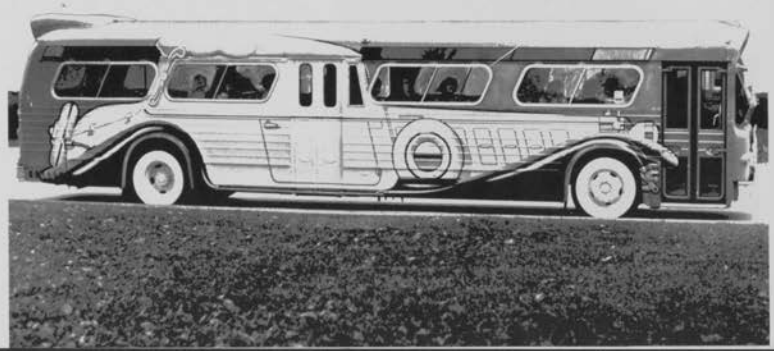
## The Bottom Line

The bottom line — after expansion of service, acquisition of capital equipment, service innovations, marketing, higher gas prices — is patronage for the year of 54,548,292.*

That compares with 50,372,121* the previous year, or an 8 per cent increase. Thus, the pattern of increases continues that began at the time public ownership occurred.

Transit continues to make its mark.

*Ridership figures are not directly comparable with those reported in previous years. That is because the method of counting passengers was changed at the same time the double-fare between Minneapolis and St. Paul was eliminated. Previously, those riders were, in effect, counted twice.


## Helping Others

The MTC was involved in 1974 in a number of here-and-now activities not directly related to operation of its own bus system.

One was support of other transit systems. Subsidies were provided to Valley Transit to link Stillwater with a nearby residential development, and to South and West St. Paul Transit Co., to provide express bus service between Cottage Grove and St. Paul. Medicine Lake Lines received support for an express bus service on Hwy. 101. Suburban bus companies were reimbursed by the MTC for carrying senior citizens free.

Financial assistance was also provided to The Jonathan Association and the Scott-Carver Economic Council for specialized transit services, directed at the commuter in the first instance, and at senior citizens in the second. The 3M subscription service, for that firm's employees in the White Bear Lake area, continued to operate with 3M and the MTC sharing deficits.

## Informing Others

For the fourth year, the citizen's Advisory Committee on Transit met at least monthly to consider transit-related matters, including the MTC shelters program and advertising campaign, and the City of Minneapolis' proposed downtown people-mover system. The committee met with key legislators and officials of other agencies, to assist in formulating recommendations about the present and future role of transit in the Twin Cities. Also during 1974 the ACT completed a report on incentives to build transit ridership; the majority of its recommendations were implemented by the MTC later in the year.

Led by Chairman Doug Kelm, the MTC's Speakers Bureau made 139 presentations to community organizations throughout the region, informing them of present and planned developments in the field of transit.

Special educational efforts were directed at junior high school students, by means of a study unit on urban transportation developed jointly by the MTC staff and the Minneapolis School District staff. Initially, a pilot unit was created, and taught in Minneapolis ninth grade classes; from that experience revisions were made so that the materials can be taught effectively in schools throughout the metropolitan area.



## Legislation Clarifies Roles

Intermediate- and long-range planning for future transit systems continued in 1974, within the framework of some new statements of legislative intent as to the roles of various planning agenices.

The Metropolitan Reorganization Act, adopted by the 1974 Legislature, gave the Metropolitan Council several important responsibilities with respect to general transportation planning of transit. The regional agency was to state the area's overall needs, and to describe generally physical facilities to be provided and their general location. This process would provide the framework for a regional Transportation Development Program.

The MTC is responsible for preparing the region's Transportation Development Program. The transit elements of the program include determining the type of transit service to be provided and designation of transit mode. In addition, previous legislation directed Commission "to plan, engineer, construct, equip and operate transit systems."

Legislative clarification of roles and responsibilities was helpful as the region continued its attempts to make some determinations about a future rapid transit system. The Legislature, besides giving better definition to agency roles, played a major part in narrowing transit alternatives, and requested further detailed study of some specific approaches.

## Planning for Diversity

There is general agreement among responsible agencies that different vehicles and different service concepts must be applied to differing transportation needs within the region. Re-oriented bus routes, line-haul express service, internal circulation within the major activity centers, flexibly-scheduled collector systems such as Dial-a-Ride; all are seen as essential to serving the diversity of trips within the Twin Cities area.

The need to automate certain segments of the transit system, so that highest levels of service can be provided at affordable costs, is now almost universally recognized. The MTC has proposed that the most heavily-traveled transit corridors be served with automated vehicles, carrying up to 40 seated passengers, traveling at intervals of one to three minutes.

The exact size and operating characteristics of an automated rapid transit system were left open. The 1974 Legislature has indicated an interest in further exploration of small-vehicle systems.

Such a study was directed by the Legislature, and got underway at the end of FY 1974. Recommendations from the study will be forthcoming to permit a prompt legislative response in 1975.

## Other Technical Studies

Whether the vehicle is small or large, it may be necessary to place the system underground in certain highly developed areas such as the two downtowns. Preliminary investigation as to the feasibility of tunneling was undertaken by the Commission in 1974, and it was found that due to the underlying geological formations, tunneling costs in the Twin Cities may be much less than those commonly experienced in other locations.

Public transportation in the broad sense is often interpreted as including carpools, van pools, and other auxiliary services for group riding. The Commission, working with the Minnesota Highway Department, the Metropolitan Council, and other local agencies, is developing ways to most effectively use such systems. It is anticipated these efforts will be necessary for a number of years, until a more definitive pattern of travel develops in the area.

## Crystal Ball Bright

As FY 1974 ended, there were some unusually encouraging signs for the year which would follow. Most encouraging was the Legislature's decision to adopt the Commission's proposed Accelerated Bus Improvement Program, supported by an increase in the MTC property tax levy. The Commission subsequently adopted a budget which is expected to generate a 12 per cent ridership increase in FY 1975, the largest increase since public ownership began. The tax levy for general operations will be 2.96 mills.

More Route Ridership Improvement Studies were underway, including those for east, west and northeast St. Paul, South Hennepin County, North Minneapolis and Northern Hennepin County, Carver and Scott Counties, and Northern Dakota and Southern Washington Counties.

A demonstration program that will provide transit service for the handicapped is set for FY 1975 implementation.

Acquisition of Bloomington Bus Company had been completed early in FY 1975, and negotiations were underway for purchase of South and West St. Paul Transit Co.

Planned capital improvements range from construction of up to 200 more passenger shelters, to purchase of up to 309 new buses, to a new bus garage in the south suburban area.

New fare innovations planned include free rides during non-peak hours for minors, and a 50-cent maximum fare on non-express bus rides.




## What It All Costs

The primary source of outside revenue for the MTC is an ad valorem property tax levied upon the Metropolitan Transit Taxing District, generally the urbanized portion of the seven-county metropolitan area. For FY 1974, the mill levy for the Transit Commission was 2.02 mills, consisting of 1.51 mills ($8,806,898) for general operations and .51 mills ($2,929,217) for debt service on outstanding obligations.

During FY 1974 the Commission received $9,146,520 in federal grants to assist its activities, consisting of $8,879,069 for capital expenditures, $95,989 for technical studies, and $171,462 for the I-35W express service demonstration. The Commission received $1.4 million from the State of Minnesota in grants-in-aid to subsidize the bus operations. Miscellaneous revenue, primarily from investment income and sale of non-expendable equipment, was $880,343.

Revenue from operation of the transit system amounted to $14,936,914, the largest single source of income for the Commission.

In October, 1973 the Commission sold $5.6 million of General Obligation Certificates of Indebtedness, maturing February 1, 1975 through 1983, at a net average interest cost of 4.35 per cent. This provided the necessary funds for the MTC local share of capital costs for new buses, new support and maintenance equipment, and renovation of facilities for approximately a year.

In March 1974 the Commission sold $8 million of tax anticipation certificates of indebtedness secured by a pledge of the tax receipts for general purposes in 1974. The certificates are due March 1, 1975, callable on or after Jan. 1, 1975, and were sold at a net average interest cost of 4.49 per cent. This provided necessary cash in the MTC general fund during 1974, in advance of receiving collections from the property tax levy.

Total expenditures of the Commission during FY 1974 were $43,269,786, consisting of $685,650 for planning and administrative costs of the governmental division, $178,977 for technical consultants and other agency costs, $2,738,585 for debt redemption and financing costs on long-term indebtedness, $13,457,820 for capital improvements and expenditures, $197,637 write-off for uncollectable property tax receipts, $353,508 for supported programs and operations, including assistance to privately-owned suburban carriers, and $25,657,609 for operating expenses of the bus system (including $2,125,419 depreciation on capital equipment and facilities).

At the end of FY 1974 the Commission had 23 employees in the governmental division and 1,406 employees in the Transit Operating Division.

# Balance Sheets

**June 30, 1974**
**with comparative total figures for June 30, 1973**

| | 1974 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Groups of Accounts | | | | | | | |
| | General Fund | Debt Service Fund | Capital Fund | Transit Operating Division Fund | General Fixed Assets | General Long-term Debt | Total Memorandum Only | 1973 Total Memorandum Only |
| **Assets:** | | | | | | | | |
| Cash | $ 3,066 | 9,281 | 18,127 | 211,032 | — | — | 241,506 | 188,707 |
| U.S. Government securities and certificates of deposit, at cost (approximates market) | 2,744,969 | 315,000 | 8,178,733 | — | — | — | 11,238,702 | 1,949,610 |
| Accounts receivable | 873,013 | — | — | 255,677 | — | — | 1,128,690 | 141,553 |
| Property tax receivable | 467,898 | 2,860,375 | — | — | — | — | 3,328,273 | 6,096,963 |
| Allowance for uncollectible property tax | (176,138) | (58,585) | — | — | — | — | (234,723) | (146,081) |
| Due from Federal government | 251,351 | — | 2,463,037 | — | — | — | 2,714,388 | 786,202 |
| Due from other funds | 6,995 | — | 6,740 | 1,470,655 | — | — | 1,484,390 | 2,015,903 |
| Accrued interest receivable | 19,656 | 6,969 | 254,360 | — | — | — | 280,985 | 80,616 |
| Materials and supplies, at cost (first-in, first-out) | — | — | — | 343,504 | — | — | 343,504 | 263,636 |
| Prepaid expenses | 3,423 | — | — | 136,308 | — | — | 139,731 | 136,492 |
| Transportation properties, equipment, furniture, fixtures, etc. (less accumulated depreciation for Transit Operating Division) (note 6) | — | — | — | 27,900,143 | 67,477 | — | 27,967,620 | 18,073,815 |
| Capital projects in progress (note 7) | — | — | 1,973,084 | — | — | — | 1,973,084 | 843,805 |
| Assets restricted for payment of tax anticipation certificates of indebtedness (note 5): | | | | | | | | |
| Cash | 991 | — | — | — | — | — | 991 | — |
| U.S. Government securities and certificates of deposit, at cost (approximates market) | 230,000 | — | — | — | — | — | 230,000 | — |
| Accrued interest receivable | 1,806 | — | — | — | — | — | 1,806 | — |
| Property tax receivable | 8,132,020 | — | — | — | — | — | 8,132,020 | — |
| Assets on deposit with Minnesota State Treasurer | — | — | — | — | — | — | — | 51,437 |
| Assets held by fiscal agents or in escrow (note 2): | | | | | | | | |
| Cash | — | — | 17,831 | — | — | — | 17,831 | 500 |
| U.S. Government securities and certificates of deposit, at cost (approximates market) | — | — | 1,627,000 | — | — | — | 1,627,000 | 1,628,965 |
| Accrued interest receivable | — | — | 6,138 | — | — | — | 6,138 | — |
| Amount to be provided for retirment of debt (note 4) | — | — | — | — | — | 12,100,000 | 12,100,000 | 8,700,000 |
| Total assets | $ 12,559,050 | 3,133,040 | 14,545,050 | 30,317,319 | 67,477 | 12,100,000 | 72,721,936 | 40,812,123 |
| **Liabilities, reserves and fund balances:** | | | | | | | | |
| General obligation certificates of indebtedness payable (note 4) | $ — | 2,200,000 | — | — | — | 12,100,000 | 14,300,000 | 10,200,000 |
| Tax anticipation certificates of indebtedness payable (note 5) | 8,000,000 | — | — | — | — | — | 8,000,000 | — |
| Accounts payable | 169,720 | — | 4,044,158 | 751,036 | — | — | 4,964,914 | 730,712 |
| Due to other funds | 1,212,976 | 1,352 | 269,778 | 284 | — | — | 1,484,390 | 2,015,903 |
| Accrued expenses | 153,287 | 319,700 | 1,949,475 | 1,147,879 | — | — | 3,570,341 | 1,378,522 |
| Excess of pension liabilities over fund assets (note 9) | — | — | — | 2,872,378 | — | — | 2,872,378 | 2,965,738 |
| Reserves: | | | | | | | | |
| For appeal on condemnation award (note 2) | — | — | 1,627,500 | — | — | — | 1,627,500 | 1,627,500 |
| For injury and damage claims | — | — | — | 678,164 | — | — | 678,164 | 213,388 |
| For sick leave | — | — | — | 140,000 | — | — | 140,000 | 140,000 |
| Fund balances: | | | | | | | | |
| Invested in capital projects in progress (note 7) | — | — | 1,973,084 | — | — | — | 1,973,084 | 843,805 |
| Invested in general fixed assets | — | — | — | — | 67,477 | — | 67,477 | 58,542 |
| Appropriated for debt service | — | 611,988 | — | — | — | — | 611,988 | 406,612 |
| Federal grants and commission contributions to Transit Operating Division, less applicable amortization (note 8) | — | — | — | 24,727,578 | — | — | 24,727,578 | 14,749,348 |
| Appropriated for excess condemnation award (note 2) | — | — | 1,615,000 | — | — | — | 1,615,000 | 1,510,000 |
| Unappropriated fund balances | 3,023,067 | — | 3,066,055 | — | — | — | 6,089,122 | 3,972,053 |
| Total liabilities, reserves and fund balances | $ 12,559,050 | 3,133,040 | 14,545,050 | 30,317,319 | 67,477 | 12,100,000 | 72,721,936 | 40,812,123 |

See accompanying notes to financial statements.

## General Fund

**Statement of Revenues, Expenditures, Transfers and Changes in Fund Balance**

**Year ended June 30, 1974 with comparative figures for 1973**

| | 1974 | 1973 |
|---|---|---|
| Revenues: | | |
| Property tax (note 3) | $ 8,806,898 | 5,235,813 |
| Less provision for uncollectible taxes | 149,262 | 194,661 |
| | 8,657,636 | 5,041,152 |
| Interest income | 145,698 | 16,061 |
| Federal grants | 267,451 | 262,602 |
| Contributions by other governmental units | 19,363 | 19,990 |
| Sundry revenues | 2,058 | 1,084 |
| State of Minnesota grants-in-aid | 1,400,000 | — |
| Total revenues | 10,492,206 | 5,340,889 |
| Expenditures: | | |
| Personal services | 371,652 | 328,267 |
| Administrative overhead | 115,563 | 103,491 |
| Travel and expenses | 38,260 | 39,163 |
| Professional services — general | 61,175 | 66,405 |
| Professional services — projects | 178,977 | 243,145 |
| Supported programs | 353,508 | 195,401 |
| Interest expense | 99,000 | — |
| Miscellaneous | — | (500) |
| Total expenditures | 1,218,135 | 975,372 |
| Transfer to Transit Operating Division | 8,688,636 | 5,305,376 |
| Total expenditures and transfers | 9,906,771 | 6,280,748 |
| Excess (deficiency) of revenues over expenditures and transfers | 585,435 | (939,859) |
| Fund balance at beginning of year | 2,437,632 | 3,377,491 |
| Fund balance at end of year | $ 3,023,067 | 2,437,632 |



## Debt Service Fund

**Statement of Revenues, Expenditures, Transfers and Changes in Fund Balance**

**Year ended June 30, 1974 with comparative figures for 1973**

| | 1974 | 1973 |
|---|---|---|
| Revenues: | | |
| Property tax (note 4) | $ 2,929,217 | 2,068,242 |
| Less provision for uncollectible taxes | 48,375 | 60,906 |
| | 2,880,842 | 2,007,336 |
| Interest income | 63,119 | 16,990 |
| Total revenues | 2,943,961 | 2,024,326 |
| Expenditures: | | |
| Principal payments — general obligation certificates (note 4) | 2,200,000 | 1,500,000 |
| Interest expense | 529,996 | 369,517 |
| Incidental cost of issuance of bonds | 8,589 | 10,044 |
| Total expenditures | 2,738,585 | 1,879,561 |
| Excess of revenues over expenditures | 205,376 | 144,765 |
| Fund balance at beginning of year | 406,612 | 261,847 |
| Fund balance at end of year | $ 611,988 | 406,612 |

See accompanying notes to financial statements.

## Capital Fund

**Statement of Revenues, Expenditures, Transfers and Changes in Fund Balance**

**Year ended June 30, 1974 with comparative figures for 1973**

| | 1974 | 1973 |
|---|---|---|
| Revenues: | | |
| Interest income | $ 647,566 | 277,467 |
| Proceeds from issuance of certificates of indebtedness less bond discount of $34,720 in 1974 ($2,956 in 1973) (note 4) | 5,565,280 | 4,797,042 |
| Federal grants | 8,879,069 | 461,524 |
| Disposition of buses and automobiles | 2,539 | 45,954 |
| Miscellaneous income | - | 8,315 |
| Total revenues | 15,094,454 | 5,590,302 |
| Expenditures: | | |
| Purchase of transit buses | 12,565,884 | 171,516 |
| Purchase and installation of support equipment | 174,440 | 16,674 |
| Purchase and installation of service and maintenance equipment | 11,483 | 500,435 |
| Equipment renovation and improvement | — | 27,657 |
| Additional costs of acquisition of Twin City Lines, Inc. — injuries and damages | 233,261 | — |
| Acquisition of other transit systems | 280,000 | — |
| Professional services | 26,962 | 134,747 |
| Installation of passenger facilities | 144,266 | 108,148 |
| Preparation of buses for operation | 11,977 | 43,542 |
| Miscellaneous | 9,545 | 33,124 |
| Total expenditures | 13,457,820 | 1,035,843 |
| Excess of revenues over expenditures | 1,636,634 | 4,554,459 |
| Fund balance (deficit) at beginning of year | 3,044,421 | (1,510,038) |
| Fund balance at end of year | 4,681,055 | 3,044,421 |
| Appropriated for excess condemnation award (note 2) | 1,615,000 | 1,510,000 |
| Unappropriated fund balance at end of year | $ 3,066,055 | 1,534,421 |



## Transit Operating Division

**Statement of Revenues, Expenditures, Transfers and Changes in Retained Earnings**

**Year ended June 30, 1974 with comparative figures for 1973**

| | 1974 | 1973 |
|---|---|---|
| Operating revenues: | | |
| Passenger revenues | $ 13,792,992 | 13,070,862 |
| Charter and contract revenues | 932,782 | 717,163 |
| Advertising and other revenues | 211,140 | 220,525 |
| Total operating revenues | 14,936,914 | 14,008,550 |
| Operating expenses: | | |
| Equipment maintenance and garage | 3,736,811 | 3,132,072 |
| Transportation | 13,996,304 | 11,531,644 |
| Traffic and advertising | 733,516 | 513,951 |
| Insurance and safety | 792,832 | 469,084 |
| Administration and general | 3,377,359 | 2,890,138 |
| Operating taxes | 895,368 | 688,129 |
| Total operating expenses, excluding depreciation | 23,532,190 | 19,225,018 |
| Operating deficit, before depreciation | (8,595,276) | (5,216,468) |
| Depreciation | 2,125,419 | 1,716,021 |
| Operating deficit | (10,720,695) | (6,932,489) |
| Fare stabilization subsidy from general fund | 8,688,636 | 5,305,376 |
| Amortization of Federal capital grants and commission capital contributions (note 8) | 2,032,059 | 1,627,113 |
| Excess of revenues and transfers over expenditures | — | — |
| Retained earnings at beginning of year | — | — |
| Retained earnings at end of year | — | — |

See accompanying notes to financial statements.

# Notes to Financial Statements

**June 30, 1974**

**(1) Summary of Significant Accounting Policies of the Twin Cities Area Metropolitan Transit Commission (MTC)**

**MTC Financial Structure**
The financial structure of MTC consists of four funds and two groups of accounts: (1) General Fund — to account for general tax revenues and general expenses; (2) Debt Service Fund — to account for debt service on long-term borrowing; (3) Capital Fund — to account for capital program expenditures; (4) Transit Operating Division Fund — an enterprise fund to account for operations of the bus system; (5) General Long-term Debt Group of Accounts — to record outstanding long-term indebtedness; and (6) General Fixed Assets Group of Accounts — to record nonoperating capital assets held at cost. The accrual basis of accounting is followed (with minor exceptions) by all funds.

**Federal Grants**
The MTC receives concurrence from the Urban Mass Transportation Administration (UMTA), U.S. Department of Transportation, for all Federal government grants, but UMTA requires support for all expenditures from MTC prior to the release of funds. Therefore, MTC's policy is to record UMTA's portion of the expenditure as accrued revenue receivable at the time final commitment is made for specific expenditures.

**Capital Projects in Progress**
Until completion, projects are recorded in the capital fund as Capital Projects in Progress, and as Investments in Capital Projects in Progress. Upon completion such expenditures are transferred to (1) the Transit Operating Division where they are capitalized in transportation property accounts or (2) the General Fixed Asset Group of Accounts (see notes 6 and 7).

**Property and Equipment**
The Transit Operating Division, accounting on an enterprise fund basis, carries its buildings, buses and equipment at cost and provides for depreciation on a straight-line basis at rates which are sufficient to prorate the cost over their estimated useful lives. Major additions and betterments are charged to the property account while replacements, maintenance and repairs which do not improve or extend the life of the respective assets are expensed currently.

**Federal Capital Grants and Capital Contributions to TOD**
The terms of the Urban Mass Transportation grants to MTC for acquiring the assets of Twin City Lines, Inc. and making capital improvement to the system prohibit MTC from recovering the cost of tangible assets so acquired from passenger revenues. Accordingly, the amount of the applicable grant and the related MTC contribution is being amortized to operations in amounts equal to depreciation on transportation properties acquired by the use of those funds, less the amount of pension fund payments assumed to apply to reduction of the pension liabiltiy assumed (see notes 8 and 9).

**Operating Subsidies**
The MTC authorized the transfer of funds from the general fund to the Transit Operating Division (TOD) in the amount necessary to offset operating losses incurred by TOD.

**(2) Transit Operations Acquired**
On September 18, 1970, the MTC acquired the assets and assumed certain liabilities of Twin City Lines, Inc. by condemnation. Twin City Lines, Inc. and the MTC appealed the initial award of $6,510,000 and on October 11, 1972 a jury of the District Court of Hennepin County, Minnesota awarded $10,136,700 to Twin City Lines, Inc. At the trial the judge directed the jury not to consider offsets to the gross value, as the condemnation commissioners had done, for pension fund liability and other obligations assumed by the MTC upon takeover. This decision has been appealed by the MTC to the Minnesota Supreme Court. Upon takeover, three-fourths of the original award was paid to Twin City Lines, Inc. and one-fourth ($1,627,500) was placed in escrow pending the outcome of the appeal. Subsequent to the latest decision by the court, the MTC has appropriated approximately one-third of the additional award and estimated interest expense accrued or $1,615,000 (two-thirds to be received from Federal grants) pending the outcome of the appeal to the Minnesota Supreme Court.

The TOD was formed by MTC for the purpose of conducting transit operations. Pending the final outcome of the appeal, the assets acquired and the liabilities assumed have been recorded in the accounts based upon the Condemnation Commissioners' findings. Should the amounts be materially increased or decreased as a result of the appeal, the financial statements of the TOD will be restated to give retroactive effect to such change.

The MTC acquired the Bloomington Bus Company as of June 26, 1974 with scheduled settlement on August 3, 1974. The total cost of acquiring the property and equipment amounted to $249,000.

**(3) Property Tax Revenues**
Minnesota Statutes, Chapter 473A, as amended, provides that the MTC may levy upon all taxable property within the metropolitan transit taxing district as defined therein, a property tax for general purposes of the transit commission. MTC levied a direct ad valorem tax of 1.51 mills or $8,806,898 collectible in 1974 and .93 mills or $5,235,813 collectible in 1973 for general operations.

**(4) Financing of Transit Capital Program**
Since January 1970, the MTC has received approval of five Federal capital grants from the Urban Mass Transportation Administration of the U.S. Department of Transportation. The five grants — providing for the small bus circulation system (QT) in downtown Minneapolis, the acquisition of Twin City Lines, Inc. and capital improvements to the bus system — are for a total of $40,087,251, over the period 1970-1978. This provides up to two-thirds of a capital program during that period with an estimated total cost of $57,104,135. The balance of this amount, $17,016,884, is to be financed over the eight-year period from local sources, but not from revenues obtained from use of the transportation properties.

On September 28, 1971, the Commission sold $6,100,000 of general obligation certificates of indebtedness dated October 1, 1971, at a net average annual interest cost of approximately 4.28%. Interest is payable semi-annually beginning August 1, 1972, and the certificates mature serially on February 1, 1973 through 1985.

On August 23, 1972, the Commission sold $4,800,000 of general obligation certificates of indebtedness dated September 1, 1972, maturing serially on February 1, 1974 through 1982, with a net average annual interest cost of approximately 3.84%.

On October 3, 1973 the Commission sold $5,600,000 of general obligation certificates of indebtedness dated October 1, 1973, maturing serially on February 1, 1975 through 1983, with a net average annual interest cost of approximately 4.35%.

The MTC levied upon all taxable property in the transit taxing district as of January 1, 1974 and 1973, a direct ad valorem tax of $2,929,217 (.51 mills) and $2,068,242 (.37 mills), respectively, for bonded debt. This is being paid into separate sinking funds established to pay the principal of $2,200,000 in 1975 and $1,500,000 in 1974 and interest payments on the certificates semi-annually.

**(5) Financing of General Fund Operations**
On March 6, 1974, the Commission sold $8,000,000 of 4.5% tax anticipation certificates of indebtedness maturing March 1, 1975 and callable on or after January 1, 1975 for general operations. The certificates are secured by anticipated receipts from general purpose property taxes levied in 1973, for collection in 1974 (note 3). A restricted group of accounts has been established for the collection and investment of pledged funds and the payment of principal and interest of the certificates therefrom.



**(6) Transportation Properties, Equipment, Furniture, Fixtures, Etc.**
Transportation properties, equipment, furniture, fixtures, etc. consisted of the following at June 30.

| | Transit Operating Division 1974 | Transit Operating Division 1973 | General Fixed Assets 1974 | General Fixed Assets 1973 |
|---|---|---|---|---|
| Land and buildings used in transit operations | $ 4,131,534 | 3,926,278 | — | — |
| Motor bus equipment | 27,312,088 | 16,646,412 | — | — |
| Other equipment, furniture, fixtures, etc. | 1,647,767 | 774,923 | 63,683 | 56,945 |
| Leasehold improvements | — | — | 3,794 | 1,597 |
| Total | 33,291,389 | 21,347,613 | 67,477 | 58,542 |
| Accumulated depreciation | 5,301,246 | 3,332,340 | — | — |
| Total | $ 27,990,143 | 18,015,273 | 67,477 | 58,542 |

**(7) Capital Projects in Progress**
Capital projects in progress at June 30 consisted of the following:

| | 1974 | 1973 |
|---|---|---|
| Purchase of transit systems | $ 249,000 | — |
| Purchase and installation of support equipment | 94,500 | — |
| Purchase of transit buses | 1,614,407 | — |
| Purchase and preparation of buses for operation | 11,977 | — |
| Purchase and installation of service and maintenance equipment | — | 596,164 |
| Installation of passenger facilities | — | 247,641 |
| Professional services | 3,200 | — |
| | $ 1,973,084 | 843,805 |

**(8) Federal Capital Grants and Commissions Capital Contributions to Transit Operating Divison**
Reconciliation of Federal capital grants and commission capital contributions to the Transit Operating Division, less applicable amortization is as follows:

| | 1974 | 1973 |
|---|---|---|
| Balance at beginning of year | $ 14,749,348 | 7,117,880 |
| Add — contributions | 12,027,521 | 9,279,600 |
| Deduct transfers to Capital Fund for sale | (17,232) | (21,127) |
| | 26,759,637 | 16,376,401 |
| Less amortization for year | 2,033,059 | 1,627,113 |
| Balance at end of year | $ 24,727,578 | 14,749,348 |

**(9) Pension Plan**
The Transit Operating Division maintains a retirement plan covering substantially all of its employees, which was assumed upon acquisition of Twin City Lines, Inc. As of January 1, 1974, the date of the most recent actuarial study, the unfunded liability of the plan for services prior to that date approximated $9,792,827 in 1974 and $10,539,327 in 1973. Net pension expense charged to operations in the years ended June 30, 1974 and 1973 amounted to $1,511, 704 and $1,272,715, respectively, and additional payments of $93,360 in 1974 and $88,907 in 1973 were charged to the liability previously recorded. Contributions provide for the payment of the normal cost and amortization of the unfunded liability over a period of approximately 19 years.

At the time of takeover by the MTC, a liability of $3,259,533 was recorded as a portion of the acquisition cost based upon the Condemnation Commissioners' findings, although at January 1, 1971, the date of the actuarial study nearest acquisition, the unfunded liability was $9,111,134.



Twin Cities Area Metropolitan Transit Commission
St. Paul, Minnesota:

We have examined the balance sheets of the various funds and account groups of the Twin Cities Area Metropolitan Transit Commission as of June 30, 1974 and the related statements of revenues, expenditures, transfers and changes in fund balance and the statement of revenues, expenditures, transfers and changes in retained earnings of the Transit Operating Division for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

The assets of the Transit Operating Division were acquired from Twin City Lines, Inc., on September 18, 1970 by condemnation. The amount awarded has been distributed to the various accounts included in the accompanying financial statements based upon the Condemnation Commissioners' findings; however, the amount awarded has been appealed by Twin City Lines, Inc. and the Twin Cities Area Metropolitan Transit Commission and the final outcome is not determinable at this time (see note 2 of notes to financial statements).

In our opinion, subject to the final outcome of the matter set forth in the preceding paragraph, the aforementioned financial statements present fairly the financial position of the various funds and account groups of the Twin Cities Area Metropolitan Transit Commission at June 30, 1974 and the revenues, expenditures, transfers and changes in fund balances (and the revenues, expenditures, transfers and changes in retained earnings for the Transit Operating Division) for the year then ended in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Peat, Marwick, Mitchell & Co.

Minneapolis, Minn.
August 27, 1974

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each picture left to
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St. Paul

Alice Rainville
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TRANSIT NEWS
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David Therkelsen
Editor

# Handicapped project may start by January

Purchase of two vans or small buses to begin a demonstration project to provide transportation to handicapped persons is expected soon.

Service, on a basis tailored to individual riders' destinations, would follow shortly thereafter, possibly before the first of the year, in a demonstration area on the north and west portions of Minneapolis.

The 1974 Minnesota Legislature approved the demonstration project for handicapped persons, and authorized a .04 mill levy for funding. The demonstration is being managed by the Metropolitan Transit Committee for the Disabled, made up primarily of handicapped individuals and representatives of organizations for the handicapped.

Cam Andre, MTC Executive Director, stressed the demonstration nature of the project, indicating that the successes and failures of the initial service will provide the basis for evaluating the potential for more extensive service, and for decisions on financing and assignment of operating responsibility.

Under the terms of the demonstration, handicapped persons, being defined as those who cannot, by reason of physical infirmity, use regular public transit, would be asked to report their transit needs to a dispatcher, 24 hours in advance. Trips registered on shorter notice will be accommodated if possible.

Thirteen-passenger vehicles wll be routed each day according to trip requests that have been made. The vehicles will be able to accommodate 10 seated passengers and three in wheelchairs.

As many as 12 vehicles may ultimately be acquired for the demonstration program.

Twin Cities Area Metropolitan
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# transit news

VOLUME 5 NOVEMBER, 1974 NUMBER 4

## actions of the commission

At its October 23 and Nov. 6 meetings the Metropolitan Transit Commission:

ADOPTED plans to administer the free-ride program during off-peak hours for persons under 18, as provided for by the 1974 Minnesota Legislature.

ACCEPTED a report prepared by ATE Management and Services Inc. on alternative fare systems.

AUTHORIZED the executive director to continue to seek a negotiated price for the acquisition of the operating assets of South-West St. Paul Transit Co.

AUTHORIZED entry into an agreement with the Minnesota Highway Department under which Federal Aid Urban funds would become available for the use of buses on a subscription basis to large employment centers.

REROUTED Minneapolis Route 15 to provide service to medical facilities in the Southdale area.

EXPANDED service for Shingle Creek Towers, Brooklyn Center, to provide for mid-day service.

INCREASED service frequency on the I-94 Minneapolis-St. Paul express bus, to 30 minutes during midday. Peak hour service continues at 20 minute frequency.

ENGAGED the firm of Liebenberg, Smiley and Glotter Associates for architectural and engineering services in connection with a south garage to be located somewhere in the I-35W corridor.

# Conference conducted

Issues such as community acceptance, safety, reliability and costs of small vehicle systems were explored thoroughly at the Second Technology Conference held Nov. 12 and 13 at the Holiday Inn, Minneapolis, as part of the current study of these systems.

Participants included consultants on the legislatively-mandated study, developers of vehicle systems, and people responsible for the planning process in several other metropolitan regions currently planning new public transit systems.

An earlier Technology Conference was conducted last May, in the earliest stages of the Small Vehicle Study.

The study, being undertaken by the Metropolitan Transit Commission, is in response to the desire of the 1974 Minnesota Legislature that more detailed analysis be conducted of automated, fixed-guideway transit systems using vehicles with 30 or fewer seats.

Results and a recommendation will be forthcoming in January. A report on Technology Conference findings and a further update on the Small Vehicle Study will be carried in next month's Transit News.

**CONFERENCE PARTICIPANTS MET AT HOLIDAY INN**
*They discussed issues of transit technology*

# transit around the world

## 'Magic Carpet' sparks revival

SEATTLE – The Magic Carpet Zone, a free-ride district in downtown Seattle, started as an experiment more than a year ago. Preliminary results indicate the zone is very popular with businesses, and that significant numbers of riders would have used a car downtown had Magic Carpet not been available.

A survey of 1,500 employees in downtown Seattle indicated that the service is very popular with those employed downtown and with bus riders, that it had caused a deliberate shift away from automobile use in the zone, and that an additional $7 million in yearly goods and services were purchased in the downtown area because of the Magic Carpet Zone.

The experiment was funded by $64,000 in City of Seattle funds. A majority of those questioned said that the City should use tax money to support the fare-free service and that $64,000 was "about right." Nearly the same number thought the cost was too low as thought it was too high.

The survey indicated clearly that the free-fare service has increased the use of downtown and has enhanced the area as a place to work and shop.

Respondents said they are using the downtown more for shopping, recreation, work-related trips, eating and personal business compared with one year ago. The majority recognized that the increase in mobility afforded by the free-fare service was a direct benefit to them as employers, employees or users of downtown services.

Bus patrons also felt that the service had increased the speed, convenience and scheduling of transit, but most felt that the "comfort" factor remained the same, possibly because of the increased ridership on the buses.

**(Editor's note: In researching Seattle's "Magic Carpet Zone" we also discovered an article written by a King County official on how Seattle may deal with the economic realities facing its transit system. Because the Twin Cities area must also work out its ultimate approach to transit financing, portions of the article are reprinted here, along with a description of the Magic Carpet Zone. Our thanks to Metro Monitor, a publication of Metro Seattle.)**

## Finance: tough question, must be faced

**by EDWARD HEAVEY**
**King County Councilman**

As we attempt to carry out the plan for a transit system in King County, approved by the people in 1972, we will begin to find out that the price is higher than we had anticipated. The demand for service is more than we expected and Metro, like all other governments throughout the country, is being adversely affected by inflation.

The cost of Metro operating a transit fleet is rising rapidly: wages, fuel, construction and equipment cost more and these costs are expected to be up by 69 per cent in the year 1981 if current inflation trends continue. Inflation is a reality and we can't expect operating and capital costs to remain fixed. Yet, most of Metro's revenue sources do not increase as the costs due to inflation increase.

Metro has three major sources of revenue: (1) the fare box; (2) a portion of the state motor vehicle excise tax, and (3) three-tenths of a cent countywide sales tax. Each of these produce approximately one-third of the total income.

Inflation isn't the only problem however. The average age of buses in our fleet is 19.6 years, and many of them ought to be junked. We cannot, however, remove any buses from operation until late 1975 at the earliest, when our new buses will start to arrive. The care and upkeep of these old buses has substantially increased Metro's cost of maintenance.

In addition, the energy shortage has substantially increased the demand for Metro service. Metro has been required to scour the country for additional buses in order to establish extra runs and add badly needed new routes. The peak has passed but the demand has not disappeared. It is expected to increase even more than we have projected for the next six or seven years. Metro is now providing service well above that projected in the original 1972 plan.

We have found that the better job we do, the more money it costs. A public transportation system, like all other public services, cannot be self-supporting if the public is to have proper services.

In March, realizing that these factors were affecting our income, at the request of the Executive Director, the Chairman of the Metro Council established a special Transit Cash Flow Task Force. The committee has developed a list of alternatives to increase Metro's transit revenues.

One of the suggestions is to increase the transit fare by 5 or 10 cents. A 10-cent fare increase would yield approximately $3.8 million a year. However, we are faced with an $18 to $22 million deficit by 1981, assuming the rate of inflation does not change; a risky assumption.

Another alternative is to reduce current levels of service or not increase services pursuant to the comprehensive plan. This is something we cannot do if we are to keep our promise of 1972 to the people that we would provide a transit system that adequately services needs of the community at a reasonable cost.

Another possibility is to seek additional state funding for public transportation from sources of revenue traditionally limited to only one aspect of transportation systems, such as highway funds. We must also consider sources of local funding such as an increase in the sales tax or a countywide payroll tax. These, however, would require a change in the state laws.

The choice as to whether to use any of these suggestions is not an easy decision. However, we must recognize that public transportation is an essential service and cannot continue to be effective unless it is subsidized by the public. It provides a public facility which is necessary for proper economic growth and to create a better quality of life. The adequate governmental support of public transportation demands the attention of elected officials at all levels and the unwavering support of the general public.

**MTC mailbag**

# Even bus system gets fan letters

**(Editor's note: People write to the MTC–and they should–when their bus is late, or the air-conditioning doesn't work. But it's nice to get fan mail, too. Here's a couple of our favorites from the mail bag this month.)**

* * *

Dear Mr. Kelm:

I am always going to write a letter to someone about how I feel about something–and it generally is about a negative reaction. So today I decided to do something positive and write to you.

I am much impressed and appreciate greatly the bus service provided where I live. I thought the 35C was great going to and coming from work, but now I can take an express bus (#47) downtown all day long. It is great to leave the house and 15-20 minutes later be downtown. I hope more people can be made aware of this good bus service–I can't imagine why anyone would drive.

Also, I think the reverse bus lane idea is a good one–it makes for a more efficient and faster entry and exit to the downtown area–another convenience for the bus riders!

Keep up the good work! I, for one, appreciate the MTC service available to me.

**Ann L. Blewett**
**Minneapolis**

* * *

Twin City Area Metropolitan Transit Commission:

Many thanks to you all for the resolution of appreciation that was given to me at your August 7 meeting.

It sure was a surprise to me. Also to each and every one of you who did this a big Thank You.

A Thank You to Al Ross who stayed by me in the past years to bring Route 22 in St. Paul a reality.

Also to all cards I received and for the lovely bouquet of Red Roses from a Minneapolis bus driver. To Robert Sprafka and Commissioner Len Levine, also to Mary Steele, who attends Transit Commission meetings with me.

**Mrs. Eleanor L. Pirrung**
**St. Paul**

**(Ed. – Mrs. Pirrung, a long-time advocate of better transit service, and a "regular" at meetings of the Metropolitan Transit Commission, was made an Honorary District Supervisor at a recent Commission meeting.)**

Current Sweden

Published by the Swedish Institute

No 47
November 1974
For free publication or background use



# PLANNING FOR SAFER URBAN TRAFFIC IN SWEDEN

by Arne Holmström

With 3.2 inhabitants per automobile, Sweden has the highest car ownership ratio in Europe. Although the country is fairly large, roughly the size of California, most of the vehicular traffic tends to converge on cities and factory zones.

About 60 percent of the road casualties occur inside densely built-up areas. Only the most recently developed urban districts have been planned to accommodate the explosive upsurge of traffic that has been going on ever since 1950, the year when Sweden really started to become a nation on wheels.

For the most part, our urban settlements were originally envisioned to implement the door-to-door principle. The townsmen of a former day took that principle for granted with their horse-drawn cabs, and their car-borne descendants naturally assumed that they could enjoy the same privilege. It was considered axiomatic that motorcars were free to jerk and wheeze their way through narrow streets and alleys and drop off their passengers wherever they pleased. The same principle was obviously meant to hold for the movements of all kinds of goods.

The result is familiar to all those who inhabit the metropolitan areas of today's industrialized world: traffic jams, noise, exhaust fumes and soaring road accident rates.

Latter-day efforts in Sweden to solve these problems have followed two different lines. First, the planners have sought to learn from earlier mistakes by designing virtually all new residential areas to adapt them to people as well as cars from the very outset. Second, safety improvement programs have been installed in older urban districts so as to cope with the worst disamenities of previously untrammelled car use.

All this forms an integral part of the ongoing attempts in Sweden to keep the motorcar under control, attempts which usually find expression elsewhere in the imposition of speed limits, mandatory use of personal safety equipment such as seat belts and motorcycle helmets, the adoption of increasingly more rigorous safety regulations for new vehicles, etc.

The standards now in force for safer traffic planning of virtually all new residential areas are based on the guidelines published in 1968 by the National Road Administration (Vägverket) and the National Board of Urban Planning (Planverket). These guidelines build in turn upon the research pursued over a period of years by the SCAFT Group attached to the Chalmers Institute of Technology in Göteborg.

The object is to bring about an ordered system for highway and street traffic which meets five requirements as follows:

1. Minimizing the accident exposure of road users. One way of doing this is to reduce the traffic volumes. Another is to encourage greater use of conveyances with a better safety record than motor vehicles, e.g. a subway or rapid transit system.

2. Eliminating conflicts and disturbances of different kinds.

3. Homogenizing traffic behaviours -- i.e. keeping variations in the behaviour of road users to a minimum -- and reducing the number of choice and action alternatives.

4. Optimizing the flow of information from the traffic milieu to the road user and enlarging the scope for action in time and space so that the process of judgment and decision-making can take place with minimum disturbance.

5. Reducing the consequences wherever an accident or close call occurs.

These requirements, which are basically identical with those the industrial psychologists meet when they are called upon to create a safe working environment -- lead up to a number of different measures. The most important measures may be grouped under the following heads:

1. Siting activities and functions to reduce the traffic volumes and hence conflicts and disturbances, and to guard against unnecessarily intersected traffic flows. Among the relevant problems under this head are finding appropriate locations for schools and workplaces in relation to residential areas, recreational facilities, shopping centers, etc.

2. Separating different kinds of traffic in space and time so as to eliminate conflicts between, say, fast-moving motor vehicles and slower-moving bicycles and pedestrians. Grade-separated intersections between motor lanes and footpaths-bicycle tracks, signalization etc. are examples of measures under this head.

3. Differentiating every traffic network in terms of functions and properties to make the traffic flows as homogeneous as possible. The measures here may involve bypasses and speed controls designed to get traffic to move in the same rhythm.

4. Designing information in the traffic milieu to make it as lucid, simple and uniform as possible. The result makes it easier for road users to take decisions and cuts down on the surprise elements. This may involve measures such as reducing the number of billboards and road signs. Whatever the measure, it must promote a clearly channelized traffic flow.

5. Cushioned, protective treatment of traffic facilities and the immediate surroundings to minimize the consequences of an accident or collision. Examples under this head are the removal of hard objects next to the roadway and fitting guardrails and lampposts with impact attenuation devices.

It follows that SCAFT adheres to more or less generally formulated guidelines. When it comes to translating these into practical planning, we arrive at the following four main principles:

1. Separate traffic networks should be developed for different kinds of traffic. This principle holds with particular force for motor vehicles vis-a-vis pedestrians. But it is also desirable to make separate provision for bicycles and mopeds. In cases where different networks intersect, as those for pedestrians and cars, they should be separated at grade by means of overpasses or underpasses (viaducts, footbridges, tunnels, etc.). However, these facilities must be sited to permit easy, convenient access.

2. A hierarchy of road classes should be developed which lets permissible speeds be determined by the mix and size of traffic plus the necessary criteria of safety and circulation. The connecting roads within and between traffic networks should be uniformly engineered in respect of width, distance between intersections, design of the intersections, visibility, illumination, etc. As regards vehicular traffic we can think of a hierarchy consisting of five road classes:

a) Expressways, which are intended for long-distance traffic. These are to be aligned outside densely built-up areas in view of the higher speeds involved (from 90 kilometers per hour on up).

b) Major arterials, which are intended for traffic between urban areas, with 90 km/hr as the permissible speed, grade-separated intersections to be spaced out at intervals of not less than one kilometer and lanes of opposing traffic divided by median strips.

c) Minor arterials, intended for traffic inside urban areas and connecting to major arterials. Here the permissible speed may range from 50 to 70 km/hr, with intersections spaced out at 500-meter intervals.

d) Feeder roads, intended for traffic inside a neighborhood and connecting to a minor arterial. The permissible speed here is 50 km/hr. Such roads should be no more than one kilometer in length, with intervals of 50 meters between the intersections.

e) Marginal access or entrance streets, intended for traffic between parking lots or house clusters and a feeder road. Speed is maximized at 30 km/hr and the maximum street length will vary from 150 to 300 meters.

It may be inferred from this classification that its object is to channelize traffic from the large expressways into the marginal access roads step by step. Pedestrian and bicycle traffic is prohibited on all types of roads except for the entrance streets.

3. All traffic networks should be designed to make it natural for the road users to utilize them for their intended purposes. Vehicular traffic must not be tempted to use throughways as feeders or vice versa. This holds perhaps with even greater force for the cyclists and pedestrians, who of course are extremely sensitive to anything that smacks of a detour. It follows that the lower-class connectors must be built as short as possible. It is also important to put house entrances, playgrounds, schools, stores and transit stops in direct proximity to the pedestrian network. This means that planning the pedestrian network ought to precede the highway engineering process.

4. Maximum simplicity and lucidity should be imparted to the system, for instance by letting traffic on higher-class roads take precedence to traffic on lower-class roads. Intersections ought to be of the three-way type, with priority to go to traffic on through routes.

   Traffic moving in opposite directions should be separated at junction points by earmarking special lanes for turn-off and through traffic. At those places where the road user is forced to choose between roads, he should be given only two alternatives.

The program called "safety improvement" represents a new approach to the problems that "unrestricted" vehicular traffic has posed for the cities. The adoption of simple traffic-control measures puts a direct tool in hand for this purpose, especially where older parts of town are concerned. At the same time, however, these measures must be integrated with a long-ranging traffic rehabilitation plan, dedicated to achieving the same high standards of road safety which now hold for those new areas that have been planned to meet the SCAFT guidelines referred to above.

The spot improvement programs so far implemented or being planned in Sweden are of varying extent. If our census is made to include isolated acts of civil authority such as posting one-way signs or banning vehicular traffic on a street section, a total of 90 traffic changes had gone into effect by 1972 and an equal number were then on tap for implementation over the next few years.

Perhaps the most widely publicized case is that of the Stockholm East Side (Östermalm), which has been the venue of an experiment since the fall of 1971.

Most of the buildings in Östermalm were erected between 1870 and 1920. Some smaller properties date back to the 17th century, with streets no wider than 12 meters. The greater parts of Östermalm, which covers a total of about two million square meters of which slightly more than 60 percent is residentially zoned, were planned in the late 19th century and feature streets 18 meters wide as well as broad, tree-lined boulevards.

Here the road-class hierarchy described earlier was realized by the simple expedient of barricading certain streets. The capital costs of this project have amounted to SKr 13 million. In the first year of its operation the

number of traffic accidents reported to the police fell off by about 25 percent on the perimeter streets and by about 30 percent inside the trial zone. Most of the reduction on the perimeter streets was due to an improved traffic milieu, with fewer conflict points, etc. Most of the safety gain inside the zone itself has apparently been due to contracted traffic volumes.

The environmental gains are harder to account for, this because the traffic volume must be cut in half to reduce noise to a level where the before-after difference (3 decibels) becomes perceptible to the human ear.

Summing up, we can say that spot improvement safety programs have greatly reduced the accident risks. As for the hygienic nuisances attributable to vehicular traffic, they have been subdued but still hold at a high level within the trial urban areas.

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Arne Holmström is press secretary for the National Road Safety Office.

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The author is solely responsible for the opinions expressed in this article.

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# Metropolitan Transit Commission

801 American Center Building St. Paul, Minnesota 55101 612/221-0939

October 30, 1978

Ms. Helene Borg, President
League of Women Voters of Minnesota
555 Wabasha
St. Paul, MN 55102

Dear Ms. Borg:

In response to considerable interest on the part of a number of local governments and citizens' groups in the Twin Cities area, the Metropolitan Transit Commission is beginning an examination of light rail transit. The enclosed report, "Light Rail Transit - A Discussion of the Issues," is an initial step in this process.

Light rail is worth a serious examination of the Twin Cities region. It is simpler, less expensive and faster to build than rapid transit or automated transit systems. Even so, it provides a significantly higher level of service quality and comfort than buses. Judiciously applied in selected corridors of the region, and carefully integrated with the bus system and paratransit, light rail could create a real improvement in transit service and have a tremendous impact on future urban development.

Even though light rail would only be implemented in a number of corridors, it would benefit the transit system throughout the region. Light rail is less expensive to operate than bus service because of its higher levels of efficiency. Savings from light rail operations could be used to upgrade bus service, creating regionwide benefits.

Light rail transit can also be useful as a planning tool. It can be helpful in clustering development to create the more rational development patterns which have been the objective of land use planning for years. In a petroleum-short future, the higher energy efficiency of such clusters will be even more important than it is today. Light rail is thus appropriate for consideration in planning for transportation improvements at the municipal level.

I hope you will find the enclosed report to be interesting and useful.

Sincerely,

Leonard W. Levine
Chairman

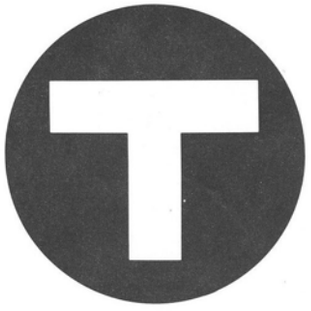
st
encl.

# LIGHT RAIL TRANSIT

## A DISCUSSION OF THE ISSUES

Metropolitan Transit Commission

801 American Center Building St. Paul, Minnesota 55101



# LIGHT RAIL TRANSIT

## A DISCUSSION OF THE ISSUES

METROPOLITAN TRANSIT COMMISSION

July, 1978

## PREFACE

Considerable analysis of fixed guideway transit systems has taken place in the Twin Cities region. Different technologies and different corridors have been studied to determine the feasibility of implementing a high quality fixed guideway system. In spite of the generally comprehensive nature of this work, little formal consideration has been given to light rail transit. As a result, there is a lack of information describing light rail and discussing it in terms of transportation and other issues which are of concern in the region.

This report is intended as a modest step in remedying this lack. This is not an exhaustive technical treatise on the subject; other studies which are much more complete are listed in Appendix B. Rather, the purpose here is to provide sufficient information to assist in public discussion of light rail and its applicability in the Twin Cities region.

## I. LIGHT RAIL - A DEFINITION

Light rail transit is a mode of public transportation which has been the object of increasing interest over the past few years. It is not a new mode; rather it is a refinement of existing technologies, planning concepts and operating methods. A recent publication of the U.S. Department of Transportation offers this definition:

> Light Rail Transit -
>
> > A generic name for a transit mode consisting of electrically-powered steel wheeled rail vehicles operating predominantly on exclusive rights-of-way and characterized by flexibility in planning routes and operating procedures and an ability to provide intermediate capacity service in between that of many bus and rail rapid transit systems.[1/]

The term "light rail" does not refer to the weight of the vehicle or the rail itself. Rather, it is meant to convey the fact that light rail systems are less complex, less expensive, and have lower capacities than full rapid transit systems.

Several characteristics of light rail make it appropriate for consideration in American cities. It provides a higher quality of transit service than buses, and so attracts and serves a larger ridership. Even though it represents a higher order of utility than bus transit, it requires significantly less investment than full rail rapid transit. It produces even less environmental degradation than do buses, and operates on electrical energy rather than the limited supply of petroleum fuels. It offers many choices in designing the operating environment, and so can be tailored to each application; it can be developed as a simple system, and upgraded as the need evolves. It can be integrated with land use controls to stimulate development or to maintain the character of a neighborhood.

Light rail transit came into being as the logical improvement upon streetcars. There are still similarities; the systems use much the same technology, although improvements have been made. But there are other innovations which make light rail clearly different from streetcars as a mode of public transportation.

During the years of street railway construction and expansion, the opportunity sometimes existed to establish a separate right-of-way for individual lines. A separate right-of-way for at least a part of the transit line is one of the most significant characteristics of light rail transit. This single measure of removing transit vehicles from the flow of general traffic provides a major improvement in the quality of service. Operating speeds are higher, reliability can be increased, and safety hazards resulting from conflicts with other vehicles and objects are decreased.

---

1/ See Reference 4, page E-2.

Figure 1. A light rail line on separate right-of-way at the side of a residential street. The right-of-way area is landscaped; the surface is planted with grass.

These service qualities make light rail highly attractive to transit patrons. Higher operating speed allows shorter trip times, while greater reliability enables riders to depend upon the transit schedule, reducing both waiting time and the feeling of uncertainty over when the next vehicle will arrive. Because these factors are critical to making transit competitive with the automobile, light rail transit on a separate right-of-way generates higher ridership than transit in mixed traffic.

Light rail is difficult to define and describe because it has the virtue of being adaptable. Existing light rail systems serve many functions, from urban circulators to interurban service. They exist in large cities and small, in high density centers and in suburban fringe areas. Many date back to the turn of the century, others are brand new. In each case, the light rail system itself reflects these differences, having been shaped to fit the particular circumstance in which it functions. So a description of light rail must consider its variety and variations.

## II. PHYSICAL COMPONENTS

### Vehicles

Because light rail had its origins in streetcar transit, the vehicles are similar. In cities where light rail operations evolved from streetcar lines, or where street running still occurs, the vehicles often are conventional streetcars. But for other systems, particularly those with exclusive rights-of-way, variations in vehicle design occur.

The basic vehicle is a single car, the length of which varies from 43.5 feet to over 50 feet. Seating capacity can range from about 35 to almost 70, with fewer seats being used in European operations where more space for standees is desired.

As transit operations have changed, so have the vehicles. One of the most significant advances has been the adoption of articulated vehicles. Each of these vehicles consists of more than one body section, connected by a joint which allows the vehicle to bend as it turns. This feature allows vehicles to be longer yet still negotiate curves easily and require a minimum clearance. The primary advantage of these longer vehicles is their higher capacity and better utilization of seating space. This allows more people to be carried per vehicle and per driver, increasing the productivity of the transit system. The articulated vehicle also provides an attractive atmosphere for riders. The vehicle joint intrudes very little on interior space, so that the cars feel spacious. Passengers can walk unimpeded the length of the car.

Because of the advantages of articulated vehicles, they are widely used. Both single articulated and double articulated cars are common. The former have two body sections and usually have six axles; the latter have three body sections and eight axles. The length ranges from 62'8" to 98'9", with seating capacities from 30 to 85. Including standing passengers, total capacities range up to more than 220.

A number of other variations in vehicle design exist. Some cars are single ended, which means that a single operator's position exists at one end of the car. Double ended cars have an operator's position at each end, which simplifies reversing at the terminus of a line.

Another option is low level vs. high level loading. Low level loading requires steps, as in a bus. High level loading utilizes platforms at stops, at the same level as the vehicle floor. Some vehicles have moveable steps which permit either high or low level loading, depending upon the character of the stop.

The technology of the vehicles allows a number of options in operating procedures. Where higher capacity is required, cars can be coupled together into two or three car trains, operated by a single driver in the lead car. These multiple unit trains require less space and can move through signals faster than the same number of cars operating individually. Another practice employed in some European systems is the use of unpowered trailer cars, towed by regular vehicles.


Figure 2. Light rail vehicle. The ability to bend with the curvature of the track is demonstrated by this double articulated car.

Most American light rail vehicles in operation are of the single unit variety. Because rail transit in this country was in the process of being abandoned for many years, there was no market for new vehicle development. However, over the last few years, a new articulated Standard Light Rail Vehicle has been developed and is being produced by the Boeing Vertol Company, in a program sponsored by the Urban Mass Transportation Administration.

All light rail vehicles have certain elements in common. Their electric traction motors are located under the vehicles, on the trucks which support them. Each car draws power from an overhead wire, through a trolley pole or pantograph. A general description of four light rail vehicles is shown in Table 1. This is not an exhaustive table. There are over a dozen manufacturers, each marketing a number of vehicle models.

It is not uncommon to find thirty-year-old light rail vehicles still in operation. While this stems partly from the general lack of modernization of American transit systems, it also results from the inherent longevity of rail vehicles. They are more sturdily built than rubber tired vehicles, and because they do not operate on pavement, they are not subject to the wear and tear caused by hitting potholes and curbs. As a result, light rail vehicles last longer before they must be rebuilt or replaced.

TABLE 1. Comparison of Four Light Rail Vehicles

| VEHICLE | PCC CAR* | DUWAG U2 | STANDARD LRV (USA) | CANADIAN LRV |
|---|---|---|---|---|
| Approximate Design Year | 1930-1934 | 1965 | 1973 | 1975 |
| Axles/Articulation | 4/0 | 6/1 | 6/1 | 4/0 |
| Length, Feet/Meters | 43.5 to 50.5/ 13.2 to 15.4 | 75.5/23.0 | 71.5/21.8 | 50.5/15.4 |
| Width, Feet/Meters | 8.33 to 9.0/ 2.54 to 2.74 | 8.70/2.65 | 8.85/2.70 | 8.32/2.54 |
| Floor Height, Feet/Meters | 2.72/.83 | 3.18/.97 | 2.82/.85 | – |
| Roof Height, Feet/Meters | 10.1/3.08 | 10.8/3.28 | 11.5/3.51 | 10.6/3.25 |
| Seats, Number/Layout | 49 to 69/ 2+1 or 2+2 | 64/2+2 | 68/2+2 | 41 or 51 |
| Doors, Number per Side | 2 or 3 double | 4 double | 3 double | 2 double |
| Type | Folding | Folding | Plug | Folding |
| Steps | Low | High | High/Low | Low |
| Maximum Speed, MPH/KPH | 50/80 | 50/80 | 50/80 | 50/80 |
| Acceleration Loaded, Feet/Second$^2$ | 6 | 3.3 | 4.1 | 4.9 |
| Deceleration Loaded, Feet/Second$^2$ | – | 3.9 | 5.1 | 5.1 |
| Emergency Deceleration Loaded, Feet/Second$^2$ | – | 10 | 8.8 | 10 |
| Empty Weight, 1000 lbs. | 33 to 42 | 66 | 68 | 45 |
| Maximum Grade (Percent) | 13 | 4.4 | 9.0 | – |

Source: Reference 4

* NOTE: This was the standard American streetcar. Although it is still in use on several light rail systems, it has not been in production for many years.

Station Design

A wide variety of designs are possible for facilities for loading and unloading. A primary decision is whether loading is to be at platform height or at ground level. High level loading provides direct movement between the floor of a vehicle and a station platform without a change in level; low level loading requires steps in the vehicles, similar to those in a bus.

High level loading permits faster loading, thus making operation more efficient. It is more convenient for passengers, especially those who have difficulty climbing stairs, and allows the vehicles to be easily accessible to wheelchairs. Drawbacks of high level loading include platform construction at every stop, with the resulting higher cost and space requirements. If both high level loading and low level loading occur on the same transit line, each vehicle must be equipped with moveable steps which will accommodate both.

Light rail loading areas and stations can be designed in many ways. The simplest ones are similar to bus stops, with a waiting area at a curb and perhaps a shelter. Where the transit line runs in subway, stations may be quite complex, with mezzanines and platform areas similar to rapid transit. Options between these two extremes abound. An important factor is that where separate right-of-way exists, it is easier to provide greater station amenities if they are desired, since space can be more readily obtained for them.


Figure 3. A simple station on a light rail line in the center of a boulevard. Special paving material is used to indicate the station area. The support system for the overhead wires is combined with the street light standards.

Rights-of-Way

Light rail is highly flexible in its right-of-way requirements. The technology of light rail is such that it is adaptable to many types of right-of-way.

The most desirable right-of-way would be one which is entirely separate from other traffic. Light rail fits well in this type of right-of-way; its high level of vehicle performance allows it to operate at high speed and the vehicle configuration allows it to carry larger numbers of passengers in greater comfort and with greater safety than on buses.

At the same time, light rail works in less advantageous environments. Light rail vehicles can operate with crossings at streets and highways, and can even run in the street mixed with other traffic if it is necessary or desirable to do so.

The great advantage of this flexibility is that different types of rights-of way can be used on a single light rail line. Where separate rights-of-way are readily and economically available, light rail can take advantage of them to provide excellent service. Where such rights-of-way cannot be obtained, light rail still works.

The most common type of right-of-way is one which is semi-exclusive. This comprises separate right-of-way for most of the line, except at street grade crossings. Many variations of this concept are possible. A light rail line may be placed in a highway or street median, at one side of a street, in a reserved transit lane, or on a railroad right-of-way. Where the transit line crosses streets, traffic signals can be used to assure safe operations. As in standard traffic engineering practice, these signals can be sequenced, or have priority given to transit vehicles through simple signal preemption devices, to maintain high operating speeds.

Right-of-way characteristics of light rail are different from both conventional rail rapid transit and automated guideway transit, both of which require absolute separation of right-of-way. Rail rapid transit must be separated because of high speeds and automation of some functions, and because power collection occurs through a track-level third rail. Automated guideway transit cannot respond to unprogrammed events since there are no operators aboard vehicles, and so cannot tolerate intrusions onto the guideway. In light rail, however, there is an operator onboard each vehicle or train, and power collection is accomplished through an overhead wire, allowing light rail to mix safety with other functions.

Because light rail does not require isolation, it does not require subways or aerial structures. They are constructed only where the improvement in service would justify the added cost, perhaps years after the construction of the basic transit line. This allows the system designer to exercise a high degree of discretion in determining how large a capital investment is needed for construction, and when that investment is to be made.

Right-of-way width for two light rail tracks is usually less than thirty feet, with additional area required at stops. Operating and geometrical conditions require slightly more width in some cases. By contrast, urban freeways typically require two to three hundred feet of right-of-way width.


Figure 4. An intersection with a street, equipped with signals giving priority to transit. Traffic moves in an orderly and efficient manner.

## III. OPERATIONS AND SERVICE CHARACTERISTICS

Light rail lines function best where they are considered to be integral components of a regional transit system. This allows maximum utilization of both the light rail lines and the rest of the system; buses and para-transit vehicles can be mutually reinforcing with the light rail.

Typically, this complementarity takes the form of a high service quality, high capacity light rail line serving a line haul function in a corridor, with other transit vehicles as well as automobiles acting as feeders to the rail line. Bus routes are reoriented to serve the rail stations, and park-and-ride lots are provided at stations. This allows each type of transportation to operate in the environment to which it is best suited. Buses and autos can operate in the lower density areas where they are appropriate, and focus on light rail stops to create a high ridership density in the corridor.

By using this approach, the light rail line can serve an area far greater than those areas directly adjacent to it. For example, the 4.3 mile long light rail line in Newark, N. J., serves passengers from an area in excess of 100 square miles, because it is served by 12 bus lines. The light rail line is bounded on one side by a park.[2/]

Figure 5. A transfer point between feeder bus and light rail, with direct access from one to the other.

2/ See Reference 7, page 159.

Feeding a light rail line with buses and autos allows the rail line's high capacity to be well utilized. The capacity of a given line depends upon many factors; successful operations generally operate at a lower volume than full capacity to avoid the disruption and delays which can occur at the limit. Capacities are affected by vehicle size, frequency, and operating speeds. The speed on a given line depends upon station spacing and alignment characteristics, but operating speeds are usually higher than those for buses.

Although a transfer from bus or automobile to the rail line is necessary, there are ways in which the negative effects can be reduced. Bus and rail schedules can be coordinated to minimize waiting times. Physical design of stations can be such that transfers are short in distance and easily accomplished.

Another simplifying measure is a no-barrier fare collection system. This system does away with fare gates in stations and fare boxes on vehicles. Instead, passengers purchase tickets before boarding. Roving inspectors board vehicles at random to check passengers for valid tickets. This system speeds boarding, since passengers can enter any door of a vehicle. It also does away with some of the costs of fare collection, and is compatible with the use of monthly passes.

Light rail is also adaptable to other fare collection systems. If stations are constructed, fare gates can be used similar to those in rapid transit stations. This also allows rapid boarding of vehicles. Where no stations are built, fare collection can be onboard the vehicle, just as on buses.

## IV. PLANNING CONSIDERATIONS

It would be convenient if there were a rule of thumb that would indicate where light rail would work. Unfortunately, such simplistic measures do not exist. Decisions on proposed light rail applications must be made with full consideration for the many factors which affect each case.

### Costs

Cost is, of course, one of the most important considerations in any potential transit system improvement. In evaluating the costs of light rail, it is necessary to examine both the capital costs of implementation and the operating costs to arrive at the full costs of light rail development.

Implementation costs can vary widely, depending upon how much right-of-way is readily available and how elaborate the system is to be. Where railroad corridors, highway medians and other existing rights-of-way can be used, capital costs are low. Where the decision is made to use tunnels or aerial structures, or where new at-grade rights-of-way must be created, costs are higher. Likewise, the options which exist for vehicle type, size, and technological detail, and the variety of station designs possible, establish ranges of costs. Table 2 shows three estimates of capital cost for the various elements of a system. As these estimates are several years old, they understate costs because of the effects of inflation.

TABLE 2. Capital Cost Estimates for Light Rail Transit*

(In Thousands of Dollars)

| Cost Element | De Leuw 1974 LRT | Beetle 1975 LRT | Dyer 1975 LRT |
|---|---|---|---|
| Guideways (per mile) | | | |
| Dual aerial | 6,200-8,000 | 10,000-15,000 | 2,820-17,150 |
| Dual at grade (grade separated) | 3,000 | 2,000-5,300 | 1,000-2,430 |
| Dual at grade (grade crossing) | 1,000 | 340 | 500-1,000 |
| Dual underground | 24,000 | 18,000-35,000 | 29,130-33,730 |
| Trackwork (per mile) | 900 | 540 | 750-1,000 |
| Stations | | | |
| Aerial (medium to high passenger-volumes) | 1,300-2,100 | 5,000 | 190-4,560 |
| At grade (medium to high passenger-volumes) | 1,500-1,800 | – | 2,770 |
| Underground (medium to high passenger-volumes) | 6,500-12,500 | 5,000-15,000 | 440-7,560 |
| Low level platform (low and medium passenger-volumes) | 60-120 | 75 | 20-60 |
| High level platform (low and medium passenger-volumes) | – | 110 | – |
| Traction Power (per mile) | | | |
| Third rail | 1,800 | – | – |
| Overhead wire | – | 490 | 1,100-1,300 |
| Controls | | | |
| Block (per mile) | 1,300 | 190 | 210-410 |
| Grade crossings (per crossing) | 60 | 25-100 | 50-200 |
| Maintenance Facilities (Per Vehicle) | 100 | 60 | 126-454 (assuming 100 vehicles) |
| Vehicles (each) | 350-500 | 450 | 320 |
| Engineering and Administrative | 15% | 15% | 15% |
| Contingencies | 25% | 25% | 25% |

Source: Adapted from Reference 6.

NOTE: These estimates are drawn from three different studies; the author and publication dates are shown in the column headings.

The ranges in capital costs which exist for light rail reflect one of its greatest advantages -- where the decision is made to construct a simple, functional system, it is possible to do so at a reasonable cost. In the Twin Cities, the added advantages of existing right-of-way and relatively low cost of tunneling in some areas, if underground lines are desired, also contribute to the economic character of light rail.

Although operating costs also depend upon the character of the system, there are several economies which are intrinsic to all light rail. The fact that light rail vehicles are large makes it possible for each to carry a high number of passengers, allowing greater productivity of the labor force. Various degrees of right-of-way separation also contribute to operating economies. Higher speeds allow more efficient utilization of both rolling stock and labor. Collision repair costs are less because the safer operating environment reduces the accident rate. The savings help to offset the costs which may be incurred in creating the separate right-of-way.

The introduction of light rail offers the opportunity to effect economies in bus operations as well. Where bus lines are reoriented to serve as feeders to the light rail line, buses are no longer used to make the line haul portion of trips, which is the least productive portion. Using buses for feeder service increases the number of passengers per bus mile, raising the system's efficiency.

Because of these economies, the total cost -- capital and operating -- of a light rail line can be comparable to an all-bus or bus-on-busway system designed to offer a similar level of service. In a number of recent studies of specific projects, light rail has been found to be less expensive than bus alternatives.

Ridership

The number of riders who would use light rail is also not a simple function of any single characteristic of the system or the area served. Ridership depends upon a complex interaction of such factors as the size of activity centers, geographic distribution of development, existing transportation facilities and their levels of congestion, as well as the nature of the transit system being implemented.

The argument is sometimes made that a certain level of city population or population density is required to generate sufficient ridership to justify fixed guideway transit. Using this argument, it is claimed that the Twin Cities cannot support rail transit.

While population and density do give some indication of the available market for transit ridership, they are far too gross to measure the actual patronage that would occur on a given transit line.

The inability of these measures to serve as a basis for decisions is demonstrated by the fact that many cities far smaller and of lower density than the Minneapolis-Saint Paul region have successful light rail operations. These are cities in Western Europe and Canada, where standards of living are comparable to that in the United States, and where auto

ownership is high and increasing. As described in a recent light rail study, "Virtually all cities in West Germany, the Netherlands, Belgium, Sweden, Switzerland, and Austria with populations in excess of 200,000 to 300,000 made the long-term decision to use rail transit systems as their basic transit mode."3/ By contrast, Saint Paul and Minneapolis had combined 1977 population of 658,300, according to Metropolitan Council estimates.

European densities are also not much different from those in the Twin Cities. The aggregate density of the two central cities here was estimated to be 6,270 persons per square mile in 1977. While existing light rail cities include higher density cities such as Dusseldorf, at over 10,000 persons per square mile, they also include cities like Gothenburg at approximately 3,300, Edmonton at 3,700 and Bonn at 5,200.

One factor which sometimes can be a useful indicator of potential light rail ridership is the ridership on the existing bus service in the corridor where light rail would be constructed. For example, in Europe a commonly used rule of thumb states that where bus ridership is over 10,000 per day, light rail may be appropriate. For comparison, the Twin Cities area has several individual bus routes which carry more than 20,000 passengers per day, the most heavily used carrying over 25,000 regularly.

However, existing ridership cannot serve as an absolute criterion. There are at least two conditions which can cause light rail to attract significantly higher ridership than that which exists. First, in a corridor where bus service is not particularly direct or rapid due to congestion or topographic barriers, the introduction of higher speed light rail service can attract far more patrons than the existing bus service. Second, in areas where the potential for land development or redevelopment exists, light rail is sometimes used as a catalyst to stimulate that development, thus creating a larger ridership market.

Development Impacts

Transportation facilities have always been one of the primary shapers of development patterns. Light rail is no exception to this rule. It has the potential to affect urban development in a positive fashion, if properly planned.

The effect of light rail is to create increased accessibility adjacent to stations. This creates an incentive to locate activities nearby which can take advantage of the accessibility. These activities can create nodes of clustered development which are conserving of land and energy.

However, no mode of transportation can cause development where conditions are otherwise unfavorable. Development requires willing investors, an unsatisfied market for space, land which is developable, and a suitable economic and social climate. Where these conditions exist, a new transportation facility can act as a catalyst to development.

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3/ See Reference 6, page 16.

The effect of a light rail line, then, would not be to magically create massive new developments surrounding stations. Instead, it could channel the continuing development process of a region, causing new facilities to be located in coherent clusters rather than in random, sprawled dispersion.

The development impacts of light rail transit in this country are difficult to measure. Most existing systems are decades old, often predating widespread auto ownership, and so not relevant to current conditions. On the other hand, new systems are only now being implemented, and have not had sufficient time to affect growth patterns.

For evidence, then, it is necessary to examine the effects of rapid transit, which shares with light rail the characteristic of establishing a fixed corridor of high quality transit service. The development impact of rapid transit has been amply demonstrated in numerous North American cities. The most outstanding example is Toronto, where high density clusters of office, commercial, and residential buildings have blossomed around transit stations. The Lindenwold High Speed Line has created a dense corridor radiating from Philadelphia in what was once semi-rural land. In Atlanta, new building construction has focused on planned rapid rail stations. There is no reason to doubt that similar results will occur from light rail implementation.

Energy Consumption

The energy consumed per passenger on a light rail line is difficult to predict. The amount varies greatly, depending upon the frequency of stops, number and severity of grades, and numbers of passengers on each vehicle. Many studies have attempted to measure the comparative efficiencies of different transportation technologies; the conclusions generally show light rail and buses to be about equal in efficiency and far better than automobiles.

Another factor to be considered, however, is that light rail transit is exclusively electrically powered. In Minnesota, only about six percent of electricity is generated from oil or natural gas; the balance is produced from coal, nuclear fuels, and hydro power. This means that light rail would not contribute to the increasingly rapid depletion of petroleum resources, and could provide an alternative means of mobility to the automobile should there be a serious shortfall in gasoline availability.

In the long run, light rail can also help create indirect reductions in petroleum consumption. Where clustered development occurs surrounding transit stops, different trip patterns emerge. People require fewer trips and shorter trips to accomplish their tasks, and more trips can be made by walking rather than using a motorized mode. These savings create further reductions in per capita petroleum use. Evidence of this phenomenon exists in cities which have established rail transit systems.

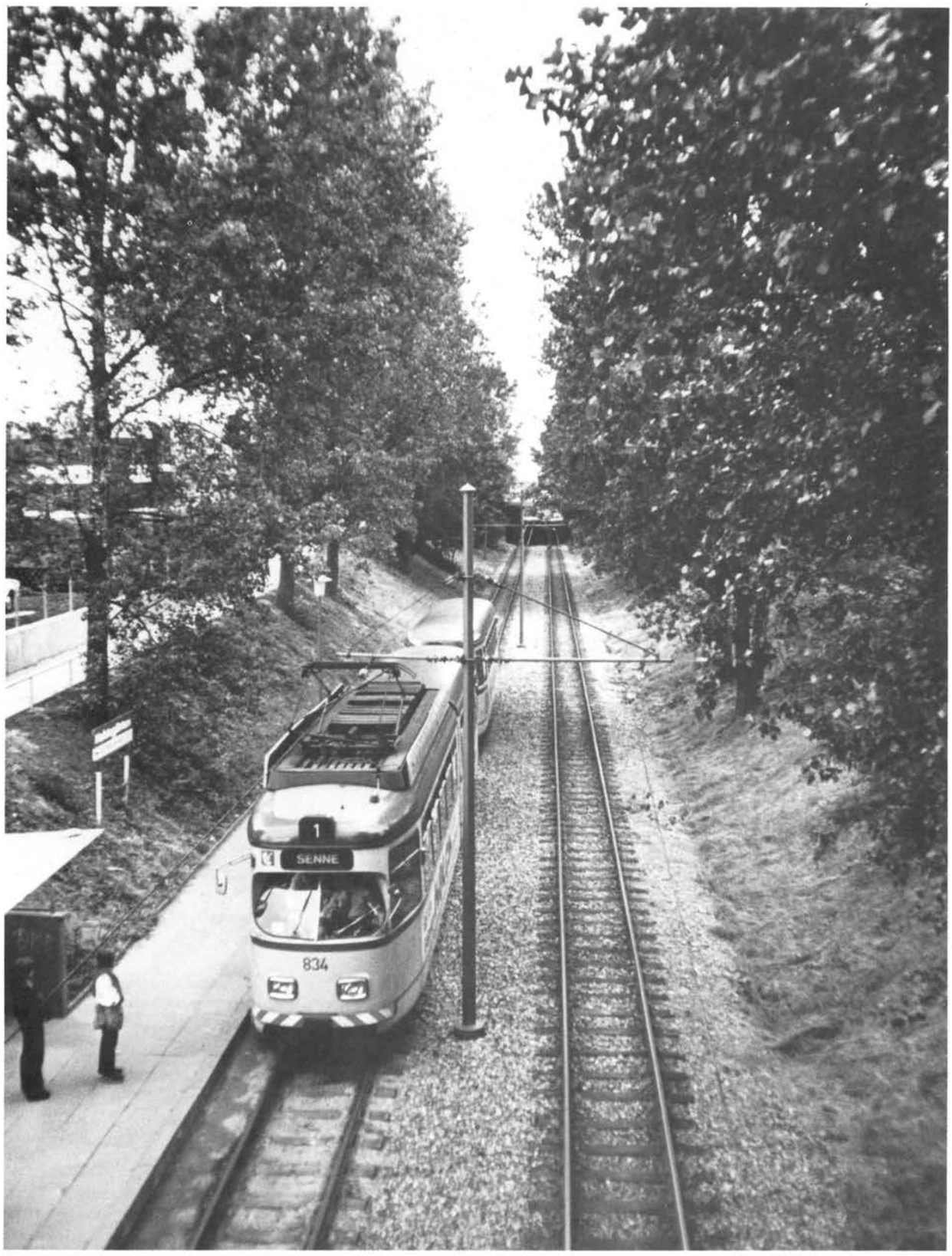


Figure 6. Typical right-of-way, approximately twenty-five feet wide. A freeway providing comparable capacity would require a width of 200 to 300 feet.

## Environmental Impacts

Because light rail is electrically powered, it does not contribute significantly to air pollution. Those pollutants which are created occur at a generating station, usually removed from environmentally sensitive areas, rather than on the street, as is the case for petroleum powered vehicles. Emissions from a generating facility are also more easily controlled, since it is stationary. Emission data for light rail show that it creates virtually no carbon monoxide, an insignificant amount of hydrocarbons, and very little oxides of nitrogen and sulfur dioxide.[4/]

Noise emissions from modern, well-maintained rail vehicles are low. The use of resilient wheels, which incorporate a damping material between the hub and the wheelrim, can serve to reduce the wheel squeal which remains a problem on older rail equipment. As a result of better track and wheel design, a well-maintained system can have noise levels lower than buses and some automobiles. Interior noise levels in modern light rail vehicles are comparable to noise levels inside many automobiles.[5/]

## Negative Aspects of Light Rail

This report has discussed many of the issues which are important to decisions regarding light rail transit. But to fully understand the implications of those decisions, it is necessary to explicitly explore the drawbacks and potential problems. As in all public sector judgements, the importance of these negative aspects depends upon publicly held values and publicly supported goals.

Several characteristics of light rail can make implementation difficult. One of the most significant is the necessity for an initial capital investment. Although the initial costs are substantially less than those for conventional rapid transit, they are still higher than those for buses operating solely on streets. These costs are accounted for by the more sophisticated rail vehicles, the purchase of some right-of-way, and the design and construction of the running surface and other fixed facilities. The latter two types of costs would also occur, of course, for a busway. Even though the total annual cost for light rail may be lower than the annual cost for buses, the necessity of financing the initial investment can be an obstacle.

Acquisition of right-of-way can also create problems. Because it is desirable to provide light rail service within short walking distance of activity centers, the lines should penetrate developed areas. Light rail's relatively narrow right-of-way and low level of environmental degradation facilitate this; light rail construction is far more compatible with existing development than is highway construction. Even so, there are situations in which right-of-way in the area to be served is unavailable or difficult to acquire. This is especially true in downtown areas. If street space is unavailable for a transit mall, and if mixed traffic operation is deemed to be unacceptable, it may be necessary to route the rail line to a less desirable location or to build a tunnel for some portion of the line.

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4/ See Reference 6, page 212.
5/ See Reference 6, page 207.


Figure 7. Landscaping used to make the overhead less noticeable.

Where street running in mixed traffic is necessary, conflicts occur. Light rail vehicles create obstacles for auto traffic, and auto congestion slows and disrupts the transit service. Although traffic engineering techniques can help to reduce these conflicts, they will still exist. Thus, it is desirable at least to provide a separate lane for light rail vehicles so that operation in mixed traffic may be avoided.

Since light rail typically does not have a fully separated right-of-way, its operating speeds are not as high as those for full rapid transit. Also because of the lack of full separation, light rail cannot be fully automated. There is the possibility of impeding the flow of motor vehicle traffic at grade crossings, although integrated rail/highway signal systems which exist in cities with light rail demonstrate that traffic disruptions can be minimized.

Another limitation of light rail is that it is not appropriate for serving all transit needs in the region. Some proponents of improved transit believe that a fixed guideway system must be region-wide in order to be politically acceptable. While light rail can be extended into low density areas, this can be in conflict with the basic purpose of light rail. That purpose is to provide a high quality, high productivity service where strong transit corridors exist or can be created. Thus light rail should be considered as a selectively applied improvement upon the regional bus system.

The overhead electric distribution system can be a drawback from an aesthetic standpoint. This system consists of the contact wire and the means to support it. Other elements of power distribution, such as feeder cables, are usually placed in underground conduits. In downtown areas, the overhead wires can be supported from buildings. In other areas, poles are used, but it is possible to use the same poles for overhead support, street lighting and traffic signals, reducing the need for additional supports. European systems have been devoting increasing efforts to making the overhead less conspicuous through the use of landscaping and careful design. Technical improvements in electrical conductors and insulators have contributed to the ability to design less obtrusive overhead than was used for streetcars.

Criteria for Decision Making

To establish criteria for deciding upon implementation of light rail transit, it is first necessary to identify light rail's characteristics and effects which are important factors in the decision. From the preceding discussion it is obvious that many factors must be considered, such as cost, system performance, environmental impacts, and social and economic benefits. The decision-making process which addresses these factors is not a simple one:

- A decision cannot be based upon only a few factors. While it might be tempting to do so, that would ignore the many others which might be equally or more important.

- The various factors are interrelated in complex ways. An attempt to optimize a transit system with respect to one factor may have profound negative effects upon other aspects of the system.

- Some of the factors do not lend themselves to measurement. An example is aesthetics.

- Other factors can be measured, but not in units which can be compared with each other. Air quality and transit service quality are two examples. This makes judgements about trade-offs difficult.

- Where these measurement difficulties occur, the decision-making process must rely upon subjective value judgements.

- There is no single standard for making value judgements. Transit systems affect at least three different groups of people -- the community at large, the users of the service, and the managers of the system. The values of these three groups often differ, but all must be considered.

As a result of this complexity, the decision process must have both technical and political aspects. Each factor must be analyzed as thoroughly as is practical from a technical standpoint, to generate the best possible information. But the act of evaluating that information in a comprehensive manner to reach a decision cannot be accomplished using strictly technical means.

Typically, technicians identify the factors which are important, and the means to measure them. Where possible, criteria and limits for the factors are defined. Then, other participants must become involved. Determining the relative importance and weighting of factors must be done by community representatives, transit users, and those responsible for the operation of the transit system. Table 3 lists a number of factors and some ways in which they might be measured.

The complexity of the process requires that decisions about light rail implementation be made on a case-by-case, site-specific basis. Although experience in other cities is instructive and valuable in providing information on light rail's characteristics, it cannot answer the hard questions which pertain to light rail implementation in the Twin Cities area. No other urban corridors are identical to those which exist here. No other area has the same governmental structure and political climate as the Twin Cities region. So if light rail is to be legitimately considered here, it will require the specific efforts of technicians and community leaders alike.

TABLE 3. FACTORS FOR DECISION MAKING

| Factors | Possible Measures |
|---|---|
| Cost | Capital cost<br>Annual cost<br>Costs not covered by farebox revenue |
| Ridership | Daily ridership<br>Peak hour ridership<br>Low income ridership<br>Elderly and Handicapped ridership |
| Energy Consumption | Electric energy used<br>Petroleum-based energy used |
| Environmental Impacts | Air pollutant emissions<br>Water pollutant emissions<br>Noise levels<br>Visual impacts |
| Safety | Accidents rates |
| Quality of Service | Travel times<br>Frequency of service<br>Transfers<br>Area coverage<br>Comfort<br>Reliability |
| Economic Benefits | Reduced costs for other transportation modes |
| Community Impacts | Land area required<br>Businesses or homes displaced by construction (if any) |
| Contribution to Urban Development Goals | Consistency with established plans for neighborhoods, municipalities, and the region |
| Effects on Existing Transportation System | Levels of congestion<br>Travel times<br>Energy used<br>Environmental measures<br>Reduced need for other construction and improvements |

## V. EXPERIENCE IN OTHER CITIES

Light rail transit is growing in both North America and European cities. Where light rail exists, it is being upgraded and expanded. In other cities which have only had bus systems, projects are being planned or implemented.

### Existing Systems

Throughout the world, over three hundred light rail systems are operating. Of those, ten are in the United States and Canada. In this country, these are the remnants of the large streetcar networks which at one time provided areawide service. The existing lines typically have a large fraction of their trackage on exclusive rights-of-way. The reason for this is simple: as streetcar networks were destroyed, the lines which interfered most with auto traffic were the first to be removed. Since lines separated from street traffic created less interference, and at the same time provided higher quality service, they were sometimes retained.

In all of the existing U.S. and Canadian systems, expansion or other improvements are underway. A few examples:

Boston -- The MBTA is acquiring 175 new standard Light Rail Vehicles, built by Boeing Vertol, Inc. Of the existing fleet, 50 to 100 cars will be rebuilt. Track work and safety improvements are also being carried out. As a result of improvements completed so far, ridership on the light rail line increased 19% in 1977.

San Francisco -- The Muni is acquiring 100 new standard Light Rail Vehicles as a part of a major light rail improvement program. New power substations have been constructed, three-fourths of the trackage has been rerailed and a new downtown light rail subway, built in conjunction with but operationally separate from BART, will open to accommodate the new cars.

Pittsburgh -- After years of studying such alternatives to its existing light rail facilities as automated transit and busways, Port Authority Transit is in the final stages of preparation for a major rebuilding of light rail. In the first stage of the program is the rebuilding of 10.5 miles of the 22.5 miles of rail line and a new maintenance and storage facility. The decision as to whether a subway or a surface line will be built in downtown has not yet been made.

Edmonton -- After opening the initial 4.5 mile light rail line in April of this year, the City of Edmonton is already considering expansion. Discussions are underway with the developer in a suburban area concerning a northeastern extension of the existing line. Planning is also underway for a line extending south from the downtown, serving the University of Alberta.

Other light rail lines operate - and are being improved - in Cleveland, Fort Worth, Newark, New Orleans, Philadelphia, and Toronto.

In the rest of the world, development of light rail has been much more intense. Over one hundred systems operate in the U.S.S.R. alone, while Western Europe contains more than seventy. Almost all of the Western European systems are planning or engaged in improvements. The general level of development is high - equipment is sophisticated and systems extensive. Europe offers the best models for potential light rail development in this country.

New Systems

In many countries, cities which do not have light rail are studying the possibility of constructing new lines. Proposals have been made in more than 30 cities in the United States and Canada alone. Among the cities where the probability of implementation is highest are:

Buffalo -- A capital grant application has been filed with the Urban Mass Transportation Administration for the construction of a 6.4 mile light rail line. The system, to be built to virtually rapid transit standards, will include 5.2 miles of subway with eight underground stations. The remaining 1.2 miles will follow a pedestrian mall.

Detroit -- Having received a commitment of $600 million from UMTA, the Southeastern Michigan Transportation Authority has developed seven alternative transit systems, four of which include light rail. A final system is expected to be selected in November. The SEMTA board favors an alternative that includes light rail in the Woodward Avenue Corridor because of the higher development potential as compared to an all-bus alternative.

Portland -- Light rail is one alternative being considered for the Banfield transitway. This project was initiated by the decision not to build a proposed freeway. It has included specific consideration of the coordination of land use planning and transportation planning. Support for the light rail alternative is high in the region.

San Diego -- In July, the Metropolitan Transit Development Board decided to move ahead with plans for a state and locally-financed 15.9 mile light rail line, all at grade. Earlier, the San Diego city council had withdrawn its support by a 5 to 4 vote, because the plans did not include a final price for right-of-way acquisition and did not include a financing plan for expanding the existing bus system, operated by a separate public agency. The passage of Proposition 13 has reduced the amount of operating funds available for the buses. The MTDB is working to resolve these issues to the satisfaction of the city council. In earlier planning, all-bus transit systems had been studied, but it was found that in 1995, the operating costs of a combined bus/rail system would be about $1 million per year less than that for an all-bus system.

Calgary -- Construction is underway on an eight mile light rail line in the city's south corridor. Scheduled to open in late 1981, the line will follow a railroad corridor and then operate on a street level mall through the downtown. Vehicles have already been purchased. Light rail was selected after an alternatives analysis showed that after five years of operation, total cost for light rail would be less than for a busway.

## VI. POLICY PERSPECTIVES ON LIGHT RAIL

In response to the growing interest in light rail, the Urban Mass Transportation Administration has developed a federal policy position. Published in December, 1975, the policy statement declares that light rail "deserves serious consideration by localities bent on improving the quality of their transportation service...." The full text of this statement is Appendix A to this report.

More recently, UMTA's "Federal Policy on Assistance for Major Urban Mass Transportation Investments" specifically includes light rail, and the "Policy Toward Rail Transit", published March 7, 1978, recognizes that light rail can be less expensive and more flexible than full rapid transit.

UMTA's stated intent has been to assist one or more new light rail systems. This has not yet happened, perhaps because UMTA has not been satisfied with applications submitted to it, or perhaps because the funds available for capital projects have not been sufficient to allow many new system starts. In any event, UMTA continues to voice its support for light rail projects. Legislation presently under consideration in the Congress could substantially increase the federal capability to assist the implementation of new rail systems.

## VII. CONCLUSIONS

Light rail is a practical, effective type of public transit. It uses proven technology, and operates successfully in hundreds of cities around the world. Recognition of light rail's capabilities and advantages has increased dramatically in North America over the last few years, in response to concerns about the environment, energy availability, and lessened ability to finance large public works. The transit industry is devoting much more effort to light rail development, and the federal government has declared its official support.

Cities in which light rail exists are not significantly different from Minneapolis and Saint Paul. Most of these places are medium sized cities, in developed countries with high standards of living. Many of them are not particularly high in density, but have identified corridors where light rail improves the existing quality and productivity of transit service.

One of light rail transit's major benefits is low total cost. The investment costs required are relatively low, and can be offset by operational savings. In appropriate applications, light rail has been shown to be less expensive than an improved bus system.


Figure 8. Performance in eighteen inches of snow. All-weather operation is an inherent capability of light rail.

Light rail is also an adaptable technology, allowing it to be tailored specifically to each application. As a result, a line can be easily integrated into an existing community without major expense or disruption.

It is possible to exert a high level of control over the costs and characteristics of a line, as the technology does not demand that expensive, elaborate provisions be made. Low cost options exist.

Light rail represents a sensible approach to transit improvement. As recognized by the MTC's Advisory Committee on Transit, light rail's potential for no-frills implementation makes it both compatible with fiscal constraints and appealing to the community.

## APPENDIX A

## UMTA POLICY STATEMENT ON LIGHT RAIL TRANSIT

During the past year light rail transit has come to be viewed as a serious alternative to buses and rapid transit in meeting the transportation needs of our metropolitan areas. Several cities with existing light rail systems are taking steps to modernize their vehicle fleets and upgrade service. A number of other cities are contemplating the possibility of introducing light rail to supplement existing bus service. However, no new light rail lines have been built in recent years in this country, with the result that capital and operating data on modern light rail technology is not available.

In light of the growing interest in light rail transit, and in answer to numerous requests, the Urban Mass Transportation Administration is issuing this statement of policy in order to provide the clearest possible expression of its position toward light rail transit.

UMTA considers light rail transit as a potentially attractive concept for many urban areas. The features that distinguish it most strongly from conventional rapid transit are the flexibility with which it can be adapted to a variety of urban settings, and its potentially lower cost. In congested downtown areas light rail transit can be operated in underground subways. In lower density areas it can be operated at grade in existing roadway medians, reserved freeway lanes, and in abandoned rail and other exclusive rights-of-way. At heavily traveled intersections and in busy arterials grade separation can be achieved through underpasses or elevated structures. However, with preemptive signals and barriers, surface grade crossing and operation in mixed traffic might be tolerated in some situations. Because much of the track can be built at surface level, the need for costly tunneling and elevated guideways can be minimized and substantial economies in capital expenditure can potentially be achieved.

Light rail transit has also other merits. It is a technologically proven concept that requires no costly development program. It can be introduced into a community with a minimum of disruption and can be operated with minimum intrusion in residential areas. It may offer a capability for conversion to higher capacity service, thus allowing a city to match its initial investment to existing and near-term demand and to stage subsequent investment as and when it is required. Because light rail transit holds promise of an economic, versatile and environmentally attractive form of mass transportation, the Urban Mass Transportation Administration believes that it deserves serious consideration by localities bent on improving the quality of their transportation service.

This is not to say that light rail transit will be prescribed as a preferred alternative in any specific local situation. UMTA has no preferences among mass transit technologies and will continue to support the choice of system and mode which emerges as the right transportation solution from the locally conducted alternatives analysis.

But while UMTA has no modal favorites, the burgeoning demand for mass transit assistance, together with the escalating costs of transit construction and operation, has put a serious strain on the available public resources, making it essential to fully explore any cost effective approaches. Therefore, the Urban Mass Transportation Administration announces its intention to assist in the deployment of modern light rail transit in a city or cities where proper conditions for this type of service are found to exist. In pursuit of this objective UMTA will carefully review all alternatives analyses and capital grant applications which are pending or which will be submitted in the coming months to determine which urban area or areas can make a convincing case for Federal support of light rail projects.

December 16, 1975

## APPENDIX B

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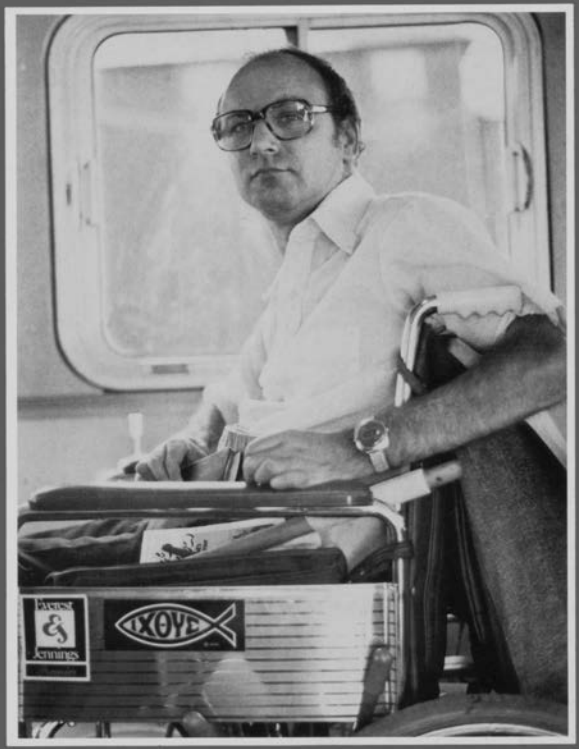
Photos: Figs. 1, 3, 4, 6, 7 - K. Fletcher; Fig. 2 - Lohöfener; Fig. 5 - G. D. Fox; Fig. 8 - N. D. Clark.

# transit news Quarterly



Volume Four Number Four Fall, 1978



## Contents

Keim accepts federal post 1
1979 budget emphasis 3
What riders think of Project Mobility 4
The future of handicapped service 6
The next five years 7

## Our Cover

Dean Neill is a frequent passenger on Project Mobility buses. We asked him and four other regular riders what they think of the service. Their responses are on page 4.

**transit news Quarterly**

Volume Four Number Four Fall, 1978

Published four times a year by Metropolitan Transit Commission, 801 American Center Building, St. Paul MN 55101. (612) 221-0939.



# Kelm accepts federal post, Levine named acting chairman

Doug Kelm has resigned as chairman of the Metropolitan Transit Commission to accept an appointment as the regional representative of U.S. Secretary of Transportation Brock Adams. In his new position, Kelm coordinates the programs of five federal transportation agencies in a six-state area that includes Minnesota.

Governor Rudy Perpich named Leonard Levine as acting chairman of the Commission. The governor said he did not believe it would be appropriate to appoint a permanent replacement for Kelm before the election. Levine has been a member of the MTC since 1973 and is serving his fifth term as a member of the St. Paul City Council. He continues to represent his precinct on the MTC while serving as acting chairman.

Kelm was appointed chairman of the MTC in 1971. During his terms as chairman, there were major improvements in MTC bus service including a doubling of the number of bus miles, a substantial reduction in the age of the bus fleet, the construction of 340 shelters and the development of 81 park and ride locations. These improvements and an effective marketing program resulted in a 40 percent increase in bus ridership.

Kelm has been a leader in promoting innovative transit services such as dial-a-ride, car and van pools, downtown circulation systems and special services for elderly and handicapped people. In addition, he is an advocate of rail transit for the Twin Cities.

Kelm's new position involves more than transit. He coordinates the programs of the Federal Highway Administration, the Urban Mass Transportation Administration, the Federal Railroad Administration and the Federal Aviation Administration. His office is in Chicago.

Doug Keim

Leonard Levine

# Marketing programs promote the convenient OughtaMobile

With the likes of fast food eateries and drive-in banks experiencing a boom, it's not surprising that consumer marketing strategies throughout business and industry are capitalizing on the convenience craze from every conceivable angle.

Following suit, the MTC has adopted a convenience-bent strategy of its own that is getting people out of their cars and onto the bus.

Until very recently, MTC marketing objectives sought to accommodate riders almost entirely from an operational standpoint; the idea was to provide efficient bus routes and schedules for riders in order to meet specific travel needs.

Now, things have changed. The aim of MTC's current marketing approach is to link convenience features directly with transit riding. This refined approach is largely due to research on the concept of convenience fares conducted by the MTC and the Advisory Committee on Transit. From that research evolved a Convenience Fare Plan which spawned MTC's new All You Can Ride pass program.

Consumer research indicated that a significant number of riders disliked having to rummage around for exact change to pay for their rides, especially with a busload of strangers looking on. In order to eliminate this perceived problem, the MTC decided to expand its existing Commuter Ticket program and design a method of

Both existing and potential riders like convenience features.

advance fare payment whereby riders could pay for rides in advance and simply show a pass when they step aboard the bus.

The result was two variations on the advance payment theme, a monthly card for weekday work commuters and a weekend pass for recreational weekend travelers — especially families.

The monthly pass, by far the more popular of the two, sells in five denominations that reflect the MTC's fare zones and is designed to offer regular commuters an average of four free work trips per month. Rides taken for other reasons also are a bonus if the card is used regularly.

Likewise, the $1 Weekend Pass (good for two adults and two children or one adult and three children) offers unlimited riding privileges for a weekend and is designed so the more it is used, the more it saves consumers.

The decision to fortify MTC's marketing approach with these convenience features has paid off. The MTC's Marketing Department found that three percent of those who buy monthly passes are new bus riders.

All You Can Ride monthly card sales rose from 8,000 in November 1977, to an average of 16,000 by last spring. Weekend pass sales have not been quite as dramatic; generally sales have hovered around 1,500-1,600 per month. This may be because the weekend passes have not been promoted as heavily as the monthly cards.

The success of the convenience fares program shows that both existing and potential bus riders are attracted to the convenience features of transit. The continuing increase in sales of monthly passes also demonstrates that these features can be effectively advertised and merchandised.

Two additional convenience pass projects are being introduced — a Touchdown Pass for riders going to Vikings football games on the new Route 78 park'n'ride buses and a Dime Zone pass for riders in downtown St. Paul and Minneapolis.

In addition, Master Charge and Visa cards are now accepted for all MTC purchases. Credit cards are accepted at the MTC's two sales and information booths (Northwestern Bank Skyway lobby in St. Paul and IDS Crystal Court in Minneapolis) as well as through a mail-in program.

These new elements of the Convenience Fare plan along with Commuter Tickets, Gift Certificates and the All You Can Ride passes will be promoted this winter under one unified theme, which will add a new dimension to the two-year-old OughtaMobile campaign. The promotion will help show how bus riding is not only more economical than driving but can be just as convenient.




# 1979 budget emphasizes special services, construction

Regular bus service will grow only slightly next year, but there will be a major increase in service for elderly and handicapped people. At the same time, construction will begin on several major projects that will make the transit system more efficient and economical.

Those are the highlights of the 1979 budget that was approved in October by the Metropolitan Transit Commission.

The work program portion of the budget totals approximately $67 million, which is about 11 percent more than in 1978. Of this, about $58 million is for regular transit service, including regular route service, QT service and University of Minnesota commuter and intercampus buses.

Most of the increase in the cost of regular transit service will be caused by inflation. The total number of bus miles will grow less than two percent next year. The Commission anticipates that the increasing cost of providing service will make it necessary to increase fares by 10 cents on July 1, 1979.

The MTC estimates that the fare increase will cause a very small decline in regular route ridership. This decline will be more than offset by increases in University of Minnesota and QT ridership, and total regular transit ridership is expected to increase almost five percent to 70.1 million.

A large increase in the work program budget is for expanded special services for elderly and handicapped people. The cost of this service will be $2.1 million compared to approximately $700,000 this year. The funds will be used to expand the Project Mobility service area and to provide other supplemental transportation services to elderly and handicapped people.

The work program budget also includes paratransit projects totaling about $1 million. These projects include continuing the total commuter service program and the Community Centered Transit Service in White Bear Lake and starting a new paratransit project in the Lake Minnetonka area. These paratransit projects are contingent upon receiving state and federal grants.

The 1979 capital budget totals $36.6 million. Unlike the work program budget, the capital budget must be approved by the Metropolitan Council. The Council has approved capital projects totaling about $30.4 million. The remaining projects can be resubmitted for approval after the Council completes its review of the Transportation Development Program. About 80 percent of the capital budget comes from federal grants.

Nearly two-thirds of the capital budget will go into two projects — a maintenance and overhaul facility and a new bus garage. Construction will begin next year on both projects, and they will be completed in 1980.

The overhaul facility is the more expensive of the two. It will cost $17.1 million, of which $13.7 million is included in the 1979 budget. The building will be about 256,000 square feet and will house the overhaul and major service facilities for the MTC fleet. The facilities are now in Snelling Garage, which was built about 1905 as a streetcar barn and is far too small to handle the current fleet. The overhaul facility will be located adjacent to I-94 in St. Paul near the Minneapolis city limits.

The new bus garage will house 200 buses on land near Twin Cities International Airport. It will be about 200,000 square feet and will have space for storing, fueling, cleaning and performing minor maintenance on the buses. It will enable the MTC to more efficiently serve the southern part of the Twin Cities area. The total cost of the South Garage will be $10.9 million, of which $9.3 million is in the 1979 budget.

Another major project is the renovation of Shingle Creek Garage in Brooklyn Center. The warehouse-type building was purchased by the MTC in 1976 as a temporary garage, and improvements are necessary to make it into an efficient bus storage and service garage. The building will be made more energy efficient, and there will be new maintenance areas, driver and dispatch facilities and additional blacktopped parking.

Other capital projects include park and ride facilities in Burnsville, Roseville, Hopkins and Wayzata. The four sites will have a total capacity of about 275 cars. In addition, a transit pulse center will be built in Golden Valley to provide a centralized area for bus riders to transfer between several bus routes. A passenger waiting area will be provided for the comfort and safety of passengers waiting at the pulse center.

# What do riders think of Project Mobility?

For the past two years the Metropolitan Transit Commission has provided special service to many handicapped residents of Minneapolis through Project Mobility. The project, which began as a one-year demonstration program, has provided reliable, easy-to-use and reasonably convenient transportation service to the residents in its North and South Minneapolis target area, according to an evaluation of its first year of operation.

In June 1978, the Project Mobility target area was expanded into eastern and southeastern Minneapolis. Since then, the MTC has ordered 18 small buses that will be used to further expand Project Mobility next year. The service area will be gradually enlarged as the buses are received until it includes all of Minneapolis and St. Paul and most of the first ring suburbs.

The evaluation of the project concluded that users of the service generally had favorable attitudes toward it. About three-fourths of them had favorable reactions to the service's reliability and its drivers, but there were some minor complaints, it said. The consultants who evaluated Project Mobility also interviewed six of its passengers and found that the service could have a significant impact on their lives.

To mark the second anniversary of Project Mobility and in anticipation of its expansion next year, Transit News Quarterly interviewed five people who have regularly used the service since it began. They were asked to describe how they use the service and what they think about Project Mobility.

### Sheila Nelson

rides Project Mobility daily and often makes three or four trips a day. She uses Project Mobility to go to the University of Minnesota, visit her family, go shopping and for social outings.

"I really like Project Mobility," Ms. Nelson said. "It's the best thing we've ever had. Before, I could do things only when friends had a car; now I can go out and use my electric wheelchair (which will not fit into a car)."

Ms. Nelson described Project Mobility as a "good system" but added that she would like to see some minor changes. One of those changes is extending the hours of service until midnight on Friday so that it would be easier to make social trips. Project Mobility operates until midnight on Saturday and 11 p.m. on Sunday, but service ends at 10 p.m. Monday through Friday.

Until several months ago, Ms. Nelson had never had a problem scheduling Project Mobility service. "Now," she said, "it is hard to get buses when you need them. A few weeks ago, I needed a bus to get to the University, but I couldn't get one." Instead, she used her electric wheelchair to go from her apartment at 2100 Bloomington Avenue So. to the campus.

### Wally Christensen

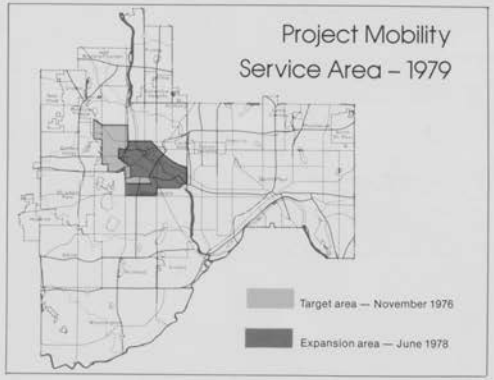
who uses Project Mobility for work, medical and shopping trips, said the service is "terrific."

Project Mobility "made it easier to get around," Christensen said. "I'm an amputee, and I can't walk more than a block at a time." Before Project Mobility, Christensen had other people do his shopping for him. He described the project as a "pretty well run thing" and added, "All the drivers are congenial."

Christensen has a standing order, which means that Project Mobility picks him up at the same time and place every weekday. He said that he has had no problems scheduling buses.

### Diane Quinn

uses Project Mobility daily for work, shopping and social trips. Before the service started, she didn't make those trips, and she used a private service for essential medical trips.








She said the service has met her needs and is "really good" although it is getting busier. Like Christensen, she has a standing order for weekdays, but she said that weekends, particularly Sundays, are the worst time for scheduling buses.

### Dean Neill

uses Project Mobility to travel between Courage Center in Robbinsdale and North Central Bible College in Minneapolis, where he is studying for the ministry.

Neill said he has been generally pleased with the service. "But sometimes I get upset with it," he said. "They can pick me up for a trip but not bring me back. The afternoons are very busy. I really think they need more buses."

Neill also uses Project Mobility to attend church on Sunday and described scheduling weekend service as "a hassle." On the other hand, he said that most of the drivers are courteous in contrast to some that he has encountered on private services.

### Bernard Morrison

uses Project Mobility for a wide variety of trips including shopping, social events and visiting the library.

He has found the service very good. "I'm waiting for it to expand so I can get to St. Paul and visit the government buildings," he said.

The only time I have a little trouble is Sunday," Morrison said. "I hope with the expansion that they can eliminate the wait on Sunday. A lot of people use it for church and going out to dinner."

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The most common complaint among those interviewed was recent difficulties in scheduling service. The reason for this is a large increase in ridership. In August 1977, Project Mobility carried an average of 182 passenger trips per weekday; one year later it was carrying 272 passenger trips per weekday — an increase of almost 50 percent.

Part of this growth in ridership was caused by expanding the project's target area last summer. The amount of Project Mobility service was increased slightly this fall to help alleviate the weekday scheduling problem, according to Sam Jacobs, manager of Project Mobility.

Jacobs agreed that it is often hard to schedule buses on weekends, when Project Mobility has only half as many runs as on weekdays. He said, however, that it would create a scheduling problem to add another run. It would be possible to have some drivers work overtime on Sunday morning if a peak period for the service could be identified, Jacobs said. Overtime service on Sunday morning has been tried but was dropped when there were not enough riders to justify the extra cost, he said.

The five interviews and the more precise evaluation report indicate that Project Mobility has been quite successful in providing service in its target area. Handicapped people in a much larger area can look forward to soon receiving a service that is reliable and convenient but which, like all other forms of transportation, is not yet perfect.


Wally Christensen


Bernard Morrison


Diane Quinn


Sheila Nelson

# Project Mobility continued

## Future of handicapped service being decided in Washington

While plans are being made for next year's expansion of Project Mobility, the long-range future of transportation for handicapped people is being determined in Washington. The federal government is currently considering regulations that would require regular route buses to be accessible by wheelchairs.

The MTC has told the U.S. Department of Transportation that this regulation would be insensitive to the needs of the Twin Cities and could seriously damage the Commission's ability to serve the region's population. The MTC said there should be local determination of the best way to provide service to handicapped people, i.e., through special service such as Project Mobility or fully accessible regular route service.

The controversy over special service versus regular route service divides both governmental agencies and the handicapped community. The issues include which program provides better service, whether handicapped people should receive special treatment through special programs, and money.

The MTC has estimated that fully accessible service plus necessary special service for those who do not live near bus routes would cost from $3.1 million to $10.6 million per year more than expanded Project Mobility service. Its position is that services such as Project Mobility are not only less expensive but provide higher quality service that is easier for handicapped people to use.

The people interviewed for the article on Project Mobility were asked for their opinions on the two types of service. Some of their comments were as follows:

Sheila Nelson — "I can see the point behind an integrated system. I would work well for some people, but in the winter, some people wouldn't be able to use regular route service. In theory, it is good. It would be best if there were some way to run both systems."

Wally Christensen — "It would be absolutely ridiculous to make regular buses accessible. The major problem would be the weather. A lot of handicapped people can't get to the front door much less to the corner."

Dean Neill — "I think it's asking too much of the general public (to make regular route buses accessible). Opening the door to use the lift lets the cold into the bus. I want my own service — Project Mobility. With a regular bus I might have to go one or two blocks for service."



# The next five years: better service, higher costs

MTC bus service will continue to improve during the next five years, and it will attract more riders. But these riders will pay higher fares, and increased subsidies will be needed.

This view of transit service in 1983 is part of the Transportation Development Program (TDP), which was recently approved by the Metropolitan Transit Commission. The Commission developed the TDP in consultation with the Transportation Advisory Board of the Metropolitan Council and its subordinate committees, and the Council is now reviewing the program.

The TDP is required by state law and is a companion to the Metropolitan Council's Transportation Policy Plan. While the Policy Plan is concerned primarily with broad transportation policies, the TDP has more detailed programs for transit and paratransit service and for highway projects. In other words, the TDP tells how the Policy Plan will be implemented.

A new approach in the Policy Plan is its "subregional concept" for transit service. It divides the metropolitan area into 12 subregions, each of which will have the basic necessities for daily living — employment and educational opportunities, a major shopping center, health facilities, governmental services, recreation and entertainment facilities. The plan says transit and paratransit services should be focused upon the major activity center in each subregion to encourage people to live, work and shop within the subregion. Local transit service would concentrate on the activity center and express service would link the center to the downtowns.

An example of the subregional concept can be seen in the southern Minneapolis suburbs. The subregion consists basically of Bloomington, Edina, Richfield and parts of south Minneapolis. The Southdale area is the major activity center. Transit and paratransit service would link all parts of the subregion to Southdale, which already has a demonstration route that provides all-day express service to downtown Minneapolis.

The TDP uses a family of transit services to comply with the Metropolitan Council's policies. This family consists of express service between the subregions and the downtowns and the University of Minnesota, local bus service within the subregions, circulation systems within

The plan recommends a balance between fares and subsidies.

major activity areas such as the downtowns, and paratransit service in the outlying areas.

Five basic options were considered for providing scheduled bus services. These included different combinations of service, fare and subsidy policies.

The least expensive option was maintaining presently authorized subsidy levels and fares. By 1984, however, this would require eliminating half of the current bus miles of service, according to the TDP. The most costly basic option was to continue service improvements without increasing fares. In 1983, this would require a subsidy of nearly 85 cents per passenger compared to the current 48 cents.

The option recommended by the TDP calls for a small increase in miles of service — 14 percent over five years. This would be accompanied by demonstrations and implementation of various types of paratransit service and some increase in activity center circulation services.

The TDP recommends providing this service through a reasonable balance between fares and subsidies. Its projections are based on an annual general inflation rate of seven percent. Under the recommended option, both fares and per passenger subsidies would increase at a rate approximately equal to the rate of inflation. The subsidy per passenger would increase to 66 cents in 1983, and fares would increase by 10 cents in mid-1979 and another 10 cents in 1983.

In addition, the TDP suggests that the premium for express service, which is now 10 cents regardless of the trip length, should reflect the zone structure. It proposes that the premium remain at 10 cents for trips in one zone but increase by five cents for each additional zone. The express premium would thus be 25 cents on the longest MTC trips.

Under the recommended program, ridership would increase by 24 percent between 1978 and 1983. Since this would be accomplished with only a 14 percent increase in bus miles of service, the productivity of the system would be increased while minimizing overcrowding on rush hour buses. The program would also permit adding new express and other services to developing areas including interconnection with paratransit service.

The program addresses the full family of services. The two downtowns and the University of Minnesota are the focal points of the express service from all the subregions. This service will be complemented by providing 2,100 parking spaces in public park and ride sites. Local bus service will operate within each subregion and connect with the express service.

The TDP proposes circulation systems in three activity areas. The QT mini-bus service would continue in downtown Minneapolis, a local bus circulation system would operate in the Southdale area and the downtown people mover might be built in St. Paul. Continuation of the dime fare zone in the two downtowns is also recommended.

The plan envisions three types of paratransit service. These are community-centered transit focused on suburban centers; a total commuter service program concerned with providing a mixture of transit and paratransit services, and special transportation service for the elderly and handicapped. Community-centered transit is currently being tested in White Bear Lake, a total commuter program is operating in Hennepin County, and Project Mobility provides handicapped service in part of Minneapolis. Experience with these programs plus proposed community transit programs in the Lake Minnetonka area and Golden Valley will help determine the future direction of paratransit in the Twin Cities.

In addition to operational plans for bus service, the TDP contains proposed capital improvements. Major capital projects by 1983 include the bus overhaul and maintenance facility, the South Garage in Hennepin County, a layover facility in downtown Minneapolis, the renovation of existing bus garages, an office facility and expansion of the fleet by 100 buses.

Other capital improvements include more than doubling the number of bus stop signs, installing 382 bus shelters — mostly in 1978 and 1979 — and renovating almost all of the existing shelters.

The TDP is not limited to transit. It also includes highway plans, programs and projects developed by the Minnesota Department of Transportation. Mn/DOT, however, has programmed federally funded highway programs only up through 1980 pending completion of its state transportation plan.

State law requires that the TDP be updated at least every two years. The TDP, however, also contains a Transportation Improvement Program that is required by the federal government and must be updated annually. Thus, the total program will be examined and revised yearly to assure that it will remain a useful document.



# Update

Some significant events since the last update in Transit News Quarterly include:

- The Metropolitan Transit Commission plans to introduce new color-coded pocket schedules. The new schedules are larger, have better maps and are easier to read. Schedules for local service are printed in red, express service in blue and special service in green. This color coding will also be used in a new system map that is being developed. The new schedule designs are now being used for some special service such as Vikings express buses and University of Minnesota commuter buses. They will be introduced throughout the system in January.

- The MTC decided to sell a 12-acre parcel of land at 12th Avenue and I-494 in Bloomington. The MTC purchased the property in 1975 as a site for a bus garage, but another site for the garage has since been obtained from the Metropolitan Airports Commission.

- Minnard Hojem won the fourth annual MTC Bus Roadeo by one point out of a possible 700 and represented the Twin Cities in national competition in Toronto. Hojem is a 13-year veteran of the MTC and usually drives St. Paul Route 10 on St. Clair Avenue.

- An MTC staff report concluded that light rail is a practical, effective type of transit and represents a sensible approach to transit improvement. The report will be used as a basis for discussion with neighborhood groups that have expressed an interest in LRT. Copies are available on request.

- John R. Jamieson resigned as director of transit development for the MTC to become deputy commissioner of the New Jersey Department of Transportation. Jamieson, who joined the MTC in 1969, was previously Minnesota commissioner of highways and deputy federal highway administrator. As director of transit development, he was responsible for long-range public transportation development programs in the Twin Cities.

- Persons with speech and hearing impairments can now use teleprinters to receive bus route and schedule information and conduct other business with the MTC. Teleprinters using beep tones to send typed messages over telephone lines. The service is available by calling 824-5202. This number is reserved for teleprinter service, and there are no voice communications on it.

- The Community Centered Transit Service vans in White Bear Lake began providing door-to-door service on request. The vans had been operating with fixed routes and schedules, but they required a high subsidy per passenger. The Minnesota Department of Transportation will fund the service until June 30, 1979, to learn whether demand responsive service can be cost effective in a suburban community.

- The Metropolitan Transit Commission discontinued service on several of its demonstration routes because of low ridership. The culture routes in Minneapolis and St. Paul were discontinued three weeks early, and service between St. Paul and the new zoo ended in November.

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