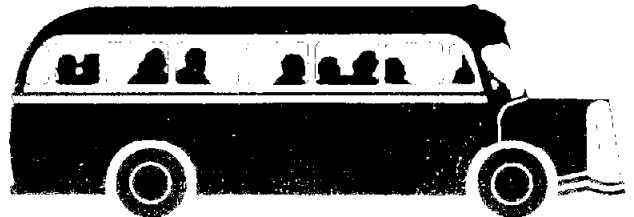
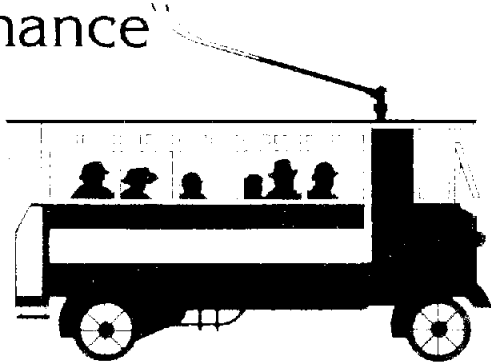


# Transit Actions

## Techniques for Improving Productivity and Performance



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Office of Science and Technology Policy  
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## Acknowledgements

Many transit representatives took the time to identify and describe actions which they believe would help improve the productivity of other transit properties. Some of their techniques are presented in this document. There are several other persons who helped identify actions, select the actions to be included in this compilation, or prepare the final material. They include the following:

### United States Department of Transportation

Brian Cudahy  
Frank Enty  
Norman Paulhus

### Washington Metropolitan Area Transit Authority

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### Greater Cleveland Regional Transit Authority

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### American Public Transit Association

Ronald Hartman

### William Hurd

William Hurd

### Public Technology Inc.

Gary Barrett  
Alinda Burke  
Sharon McCrea  
Helene Overly  
Jon Schotz

\* Under contract to the U.S. Department of Transportation's Office of the Secretary and Urban Mass Transportation Administration, this firm is conducting an assessment of the impact of innovations on transit system productivity and barriers to their acceptance. Some of their findings are incorporated into this document. Final results from this study will be available in mid-1979.

TRANSIT ACTIONS

Techniques for Improving  
Productivity and Performance

November 1978

Prepared by

PUBLIC TECHNOLOGY, INC.  
1140 Connecticut Avenue, N.W.  
Washington, D.C. 20036

Secretariat  
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## PREFACE

This workbook contains actions which can cut the costs of providing transit services or improve system operating efficiency and effectiveness. The included actions represent only a few of the many steps which will have to be taken over the next few years to narrow the growing gap between fare-box revenues and operating expenses. Some of the actions are innovative, others, such as the use of part-time labor, and the designation of free-fare zones, have been considered for a long while but are now being tried on a large scale.

The 41 actions included here are representative of the 110 actions submitted by 31 agencies. They are included because they required a low capital investment, had short-term payoffs, required minimal staff time, or involved minimal institutional approval. The remaining actions may be clarified or expanded during the Transit Actions Regional Meetings so that they might be included in the final Transit Actions Workbook.

This preliminary workbook will be the starting point for five workshops at the regional meetings, covering:

- Service Levels
- Transit Financing Policies
- Internal Management
- Labor-Management Relations
- Performance Measures

In each workshop additional actions will be collected from participants; blank forms are included with the preliminary workbook so that you might identify your exemplary actions.

At the conclusion of the regional meetings, the additional actions will be integrated into an expanded Transit Actions Workbook to be distributed to all participants, and others upon request.

Public Technology, Inc., for the Urban Consortium for Technology Initiatives, the American Public Transit Association, and the Intergovernmental Science and Engineering Technology Advisory Panel have selected improving transit productivity and performance as one of the most important urban transportation research and development needs. With the support of the Department of Transportation, Urban Mass Transportation Administration, Office of Transit Management, we are pleased to help meet this need through this project. It is our hope that widespread use of the Transit Actions Workbook will result in significant improvements to the productivity and performance of our nation's transit systems.



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# I. SERVICE LEVELS





# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area... Service Levels

Action : Staggered school hours.

Goal : Improve service to high schools using existing system capacity.

Issue : San Diego has a shortage of "Little Yellows" (school buses), yet between 5,000 and 6,000 students need bus transportation each day. Because of crowded peak conditions, student transportation demand was not being met with regular service, since any given vehicle could only deliver one partial load of students (i.e. mixed in with other patrons) per A.M. peak period.

Details : Since, as a result of Proposition 13, no additional vehicles could be purchased to meet this surplus of student demand, the local Board of Education agreed that staggering school starting times would be the best approach. Staggering times vary among schools, depending on transit availability and demand, the maximum being about an hour. No special routes have been provided, but routes and schedules have been modified to integrate the new patrons into a smooth system. San Diego has a rather advanced RUCUS installation which facilitates such changes.

San Diego also supplements its regular fleet with older, non air-conditioned buses during peak periods. These are used sparingly on heavy demand routes, as a means of extending the life span of the fleet (thus, in the hottest summer weather when school is out, these older, non air-conditioned buses are pulled out of service).

Success : All students needing transit service have been provided it. Vehicles on some routes are now able to transport two and three loads of students during the A.M. peak. A few teachers have complained about the time changes, but the School Board has been quick to quell the opposition. The Board remains in strong support of the program.

Contact : Mr. Roger Snobel  
Assistant General Manager  
San Diego Transit Corporation  
P. O. Box 2511  
San Diego, California 92112  
(717) 238-0100

# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Service Level

- Action : Replace special downtown shuttle routes with 10¢ fare zone called "Dimetown".
- Goal : Reduce costs and improve service.
- Issues : Specially painted weekday downtown circulators on fixed routes at a 10¢ fare were successful, but increased shuttle service would have been unduly expensive. The Kansas City Area Transportation Authority eliminated this special service and allowed riders on all lines within the downtown area for 10¢.
- Details : Many lines travel through the downtown area with excess capacity, especially during midday, evening, and weekend period. The establishment of Dimetown allowed use of this capacity, while at the same time increasing the coverage and service periods of downtown circulator service. Dimetown required a change in fare payment method from standard pay upon boarding method: On trips moving away from the center of downtown, passengers are asked to pay upon leaving the bus.
- Success : Intra-downtown trips doubled from 2,500 trips to 5,000 trips a day. 7 runs were eliminated and 7 buses were repainted to regular color scheme and returned to regular service.
- Estimated net savings ..... \$180,000 ..... annually.
- Contact : John Q. Waterman  
Kansas City Area Transportation  
Authority  
1350 East 17th Street  
Kansas City, Missouri 64108  
(816) 471-6600 Ext. 215

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Service Level

Action : Integration of five transit systems.

Goals : (1) Reduce costs and service overlaps; (2) improve transit service.

Issues : Prior to 1974, San Diego was served with three bus and three Dial-a-Ride systems -- all publicly owned. Routing and scheduling were not coordinated, and transfer from one system to the next required payment of additional fares. Because of this fragmented coverage, many origin-destination combinations were difficult or impossible, and many potential trips were deterred.

Details : Pushed by San Diego's Comprehensive Planning Agency, San Diego Transit Corporation integrated its service (a regional goal) with the two other major bus companies and three Dial-a-Ride companies, plus AMTRAK and intercity buses. Scheduling is done together for all the transit and paratransit operations, routing has been reworked to improve compatibility, and intercity terminals are now served directly. Each system accepts each other's transfers.

Success : This approach has greatly improved transit access for most persons in the San Diego area. Many new trips are now possible. Because of the transit agency's computer facilities, integrated routing and scheduling was not difficult to achieve. Transit officials cite the costs of this integration as almost negligible. Since it was promoted by the regional government, few institutional problems occurred.

Contact : Mr. Roger Snobel  
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(717) 238-0100

## TRANSIT ACTION

### Performance Improvement...*in brief*

#### Performance Area...Service Level

- Action : Cut under-utilized service and add service where productivity is assured.
- Goal : Improve effectiveness of transit service.
- Issues : Transit resources are limited by finances and fleet size. It is incumbent upon the transit agency to use those resources to provide the most good to the most people.
- Details : Tri-Met analyzes ridership by time of day, (peaks, midday, night), type of passenger (student, senior citizen, adult), and trip purpose (work, school, shopping, etc.). Lines or trips not meeting established minimum standards -- 20% revenue/cost and less than 20% of ridership being transit dependent -- are recommended for elimination or cutback of service. New service is added only where there is assurance of producing revenue to cover 40% of the operating cost.
- Service cuts made in 1978 and 1979 will allow the addition of service to two major employment centers, Tektronix and Swan Island, in January, 1979, and provide a net savings for the fiscal year of \$600,000. The service to Swan Island is through agreement with City of Portland, which guarantees revenue from 40 riders a trip. The City will make service payments if less than 40 riders are carried.
- Success : To be determined. The criteria are that monthly Operations Department costs are kept within budget; and the performance indicator Total Riders per Vehicle Hour is improved to a goal of 29.5 for fiscal year 1978-79.
- Contact : Carolyne Nelson  
Administrative Assistant  
Tri-County Metropolitan  
Transportation  
District of Oregon  
4012 S. E. 17th Avenue  
Portland, Oregon 97202  
(503) 238-4830

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Service Level

- Action : Subscription Service.
- Goal : Provide transportation to major employment centers.
- Issues : Premium service to major employment centers is provided for those which agree to sponsor the subscription service.
- Details : Subscription service is available to any Fort Worth employer who agrees to purchase 40 monthly passes per bus. The \$15.00 monthly pass cost is ordinarily collected through payroll deduction. Routes and schedules for this service are determined by the joint efforts of the employer and CITRAN.
- Success : Since subscription service began in 1973, the number of buses in daily use has expanded from 1 to 20 with requests for additional routes being considered at present. The service is efficient because it does not have an off-peak and it operates with a guaranteed load factor.
- Contact : Janie Manning  
Director of Marketing  
CITRAN  
2304 Pine Street  
Fort Worth, Texas 76102  
(817) 870-6200

# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area...Service Level

- Action : Promote the use of chartered buses.
- Goal : Reduce traffic congestion and generate additional revenue at times when extra equipment is available.
- Issues : University of Wisconsin football and hockey games generate more traffic than the streets can handle. Parking is hard to find close to the stadium. Large groups, such as conventions, often are in a position of having to move many people in a short time. Many buses are sitting idle during off-peak hours and weekends.
- Details : A marketing program has been developed to sell charter service to the community. This included newspaper advertising, letters, bus signs and personal contact with the Greater Madison Convention and Visitors Bureau, hotel, restaurant and tavern owners, convention groups and others.
- Success : On football Saturdays, there are now as many orders for chartered buses as there are available drivers. Shuttle service is provided on a charter basis from a main U.W. parking lot to Camp Randall Stadium. Shuttle service is also provided to U.W. hockey games at the off-campus arena when they are played. Many convention groups now use chartered buses as an aid in planning the times and locations of their sessions.
- Contact : Frank Mattone  
Resident Manager  
Madison Metro  
166 S. Fair Oaks Avenue  
Madison, WI. 53704

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area... Service Level

Action : Bus - Rapid Rail interface warning light.

Goals : (1) Improve multi-modal transfers; (2) eliminate incidence of subway passengers emerging from terminals as their buses pull away.

Issues : To take full advantage of a multi-modal transit system's flexibility, many passengers must transfer. Transfers are a serious ridership deterrent during off-peak hours, when headways are long (30 minutes for bus, 15 for train), especially when passengers exit the stations to see their buses pulling away.

Details : Blue lights shine for two minutes, at major rail terminals, to inform bus drivers that a train is entering the station. The lights are triggered by a simple circuit energized as the train crosses a signal block. Installed in the 1940's at 12 terminals, the devices cost approximately \$800 each, including labor. Sufficient recovery time is built into bus schedules to enable drivers to take advantage of the warning system.

Success : While increases in ridership as a result of the warning system have never been (and probably cannot be) measured, transit officials claim that complaints of buses pulling away from terminals are substantial for stations without this feature. Operating and maintenance costs are minimal. The lights offer a significant benefit to riders during off-peak periods, especially psychologically (no one misses his or her bus).

Contact : Mr. Robert McKinstry  
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Southeastern Pennsylvania Transportation  
Authority  
200 W. Wyoming Avenue  
Philadelphia, PA. 19107  
(215) 456-4267

## II. TRANSIT FINANCING POLICIES





# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area... Financing Policy

- Action : Honor System "certification" process for elderly and handicapped riders.
- Goal : (1) Save certification costs; (2) improve convenience for, and good will with, elderly and handicapped passengers.
- Issues : When the half fare requirement of the Section 5 Program came into effect the transit agency was faced with the task of certifying elderly and handicapped riders. This would have involved one staffer working full-time for three months, plus plastic cards (@50¢), plus coordination with social service agency groups in order to develop criteria for admission to the reduced fare program. And it would have been months before all passengers would be certified, and thus, could ride at a discount. The transit agency had limited staff available to conduct the process.
- Details : The General Manager decided that it would be less expensive to dispense with the certification process altogether. Instead, the elderly and handicapped were informed that they could simply ride for half price, and that no questions would be asked. In other words, "If you feel that you are elderly or handicapped, merely pay half fare." Drivers were instructed not to enforce the program whatsoever--i.e. regardless of their judgment, drivers were not to challenge any half-fare patrons (this also removed Union obstacles to implementation).
- Success : Transit officials claim that cheaters can be "counted on the fingers of one hand." In addition, many elderly and handicapped who can afford to, still pay full fare (for reasons of dignity, etc.); officials feel that less of them would do so if they had the opportunity to "legitimize" their ages or handicaps through a formal process.
- Transit officials saved approximately \$10,000 with this approach. Additional revenue (i.e. from qualified riders paying the full fare) is difficult to estimate.
- Contact : Len Engel  
Resident Manager  
Boise Urban Stages  
P. O. Box 9016  
Boise, Idaho 83707

# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area...Financing Policy

Action : Free Fares in off-peak periods.

Goal : Increase transit ridership and productivity.

Issues : Some two-thirds of the total trips in the Denver region are for non-work purposes. The majority of these occur during off-peak periods. This market is one which transit has the capacity to serve but, in general, has had limited success in attacking. In order to promote the use of public transit, fares were eliminated in the off-peak periods.

Details : The Regional Transportation District obtained UMTA funds for a one-year experiment ending in January of 1979. The total budget for the experiment is \$6.8 million, of which half is UMTA-funded.

Fares on all regular service are free on weekdays, except from 6 A.M. to 8 A.M. and 4 P.M. to 6 P.M., and all day Saturdays, and Sundays.

Success : Average weekly transit ridership is up by about 50 percent. Off-peak productivity is up substantially.

Contact : John Gaudette  
Regional Transportation District  
1325 South Colorado Boulevard  
Denver, Colorado 80222  
(303) 759-1000

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Financing Policy

- Action : Elimination of time restrictions on Sunday transfer.
- Goal : Increase transit ridership.
- Issues : Ridership levels and passenger revenues on Sundays are generally low. Fare promotions can be implemented with relatively minimal impact upon total revenue and without increasing operating costs.
- Details : For all Sundays in August 1978, transfer time restrictions were eliminated. Because the transfer can be used on any route in any direction, it in effect became an all-day pass.
- Success : The promotion proved successful as a short-term program. The long-term impact has not been documented. Average Sunday ridership during the promotion was 99,850 rides, an increase of 61% over expected ridership of 62,025. Average Sunday cash and ticket revenue increased by 4% from \$11,700 to \$12,200.
- Contact : Kenneth J. Warren  
Milwaukee County Transit System  
4212 W. Highland Boulevard  
Milwaukee, WI. 53208  
(414) 344-4550

## TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Financing Policy

- Action : Establish an inter-carrier, universal transfer program.
- Goal : Encourage the development of an integrated and coordinated transportation system on a regional basis and increase ridership.
- Issues : The RTA transit system is composed of more than 20 suburban bus carriers and the bus and transit services of the CTA. Prior to RTA's creation, passengers wishing to transfer from one carrier to another had to pay two separate fares. This posed a serious barrier to inter-carrier travel, thus minimizing ridership. This pricing situation was also reflective of a general absence of service coordination.
- Details : In October 1976, RTA established a universal transfer program. This program allows passengers to transfer between all RTA-funded bus and rapid transit carriers. Transfers sell for \$.10 on all regular and premium fare services, and for \$.30 on local and feeder bus services. This pricing establishes basically a \$.60 "go-anywhere fare". Transfers allow up to 4 hours of unlimited riding.
- Success : During the first month of operation, 104,000 universal transfers were sold. Monthly transfer sales now total well over 550,000.
- Contact : Michael Nielsen/Jud Lawrie  
Regional Transportation Authority  
300 North State Street  
Chicago, Illinois 60610

## TRANSIT ACTION

### Performance Improvement...*in brief*

Performance Area...Financing Policy

- Action : Universal Transfer Charge among seventeen private operators operating in the same county.
- Goal : To create an equitable fare structure without adversely affecting revenues.
- Issues : Because of the seventeen different operators, many passengers requiring only a transfer from one operator to another in effect had to pay two fares. In addition, some carriers maintained zones and some did not. The basic issue was to obtain simplicity and equity without reducing total revenue.
- Details : A basic fare was raised from 40¢ to 50¢, all zones were eliminated, and a universal transfer charge of 10¢ was inaugurated. At the same time routes were adjusted and service was improved.
- Success : Ridership increased and the operating deficit was reduced by \$250,000 per year.
- Contact : R. Raleigh D'Adamo  
Commissioner  
Westchester County  
County Office Building #1  
White Plains, New York 10601

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area... Financing Policy

Action : Employer Subsidy Program.

Goals : Get employers to pay partial costs of employees' transit trips.

Issues : Employers pay considerable sums for parking, either through the construction of lots or the subsidizing of employees' parking costs. Good transit service is often available, though many are not aware of it, nor the potential benefits and cost savings of subsidizing transit ridership rather than parking.

Details : The transit agency, through persistent personal effort, has developed a comprehensive employer subsidy program currently involving 17 major businesses. Employers generally buy monthly passes for \$20 a piece and resell them to employees at lower rates (usually \$10). In selling the program, transit officials stress 3 points:

- . Costs -- subsidizing transit may be considerably cheaper than doing the same for parking, or constructing parking facilities.
- . Punctuality -- transit runs reliably in all weather.
- . Alternative Mode -- transit usage eliminates many excuses for not appearing at work ("my car won't start").

The MTA offers to perform a company origin-destination survey for employers considering participation. MTA is also sensitive to corporate budget cycles and the fact that businesses with franchises in other cities must often treat employees uniformly as a matter of company policy. The MTA has beefed up sales efforts with small incentive programs (e.g., "Energy Week") which typically provide a week's free service to companies joining.

Success : Revenue increases from the program cover the full cost of the Consumer Relations Supervisor's salary. This effort has led to the State's committal of \$65,000 for financial assistance to employers participating in such programs.

Contact : Jim Windsor  
Consumer Relations Supervisor  
Des Moines Metropolitan Transit Authority  
1100 MTA Lane  
Des Moines, Iowa 50309

# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area...Financing Policy

- Action : A method of determining State operating assistance grants, based on constrained financial need and improved operating and financial performance.
- Goal : To distribute State operating assistance in a more equitable and predictable manner and provide incentives for improved transit performance.
- Issues : For the past several years, the State appropriation for the transit operating assistance program has increased at an average annual rate of 3<sup>1</sup>/<sub>2</sub>%, while transit operating deficits have increased approximately 12% per year. This underfunding has resulted in increased fares and decreased service.
- Details : The State has placed a ceiling on transit operating expenses and a floor on transit operating revenues to make sure projected operating deficits are reasonable based on national, State, and transit industry experience. The State provides financial bonuses to systems that demonstrate improved productivity based on four ratios that reflect improved transit efficiency and effectiveness.
- Success : Selected operating assistance grants have been determined to test this methodology. The results have been promising, as the awards seem to be more equitable than before.
- Contact : John Dockendorf  
Mass Transit Assistance Division  
Pennsylvania Department of Transportation  
1215 Transportation and Safety Building  
Harrisburg, PA 17120

# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Financing Policy

- Action : Increase certain fares, establish zone fare, and provide discounted monthly passes.
- Goal : Increase revenue to cover 32% of system operating costs.
- Issues : Tri-Met's tremendous growth in ridership and amount of service (approximately 100% for both) during 7 years of existence as a public agency created rapidly escalating operating cost deficits. The Board of Directors established policy to limit deficit to 68% of cost. That was not met in 1977-78 and could not be achieved in 78-79 by operating economies alone. A fare increase was required.
- Details : Tri-Met staff projected budgets and ridership/revenue levels of many alternative fare structures. In addition to economic analysis, more qualitative considerations were also evaluated: equity, simplicity, operational feasibility, timing, and most important, effect on ridership.
- Success : Fare increase became effective September 3, 1978. Report for the month of September indicates revenue up 27% over September 1977 (1% over projection), and ridership up 4% over September 1977 (1% over projection).
- Contact : Carolyne Nelson  
Administration Assistant  
Tri-County Metropolitan  
Transportation  
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Portland, Oregon 97202  
(503) 238-4830



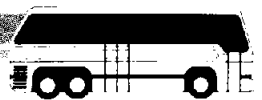
## TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area... Financing Policy

- Action : Nickel Week following a transit strike.
- Goal : To minimize ridership loss due to a strike.
- Issues : A strike occurred during the Christmas shopping season which hurt ridership as well as the downtown merchants.
- Details : The base transit fare was reduced to 5 cents for one week following the strike.
- Success : Ridership was restored to pre-strike levels.
- Contact : Wilbert Scott  
Director of Marketing  
Queen City Metro  
6 East Fourth Street  
Cincinnati, Ohio 45202

### III. INTERNAL MANAGEMENT



# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area: Internal Management

Action : Installation of Random Access Microfiche System for display of information needed by telephone agents.

Goals : (1) Increase productivity of agents; (2) improve quality and reliability of information provided to callers; (3) reduce training time for agents.

Issues : The Chicago Transit Authority provides telephone information services for city (CTA) and suburban (RTA) operations. Call rates have experienced significant growth and in order to provide proper level of service, i.e. high capture rate and reliable, consistent information, automation was needed.

Details : The Chicago Transit Authority has expanded and upgraded transit information services over the past few years. This has involved construction of improved working facilities, improved telephone equipment, installation of free telephone lines for the suburbs, expansion of the number of agents, and installation of 30 microfiche units. Plans are to upgrade to 40 units in the first quarter of 1979 and to investigate computer control of the microfiche system. The microfiche system holds all schedule information and through indexing of materials and special button labels permits direct access within 3 seconds to information, timetables, route maps, fares, etc. Much of this information is also required by the CTA System Control Center for use in handling non-routine operation situations, e.g., accidents, fires, bus breakdowns, etc. Accordingly the Control Center has installed and is using three units with plans to install additional units in 1979.

Success : These actions have resulted in a large increase in operator productivity even though suburban calls, which make up more than 50% of the total, are more difficult to handle. Training time for new agents has been reduced from 6 to 10 months to 3 to 4 weeks, and operator morale is high.

Contact : Mr. Tom Coyne, Director  
Consumer Services  
Chicago Transit Authority  
Merchandise Mart  
Box 3555  
Chicago, Illinois 60654  
(312) 664-7200

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Internal Management

Action : Radio traffic reports from transit dispatcher.

Goals : Provide peak hour traffic reports to radio stations in exchange for radio promotion spots.

Issues : Because of Pittsburgh's congestion, poorly maintained streets, severe winters, and detours due to bridge closings, bus drivers radio in traffic conditions along major routes periodically so that those and subsequent runs might be modified to circumvent or compensate for bottlenecks and delays. This is costly (equipment, dispatcher, labor problems). At the same time this information was being collected -- information which could be valuable to automobilists -- traffic helicopters were duplicating the effort and at great expense.

Details : Pittsburgh transit officials now provide traffic information for a major local radio station. The station periodically switches over to the transit dispatcher who goes on the air live with an up-to-the-minute traffic report which he receives from drivers on key routes. ("And now, here's John Doe from PAT with the latest traffic report"). Thus the transit system gets instant and recurrent publicity. In addition, the radio station airs special advertisements designed by the station's professional advertising staff, specifically for the transit system.

Success : Both the transit system and the radio station save considerable amounts of money. The former does not have to pay for radio advertisements, the latter for a helicopter and its pilot.

Contact\* : Mr. L. Michael Kelly  
Manager, Advertising & Promotion  
Port Authority of Allegheny  
County  
Beaver & Island Avenues  
Pittsburgh, PA. 15233  
(412) 237-7000

## TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Internal Management

- Action : Reorganize Transportation Division and publish Drivers' Manual.
- Goal : Improve internal morale, reduce absenteeism, and improve bus operator relationships with public.
- Issues : Lack of communication between management and bus operators, misinformation to the public, and the need for clear, consistent operating policies and procedures were problems of most consistent concern to Tri-Met. Absenteeism, including abuse of sick leave and workmens' compensation programs, was becoming a serious problem.
- Details : Union position of Instructor was eliminated. Two new positions, at higher pay rate, were created: Driver Supervisor and Training Supervisor, for a net increase of 8 supervisory positions. Each Driver Supervisor has approximately 60 drivers assigned for frequent ride checks, maintenance of personnel records, and improved communication flow.

A Drivers' Manual was compiled by committee of drivers, edited by a staff committee, and written by an outside editor. The Manual was reviewed by union representatives.

- Success : About 120 bus operators applied for the 8 open positions (former Instructors were guaranteed 10 of the 18 new positions). Absenteeism fell 5% in September from September, 1977, and a 15% reduction is expected for the fiscal year.

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# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Internal Management

- Action : Conduct performance audits of each support and operating unit.
- Goal : Maintain an on-going evaluation of organizational performance.
- Issues : To insure maximum return on transit resources, there is a need for continual management performance monitoring.
- Details : Regular performance audits are made of all operating and support units. These audits include a review of department policies and procedures, organization structure, budget data, manpower requirements, workload factors, personnel practices, and productivity measures. Audit reports are forwarded to the Manager of Operations and the General Manager, who discuss them with the concerned line managers in order to develop an action plan for improving the unit's performance.
- Success : The performance audit program has strengthened communication between top and line management and has produced a number of innovative performance improvements.
- Contact : Ralph de la Cruz  
Southern California Rapid  
Transit District  
425 S. Main Street  
Los Angeles, California 90013  
(213) 972-6651

# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Internal Management

Action : Development of Service Performance Analysis and Reporting System.

Goal : Improve feedback of route and schedule performance data.

Issues : Service Analysis and Decision Making.

Details : Service Performance Analysis and Reporting System

Halifax, Nova Scotia recently developed a computerized Schedules Performance Analysis and Reporting System (SPARS) which provides for comprehensive passenger count, running time, revenue and cost, schedule adherence, and level of service analysis and reporting capabilities for management, scheduling, and service planning applications. SPARS consists of three components to measure efficiency and effectiveness -- performance indicators, schedules adjustment reports, and route review reports. These components directly correspond to the management, scheduling, and service planning functions. In addition, the SPARS system is designed to accommodate data collection by manual, automated and on-line means. The system is being applied in conjunction with a comprehensive route and schedules review for the Long Beach Transportation Company.

Success : The route and schedule review package is being used in Long Beach, California.

Contact : Larry Jackson  
Director of Administration  
Long Beach Public Transportation Company  
1300 Gardenia Avenue  
Long Beach, California 90813

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Internal Management

Action : Management by Objective.

Goal : Increase overall system performance.

Issues : The management of a large public agency requires the integration of purpose and direction. Definite productivity targets, if set at every level in the agency, provide a sense of direction and serve as a measuring device. If they are linked to merit pay, they can provide incentives traditionally lacking in the public sector.

Details : Each division in the Transit Department has specific goals to achieve each year. (Reduce overtime by X%, reduce complaints by X%, reduce accidents to X per million miles). These goals are reviewed each month at a regular staff meeting. The goals are charted in graph form on 4" x 6" sliding boards in the management information center. These charts are also used as information tools when briefing public officials and people from other agencies.

Progress toward meeting individual objectives is measured and solutions to problems relating to objectives are actively pursued. Each year salary increases for top and middle management are based on performance in achieving MBO goals.

Success : Equipment and Facilities Division has improved the maintenance manpower efficiency by setting an objective to increase the coach miles run per man. Currently, a 6% increase is being maintained.

Transit Department budget objectives have focused attention on expenditures. Metro is currently underrunning the budget by 4%, and expects to finish 1978 2% or more under a \$47 million budget.

Contact : Lynn Kay  
Seattle Office of Policy Planning  
306 Cherry Street  
Artic Building  
Seattle, WA. 98104



## TRANSIT ACTION

### Performance Improvement...*in brief*

Improvement Area...Internal Management

Action : Production line inspection services during the manufacture of new buses.

Goal : Improve vehicle acceptability and reliability prior to taking delivery.

Issues : Resolve acceptance issues at the plant, not at the system.

Details : An on-site inspection team is assigned to plant inspection to represent the buyer from the beginning of the assembly line to acceptance.

Success : Project is one-third complete and many problems have been identified and resolved at the plant which would otherwise have not been uncovered until revenue service.

Contact : James C. Moran  
Director of Transit Operations  
Bureau of Public Transportation  
24 Wolcott Hill Road  
P.O. Drawer A  
Wethersfield, Connecticut 06109

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Internal Management

Action : Oil Level Check

Goal : Accurate measurement of oil level in engines.

Issues : Oil level was checked by maintenance employees during fueling and lubrication of buses. Excessive oil consumption and emissions had been noticed, but the cause of the problem was not clear.

Details : Maintenance crews were instructed to check the oil in each coach before starting the engine, instead of checking after the engine had been stopped for 3 to 5 minutes.

Success : Oil consumption, not including oil changes, has been reduced to 25% of its former level.

Contact : L. M. Odom  
Director of Maintenance  
CITRAN  
2304 Pine Street  
Fort Worth, Texas 76101  
(817) 870-6200

# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area...Internal Management

- Action : Use of Freon 12 as a coolant in bus air conditioners.
- Goal : (1) Reduce maintenance and fuel costs; (2) reduce vehicle down-time; (3) improve cooling consistency of buses.
- Issue : Air conditioners in buses are a major maintenance problem. In warm weather, failure many times means that the vehicle must be pulled out of service until the damage is repaired. Common problems include seals blowing and compressors failing. In Minneapolis/St. Paul, 15 to 20 units per day would commonly fail (out of 300 air conditioned buses).
- Details : Freon 12 was substituted for the standard Freon 22. Conversion costs were \$100 to \$120 (including four hours labor) per vehicle.
- Success : Since switching coolants a year ago, only 6 air conditioners out of 180 units failed. Freon 12 costs one third as much as Freon 22, and creates only 25% of the pressure on AC Components (thus, seals don't blow, etc.). It also takes less power to operate a vehicle using Freon 12 -- thus greater fuel efficiency. However, some minor adjustments must be made in driving. This coolant loses cooling capacity when engine speeds are below 1500 r.p.m., so drivers have to "rev" their engines slightly during idling (at stops, lights, etc.) Also, maintenance officials elsewhere state that the coolant will not work in TRANE Systems.
- Contact : Mr. Jerome S. Mallak  
Director of Equipment &  
Maintenance  
Metropolitan Transit Commission  
St. Paul, Minnesota 55101  
(612) 221-0939

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area... Internal Management

Action : Sandblasting rust.

Goals : (1)remove rust without removing metal; (2) reduce maintenance time and labor costs; (3) make rust removal easier for maintenance personnel; (4) get rusted buses back into service quickly.

Issues : Rust appears in many places on different buses. New buses still under warranty had to be recalled to the factory. An alternative, and one used on older buses, was hand sanding -- a tedious process requiring days of work which often resulted in scraping away so much metal as to require filling. Employees disliked the arduous nature of the task, yet in 1976, the Union resisted the transit agency's efforts to contract out the work needed on 15 new Flxibles (1975) still under warranty.

Details : Transit officials decided to set up a special sandblasting stall, large enough to accommodate even articulated buses (55'). This stall had pressure shields instead of windows, side and overhead hatches, dust collection shields, protective equipment for the workers, and a track for scaffolding on either side of the vehicle platform. The facility cost about \$4,000 to \$5,000 (1977), and the two sandblasting machines about \$1,500 a piece.

Success : The process takes three hours as opposed to an average three days per bus -- plus it doesn't remove metal. In one year, PAT has repaired 15 new Flxibles, dozens of older GMC's, plows, tractors, and other equipment. The operation is now constrained by the paint department which can't keep pace with it. The Union and employees are happy with the arrangement. System capacity is about two buses a day -- more than adequate to handle PAT's 1000 buses and other miscellaneous equipment. It paid for itself the first year.

Contact : Mr. Frank DiPietro  
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Port Authority of Allegheny County  
Beaver & Island Avenues  
Pittsburgh, PA. 15233  
(412) 237-7000

# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area...Internal Management

- Action : Install a computer-assisted vehicle maintenance management system.
- Goal : Improve overall productivity in vehicle maintenance.
- Issues : Work productivity and detailed record keeping in bus maintenance had declined over the past several years. These two developments resulted in lowered vehicle reliability and a concomitant degradation of public service. Management sought a solution to this problem which would require neither a reinstatement of costly manual record-keeping procedures nor the imposition of productivity standards unacceptable to labor.
- Details : Through the use of one document for each maintenance job, a battery of computer programs summarize each mechanic's work activity on a weekly basis, each vehicle's repair history on a monthly basis, and the entire fleet's cost and failure rate values on demand. An important element of the system is the calculation of individual employee productivity measures based on comparisons of paid hours, actual performance times, and a set of standard repair times. The standard repair times were derived from an evaluation of actual bus repairs tempered with first-line supervisory verification. Hence, the standards reflect actual employee skills and facility resources.
- Success : Overall improvement in bus availability and reliability with no increase in personnel.
- Contact : Greg Mitchell  
Detroit Department of Transportation  
1301 E. Warren Avenue  
Detroit, Michigan 48207

# IV. LABOR-MANAGEMENT RELATIONS



## TRANSIT ACTION

### Performance Improvement...*in brief*

#### Performance Area...Labor-Management Relations

- Action : Employees receive half pay for unused sick leave as a pre-Christmas bonus (i.e., when extra spending money is most needed).
- Goals : (1) Reduce absenteeism; (2) reduce labor costs
- Issues : Many employees use up all their sick leave. Transit properties have no way to monitor the validity of sick calls, and no incentives exist for the drivers to minimize them. Additional costs occur (i.e. beyond payment for not working) as extra board drivers must work overtime to cover all routes. Because sick days accumulate during inclement weather, service is occasionally disrupted.
- Details : Employees may receive half pay for up to one half of their unused sick leave (five days per year for employees hired after August 1, 1976, 10 days per year for those hired before). This is calculated only on the current year's sick leave.
- Success : Results will not be known until the end of 1978. Transit officials anticipate only slight savings for Mobile's small system (only 78 employees are involved). Yet such savings could be significant for large properties with high absentee rates and large by-contract sick leave provisions.
- Contact : Mr. Steve Morris  
General Manager  
Mobile Transit Authority  
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Mobile, Alabama 36601  
(205) 438-1111

## TRANSIT ACTION

### Performance Improvement...*in brief*

Performance Area...Labor-Management Relations

- Action : Use of part-time drivers.
- Goal : Reduce guaranteed eight-hour pay for less than eight hours of work.
- Issues : Because of peak periods, most systems have drivers who work for less than eight hours but are guaranteed eight hours pay. One solution is the use of part-time drivers. Labor is opposed to this because it may reduce the work available to full-time employees, including overtime. Labor is also concerned that part- and full-time employees may have conflicting goals with regard to pay schedules and job benefits, and may dilute the strength of the union.
- Details : Agreement allows use of part-time drivers, guaranteed 1½ hours pay a day at regular driver rates, on weekday assignments of less than 7 hours 11 minutes. Part-time drivers must join the union. Regular drivers are protected by a floor on the number of full-time employees and a ceiling number of part-time workers. It was also agreed that all part-time employees were released, and miss-outs would be filled from the regular drivers' extra board.
- Success : Success has not been determined since agreement is too new. Metro received 500 applications for part-time work and expects to hire between 200-300 part-time operators.
- Contact : Charles Collins  
Seattle Metro  
821 2nd Avenue  
Seattle, WA. 98104  
(206) 447-6666



# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Labor-Management Relations

- Action : Use of Part-time drivers.
- Goal : Reduce guaranteed eight-hour pay for less than eight hours of work.
- Issues : The nature of peak period demand precludes the possibility of straight eight-hour shifts for all operators. Management wishes to eliminate pay for time not worked.
- Details : Part-time operators earn the same wage rate as full-time operators and are assigned only to short trippers during peak hours. The number of part-time operators does not exceed that needed to cover the peak-hour trippers. Part-time operators have no seniority rights on the full-time seniority list and do not receive full fringe benefit package. In case of lay-off, part-time operators will be laid off before full-time operators.
- Success : The use of part-time operators has been an unqualified success. The amount of work covered by the part-time operators is the equivalent of 10 runs in both the morning and evening peaks. Cost savings of 15% to 20% in covering this work has been realized.
- Contact : Jan Everett  
Vice President, Personnel  
CITRAN  
2304 Pine Street  
Fort Worth, Texas 76102  
(817) 870-6200

## TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Labor-Management Relations

- Action : Establish a lower operator wage rate for drivers used on irregular service in areas of relatively low population densities.
- Goal : Reduce cost of operator wages for irregular service.
- Issues : Previous union agreements did not include a lesser wage for irregular service, which made the cost of this service prohibitive.
- Details : Agreement allows for individual negotiated contracts between RTD and represented operators in the case of irregular service in rural areas. Arrangements for the operation, maintenance, and custody of the vehicles are defined in the agreement. Wages for this service are 50% of the top operator rate with an incentive clause in which the driver shares a portion of the revenue collected.
- Success : RTD is now able to provide service to rural areas at less cost. Two rural areas are being served. Other applications are being processed.
- Contact : John Gaudette  
Regional Transportation District  
1325 South Colorado Boulevard  
Denver, Colorado 80222  
(303) 759-1000

# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area...Labor-Management Relations

- Action : Drivers drive the buses through the service line and into the storage garage.
- Goal : Reduce the number of maintenance employees during peak return times.
- Issues : The past practice has been for drivers to bring vehicles onto the property and maintenance employees to take them through the service line. The only time an operator would store a bus is when it did not have to be serviced.
- Details : Agreement allows company at the time of the pick to designate which runs will be taken through the service line by the operator. Time is included in the run or biddable tripper for this activity.
- Success : This procedure has allowed five maintenance employees to do other work during the peak return period and the flow is much smoother.
- Contact : Richard Long  
Manager-Maintenance  
Capital District Transportation Authority  
110 Watervliet Avenue  
Albany, New York 12206

# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Labor-Management Relations

Action : Biddable Trippers.

Goal : Reduce the number of regular employees required to fill all the work. Have the same driver on the same work each day.

Issues : The system has a A.M. peak requirement because of school service. To fill all work off the extra list and regular operators looking for overtime is confusing and time-consuming. Some of the work is not filled when drivers decide they do not want to work overtime. The same driver does not have the same work each day.

Details : Agreement allows for a list of trippers to be bid by seniority when regular work is bid. The operator must work the tripper the days he works the regular run if the tripper runs. The pay is for a minimum of 2 hours. If the operator misses, the tripper can be rebid.

Success : The number of regular operators has been reduced and the work requirements are being met more efficiently. There is a cost saving to the system.

Contact : Tom Sharkey  
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Capital District Transportation  
Authority  
110 Watervliet Avenue  
Albany, New York 12206  
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## TRANSIT ACTION

### Performance Improvement...*in brief*

Performance Area...Labor-Management Relations

- Action : The use of handheld calculators in labor negotiations.
- Goal : To speed the negotiating process by providing an immediate assessment of the impacts of various work rule changes.
- Issues : The complex nature of labor negotiations demand a tremendous amount of time to calculate the costs and benefits of proposed work rule changes.
- Details : Management anticipated work rule changes which were likely to be proposed, and wrote small calculating programs which could be done quickly on pocket calculators. Supporting data was gathered before the negotiations began.
- Success : A proposal which usually took two days of manual calculations took only two hours using the calculators, which greatly reduced the time required to negotiate a contract. As a result of Metro's positive experience with the use of pocket calculators, Metro is considering expanding their use in the next negotiating session.
- Contact : Lynn Kay  
Seattle Office of Policy Planning  
Artic Building  
306 Cherry Street  
Seattle, Washington 98104

# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Labor-Management Relations

Action : Use of computerized run-cutting program to simulate the cost of changes in working conditions as input for labor negotiations.

Goal : Identify quick response techniques for evaluating cost effectiveness in changes to work rules.

Issues : None.

Details : The transit system and the union used a computerized run cutting program (RUCUS) to simulate the cost of changes in working conditions as input for labor negotiations. The results demonstrated the high cost of changing the maximum allowable spread time, an issue of primary concern to the labor union. Interestingly, one of the simulations produced an unexpected cost savings by reducing the minimum and maximum platform time.

Success : The simulations were able to identify cost savings which were acceptable both to management and labor which might have otherwise not been negotiated.

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Toronto Transit Commission  
1900 Yonge Street  
Toronto, Ontario  
Canada M4S1Z2

## TRANSIT ACTION

### Performance Improvement...*in brief*

#### Performance Area...Labor-Management Relations

- Action : Include maintenance personnel as participants in the Bi-State bus roadeo.
- Goal : To acknowledge the important role of the maintenance division in the operation of the system.
- Issues : Operators were the primary participants in the bus roadeo which was established to identify and acknowledge the top drivers in the system. Maintenance personnel are also a skilled group of people whose contributions need to be acknowledged.
- Details : Major and minor defects were planted on buses and teams made up of maintenance personnel were selected. The team finding all the defects in the shortest time period won.
- Success : It was felt that the morale of the maintenance personnel was boosted as a result of thier involvement in this annual event.
- Contact : Barry M. Locke  
Executive Director  
Bi-State Development Agency  
3869 Park Avenue  
St. Louis, MO 63110

# V. PERFORMANCE MEASURES





# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Performance Measurement

- Action : Monthly public reports on Tri-Met's performance indicators.
- Goal : Establish Tri-Met's credibility as an efficient and effective transit agency.
- Issues : Public transit depends upon public support and subsidy. The public mood, at least in Oregon, is anti-government and anti-bureaucracy. Only 25% of Tri-Met's service area population uses the bus two or more times per month -- a relatively small constituency.
- Details : With the adoption of the budget for fiscal year 1978-79, goals were set for improving six specific performance indicators which would reflect in improved effectiveness of service, efficiency of operations, and quality of service. Performance indicators used are:
- Service Effectiveness:
    - Total riders per vehicle hour.
    - Operating revenue per operating cost.
  - Operators Efficiency:
    - Operating cost per vehicle hour.
    - Work hours lost per regular pay hours.
    - Unscheduled overtime per regular pay hours.
  - Service Quality:
    - Complaints per thousand passengers.
- Success : Press coverage has been positive. Also, management has received positive feedback and tangible support for specific programs from other jurisdictions and associations.
- Contact : Carolyne Nelson  
Administrative Assistant  
Tri-County Metropolitan Transportation  
District of Oregon  
4012 S.E. 17th Avenue  
Portland, Oregon 97202  
(503) 238-4830

# TRANSIT ACTION

## Performance Improvement...*in brief*

Performance Area...Performance Measurement

- Action : Measure bus operations, patronage levels, financial indicators, and fare policies on a monthly basis.
- Goal : Monitor bus performance.
- Issues : Management determined that significant performance measures and indicators were either dispersed among many sources or were non-existent.
- Details : The Office of Budget and Management Analysis assembles and scrutinizes operational, financial, and managerial statistics from various offices which deal with bus operations and prepare a report with analytical interpretations.

Office directors and key management personnel are currently provided with over 50 indicators to compare bus operations on a month-by-month basis. These statistics indicate operational trends and historical comparisons. Analytical reviews point out strengths and weaknesses and provide management with status reports.

- Success : Upper level management in both financial and operational divisions continually cite the performance reports as one of the major tools in the improvement of the bus system. Efforts are now underway to refine current measures and develop other indicies such as, comparison of operation to other public transit authorities, citizen perception indicators, and time-distance, origin-destination measures.
- Contact : Eckhard Bennewitz  
Washington Metropolitan Area  
Transit Authority  
600 Fifth Street, N.W.  
Washington, D.C. 20001

## TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...Performance Measurement

- Action : System for collecting and processing line patronage data.
- Goal : To keep track of patronage on a detailed basis.
- Issues : In the large scale service changes that were required several years ago, the rudimentary information on patronage was inadequate for making good decisions. A fairly detailed body of data was needed to change individual lines without diminishing productivity. There was also a need for some assurance that the changes would make the service more equitable.
- Details : A crew of 36 schedule checkers gathers field data continually, line by line. A battery of computer programs transforms the raw data into detailed information on riding patterns for each line. Recently, a capability was added for breaking down line data into geographical areas. Any combination of census tracts can be specified.
- Success : Service change recommendations based on quantitative information have been much more readily accepted by everyone, and have allowed reduction in service miles by over 10% with no decrease in patronage.
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Southern California Rapid Transit  
District  
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Los Angeles, Ca. 90013  
(213) 972-6131

# TRANSIT ACTION

## Performance Improvement...*in brief*

### Performance Area...Performance Measurement

- Action : Cut service frequency on the poorly and marginally-patronized routes.
- Goal : Reduce the number of bus runs.
- Issues : Because of the large reduction in budget, the transit board required a cut in service. A typical action is to cut poorly-and marginally-patronized routes. This leaves some areas with no service and can reduce patronage on other routes.
- Details : The Metropolitan Transit Commission determines whether or not to continue a bus route or individual trip based on a measure called "subsidy/passenger". Subsidy per passenger is defined as the cost of service minus the revenue derived divided by the patronage for that route or trip.
- The Metropolitan Transit Commission does not allow bus routes to operate in excess of \$1.25 subsidy/passenger. However, individual bus trips on a route may go as high as \$1.50 subsidy/passenger. Trips or routes exceeding these ceiling standards are either modified to bring them into compliance or discontinued.
- Success : Service for 1,800 of the system's 90,000 daily route miles was cut. Patronage before the cut was 200,000 per day. Patronage dropped by 0.005%.
- Contact : Fred Heywood  
Metropolitan Transit Commission  
801 American Center Building  
St. Paul, MN. 55101  
(612) 221-0939

# TRANSIT ACTION

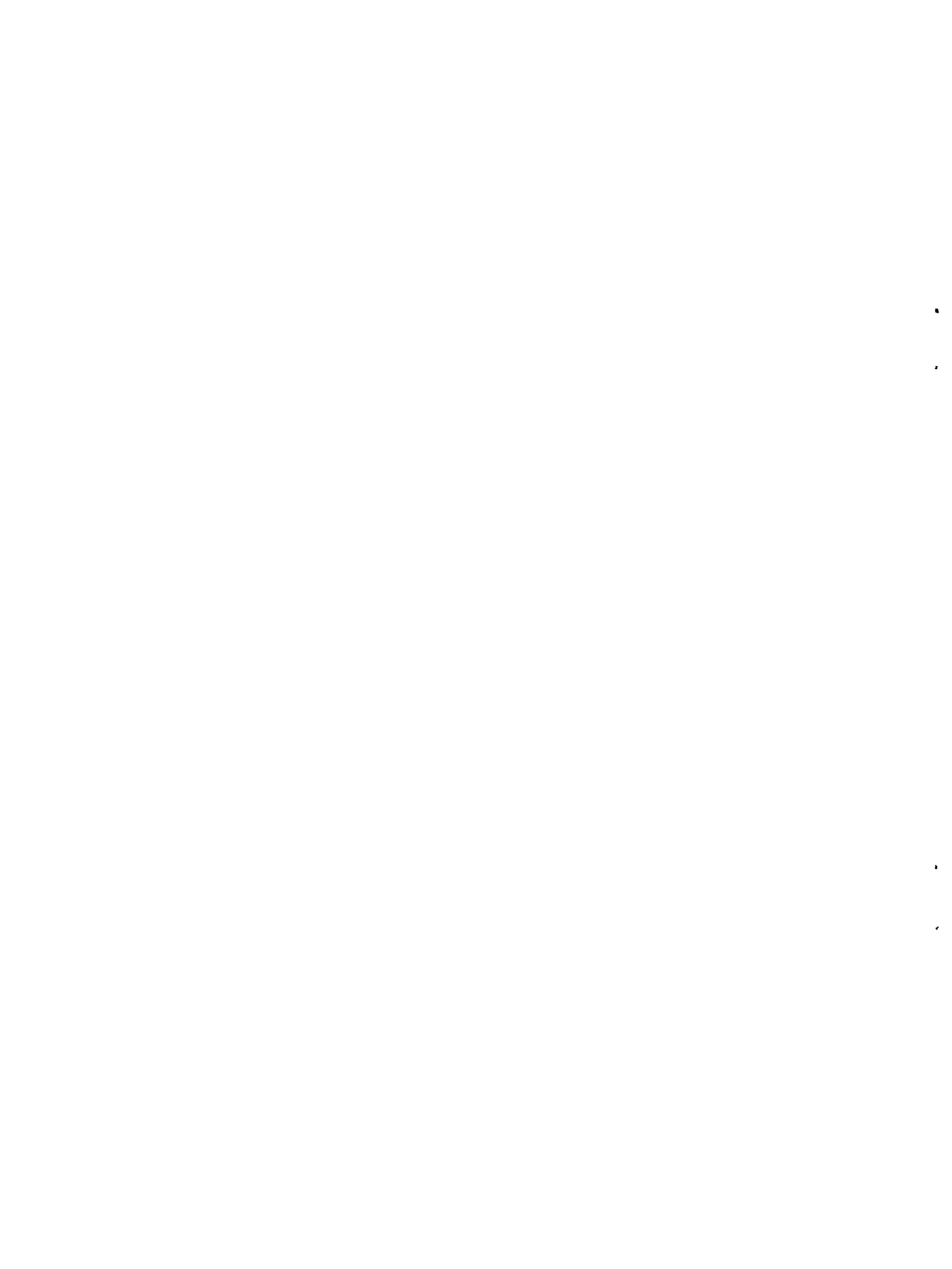
## Performance Improvement...*in brief*

### Performance Area...Performance Measurement

- Action : Curtail service on routes where ridership in certain time periods is extremely low.
- Goal : Reallocate available system mileage to more productive uses.
- Issues : To continue RTA's service expansion program, it became necessary to reallocate services performing in an unproductive manner to more productive areas. At the same time, the Board of Trustees was committed to continue all routes in all time periods. Therefore, it became necessary to identify areas of service where there was low passenger utilization so that an equivalent amount of service could be shifted to more productive areas.
- Details : A standard of 15 passengers per vehicle hour was used to gauge the performance of individual routes in all time periods. Routes operating below this standard became candidates for selective service reductions.

For example, Route A is generating 10 passengers/a vehicle hour during the weekday evening base time period while buses are running every 30 minutes. To bring Route A within the acceptable standard of productivity, service in the weekday evening time period is reduced from a 30 minute frequency to a 45 minute frequency.

- Success : RTA was able to improve the productivity of the service and minimize the unfavorable impact of a reduction in transit service. The span of service on individual routes was preserved while considerable amounts of mileage were shifted to areas where routes were exceeding acceptable system load standards in peak and off-peak time periods and enabled RTA to add new routes and services without increasing the overall operating budget.
- Contact : Donald G. Yuratovac  
Director, Service Development  
Greater Cleveland Regional Transit Authority  
1404 East 9th Street  
Cleveland, Ohio 44114



# TRANSIT ACTION

Performance Improvement...*in brief*

Performance Area...

Action :

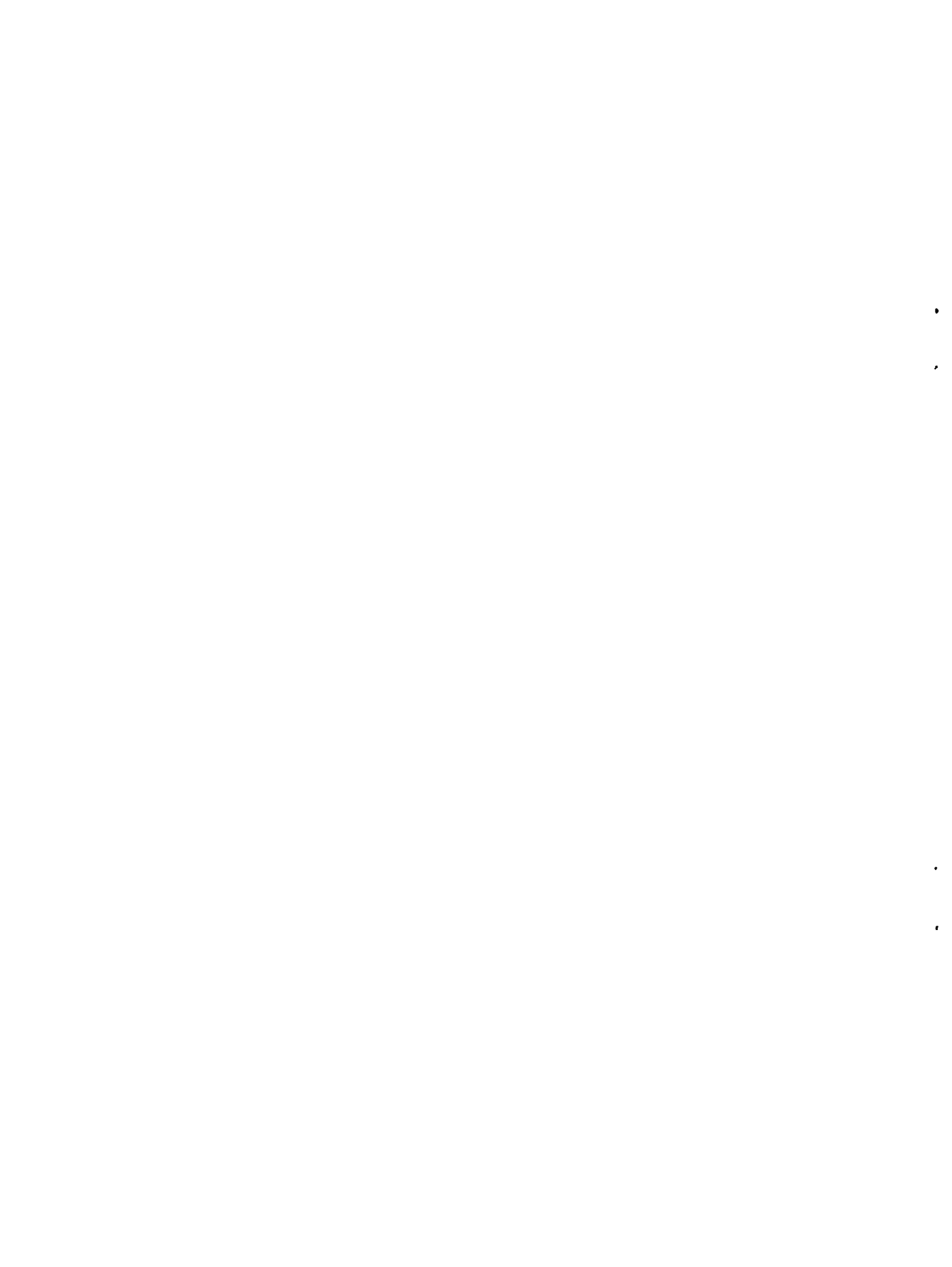
Goal :

Issues :

Details :

Success :

Contact :







- load factors
- accessibility to routes
- frequency + spread

2BD to routes?

2 years.

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Transit actions



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