PART 3

Planning and Development

Transit Privatization in Denver: Experience in First Year

ROBERT L. PESKIN, SUBHASH R. MUNDLE, AND SCOTT D. BUHRER

The performance of the Denver Regional Transportation District (RTD) in its implementation of Colorado Senate Bill 164 of 1988 and Senate Bill 8 of 1990 and the resulting performance of the contractors selected by RTD to provide transit service in the region were reviewed. The bill required that RTD contract at least 20 percent of its service to qualified private businesses in negotiated contracts. Furthermore, the bill required that RTD contract with an independent certified public accounting firm for a neutral and unbiased performance audit. Over the 5-year term of the privatization contracts, RTD is projected to save more than $29 million (25 percent) on a fully allocated basis and nearly $16 million (15 percent) on an incremental basis over its in-house costs. And, for many measures of safety and quality of service, the contractors performed as well as or better than RTD. These positive findings must be tempered, however, by the consideration of significant front-end RTD costs resulting from contract administration and operational oversight; uncertain future contractor-proposed prices; lower performance by the contractors, in terms of some performance measures for some types of service; and poor initial performance by all of the contractors and continuing problems with one of the contractors. In addition, the results at the conclusion of the 3-year base term of the contracts (or after 4 or 5 years, if RTD exercises options with the current contractors) may vary from the findings contained herein, given the relatively short-term focus of this study.

This paper describes the performance of the Denver Regional Transportation District (RTD) in its implementation of the provisions of Colorado Revised Statutes 32-9-119.5, as amended—specifically the provisions of Senate Bill 164 of 1988 and Senate Bill 8 of 1990 (hereafter referred to as "SB 164" or "the bill")—and the resulting performance of the contractors selected by RTD to provide transit service in the region. SB 164 required that RTD contract at least 20 percent of its service to qualified private businesses in negotiated contracts. Furthermore, the bill required that RTD contract with an independent certified public accounting firm for a neutral and unbiased performance audit.

RTD contracted for service in four groups, each of which consisted of several smaller packages of individual routes. Contracts were of a 3-year initial term, with two 1-year options. Proposals were solicited for each package. This approach was intended to provide opportunities for smaller potential contractors to propose. From the proposals received, the following contractors were selected to provided privatized services: Mayflower Contract Services, Inc.; Laidlaw Transit, Inc.; and American Transit Corp.

R. L. Peskin, KPMG Peat Marwick, 8150 Leesburg Pike, Suite 800, Vienna, Va. 22182. S. R. Mundle, Mundle & Associates, Inc., 1700 Sansom Street, Suite 601, Philadelphia, Pa. 19103. S. D. Buhrer, City of Sunnyvale, 650 West Olive, Sunnyvale, Calif. 94086.

Revenue service for Groups I, II, III, and IV began on June 11, September 3, and December 10, 1989, and September 2, 1990, respectively. SB 164 called for RTD to submit its report to the general assembly by December 1, 1990. The period of evaluation in this study ended on June 30, 1990. The evaluation period included slightly more than a full year of Group I service, nearly 10 months of Group II service, and more than 6 months of Group III service. Group IV revenue had not yet commenced during the evaluation period. Thus, although 20.5 percent of RTD's service was contracted out (in terms of annualized revenue hours), only the performance of Groups I, II, and III (amounting to 19.4 percent of RTD's service, on an annualized basis) was evaluated in this paper.

This paper summarizes the following analyses conducted in the performance audit report (*1*):

- Comparison of RTD's cost had it operated the privatized routes with the costs it experienced when these routes were privatized;
- Contractors' actual costs and profitability;
- Safety and quality of service; and
- Contractors' compliance with the terms of their contracts.

The performance audit report also addressed, in considerable detail, RTD's management of transit privatization, including the process for solicitation of proposals, selection of contractors, and oversight during contractor start-up and revenue service.

COST COMPARISON OF RTD

Structure of Analyses

The cost comparison involved two alternative approaches to provide a realistic range in which the eventual fiscal results of privatization will most likely reside. This process was accomplished through the estimation of long-term, fully allocated costs and short-term, incremental (or "cash basis") costs.

Long-Term, Fully Allocated Cost Analysis

Fully allocated cost analyses implicitly assume that all costs were directly related to the level of service provided. The interpretation of long-term savings, as projected in a fully allocated cost analysis, must be made in the following context:

- RTD's administrative "Category 1" costs were influenced more by board and federal policy, organizational structure, and fixed capital plant than by service levels. Fully allocated cost analysis assumes that such costs were directly related to the quantity of service provided and thus projects pro rata savings. The likelihood of this occurring, particularly in the short term, is remote. Savings in administrative functions were dependent more on management initiatives and board policy than on service levels.

- Long-term financial forecasts, and the fully allocated cost projections on which they were based, were an economic concept that imply that RTD has the ability to modify the infrastructure that was assembled to operate the preprivatized service. This includes a large administrative staff and large discrete fixed assets (e.g., garages) that may be less efficiently deployed as a result of reducing directly operated service.

Long-term, fully allocated cost analyses may, therefore, provide an upper boundary of projected financial impacts.

Short-Term, Incremental Cost Analysis

Whereas the fully allocated cost approach was appropriate in determining long-term savings and awarding contracts, a more appropriate approach for estimating the short-term financial implications of privatization was the incremental costing methodology. The purpose of incremental cost analysis was to identify near-term "cash" effects of alternative management decisions, each resulting in alternative revenue and cost flows. This approach was addressed in the analysis in two ways:

- Indirect operating costs: The fully allocated analysis implied theoretical reduction in indirect costs of 20 percent, or proportionate to the quantity of service privatized. By contrast, the incremental analysis applied the actual and forecasted reductions in such costs identified in theRTD proposed amended 1990 and recommended 1991 budgets. These budgets reflect the actual cost reductions achieved by RTD before privatization.
- Depreciation costs: The incremental analysis does not address the sunk capital-related costs for depreciation decisions.

Short-term, incremental cost analyses may, therefore, provide a lower boundary of projected financial impacts.

Cost Allocation Model

RTD developed a state-of-the-art cost allocation model (*2,3*) that addressed the specific unit costs associated with the various types of service that RTD operated. This model was accomplished by distinguishing labor productivity and other unit cost factors for peak and off-peak service, various types of buses, and various RTD bus garages. It was thus possible to apply the model at the route level and to develop reasonable estimates of the cost for each group of service that was privatized.

For comparing of RTD's net in-house cost with RTD's net cost to privatize, the cost allocation model did not include the costs of "retained functions." These functions included various operations and administrative functions that RTD continued to provide regardless of whether it operated the routes to be privatized. Many of these functions represent systemwide responsibilities that could not be economically privatized or that RTD was specifically mandated to perform, including governance board, legal counsel, transit mall security, marketing, revenue collecting and reporting, grants management, janitorial services at terminals, planning, scheduling, street supervision, and maintenance of street facilities (e.g., bus stop signs, shelters, park-and-ride lots, and the 16th Street Transit Mall). These retained function costs represent $9.9 million, or approximately 9.8 percent of the adopted 1989 RTD operating budget.

In addition, the cost allocation model excluded from the analysis various capital project-related expenses, including construction claims management; interest, design, and construction administration; transitway technical analysis; construction quality and cost control; the Southwest Corridor Project; and the Rapid Transit Program. These excluded function costs represent $5.6 million, or 5.5 percent of the adopted 1989 RTD operating budget.

The cost allocation model classified costs according to the RTD chart of accounts, distinguishing between "Category 1" administrative costs and "Category 2" costs, largely associated with the transportation and maintenance functions. The costs of operating capital were allocated on the basis of fixed-asset depreciation costs. The 1989 and 1990 estimates were based on budgeted costs, adjusted for actual cost experience. The inflation rate for cost projections was based on a weighted average of inflation rates for labor and selected commodities prepared by the Colorado Bureau for Economic Forecasting.

The cost allocation model was based on the most recently available RTD internal cost data from just before the initiation of privatized service. These data included the operating budget from the current year, labor productivity data from the most recent 12-month period for bus operators and mechanics, and unit costs for parts and fuel. The model was initially validated and adjusted to replicate the 1989 budget, the year in which the privatization effort began.

Components of Cost of Privatization

RTD incurred the following fiscal impacts as a result of privatization:

- *Gross contractor cost to RTD*
  - — *Invoice costs*. The contractors billed RTD on the basis of the quantity of service provided and a specified hourly rate of compensation. The proposals and the contracts included an annual increase in these rates (based on the contractors' assumption of the rate of inflation).
  - — *Retained fare revenues*. Revenues retained by the contractors but previously received by RTD were retained for fare revenue. It was assumed that had RTD continued to receive the fares, the proposed prices would have been higher (by the amount of the fare revenues). Thus, these retained revenues were interpreted as a cost to RTD.
- *RTD labor costs charged to privatization*. RTD labor costs included both "one-time" costs associated with initiation of privatization (spread out over the 3-year base term of the

contracts) and estimated recurring costs for contract administration and operational oversight.

• *Consultant costs*. Consultant costs were a direct result of the provisions of SB 164 and included this performance audit, the development of the cost allocation model, and a study of privatization of RTD management.

• *RTD underutilized labor costs*. This amount included a projection of wages and fringe benefits for underutilized operators, mechanics, and service personnel resulting from the labor protection provisions of SB 164. These projected costs reflect adjustments for wage increases and more efficient use of bus operators permitted under the current union contract and for attrition.

• *RTD underutilized fixed-assets costs*. This included an allocation of the costs of underutilized RTD facilities. By choosing to lease buses, RTD efficiently managed the size of its bus fleet; in fact, RTD has been able to maintain its spare ratio (total number of active buses/peak buses − 1) at less than 20 percent.

• *Lease income*. Lease income included revenue generated by leasing RTD buses and the Longmont facility.

Results of Fully Allocated Cost Analysis

Table 1 summarizes the results of the comparison, on a fully allocated and an incremental basis, between RTD's cost had it operated the privatized routes and the costs it experienced when these routes were privatized. The fully allocated analysis financial impacts were computed as the difference between the following.

• Projected fiscal impacts had RTD directly operated privatized transit services (based on the results of the cost allocation model) of
—Category 1 (indirect) operating costs;
—Category 2 (direct) operating costs; and
—depreciation costs.

• Fiscal impacts resulting from RTD contracting transit services of
—gross contractor cost to RTD;
—lease income;
—RTD labor costs charged to privatization;
—consultant costs;
—underutilized labor costs; and
—Underutilized fixed-assets costs.

Two analyses were performed:

• *Cumulative costs over 5-year contract term*. This analysis addressed the cost savings that will result over the full 5-year term of the contracts. The analysis projected a 5-year savings resulting from privatization, on a fully allocated basis, of $29.347 million, or 24.5 percent of RTD's in-house cost.

• *Stable year costs*. This analysis focused on 1993, the last full year in which all the contracts will be in effect (assuming that RTD exercises the options). This analysis assumed that all transitional financial impacts associated with implementation of the privatization process (e.g., amortized nonrecurring RTD labor costs for contract administration and operational oversight, consultant costs, underutilized RTD labor, and bus lease income) diminish to zero. This analysis determined a stable year savings resulting from privatization, on a fully allocated basis, of $6.949 million, or 27.5 percent of RTD's in-house cost.

TABLE 1 RESULTS OF COST COMPARISON

Type of Analysis	Savings (Costs) of Privatization ($ Millions): 5-Year Cumulative	Stable year	Through 6/30/90
Fully Allocated	$29.3	$6.9	
	24.5%	27.5%	
Incremental	$15.9	$3.9	($1.0)
	14.9%	17.0%	

Results of Incremental Cost Analysis

The incremental fiscal impact of privatization was determined by summing favorable and unfavorable impacts.

• Favorable impacts resulting from privatization included
—*Lease income*. Lease income was the income resulting from leasing RTD buses and the Longmont facility; and
—*RTD cost reduction*. RTD realized actual cost reductions subsequent to privatization. These reductions included the actual and forecast reductions in Category 1 indirect costs (which were lower than the fully allocated projections). They also included reductions in Category 2 transportation and maintenance costs, adjusted for the adverse manpower utilization impacts of the labor protection provisions of SB 164 and efficiencies in manpower utilization achieved through recent changes in RTD's labor agreement.

• Unfavorable impacts resulting from privatization included
—Gross contractor cost to RTD;
—RTD labor costs charged to privatization; and
—Consultant costs.

The net savings resulting from privatization were computed as the difference between the above and modeled RTD in-house operating costs. These modeled costs included only Category 1 (indirect) and Category 2 (direct) operating costs. The incremental analysis did not address depreciation costs because these were sunk costs, expended before the privatization effort.

Three analyses were performed:

• *Cumulative costs over 5-year contract term*. Cumulative cost analysis addressed the cost savings that will result over the full 5-year term of the contracts. This analysis projected a 5-year net positive fiscal impact (or savings) resulting from privatization, on an incremental basis, of $15.859 million, or 14.85 percent of RTD's in-house cost.

• *Stable year costs*. This analysis focused on 1993, the last full year in which all the contracts will be in effect (assuming that RTD exercises the options). As in the fully allocated analysis, this analysis assumed that all transitional financial impacts were associated with implementation of the privatization process. This analysis projected a stable year net positive fiscal impact (or savings) resulting from privatization, on an incremental basis, of $3.852 million, or 16.96 percent of RTD's in-house cost.

- *Cash basis through June 30, 1990.* This analysis focused on cost and revenue experience during the period through June 30, 1990 (the most recent quarter for which financial results were available). The net cost of privatization included actual revenues and costs on a cash (not amortized) basis. This analysis estimated a net negative fiscal impact (or cost) of privatization of $1.009 million, on an incremental basis, through June 30, 1990.

ANALYSIS OF CONTRACTORS' ACTUAL COSTS AND PROFITABILITY

Actual cost information was obtained from each of the contractors. This information was reviewed for both completeness and reasonableness. To preserve the confidentiality of proprietary information, only the sum of the costs for all three contractors was published in the performance audit report.

This analysis determined that during the first year of operation, with start-up and leasehold improvement costs amortized over a 3-year period, the contractors lost approximately $217,000 out of total expenses of approximately $10.413 million (a loss of 2.1 percent). The contractors have indicated that they may have underestimated their projected costs for both start-up and revenue operations.

Despite initial operating losses, each contractor was an operational unit of larger corporations that have and may continue to fund relatively small local operating losses in individual operating units. Two of the contractors actively pursued other transit-related businesses in the Denver area. The privatized RTD services may effectively have been a "loss leader" that gave these contractors a foot in the door in the Denver marketplace. Without knowledge of the overall business strategy of each contractor, which is subject to change, the financial performance of individual operating units of larger businesses may not give any indication of the future price strategy of each contractor.

It is not possible to predict the economic conditions that influence contractor business and pricing strategies. If the current contractors are selected for future additional service, the effect of the start-up costs might be moderated, but all proposers will probably have higher hourly rates than those previously received by RTD. The reasons for the higher rates include

- *Initial operating losses.* As noted, the contractors lost money fulfilling the terms of their contracts, through the first year of privatized service.
- *Higher labor costs.* Some proposers may have anticipated the availability of RTD employees. Firms that were awarded contracts in Groups II and III found that few of these employees were available. The result may have been training costs that were higher than expected. Possible future unionization of contractor work forces may also result in higher labor costs for the contractors.
- *Higher fuel costs.* The significant increases in the costs of diesel fuel subsequent to summer 1990 were not anticipated by the contractors. RTD's contracts do not include any escalator for diesel fuel costs. Fuel costs, however, were a relatively small proportion of the contractors' actual costs (i.e., 6.2 percent). Further, the contractors have the opportunity to control these costs through bulk purchases or to use financial instruments to hedge against future price increases. This control could be accomplished by the large national firms, who have the opportunity to arrange fuel purchase contracts on a national level. Alternatively, the RTD contractors could pool their local fuel purchases.
- *Higher vehicle costs.* The Group I contractor has experienced increasing maintenance costs for its school-bus–type buses. RTD realized significant savings from proposals based on such less-expensive vehicles. These savings may not be repeated if future contractors propose only standard transit coaches.

SAFETY AND QUALITY OF SERVICE

The performance audit addressed the following measures: safety, on-time performance, maintenance reliability, and complaints. Because of inherent differences in operating conditions (e.g., density of street traffic) and passenger loadings, the comparison of safety and quality of service between RTD and the contractors distinguished between several types of bus services:

- *Local/limited radial routes.* These routes included local and limited routes operating largely on surface streets and either passing through or terminating in downtown Denver. Limited routes operated primarily during the peak periods over the same streets as local routes, but they made fewer stops.
- *Local/limited nonradial routes.* These routes included local and limited routes operating largely on surface streets but not entering downtown Denver. These routes, sometimes referred to as "crosstowns," generally encountered less-congested streets.
- *Express routes.* These routes included between suburban park-and-ride lots and either the Market Street Station or the Civic Center Station in downtown Denver.
- *Circulator routes.* Circulator routes had relatively low passenger volumes and operated between primarily residential areas and nearby commercial areas.

In addition, the "HandyRide" service for handicapped passengers was contracted out. Because of significant changes in the operation of this service (e.g., revised eligibility and expanded service), direct comparisons of safety and quality of service were not possible. This service represented only 1.6 percent of total vehicle hours.

Two other types of service were not specifically analyzed in this study.

- *Regional routes.* Regional routes occurred between outlying areas in the RTD service area. Because no qualified proposers submitted a price lower than RTD's in-house cost of providing the service, RTD did not contract for this type of service.

• *Mall shuttle*. Mall shuttle service operated with specialized low-floor vehicles on the 16th Street Transit Mall.

Safety

Figure 1 compares the performance of RTD and the contractors with regard to bodily-injury and property-damage accidents. The contractors' accident rates were lower than those of RTD for bodily-injury accidents but higher than those of RTD for property-damage accidents. This trend applied for all types of service. The contractors' property damage accident rates were much higher during the initial months of operation for local/limited radial routes and circulator routes.

On-Time Performance

Figure 2 compares the performance of RTD and the contractors with regard to on-time performance. The contractors' on-time performance was better than that of RTD for local/limited radial routes, approximately the same for local/limited nonradial and express routes, and slightly worse for circulator routes. Contractors were observed running late more often than RTD and running early less often than RTD.

Maintenance Reliability

Figure 3 compares the performance of RTD and the contractors with regard to maintenance reliability. During the quarter of April through June 1990, the contractors had a

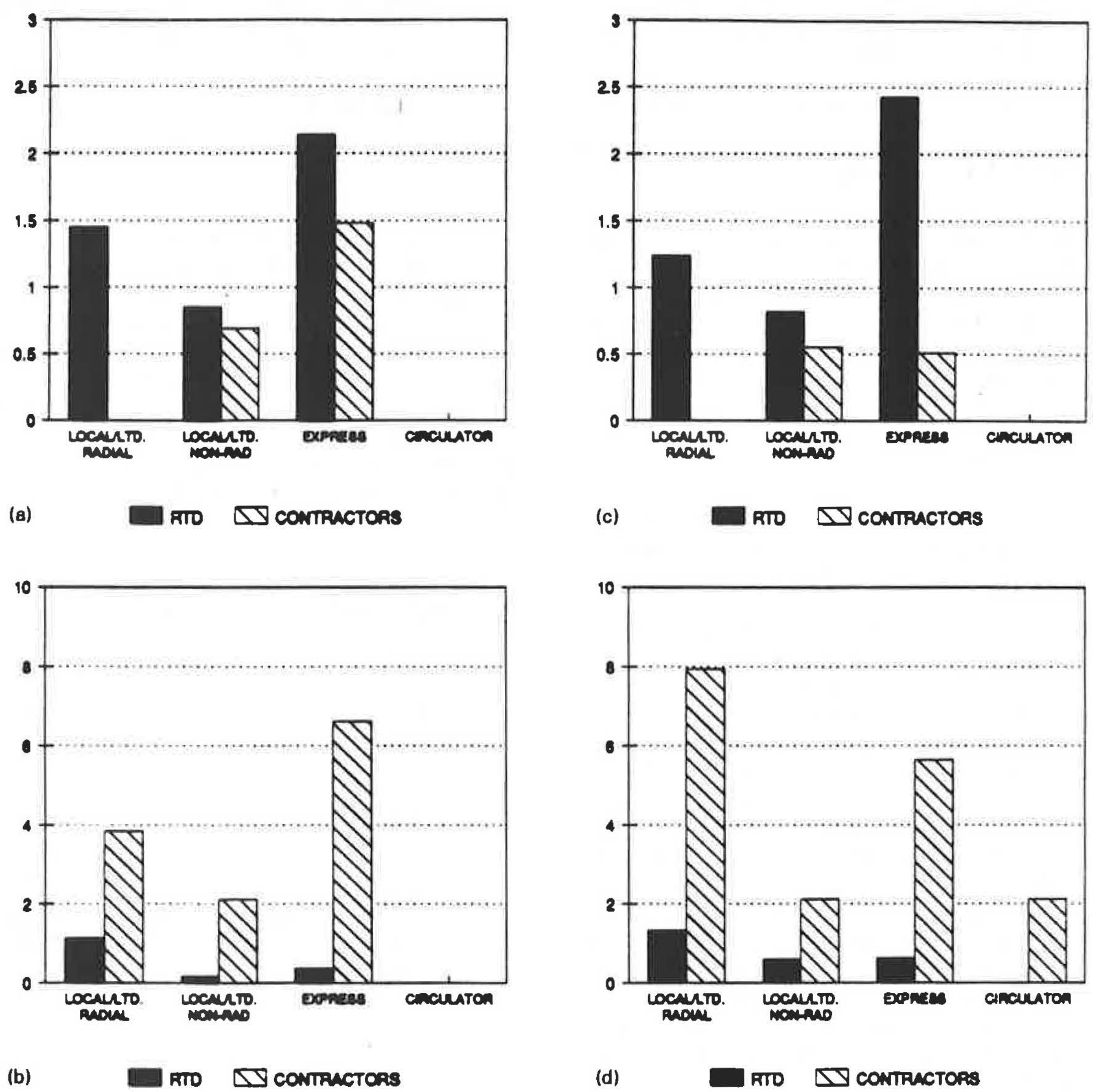

FIGURE 1 Comparison of RTD and contractor performance for bodily-injury accidents per 100,000 passengers (*a*) April through June 1990 and (*c*) June 1989 through June 1990 and for property-damage accidents per 100,000 vehicle-mi (*b*) April through June 1990 and (*d*) June 1989 through June 1990.

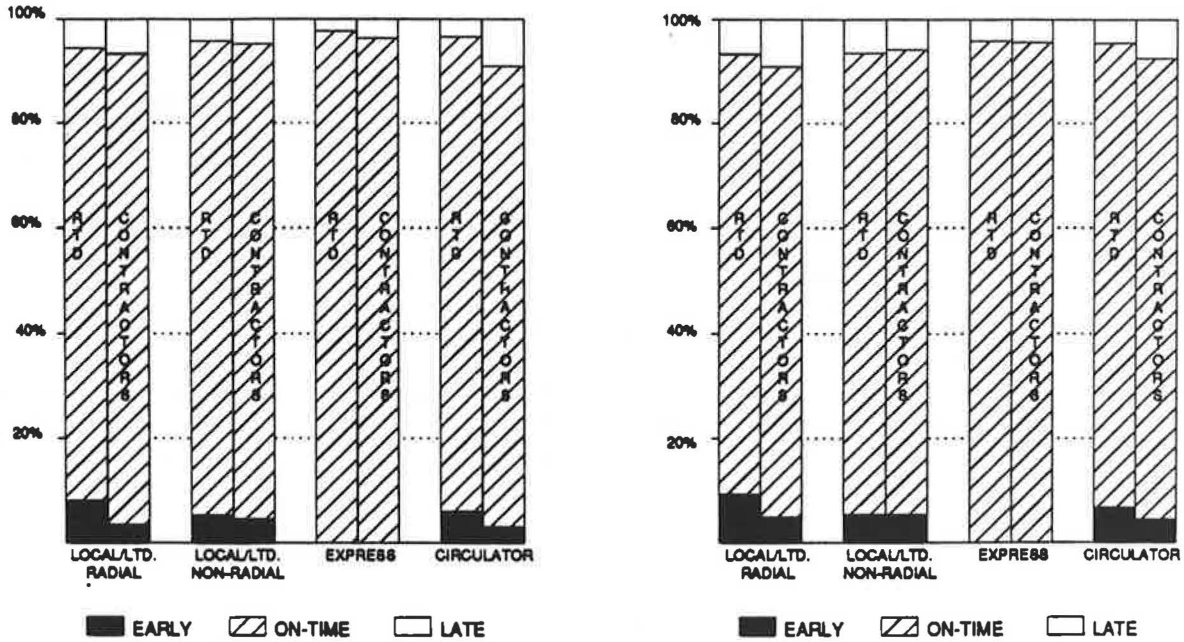

FIGURE 2 Comparison of RTD and contractors for on-time performance April through June 1990 (*left*) and June 1989 through June 1990 (*right*).

worse rate of miles between roadcalls than RTD for all types of service. The contractors' miles between roadcalls declined over the total analysis period. This decline can be partially explained by the new vehicles operated by the Group I contractor, which experienced fewer in-service maintenance problems during the initial months of operation.

Complaints

Figures 4 through 6 compare the performance of RTD and the contractors with regard to complaints concerning operator performance, maintenance, and on-time performance.

- *Operator performance.* Contractor performance was approximately the same as that of RTD for local/limited radial and express routes. Contractor performance was much better than that of RTD for circulator routes.
- *Maintenance.* During the quarter of April through June 1990, the contractors performed slightly better than RTD for express routes and worse than RTD for circulator routes. In the total analysis period through June 1990, the contractors performed worse than RTD for express routes but significantly better than RTD on circulator routes.
- *On-time performance.* The "early" complaint rate of contractors was similar to that of RTD for local/limited radial and radial and express routes. The early complaint rate of contractors was higher than that of RTD for circulator routes in the quarter of April through June 1990 but lower in the total analysis period through June 1990. The contractors had a higher "late" complaint rate for local/limited radial and express routes but a significantly lower rate for circulator routes. The contractors had a higher "no-show" complaint rate for local/limited radial and express routes but a significantly lower rate for circulator routes.

Complaint data have significant limitations. Solely on the basis of the volume of complaints received at the RTD Telephone Information Center, the data reflect none of the follow-up routinely given complaints by both RTD and the contractors. The validity of each complaint was not researched before it entered the data base. Furthermore, none of the complaints received directly by the contractors (at their local offices) was included. The extent to which the complaint findings differ from the maintenance roadcall and observed on-time performance data can be explained partially by these limitations.

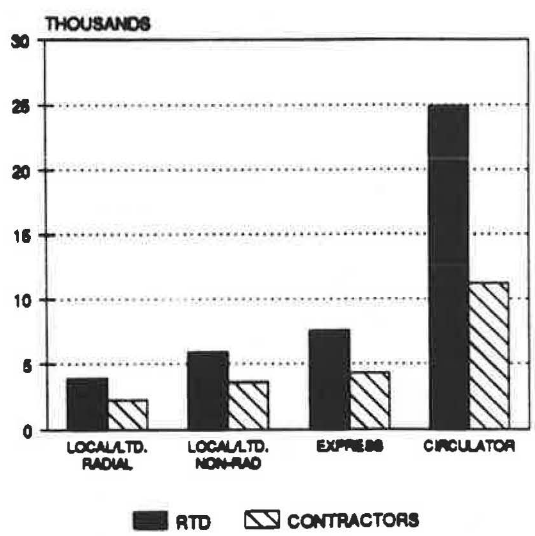

FIGURE 3 Comparison of RTD and contractors for maintenance reliability by type of service (in miles and between roadcalls, April through June 1990).

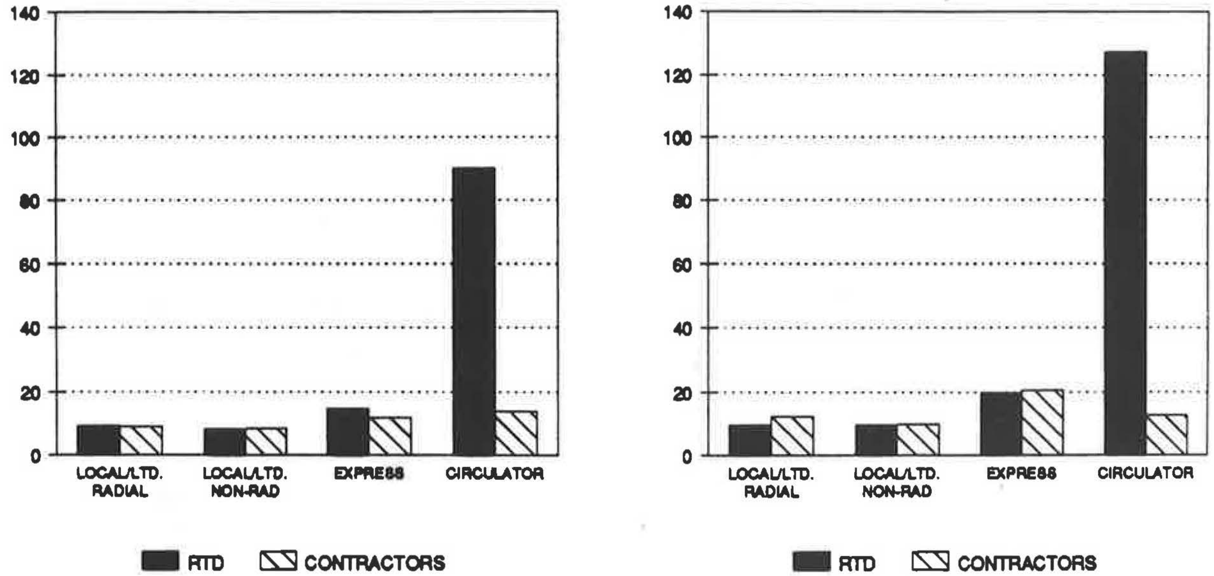

FIGURE 4 Comparison of RTD and contractors for operator performance complaints per 100,000 passengers April through June 1990 (*left*) and June 1989 through June 1990 (*right*).

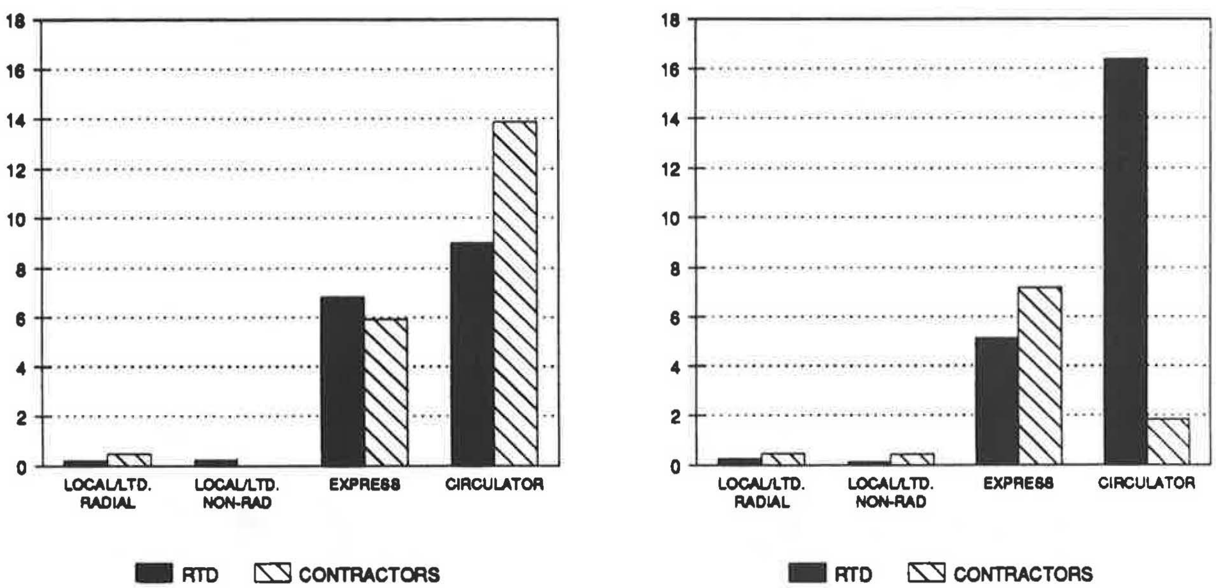

FIGURE 5 Comparison of RTD and contractors for maintenance complaints per 100,000 passengers April through June 1990 (*left*) and June 1989 through June 1990 (*right*).

CONTRACTORS' COMPLIANCE WITH CONTRACT TERMS

RTD applied two quantitative approaches to measure overall contractor compliance:

• *Service delivery.* RTD addressed service delivery through two gross measures: revenue hours and vehicle miles. In the total analysis period through June 1990, the contractors delivered in excess of 99.8 percent of scheduled revenue hours. This measure was based on daily service provision reports by the contractor and verified by electronic farebox data (for two contractors) and observation by RTD traffic checkers and street supervisors.

• *Liquidated damages.* The contracts included a provision for RTD to assess liquidated damages in those cases of observed lack of compliance by the contractors. As summarized in Table 2, through June 30, 1990, a total of 495 liquidated damage incidents were initiated by RTD, of which 288 were eventually assessed. The most frequently assessed liquidated damages resulted from contractors' being observed running early and late, missed trips, nonfunctioning wheelchair lifts, and displaying the improper destination sign. Overall, there was a broad range in the compliance among the three contractors.

RTD's experience went beyond the quantitative descriptions described above, however. From RTD management's

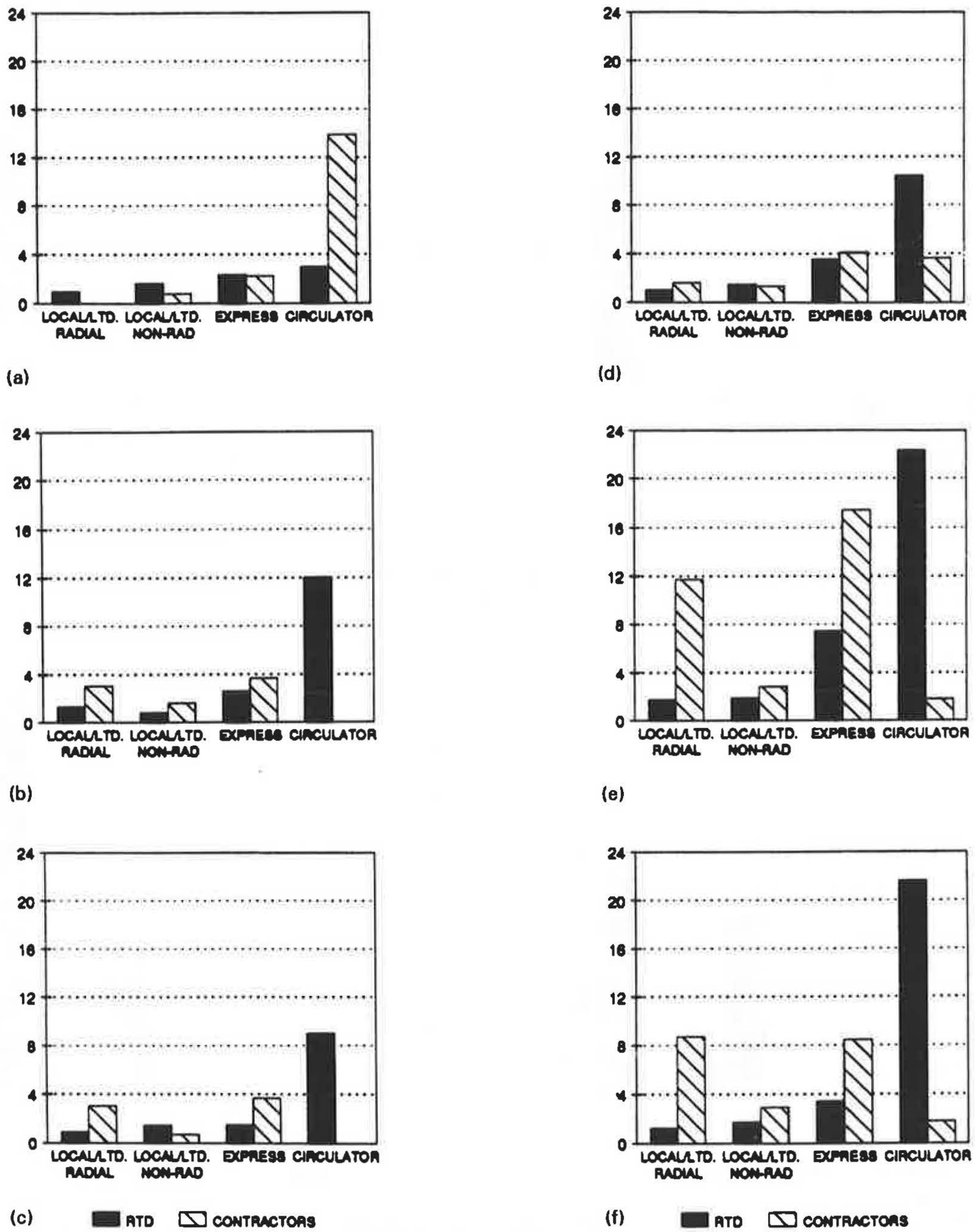

FIGURE 6 Comparison of RTD and contractors for on-time performance April through June 1990 for (*a*) early complaints, (*b*) late complaints, and (*c*) no-show complaints; and June 1989 through June 1990 for (*d*) early complaints, (*e*) late complaints, and (*f*) no-show complaints.

perspective, one contractor had relatively few problems and has generally been receptive to recommendations for improvement from RTD management. Another contractor, after experiencing significant problems during start-up and initial revenue service, applied increased corporate and local management oversight to resolve its operational problems and eventually operated with only minor, routine problems. Concerns were raised about whether the remaining contractor had an adequate level of management and supervision.

RTD transmitted cure notices to one of the contractors in the initial weeks of its revenue service. These notices addressed the contractor's failure to maintain its leased buses per the terms of the lease and to meet RTD contract standards for the quality of service provided (e.g., failure to provide service and on-time performance). The cure notices were issued after the assessment of a large number of liquidated damages and extensive discussion with the contractor's on-site manager and corporate management. The contractor quickly responded to the cure notices, which have since been closed.

The following contractors' incurred costs were either related to complying with their contracts or a result of being observed in noncompliance.

- *Start-up and leasehold improvements.* Nonrecurring start-up and leasehold improvement costs amounted to $1.6 mil-

TABLE 2 LIQUIDATED DAMAGES JUNE 1989 THROUGH JUNE 1990

	Initiated	Assessed
Incident Type		
Failure to Provide Service	0	0
Missed Trip/1 Min Early/30 Min Late	170	111
Between 5 Min and 30 Min Late	156	77
Route Deviation	27	14
Non-Assigned Required Personnel	0	0
Non-Functioning Wheelchair Lift	65	48
Unclean Vehicle/Unrepaired Damage	2	1
Non-Functioning Heating/Cooling System	12	4
Driver Not In Presentable Uniform	4	3
Improper Vehicle Maintenance	12	9
Improper Destination Sign	47	21
Failure to Remove RTD Logo When Providing Other Than RTD-Contracted Service	0	0
Total	495	288
Total Incidents per 100,000 Vehicle Miles	10.54	5.44
Total Value of Liquidated Damages		
June–September 1989		$3,520
October–December 1989		$16,475
January–March 1990		$5,850
April–June 1990		$4,000
Total		$29,845

lion, or 2.4 percent of the 5-year total contract price. Amortization of these costs over the initial 3-year term of the contracts brought them to $418,000 or 4.1 percent of total actual costs through June 30, 1990. These costs were the result of the following:

—Training: Training included costs to hire and train bus operators, mechanics, cleaners, supervisors, and instructors.

—Buses: Contractors operating their own vehicles were required to paint the buses to RTD standards and install wheelchair lifts, emergency exits, and destination signs to meet RTD specifications.

—Facility preparation: The contractors acquired operating facilities that had to be converted for transit use. These preparations included constructing office space; installing shop equipment, ventilation, and lighting; and paving storage areas. One contractor leased RTD's Longmont facility, thereby limiting this expense somewhat.

- *Liquidated damages.* Assessed liquidated damages resulted in a total cost of $27,625 to the contractors, representing less than 0.3 percent of the contractors' total actual costs.

CONCLUSIONS

RTD's privatization effort demonstrated that it is possible to reduce its net cost by contracting for transit services from private providers. Over the 5-year term of the privatization contracts, RTD is projected to save more than $29 million (25 percent) on a fully allocated basis and nearly $16 million (15 percent) on an incremental basis over its in-house costs. In stable years, after various privatization initiation costs have been fully amortized, the annual savings were projected to be as high as 28 percent on a fully allocated basis and 17 percent on an incremental basis. For many measures of safety and quality of service, the contractors performed as well as or better than RTD.

These positive findings must be tempered, however, by the consideration of

- Significant front-end RTD costs resulting from contract administration and operational oversight;
- The uncertainty of future contractor proposed prices and, hence, RTD cost savings given higher-than-expected contractor start-up costs and initial operating losses;
- Lower performance by the contractors in terms of some performance measures, for some types of service; and
- Poor initial performance by all of the contractors and continuing problems with one of the contractors.

The results at the conclusion of the 3-year base term of the contracts (or after 4 or 5 years, if RTD exercises options with the current contractors) may vary from the findings contained herein, given the relatively short-term focus of this study.

RTD faced the challenge of maintaining a balance between providing the contractors the opportunity to run their own businesses effectively and profitably and protecting the public's interest through preserving safe and reliable service and protecting RTD assets leased to the contractors. While it recognized the potential advantages of the profit motive and competition in controlling the proposed price, RTD also made provision for controls to ensure that all services contracted for were actually provided and were consistent with RTD's own safety and service quality standards. RTD has attempted to control these factors through the following procedures.

- *Attention to the "business" side of privatization.* Attending to the business side included preparing requests for proposals, selecting contractors, and providing program oversight. RTD structured a procurement process that was intended to protect the public's interest, in terms of safe and reliable service, and provided opportunities for qualified local and small businesses.
- *Contractor selection.* Contractors were evaluated and judged qualified on the basis of previous operating experience, adequate understanding of the Denver situation and approach for organizing the implementation of privatized service, and sufficient financial capacity.
- *Performance incentives.* Incentives were in the form of retention of 100 percent of fare revenues collected.
- *Performance penalties.* Penalties were in the form of liquidated damages for noncompliance of specific contract articles related to service provision and safety and service quality.

Routine observation by RTD street supervisors, spot inspections of vehicles and facilities, and periodic meetings with the contractors ensured that service safety and quality were measured, that problems were identified, and that resolution of problems could be initiated. The dedication of both contracts and operations department project managers helped ensure that the appropriate level of attention was paid to the privatization effort.

A concern with RTD's management approach, identified by the contractors and others, is the temptation for RTD to impose its own expectations about how the contractors should manage their businesses. Although RTD was properly concerned about the adequacy of training and the level of street supervision during the initial months of privatization, the initial mobilization problems faced by the contractors have largely been overcome.

The incentive-penalty system used by RTD had several weaknesses:

- *Limited financial impact.* The dollar amount of the incentives and penalties were too small to be of significant importance to the contractors. Incentives from retained fare revenues were difficult to determine, because the effect of the recent fare restructuring probably overshadowed any passenger response to quality of service. In all likelihood, such incentives would have been small because, in the total analysis period, retained fare revenues equaled less than 17 percent of total contractor costs. Penalties resulting from liquidated damages amounted to less than 0.3 percent of contractor costs.
- *Limited opportunity for contractor control.* The incentives to the contractors for good-quality service were based on fare revenues received. Unfortunately, the contractors did not have the ability to directly control two important aspects of fare revenue. The overall fare structure was imposed by RTD. Although the recent fare restructuring actually benefitted the contractors, the revenue increase probably had little to do with the quality of service they provided. The other aspect affecting fare revenue was ridership. Prevailing regional economic conditions, as well as route-specific changes (e.g., expansion or elimination of major employers and changes in traffic congestion) could have had as much or greater influences on ridership than any change in service quality.
- *Inconsistent observations.* Liquidated damages were imposed by RTD on the basis of observations from a variety of sources. These include observations by street supervisors, maintenance inspections of buses, and passenger complaints. There was no assurance that the occurrence of these observations was uniform or consistent. Street supervision, for example, was deployed based on day-to-day and hour-to-hour operational considerations rather than on any attempt to observe all service. By contrast, measurement of on-time performance by traffic checkers was an example of unbiased performance measurement. The number of observations was in approximately the same proportion as the number of revenue hours operated by the contractors. Thus, the on-time performance of each contractor had the same likelihood of being observed.

ACKNOWLEDGMENT

The study described in this paper was performed by KPMG Peat Marwick, in association with Mundle & Associates, Inc., under contract to the Denver RTD.

REFERENCES

1. KPMG Peat Marwick and Mundle & Associates, Inc. *Performance Audit of Privatization of RTD Services.* Revised Final Report. Regional Transportation District, Denver, Colo., Dec. 24, 1991.
2. KPMG Peat Marwick and Mundle & Associates, Inc. *Development of Fully-Allocated Cost Model in Compliance with UMTA Guidelines.* Working Paper 2 (Revision 3). Regional Transportation District, Denver, Colo., Aug. 1989.
3. KPMG Peat Marwick and Mundle & Associates, Inc. *Modification of Fully-Allocated Cost Model to Address Retained Functions.* Working Paper 3 (Revision 2). Regional Transportation District, Denver, Colo., June 1989.

Although all factual information was provided by RTD and its contractors, any opinions and conclusions expressed in this paper are solely those of the authors.

Publication of this paper sponsored by Committee on Public Transportation Planning and Development.