Digest of A Performance Audit of the Utah Transit Authority

Chapter I: Introduction

The Utah Transit Authority (UTA) is a public transit district that offers bus, light-rail, vanpool, and paratransit services in communities along the Wasatch Front. It is governed by a 15-member Board of Trustees appointed by mayors and county commissioners in the service region.

Chapter II: Unreliable Passenger Data Makes Analysis Difficult

UTA Must Improve Passenger Data. We found it difficult to respond to many of the Legislature's questions regarding transit use in UTA's service region because much of the agency's passenger data is unreliable. For example, TRAX ridership has been overstated by about 20 percent. However, even when considering the problems with the data, it appears that the number of transit users has grown faster than the local population and highway use. Although bus ridership has declined, it appears that TRAX ridership has helped produce an overall increase in transit use. To improve the accuracy of its passenger counts, we recommend that UTA use sound statistical methods and automated passenger counters.

Chapter III: UTA's Budget Growth Fueled by Sales Tax Receipts

UTA's Budget Will Continue to Grow as Transit System Expands. UTA's rapid expansion has resulted in a shift in the agency's cost structure as its expenditures for capital assets have grown more rapidly than its operating expenses. At the same time, sales tax has replaced federal grants as the agency's largest source of revenue. During the next 23 years, UTA is expected to spend about $11 billion for a number of new transit projects. To cover the added costs, taxpayers will be asked to approve several additional increases to the local sales tax.

A review of UTA's compensation practices found that executive salaries and bonuses are high compared to those of other transit agencies. We recommend that the board establish policies which bring executive compensation in line with those of other transit agencies.

Chapter IV: Efficiency Varies by Type of Service

Services Vary Widely in Both Cost and Usage. The relatively low number of passengers using UTA's bus service has prevented that service from being as efficient as those operated by other transit agencies. UTA buses pick up an average of

Total Cost per Boarding in 2006	
Bus:	$ 5.11
Light Rail:	3.51
Paratransit:	36.82
Vanpool:	3.53

1.29 passengers each mile traveled while other transit agencies average 2.17 passenger boarding per mile. In contrast, the large number of passengers using light rail has helped light rail to maintain a relatively low cost per passenger compared to other transit agencies. We recommend that UTA develop a watch list for high-cost bus routes not meeting certain minimum standards of performance.

Chapter V: Transit Is Highly Subsidized

UTA's Board Should Provide Additional Guidance about Agency's Fare Pricing Strategy. Farebox revenue only covers about 17 percent of UTA's operating costs and about 13 percent of the total cost of service. Although the Legislature has directed UTA to minimize, as much as practicable, the burden placed on taxpayers, UTA has focused on increasing overall ridership rather than on minimizing subsidies. Certain types of fare passes, such as the Education pass, are subsidized at a much higher level than others. We recommend that the board establish in policy a fare-pricing strategy that guides the level of subsidies offered and establishes a minimum farebox recovery ratio.

Chapter VI: Transit Provides a Benefit to Congestion but Not to Air Quality

About 4.5 Percent of Commuters Use Public Transit. Although the impact on freeway drive times is difficult to measure, transit is most likely having a positive impact on traffic congestion. About 42,000 vehicle trips (about 21,000 round trips) are removed from local roads and highways each day due to commuters choosing to use transit instead of their passenger cars.

Light rail and vanpools offer a considerable reduction in emissions compared to passenger cars. However, UTA buses create so much air pollution that they negate any gains in air quality created by light rail and vanpools. The overall effect of UTA's emissions on the region's air quality is quite small when considering the total pollution created by all other sources in the four-county region.

Chapter VII: Board Independence and Oversight Could Improve

Legislature Could Address Governance Issues. In addition to the concerns described in previous chapters, a lack of compliance with a board member's term limit requirement and the board's poor use of its internal auditors have raised concern about the board's independence and oversight. Also, because of its size and importance, UTA may require more state-level oversight than special districts normally receive. The Legislature may wish to take some of the same steps used by other states to provide better oversight of UTA and hold the agency more accountable for its use of public funds.

REPORT TO THE

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A Performance Audit of the Utah Transit Authority (UTA)

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Table of Contents

Table of Contents (Cont.)

Chapter I
Introduction

The Utah Transit Authority (UTA) was incorporated in 1970 for the purpose of providing a public mass transportation system for communities along the Wasatch Front. The UTA service area includes Salt Lake, Davis, and Weber counties, as well as 14 cities in Utah County, 3 cities in Tooele County, and 3 cities in Box Elder County. The population of UTA's service area is estimated to be over 2 million people and includes about 79 percent of the state's total population.

UTA has four main services. It provides local bus service to communities in each of the six counties its serves and offers commuter express bus service between several major cities. UTA also offers its TRAX light-rail service on two lines in Salt Lake County. A vanpool program allows groups of individuals to commute together. Finally, UTA operates a federally mandated service for people with disabilities called paratransit.

UTA provides transit service to the majority of the state's population.

UTA is defined under ***Utah Code*** 17B-2a-801 as a public transit district. As required by statute, UTA is governed by a 15-member Board of Trustees who are appointed by local elected officials from the individual communities it serves. The board's role is to establish agency policy and to monitor performance. They are also responsible for appointing the agency's general manager, general counsel, and internal auditor.

UTA Has a Broad Mission and Goals

Although the agency was originally incorporated for the purpose of providing mass transit services to the public, UTA now defines its mission and goals more broadly. Under the direction of its Board of Trustees, UTA has adopted the following mission statement:

> Utah Transit Authority strengthens and connects communities thereby enabling individuals to pursue a fuller life with greater ease and convenience by leading through partnering, planning, and wise investment of physical, economic, and human resources.

In addition, UTA has established four goals to help meet its mission:

1. Increase public transportation connections and mobility across the Wasatch region.

2. Support and contribute to the long-term economic, environmental, and social sustainability of the region through balanced transportation that encourages wise land use.

3. Achieve long-term viability of public transportation services by maintaining cost, revenue, and environmental performance effectiveness.

4. Execute the major projects in the long range regional plans plus additional strategic projects in an efficient and timely manner.

Thus, in addition to transportation mobility and cost effectiveness, UTA aims to influence land use and to improve the environment. In addition to its four main goals, UTA has established specific corporate objectives that guide the organization's efforts to accomplish its goals and mission.

UTA Offers a Range of Transit Services

UTA offers bus, light rail, commuter rail, vanpool, and paratransit services along the Wasatch front.

While bus and light rail provide transit services to the vast majority of UTA passengers, the agency's vanpool and paratransit services are designed to meet the needs of two special categories of travelers. Commuter rail will offer transit services to passengers wishing to travel between the major communities along the Wasatch Front. Figure 1.1 shows three indicators of the amount of service provided on a weekday. Each mode provides reduced services on weekends.

Figure 1.1 Average Weekday Service Provided by UTA in 2006 by Transit Mode. Weekday service activity is described by transit mode. Bus service has the largest number of vehicles, the most service hours and largest number of miles traveled.

Transit Mode	Vehicles in Operation	Vehicle Hours of Service	Vehicles Miles of Service
Bus	381	3,124	58,928
Light-Rail Trains*	14	296	3,478
Vanpool	326	676	26,642
Paratransit	148	978	13,640

** TRAX light-rail trains usually consist of multiple cars.*

Buses Provide the Most Widely Available Service. Since UTA's creation, bus service has been the primary service offered to passengers. On weekdays, UTA provides about 59,000 vehicle miles of service with 381 buses. Service is reduced by about half on Saturdays. On Sundays, the services are further reduced to about one-eighth of the level of service provided on weekdays. In addition to local bus service, UTA offers express bus services to commuters as well as specialty services to ski resorts and other special-event destinations.

Although light rail is a popular new service, buses remain UTA's primary service option.

Light Rail Offers Additional Options to Riders. In 1999, UTA opened its first light-rail line from Salt Lake City to Sandy. TRAX light-rail cars provide service through electric-powered trains that travel along fixed guideways. A second line was constructed from downtown to the University of Utah and extension of that line to the University Hospital. An extension of the Sandy Line is currently being built from the Arena TRAX Station to the Salt Lake Intermodal Hub on 600 West and 300 South in Salt Lake City. UTA reports that Saturday trains provide as many miles of service as weekday trains, but the trains have fewer cars. On Sundays, the service miles provided by trains are reduced by about half.

Vanpools Provide Alternatives for Distant Commuters. UTA's vanpool program helps corporations or individuals purchase or lease a van if they are willing to drive a group of commuters to work each day. Typically, UTA vanpool vans carry between 7 and 15 passengers. The vanpool program has become so popular that applicants have had to wait

for nearly a year to receive a van. In 2006, UTA reported 326 vans operated on weekdays, 38 on Saturdays, and 10 on Sundays.

Paratransit Serves People with Disabilities. UTA provides paratransit services to approximately 5,000 registered users who qualify under federal law as having a mental or physical disability. It provides curb-to-curb service on special buses designed for people with disabilities, and is mandated by the federal government as a condition for receiving funds for other transit modes. UTA's paratransit program provides users with about a half-million trips each year.

UTA primarily takes its direction from two regional planning organizations and local government.

Commuter-Rail Service to Ogden Will Begin in May 2008. The commuter-rail line from Salt Lake City to Ogden is UTA's first attempt to provide heavy-rail service. Known as "FrontRunner," the diesel-operated trains will offer intercity transportation among the large urban centers. FrontRunner trains are much larger than TRAX trains, will carry passengers longer distances at a faster speed, and will make fewer stops.

Metropolitan Planning Organizations and UTA Plan Expanded Transit Services

Two separate metropolitan planning organizations (MPOs) are responsible for evaluating and planning the transit and highway needs in the communities served by UTA. The Wasatch Front Regional Council (WFRC) oversees the planning for Davis, Morgan, Salt Lake, Tooele, and Weber counties. The Mountainlands Association of Governments (MAG) prepares plans for Summit, Utah, and Wasatch counties. Both of the MPOs have recently developed plans which identify the highway and transit projects that will be needed through the year 2030.

Future plans for UTA include four new light-rail lines, commuter rail south to Utah County, and bus rapid transit.

The most recent plans include a proposal to build five projects that will add 70 miles of new light rail and commuter rail to the transit system during the next seven years. The plan includes a commuter-rail line from Salt Lake City to Utah County which, with the north line, will create a commuter-rail corridor of approximately 90 miles in length. Four new light-rail lines have also been proposed and are in various stages of planning and construction in the Salt Lake Valley. Specifically, the new light-rail lines will provide service to Draper, West Valley, Salt Lake International Airport and West Jordan.

The 2030 plan also anticipates the need for many additional light-rail lines, bus rapid transit, and streetcars that will add much more capacity to the transit system. UTA estimates that the total construction cost of the projects listed in the two plans will exceed $11 billion, and the cost of operating and maintaining those systems will reach $500 million per year.

Audit Scope and Objectives

Recognizing the tremendous growth that UTA is experiencing and the billions of dollars put toward new transit services, legislators asked the Legislative Auditor General to evaluate several aspects of UTA's operations. Auditors were asked to evaluate the cost of service, the level of subsidy required, and other issues which relate to the agency's ability to manage a large, multi-modal transit system. Specific audit objectives included the following:

1. Determine how trends in transit use compare to population growth and highway use.

2. Review UTA's budget growth by expenditure types and revenue sources including review of:
   - Compensation and benefits for administrators
   - Expenditures for advertising and public relations
   - Amount of federal grants received and how they were spent

3. Evaluate the reasonableness of UTA's cost per passenger for different types of service.

4. Identify the amount of passenger fares collected for those services and accompanying subsidy.

5. Review the impact of UTA on traffic congestion and air quality.

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Chapter II
Unreliable Passenger Data Makes Analysis Difficult

We were asked by the Legislature to compare the growth in transit use to the growth in population and highway use over time. We found that over the last decade, transit use has increased 57 percent while highway use has grown 25 percent. Although we are concerned about the accuracy of UTA's passenger data, transit use has clearly increased during the past decade. While there has been a decline in the number of bus riders, the increase in TRAX passengers has more than made up the difference. UTA has had problems generating accurate data regarding the number of passengers using its bus and light-rail systems. However, after we identified the problems, UTA has begun to take steps to correct the situation and improve its passenger data.

Despite problems with passenger counts, it appears that bus ridership has declined while TRAX ridership has increased.

Transit use can be measured in a number of ways, three of which are shown in Figure 2.1. The most readily available data from UTA is the number of passenger boardings (unlinked trips). Figure 2.1 shows the number of 2006 boardings reported by UTA for each mode.

Figure 2.1 Reported Boardings, Estimated Trips, and Reported Passenger Miles in 2006 by Type of Transit Service.

Transit Mode	Reported Boardings**	Estimated Trips	Reported Passenger Miles**
Bus	21,598,392	12,279,000*	148,984,636
Light Rail	15,203,660	9,880,000*	86,039,042
Vanpool	1,316,599	1,316,599	58,598,969
Paratransit	476,039	476,039	5,665,436
Total:	**38,594,690**	**23,951,638**	**299,288,083**

** Based on ratio of trips to boardings estimated at .57 for bus and .65 for light rail.*

*** UTA's 2006 NTD Reported Figures.*

Instead of using the number of passenger boardings, a better measure of transit use is the number of trips taken without regard to the number of transfers completed by passengers. However, it is difficult to obtain

reliable information on how often a passenger must transfer between UTA vehicles in order to complete their trip. The best information about transfer rates we could obtain from UTA comes from a 2006 onboard survey of transit users; Figure 2.1 uses that data to estimate the number of trips completed for each mode in 2006. A third way to measure transit use is the number of miles passengers travel. UTA reported that its passengers traveled nearly 300 million miles in 2006.

We reviewed UTA's passenger data over time in order to determine trends in transit use. Although we think passenger trips and passenger miles are better measures of transit use than boardings, as the following sections suggest, UTA does not have reliable historical data.

UTA Passenger Data Is Unreliable

During the audit we found several errors in the passenger data that UTA uses to make major strategic decisions. Improving the quality of that data should be one of UTA's top priorities. The unreliability of ridership information makes it difficult to know how many people are actually using the system and if services are delivered in a cost-effective manner. After we identified the problems with UTA's passenger data, the agency increased its efforts to improve the accuracy of its survey methods. However, we remain concerned that the faulty data is still being used to justify major investments in the transit system.

UTA has struggled to gather accurate passenger counts for its bus and rail lines.

UTA has three different methods for counting the number of passengers that ride TRAX and its bus system:

- Automatic Passenger Counters (APC): These counters are electronic readers that track boardings and other passenger data, then communicate it to a central database for analysis.
- Bus Driver Counts: The first Tuesday, Saturday, and Sunday of each month, drivers count the number of boardings for each bus trip.
- National Transit Database (NTD) Surveys: UTA follows a prescribed federal sampling method on buses and light rail to estimate the total number of boardings reported to the Federal Transit Administration.

During the audit we identified problems with the accuracy of the data produced by each method.

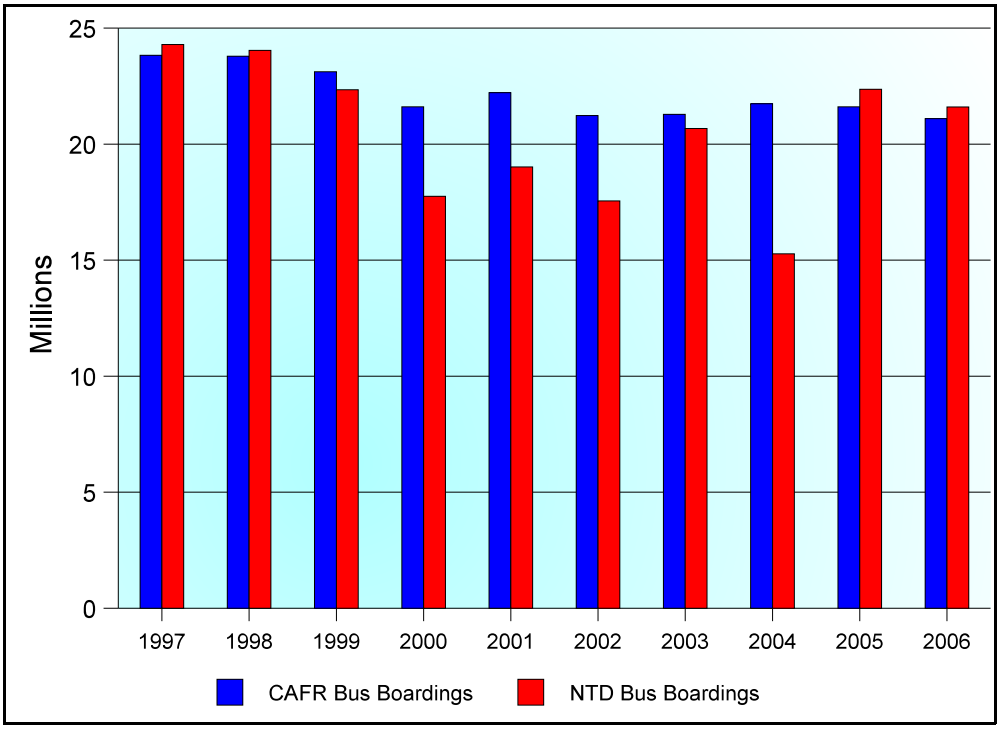
Poor Ridership Data Has Been A Problem for Several Years

For many years, UTA has had problems with the accuracy of its ridership data. In 2005, a performance audit by outside consultants cited specific concerns about the wide fluctuations in the data from UTA's multiple reporting methods. The NTD also questions the reliability of UTA's ridership information. Recently, UTA publicly acknowledged some of the problems with the data, informed their Board of Trustees of the situation, issued a restatement of some ridership data to NTD, and established an action plan to address the source of the problem. UTA claims that staff turnover and technical challenges have prevented them from correcting these shortcomings. At the end of this chapter we offer several suggestions aimed at addressing the deficiencies of the agency's passenger data.

UTA management has been working to improve data collection for years, but problems with data accuracy remain.

An Earlier Audit Identified Problems with Bus Ridership. In 2005, performance auditors from Booz Allen Hamilton identified inconsistencies with UTA's ridership reporting. Specifically, they pointed out the significant variance between NTD and bus driver counts from 2000 to 2002, stating that in other transit systems, "There is a reasonably consistent relationship between the two sources." Booz Allen Hamilton stressed that, "Ridership data sources should reinforce each other and the variances should not fluctuate as widely as they did in the years of the audit period." Figure 2.2 below shows the difference between the bus driver passenger counts and NTD counts.

Figure 2.2 Large Differences Between Bus Driver Counts and NTD Surveys Raise Questions About the Quality of the Data. The two different ways of counting bus passenger data should produce similar results.



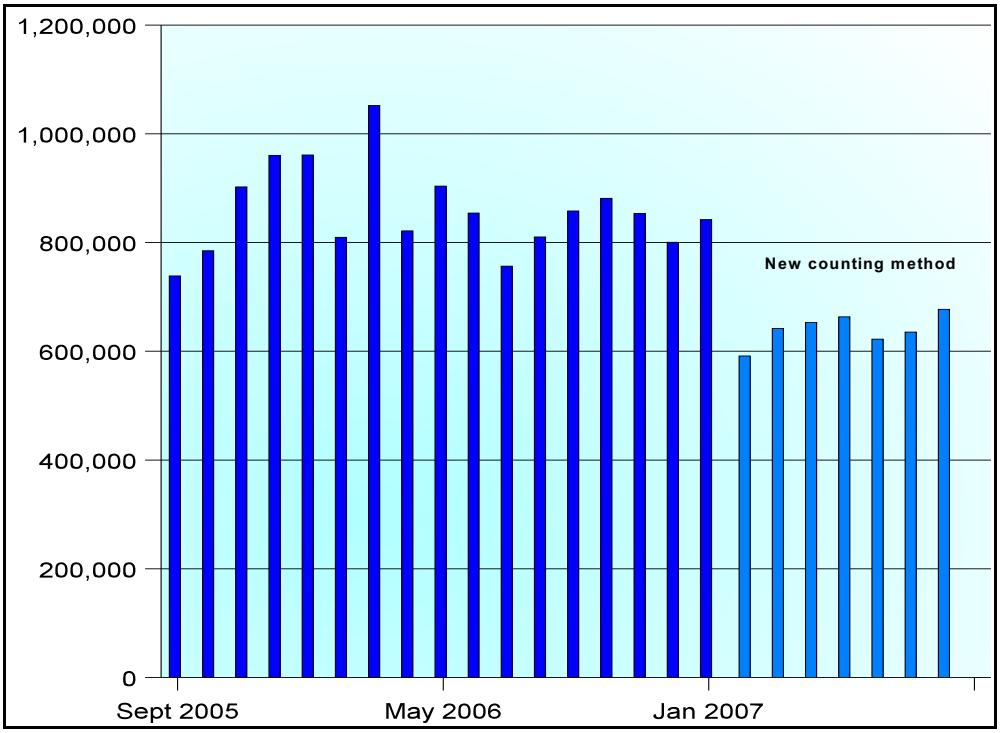
Source: UTA's Comprehensive Annual Financial Report and reports to the National Transit Database.

There has been a significant variation between UTA's two methods of counting bus passengers.

As seen above in Figure 2.2, the reliability of boardings data is a concern because it does not allow one to make an accurate conclusion about ridership trends over time. During the years 2000, 2001, 2002, and 2004, there were significant differences in the data collected using the two different survey methods. The counts for 2005 and 2006 appear to be more reliable, in part, because UTA began to use a more statistically valid method of selecting the routes to be surveyed. However, concerns remain regarding the accuracy of data.

TRAX Ridership Has Been Overstated. The most recent monthly data shows that the number of boardings on TRAX dropped significantly in February, 2007. However, it appears that the number of passengers did not actually decline but that the method for counting passengers changed. In February 2007, UTA began using APCs for measuring boardings. Figure 2.3 shows the number of monthly riders on the Sandy Line.

Figure 2.3 Reported Monthly Ridership on Sandy Light-Rail Line Dropped in 2007. The number of reported boardings on the Sandy TRAX Line has dropped significantly since January 2007.



Source: UTA Monthly TRAX Ridership Reports.

Prior to February 2007, monthly TRAX ridership was overstated by 20%.

During a November 2007 board meeting, UTA officials acknowledged that TRAX ridership counts were down but explained that the reason for the decline was the switch from manual counts to APC counts. Their conclusion was that prior counts of passenger boardings were probably overstated by as much as 20 percent. As with the bus counts, the lack of accurate historic readings of light-rail passengers makes it difficult to identify the trend in TRAX ridership. For most of 2006 and into January 2007, the data suggests there were over 800,000 boardings each month on the Sandy Line. However, beginning in February 2007, the number of monthly boardings dropped to about 600,000 per month. During the same period, the ridership on the University Line (not shown) experienced less of a decline but more of a leveling in the number of passenger boardings.

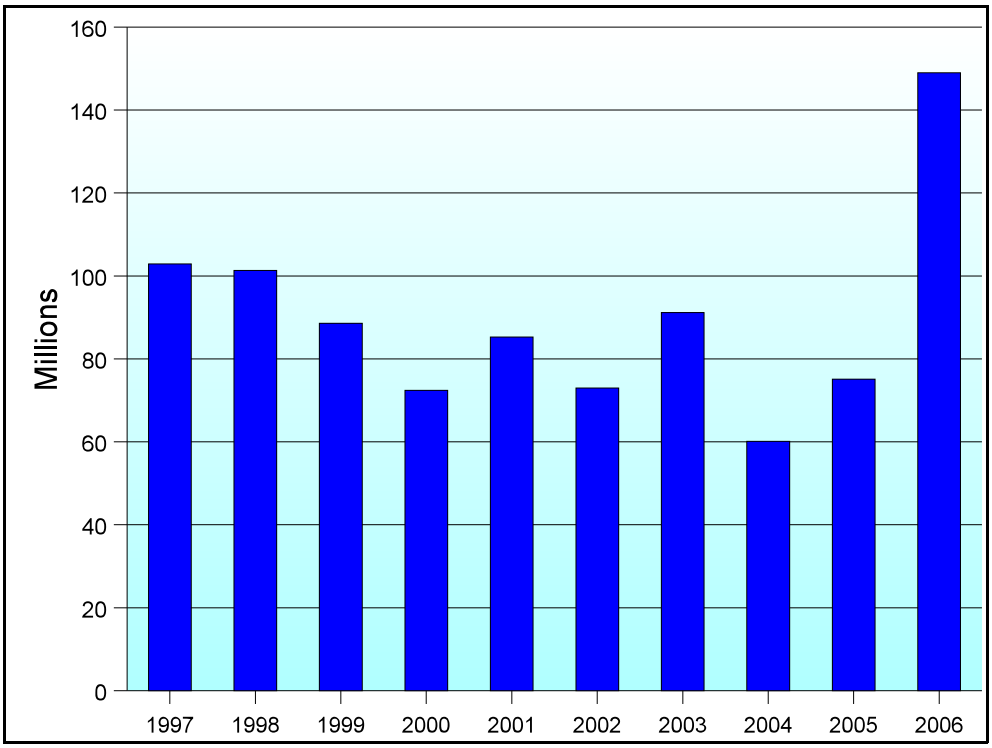
Bus Passenger Mile Data Has Been Inaccurate

We also identified problems with UTA's measures of the passenger miles traveled by individuals using the bus system. Passenger miles

measure the use of the bus and rail system in terms of the total number of miles traveled by all the passengers using the system. UTA uses several methods to estimate the passenger miles traveled for each mode. However, as we examined the historic data showing the passenger miles traveled, we identified some obvious inconsistencies that led us to question the validity of the data. For example, as seen in Figure 2.4, reported bus passenger miles jumped from just under 80 million in 2005 to over 140 million in 2006.

Examining trends using bus passenger miles is difficult because of data inaccuracies.

Figure 2.4 Reported Passenger Miles from 1996-2006 for Bus Service. The inconsistent trend in passenger miles data calls into question the accuracy of the information.



Source: UTA Annual Reports to the National Transit Database

When we asked UTA officials to explain the sudden increase in passenger miles, they told us that the passenger miles data before 2006 is not accurate. Apparently, the use of poor sampling techniques led UTA to underestimate the actual ridership. Thus, we found that neither passenger mile data nor passenger trip data was useful to measure trends.

NTD Considers Some of UTA's Data Unreliable

A federal oversight body has questioned the accuracy of UTA's passenger counts.

In recent years, the NTD has questioned the accuracy of UTA's passenger data. All transit agencies that receive federal transit funding, including UTA, are required to submit annual statistical reports to the NTD. From 2002 to 2005, the NTD identified 11 instances in which UTA data was considered questionable. In comparison, few other transit agencies in the western states had their data flagged as deficient by the NTD. During the same time period, Seattle's Sound Transit had five instances and Sacramento's Regional Transit had only one instance in which data was questioned. The remaining three western transit agencies that we considered were not cited for questionable data in the entire four-year period. We contacted NTD and asked them to describe the significance of the data being marked as questionable. We were told that it suggests that there may be significant problems with the agency's data and that we should be very cautious in using it for peer comparison.

We feel that the combination of the deficiencies highlighted in this report demonstrate a pattern of accuracy and reliability problems with UTA's passenger data that should be corrected. These deficiencies include the finding of questionable data in the national transit database and UTA's own admission of problems with ridership information, as well as those pointed out in the 2004 independent audit previously mentioned.

UTA staff have knowingly reported incorrect data to the National Transit Database (NTD).

Another problem that UTA has had with its NTD reporting is that the passenger miles have been consistently under-reported. In 2005, UTA discovered that for many years it had been undercounting the number of passenger miles reported to NTD. Then, when the agency tried to submit a more accurate count, NTD would not accept the new number because it was nearly double the figure reported the prior year. However, rather than explaining to NTD that their prior reports had been inaccurate and that the new number was correct, the UTA staff submitted a false number that they thought NTD would find more believable. In 2006, UTA again submitted the accurate count of passenger miles even though it was still double the amount for the prior years. Figure 2.4 above shows the significant increase in the 2006 number. While UTA claims the 2006 figure is accurate, it raises questions about the accuracy of the data submitted in prior years.

Auditor Tests Raise Doubts About The Reliability of Current Counting Methods

We conducted limited tests of the bus driver counts and the APCs used on light-rail trains. The results raise doubts about the reliability of the survey methods currently in use and of the accuracy of the passenger data being reported.

We question the accuracy of the passenger counts made by bus drivers.

Audit Test of Bus Driver and APC Counts Shows Variation. In order to verify the reliability of the various methods used to count passengers, we did our own tests of UTA bus trips. We conducted counts of 64 different bus trips and found that drivers often submitted counts to UTA that differed from ours. In only nine instances, about 14 percent of the trips, the bus-driver counts matched exactly to the audit counts, but in other trips, variations ranged from overcounts of 15 passengers to undercounts of nine passengers.

To supplement our test of driver counts, we conducted interviews of 34 bus drivers, asking them a series of questions regarding their survey method and if they could explain the variation we observed in the results. Approximately one-third of drivers explained that rather than counting the actual number of passengers that boarded their bus, some drivers simply estimated the total number of boardings at the end of each trip. A few drivers even disclosed that overcounting was not an uncommon practice among drivers. We also found that there are some inconsistencies in counting standards among the drivers we interviewed. We feel that these types of human errors can be avoided by implementing a working APC system on buses and by training drivers in how to conduct proper surveys.

The accuracy of automatic passenger counters (APCs) on TRAX is in question.

Auditor Test of TRAX APC Accuracy Found Additional Variances. We conducted tests to verify the accuracy of the APC counters used on TRAX. After riding on 16 different TRAX cars and counting the number of boardings, we found differences between the physical count we recorded and the counts reported by the APC counters. On two cars, the APC counters reported exactly the same number of boardings that we counted. However, APCs on the remaining 14 cars reported different figures from our counts. For example, one car on an outbound trip reported 45 boardings while we counted 56. On the return trip, the same car counted 63 boardings and the auditors recorded only 38.

We also tested the accuracy of eight individual TRAX doors, and no single door reader captured the same number of boardings or de-boardings that we recorded. One APC reported 19 passengers exiting the train, yet we counted only 11 for the same trip. Although it was not possible to obtain a systemwide, statistically significant sample, we feel that the variances exposed by these limited tests should be investigated. Most of our counts were close to that of the readers, but some APCs were clearly having technical problems. We are not confident in projecting the magnitude of the problem, but these examples do lead us to question the accuracy of UTA's passenger data. Currently UTA is working to address the problems identified with its APCs and hopes to improve the overall system accuracy.

Technical problems have hindered UTA's attempts to collect more reliable passenger data.

In conclusion, while we recognize the problems that UTA has had counting its passenger boardings, we believe we can still provide legislators with a broad indication of the trends in transit use. When compared to the other available performance indicators, the boarding counts provide the best information available regarding the number of individuals using the transit system. Later in the chapter we discuss improvements needed in UTA's passenger data.

Available Data Indicates Transit Use Has Expanded

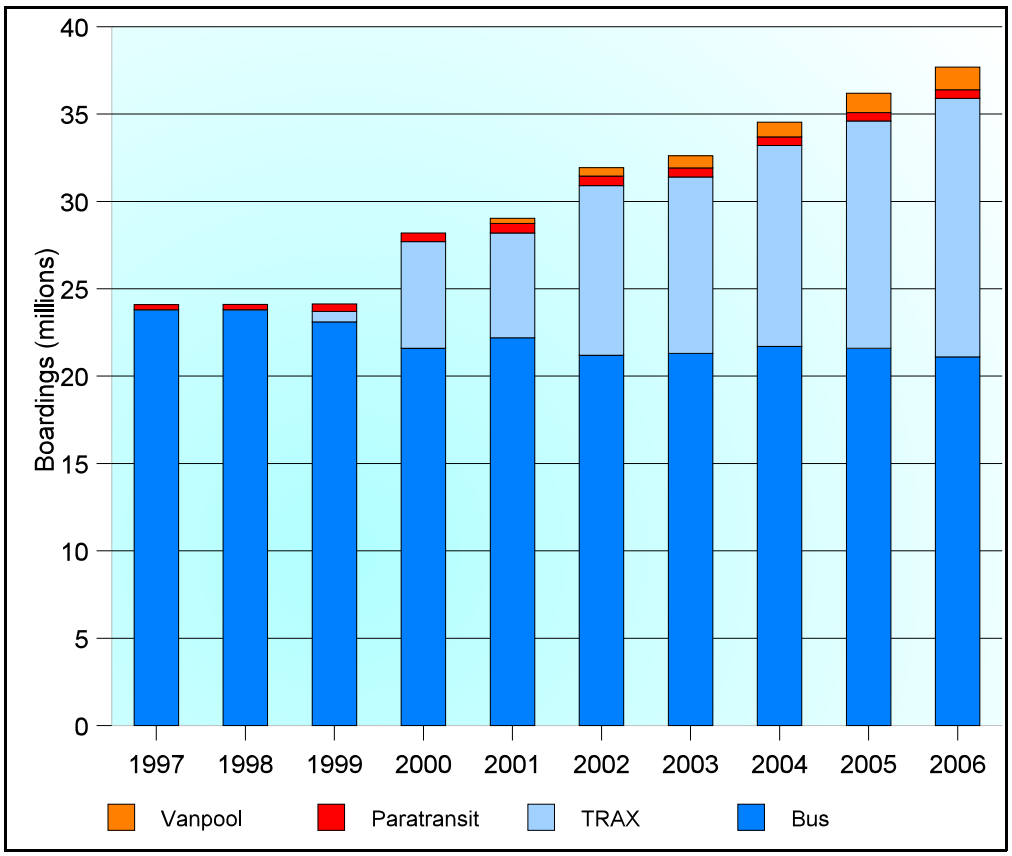
Overall, UTA's ridership appears to have increased over the past decade. While UTA's bus system has been losing ridership, UTA's light-rail system appears to be attracting new passengers to the transit system. In addition, vanpools have generated more ridership as UTA tries to keep up with demand for that service.

During the past 10 years, UTA has experienced a 57% increase in ridership.

Growth in Transit Use Can Be Attributed To Gains in TRAX Ridership

Using the best available data, we have identified the growth in passenger counts for each type of transit service. Figure 2.5 below shows the total number of reported boardings on bus, TRAX, paratransit, and vanpool.

Figure 2.5 Increase in TRAX Riders Has Compensated for Declining Bus Ridership. TRAX and bus ridership is described in terms of the total boardings.



Source: UTA 2006 Comprehensive Annual Financial Report (CAFR)

As seen above in Figure 2.5, UTA reports an overall increase in ridership of about 57 percent over the last decade.

In 2006, UTA's bus system had nearly 3 million fewer passenger boardings than in 1997.

Bus Ridership Has Declined. According to bus driver counts, which currently appear to be the most reliable source of trend data, UTA's 1997 bus ridership reached almost 24 million annual boardings. Since that time, the number of riders using the bus system has declined to approximately 21 million in 2006. The bus system lost the largest number of riders in the year 2000 when the system began adding TRAX lines. That same year also marked the reopening of I-15 after its reconstruction.

TRAX Ridership Has Increased and Attracted New Riders to UTA. Since 1999, when the first TRAX line was opened, light-rail ridership appears to have grown to nearly 15 million annual boardings,

now representing more than a quarter of all transit boardings. As mentioned previously in this chapter, UTA has recently disclosed that this method of counting passengers was overstated by up to 20 percent of the number of passengers riding the TRAX system. UTA is working on issuing a restatement of TRAX ridership for 2007. If the TRAX figures really are overstated by 20 percent, then the actual annual ridership on the TRAX system would be about 12.7 million boardings instead of 15 million. Total growth in the transit system would be 46 percent instead of the 57 percent that UTA reported over the last 10 years.

TRAX ridership has steadily increased, attracting new riders to the system.

UTA believes that TRAX is viewed as a more convenient, reliable, and attractive alternative to buses and that new users are choosing TRAX for that reason. Some of those riders are undoubtedly drawn away from the bus system to TRAX, but UTA reports that many TRAX riders are new to the system. In addition, the agency anticipates that with commuter rail coming on line next year and with four new light-rail lines opening in the next five years, riders will continue to move from the bus system onto rail.

Vanpool Use Has Increased. UTA has met the increased demand for vanpools with the purchase of additional vans. Currently, UTA reports it has 455 vanpools assigned, with 100 in reserve. In 2006, vanpool total ridership exceeded 1.3 million boardings. If demand for this program increases and UTA accommodates that need with the purchase of additional vans, we could see a rise in ridership in the years to come.

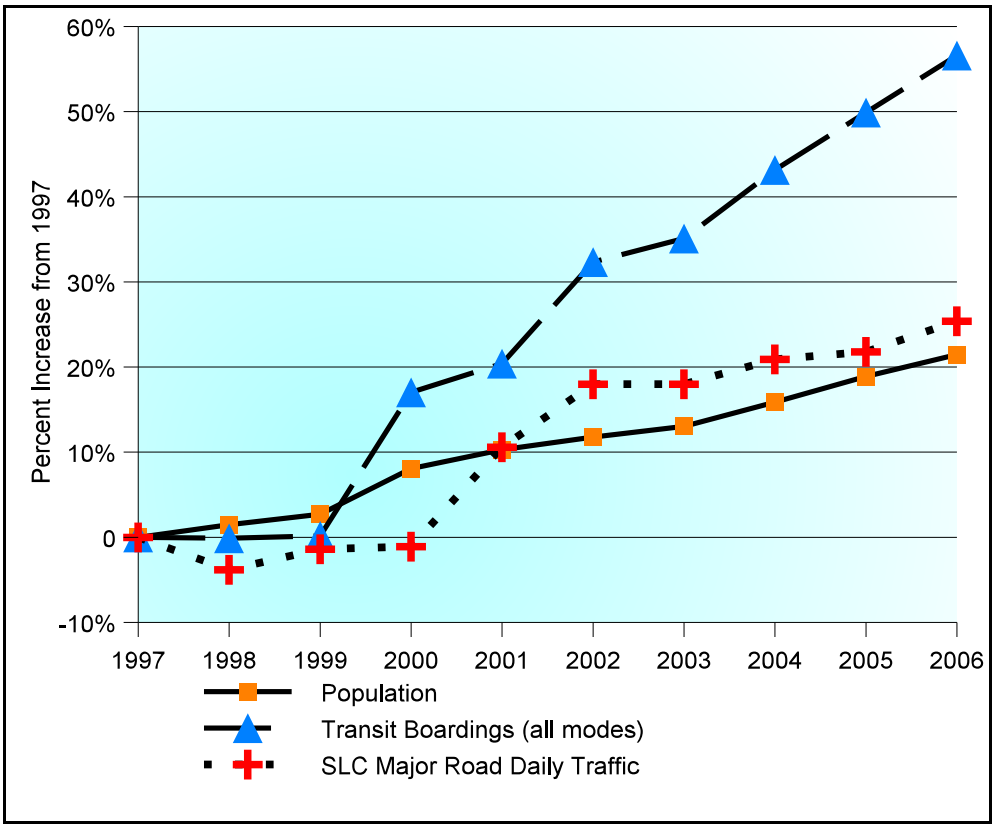
Paratransit Ridership Has Declined in Recent Years. With stricter adherence to federal ADA eligibility requirements and free access offered to paratransit users on UTA's other modes, demand for the service has decreased only slightly. In 2003, the number of annual paratransit boardings peaked at 550,000. Since that time, the ridership has declined to 490,000 boarding in 2006.

Transit Growth Appears to Have Outpaced Population Growth

Legislators asked us to compare the trends in transit use to the trends in population growth and highway use. As shown in Figure 2.6, it appears that the number of transit boardings has increased at a faster rate than both the population and highway use since 1997.

For the past decade, transit boardings have increased at a faster rate than highway use and population growth.

Figure 2.6 Population, Transit Boardings, and Highway Usage Growth Since 1997. The number of boardings on UTA services has grown faster than both daily traffic usage of SLC major roads and the population served.



Source: UTA's 2006 CAFR, UDOT , and U.S. Census Reports.

Figure 2.6 shows that the population in UTA's service area increased by 21 percent from 1997 to 2006. In comparison, according to data provided by UDOT, the amount of road traffic on major roads in Salt Lake County increased by 25 percent. During the same time period, the number of passenger boardings reported by UTA has increased by 57 percent. Although we are convinced that transit use has grown over the past decade, we are less confident as to what extent it has increased. The growth in transit ridership above may be overstated. As the following suggests, the increase may be due to an increase in transfers rather than actual riders.

Transit Trips May Not Have Increased as Much as Boardings. One concern we have with the use of boardings as a measure of growth in transit use is that the frequency of transfers may have changed. The

growing use of TRAX as well as changes in bus routes may have increased the frequency of transfers during the time period studied. If so, then the actual growth in transit use since 1997 as measured by trips completed is likely lower than the 57 percent reported.

An increase in the number transferring from one line to another may serve to overstate the number who actually use the transit system.

To complete a trip to some destinations, passengers may be required to transfer from one UTA vehicle to another. For example, a student at the University of Utah living in Sandy may need to take the Sandy TRAX Line to Salt Lake City and then transfer to the University Line. Thus, the student would have two boardings to complete a single trip.

Passenger revenue data is consistent with the possibility that UTA transfer rates may have increased during the past decade. As discussed in Chapter V, total fare revenue has not increased as much as expected over the past five years, given the increases in base fares and boardings. Among many possible explanations for fare revenue not growing more is that the frequency of transfers may have increased.

The remainder of this chapter describes the importance of UTA improving the quality of their passenger information, including obtaining better data about the frequency of transfers made by transit users.

Addressing Technical Problems and Increased Quality Control Will Improve Passenger Data

UTA can improve the accuracy of its ridership counts for bus and rail by performing a more frequent review of both ridership information and the counting systems used to capture that data. Furthermore, we have seen that other states have successfully relied on APCs as a tool for accurately tracking passenger data, and we believe that UTA should strive to do the same. Conducting better onboard surveys will improve the quality and depth of UTA's passenger data.

Additional Controls and More Frequent Review Of Passenger Data Is Needed

Some of the problems with the reliability of UTA's data can be attributed to poor sampling methods and other reporting mistakes made by staff. UTA can improve the quality of its ridership data by making sure that sound methods of data collection are used, that the figures

reported to NTD and to the Board of Trustees are reviewed, and that the staff performing the data collection are properly supervised.

More internal review could increase the reliability of UTA's passenger data.

Convenience and Undersampling Have Affected Reliability of Ridership Data. In the past, UTA has not always used a statistically sound method of sampling the bus routes to be included in its survey of passengers. Instead of randomly selecting routes to be included in the sample, UTA staff conducted convenience sampling in which the routes surveyed were selected at the convenience of the staff. We also found clustering of the routes sampled that may have resulted in night trips and peak trips being under represented.

In addition to using poor sampling methods, UTA also chose to rely on a poorly functioning APC system for its ridership data. The result was that in 2004, UTA relied on APC data to supplement some of the physical sampling only to realize that the APCs were not operating correctly. The effect of the malfunctioning APCs was that the data was incorrect and could not be used. These errors affected UTA's sample size; instead of sampling 730 routes, which was necessary to produce a statistically significant representation of bus trips, UTA conducted only 493 samples. UTA is aware of these concerns and has taken steps to correct some of their sampling errors.

Staff Mistakes Have Contributed to Problems with Ridership. Although many errors have been made in UTA's collection of ridership data in the past, additional controls and oversight may curb the frequency of mistakes in the future. For example, in its 2001 annual report to NTD, UTA accidentally reported the weekday totals for bus passenger boardings instead of reporting the total count, including weekend trips. The result was a large under-reporting of the actual passenger trips. Similarly, in its 2003 report to NTD, UTA mistakenly submitted the 2001 passenger mile counts and the unlinked trips instead of the figures for 2003.

The multiple reporting methods UTA uses have also raised concern about the quality of the agency's data. When comparing the 10-year trend statistics in the UTA *Comprehensive Annual Financial Report* (CAFR) to the figures reported to NTD, there are discrepancies between various performance indicators. From our observations, it appears that UTA uses ridership data from one source for internal communication with the Board of Trustees and data from another source for its reports to its federal oversight body, which uses the data to compare UTA to other transit

systems. Better management oversight of the data-collection process could avoid instances of misreporting. In addition, management should make sure that the data is reviewed for accuracy before it is reported to NTD or to the board.

APCs Could Increase Passenger Data Reliability if Technical Problems Are Overcome

Earlier in this chapter, we highlighted many of the problems UTA has had with APCs, electronic motion-detection devices that count passengers boarding and exiting a bus or rail vehicle. Despite these problems, we believe that APCs are a tool that can address many of the deficiencies in UTA's passenger information. When working properly, APCs provide UTA with:

Addressing the technical issues with passenger counters will make ridership data more useful.

- Route efficiency data
- Real-time passenger counts
- Passenger "load factor" data
- Lower cost, more reliable alternative to manual counts

If UTA could improve the reliability of the APCs, it could ultimately improve the accuracy of information used to manage the system.

APCs Have Not Always Been Reliable. UTA began installing APCs on its buses in the late 1990s as a route-planning and evaluation tool and has had mixed results with the output of the product. During the Utah County bus route redesign, the agency successfully used APCs to identify 700 underutilized bus stops. UTA then altered stop times and locations to improve efficiency. However, UTA has not had similar, systemwide success using APCs as a reliable passenger-counting mechanism. UTA has told us that APCs on buses would fail to produce a usable count if any of the following occurred:

- An APC bus was not assigned to a NTD trip.
- Detours resulted in incomplete trips.
- A bus breaks down in the middle of the route.
- The driver failed to log on to APC/radio.
- APC lost bus location at some point during route due to GPS communication.

- APC failed to reconcile its information with UTA schedule and map database.
- Errors were found in the UTA schedule and map database.

As a result, only 30 percent of the data reported by bus APCs was usable in the past. UTA now claims that many of these problems have been corrected and the agency is now able to use approximately 60 percent of data reported to the APC database from buses. UTA should continue to improve the reliability and accuracy of APCs on buses as well as on TRAX.

Use of APCs Has Worked on Other Transit Systems. Currently, UTA uses a prescribed, manual passenger-counting system for NTD reporting. UTA estimates that it costs approximately $52,200 to conduct the surveys necessary to meet NTD standards. However, APCs, if working properly, could be deployed to record the same data, which would include additional, and more detailed, measurements of transit use for only $27,650 annually. Despite the difficulties UTA has had with APCs, we feel that the agency has now developed an effective action plan to correct the technical problems and that the devices will soon be used to generate more reliable passenger data.

Other transit agencies have successfully used APC's to capture ridership information.

We spoke with other transit systems that have successfully used APCs as the reporting mechanism to NTD for ridership information, and we see no reason why UTA cannot do the same. We believe that UTA's plan to begin using APC counts for its NTD reporting in 2008 should continue to be the agency's goal. UTA should also include APCs when considering future modes or vehicles like commuter rail, which is currently not scheduled to be equipped with the counters. Furthermore, the success of the APC system will depend on monitoring the accuracy of the readers to ensure that planners and stakeholders are basing future system changes on accurate information.

If Methodological Problems Are Addressed, More Onboard Surveys Will Enhance Passenger Data

Onboard surveys of passengers can be beneficial because they help identify a wide range of demographic information about passengers using the system; they also provide information regarding patterns of use. UTA conducted onboard surveys of the transit system in 2001 and again in 2004. In 2006, the Wasatch Front Regional Council (WFRC), with the

assistance of UTA, conducted another onboard survey. In comparison with the 2004 UTA survey, the 2006 survey suggested that the transfer rates for both bus and rail have increased during the two-year span.

UTA should do more and better onboard surveys.

We feel that the onboard surveys can be a useful tool for assessing the actual number of people that UTA serves, and not just the number of boardings. We have identified other transit agencies that publish this figure in addition to the federally required numbers, and we believe UTA would benefit from doing the same. In addition to capturing linked passenger trips, onboard surveys also provide useful data like:

- User perceptions
- Patterns of use
- Service and cost-effectiveness
- Demographic data of those served
- The number of intersystem transfers
- Fare data
- The use of different types of passes UTA offers

Linked Passenger Trip Data Is Valuable. Linked trips, unlike boardings, show the number of passenger *trips* taken without regard to the number of transfers made during a trip. Linked trips are not to be confused with another widely used statistic known as "unlinked trips" which measures the number of times passengers *board* a UTA vehicle. Passengers are often required to make transfers from bus to rail or from one rail line to another in order to reach their destination. By reporting each boarding or leg of the trip as a separate passenger, the "unlinked trips" measurement may give the impression that there are more individuals using the transit system than there actually are.

For this reason, we believe UTA should identify passenger counts in terms of linked trips in order to understand the total population the agency is serving and not just the number of boardings. Onboard surveys are currently the only tool available to UTA that can determine that number.

Although the value of using onboard surveys is clear, UTA staff have reported problems with the survey methodology used in the past that raises questions about the accuracy of the survey results. These problems include:

- Passenger counts identified in the survey are not consistent with the amount of revenue generated during the survey period.
- Other UTA staff have chosen to make alterations to the survey results to compensate for data anomalies.
- The survey author acknowledged inadequacies in the methodology used.

The results of UTA's 2004 and WFRC's 2006 onboard survey were generally consistent with those of a similar survey conducted by the American Public Transportation Association (APTA) in several states. However, it appears that some improvements are needed in the survey methods to make the results more reliable. If the agency can improve its survey methodology and conduct more onboard surveys, UTA should be able to help stakeholders and decision makers remain informed as to the real contribution made by UTA toward meeting the region's transportation needs. Valid ridership data is needed in order to communicate to the public the benefits that result from their investment in the region's public transportation systems. We believe more frequent onboard surveys are the best way to generate this data.

Recommendations

1. We recommend that UTA management require that sound statistical methods be used when conducting passenger counts and that data collection and the reporting process be adequately supervised.

2. We recommend that UTA correct problems with Automated Passenger Counters (APC) and set targets for using them as the reporting mechanism for both external National Transit Database (NTD) submissions and for internal financial data and performance monitoring.

3. We recommend that UTA develop a consistent methodology for conducting onboard surveys and perform routine surveys to gather information about transit users including linked passenger trip data and fare-payment methods.

Chapter III
UTA's Budget Growth Fueled by Sales Tax Receipts

Legislators asked that we review UTA's budget growth in terms of both expenditure types and revenue sources. As part of that evaluation, we considered both the growth in UTA's operating costs and the agency's increased reliance on sales tax revenue. In addition, we were specifically asked by legislators to review (1) the receipt and usage of federal funds, (2) the expenditures for public relations and advertising, and (3) the compensation paid to UTA's top-level administrators.

UTA has grown from a bus company into a major, multi-modal transit system.

Since 1999, when it opened its first light-rail line, UTA has evolved from a regional bus company into a multi-modal transit agency. During that time, UTA's budget has grown rapidly, largely due to the increased spending for new rail systems. The agency has also experienced a significant shift in its sources of revenue. During the late 1990s, most of UTA's revenue came from the federal government. In recent years, local sales tax has become UTA's main source of revenue.

UTA's growth is largely driven by the addition of new light-rail, bus rapid transit, and commuter-rail lines, which have been added to the system in recent years. These new facilities have been built at the request of two regional transportation planning agencies which work under the direction of the cities and counties in the region. Furthermore, voters have authorized the additional sales taxes needed to fund the growth.

As the growth in the transit system continues, UTA is expected to spend about $11 billion in construction costs during the next 23 years for a long list of new transit projects. Additional funds will be needed to operate and maintain those systems. Furthermore, many communities have expressed an interest in adding more transit projects not included in the regional transportation plans, thus requesting hundreds of millions of dollars more in construction and operating costs not currently included in the 2030 estimate.

UTA Expense Types and Revenue Sources Are Changing

Over a 10-year period, UTA's total annual expenses increased from $77 million to $201 million. This rapid growth has been accompanied by a shift in the cost structure as the depreciation expenses for capital assets have grown more rapidly than operating expenses. Over the same time period, there also has been a shift in UTA's funding sources. Initially, the federal government was the primary source of funding for UTA's expansion. However, in recent years, UTA has become increasingly dependent on local sales tax to build and operate its transit systems.

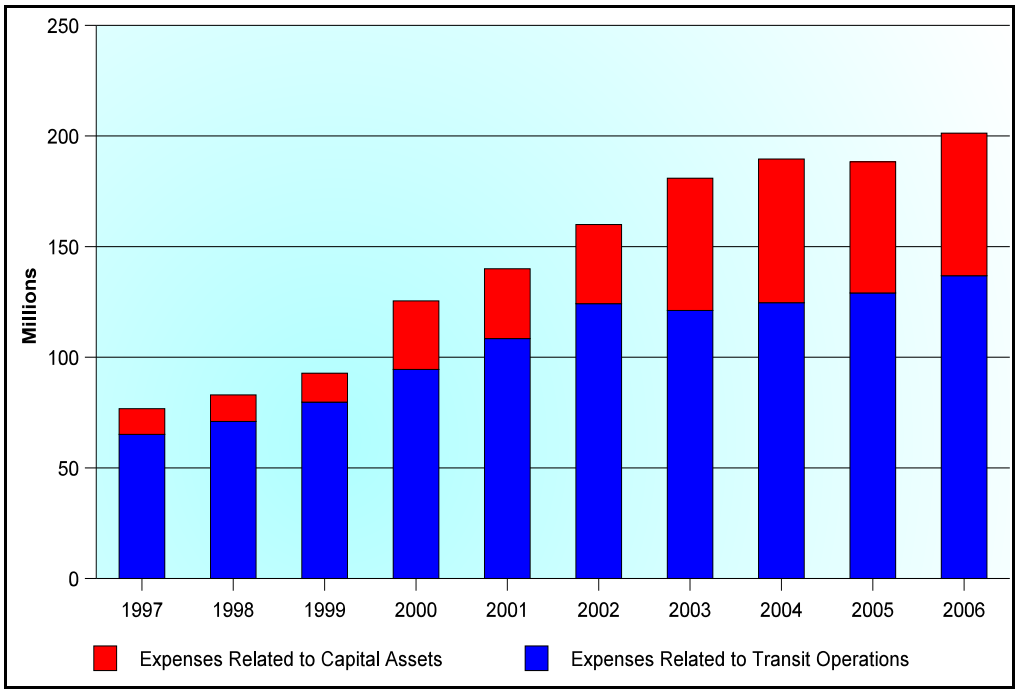
UTA's Expenses Have Grown Significantly in 10 Years

During the past 10 years, UTA's operating budget has grown from $77 million to $201 million.

In 1997, before its first light-rail line was built, UTA's annual expenses were about $77 million. Over the next decade, the agency's total annual expenses grew to $201 million in 2006. These figures are based on the expense reported in UTA's annual financial report. However, the actual amount spent each year may vary from the expenditures recognized in the financial statements. Under the accrual accounting method used by UTA, capital costs are depreciated over the useful lives of the assets with the current portion of the total capital cost being recognized each year. While operating costs such as vehicle maintenance and driver salary are recognized as expenses when incurred, capital costs may not be recognized as expenses for many years.

In recent years, depreciation and interest (related mostly to UTA's very large capital expenditures for light rail and commuter rail) have become a much more significant component of UTA's expenses. Operating expenses have doubled over the past decade, but expenses resulting from capital investments have increased more rapidly. In 1997, depreciation and interest represented only $11.6 million, or 15 percent of UTA's total expenses, while in 2006 they represented $61.1 million, or 30 percent of total expenses. Figure 3.1 shows the budget growth for these two types of expense.

Figure 3.1 UTA's Expenses Have Grown Rapidly. The cost of building rail systems is evident in the growth of depreciation and interest expense. The cost of operating transit systems has grown, but not as rapidly as depreciation expense.



Source: UTA 2006 Comprehensive Annual Financial Report

The following describes those categories and some of the reasons for increased spending.

Due to new construction, capital expenses have increased significantly during the past 10 years.

Operating Expenses Increased 110 Percent in 10 Years. The operating expenses shown in Figure 3.1 include the direct costs associated with each transit mode and also overhead costs for administration and operations support. In 1997, those expenses totaled $65.1 million, mostly for bus and paratransit services. By 2006, operating expenses had grown to $136.8 million for bus, light-rail, paratransit and vanpool services. Operating expenses include items such as fuel for buses, electricity for rail cars, driver salaries, and vehicle maintenance. Costs have increased due to both growth in the amount of transit services provided and also inflation.

Expenses Related to Capital Assets Have Increased 450 Percent In 10 Years. UTA has experienced a large increase in depreciation and interest expense during the past decade. The increase from $11.6 million to $64.4 million reflects the surge in UTA's capital investing during that time. The reader is reminded that, as prescribed by standard accounting

practices, the depreciation expenses shown in the figure are only fractional, current-year portions of UTA's capital investments. In some years, UTA has spent several hundred-million dollars on new construction, and the agency's total assets have more than doubled since as recently as 2000. At the end of 2006, UTA's balance sheet included over $750 million of capital costs that (unless disposed of) will be shown as depreciation expenses in the future. Another $260 million in land and right-of-way costs shown on the UTA balance sheet are not depreciable assets.

Light rail requires a larger capital investment than most of UTA's other services.

Rail Much More Capital Intensive than Other Modes. Considering expenses by transit mode shows very different cost structures. Figure 3.2 shows that transit modes vary significantly in the balance of operating and capital expenses. For all of the modes except light rail, most expenses are from operating costs. For light rail, most expenses are from capital costs.

Figure 3.2 UTA Expenses by Mode for 2006. Except for light rail, most expenses are operating costs. For light rail, about 57 percent of total expenses arise for capital costs.

Transit Mode	Operating Expenses	Capital Expenses*	Total Expenses
Bus	$94,016,983	$16,379,079	$110,396,062
Light Rail	23,131,704	30,230,208	53,361,912
Paratransit	16,355,021	1,173,332	17,528,353
Vanpool	3,320,527	1,327,304	4,647,831
Total	**$136,824,235**	**$49,109,923**	**$185,934,158**

** Approximately $15 million are not allocated to modes because it represents bond expense related to commuter rail. Thus, the total expenses differ from those shown in Figure 3.1.*

The 2006 operating expenses shown in Figure 3.2 are the same as are shown in Figure 3.1. Those expenses were reported by UTA to the Federal Transit Administration for the National Transit Database (NTD) and include the direct costs of each mode and the overhead costs allocated to each modes.

The 2006 capital expenses shown in Figure 3.2 are less than those shown in Figure 3.1 because expenses due to commuter rail are excluded. Although it is not yet operating, a significant amount of bond interest for commuter rail was recognized as an expense by UTA in 2006. The remaining capital expenses shown in Figure 3.2 are based on UTA's asset list and depreciation schedules. Expenses from capital costs are not included in the NTD database.

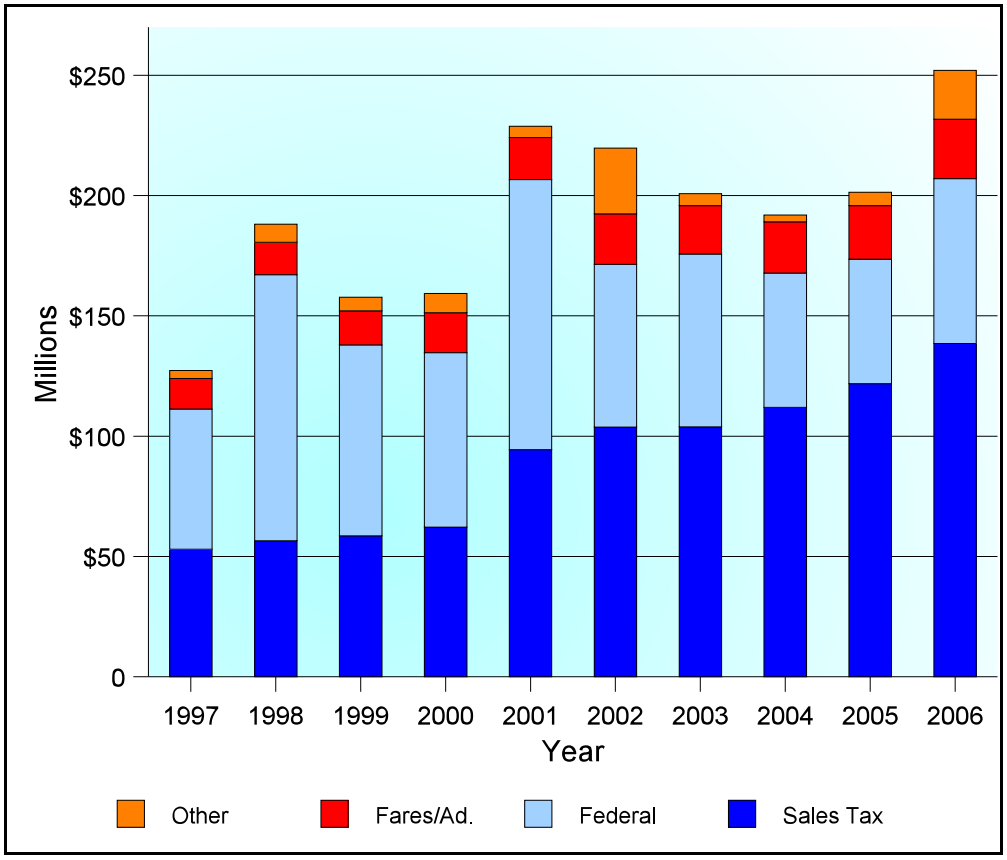
In summary, the increases in UTA's budget reflect the growth in new transit services. As expenses have increased, so has the need to increase the agency's revenues. The following section describes the changes that have occurred among the individual revenue sources.

Sales Tax Has Replaced Federal Funds as The Primary Source of Revenue

For many years, federal funds represented UTA's largest source of revenue. However, since 2001, federal funding has declined and is no longer the primary source of revenue. Instead, UTA has become increasingly dependent on local sales tax as its primary source of revenue. Figure 3.3 shows UTA's sources of revenue for the past 10 years.

Sales tax revenues fund the majority of UTA's operations.

Figure 3.3 Revenue Contribution by Source (1997-2006). Since 2002, local sales tax has replaced federal funding as UTA's primary source of revenue.



Source: UTA 2006 Comprehensive Annual Financial Report

One reason that the revenues shown above exceed the expenses shown earlier is because capital contributions are included. In addition, sales taxes have grown significantly and are used for both operating and capital costs. Only fares and advertising income are considered operating revenues that are directly comparable to operating expenses.

Sales Tax Is the Major Revenue Source. Local sales tax is now UTA's primary source of revenue. Sales tax receipts have more than doubled from $53 million in 1997 to $138 million in 2006. The average annual growth rate of 10.1 percent was partly due to increased tax rates for transit and partly due to an average annual increase of 7.1 percent in the taxable sales base. UTA has taken a conservative approach and has based its budget projections on the assumption that sales tax will grow at

only a 5.5 percent rate. If past trends continue, UTA may receive more sales tax in the future than anticipated in its long range budget forecasts.

Local officials and voters have supported UTA's growing reliance on sales tax dollars.

Based on the decisions of local elected officials and voters, there has been a different local option sales tax applied to each county in UTA's service regions. For example, in Salt Lake County, where UTA offers the most transit services, the sales tax rate is currently .68375 percent. On the other hand, Davis and Weber counties have a sales tax rate of .50 percent. Utah County's rate is currently .526 percent. Presumably, Salt Lake County receives greater transit services because it pays a higher sales tax rate. However we were unable to determine whether the revenues generated by each county match the level of service provided.

Federal Grants Include Operating and Capital Funds. From 1997 to 2001, 50 percent of UTA's revenues came from federal grants, mainly to build the Sandy and University TRAX lines. Since that time, the agency has continued its capital investment in rail systems, but most of that growth has been funded through local sales taxes (54 percent from 2002-2006). As one UTA official pointed out, when UTA applied for funding to build its Sandy Line, there was much less competition for grants from the Federal Transit Administration (FTA). As a result, the federal government paid over 77 percent of the cost of that line. Since that time, the competition has been much greater and many transit agencies are competing for the same federal grants. About half of the federal grants received in 2006 were for operating costs, and half were for capital costs. The use of federal grants is discussed more later in this chapter.

Fares Not a Large Source of Revenue. Operating revenues consist of passenger fares and the income from advertisements on buses and trains. From 1997 to 2006, UTA's operating revenues grew from $12.7 million to $24.6 million, at an average growth rate of 7.8 percent each year. As described in greater detail in Chapter V, during 2006 UTA's fares covered about 17 percent of the cost of UTA operating expenses and about 13 percent of total expenses.

Fares represent only a small portion of UTA's revenues.

Other Revenues Are Generally Minor. The "other" revenue category included about $20 million in 2006, but has usually been much less. The largest contributor to other revenue is interest revenue related to ongoing capital projects.

In summary, UTA's operating expenses and revenues have experienced significant growth in recent years. In the following section, we review plans for continuing growth.

UTA's Budget Will Continue to Grow As the Transit System Expands

UTA's recent plan to build four additional light-rail lines and a southern extension of the commuter rail is just the beginning of a lengthy construction process that will last through the year 2030 and beyond. The Wasatch Front Regional Council estimates that it will cost $18.6 billion to cover the cost of building, operating and maintaining the new transit lines that have been proposed in its region. Similarly, Utah County planners have proposed transit projects with an estimated cost of $1.2 billion. Voters will be asked to approve several additional quarter-cent sales tax increases that would be added to those already approved by each of the counties in UTA's service region. Policymakers and taxpayers need to understand the size of the transit system that is being planned and recognize that billions of local taxpayer dollars will be required to build and operate the system.

As additional transit projects are completed, UTA's operating budget will increase significantly.

Transit Planners Foresee the Construction of Many Additional Transit Systems

The two existing TRAX lines and the commuter-rail line that will soon begin service from Salt Lake City to Ogden are only the first phases of what UTA and regional planners expect to be an extensive network of rail and bus systems along the Wasatch Front. Two regional planning organizations have each developed transportation plans that anticipate the construction of several additional light-rail lines, extensions to the commuter-rail lines, and many bus rapid transit systems during the next 23 years. Furthermore, some communities have already asked for even more transit service than those currently included in the 2030 plans.

Several new projects are planned for completion by 2030 with several already under construction.

2030 Plans Anticipate Many Additional Transit Projects. The 2030 plans developed by the Wasatch Front Regional Council (WFRC) and the Mountainlands Association of Governments (MAG) anticipate the construction of the following transit systems before the year 2030:

- 10 light-rail lines and 1 street car
- 4 commuter-rail extensions
- 11 bus rapid transit lines
- 12 enhanced bus lines
- 1 intermodal center
- 3 transit centers
- 3 park and ride lots
- 6 preserved corridors for future expansion

The cost of building and financing the construction of these projects, and the cost of maintaining them, will require that UTA's budget continue the rapid rate of growth experienced during the past several years.

New Transit Systems Will Cost Billions of Dollars. Planners anticipate that it will take nearly $10 billion in capital expenditures to construct the new transit projects listed in the WFRC 2030 plan. Additional operations and other expenditures bring the total expected costs for these new projects to $18.6 billion during the next 23 years. Figure 3.4 describes how those funds might be spent.

The cost to build and operate the currently scheduled projects will exceed $18 billion over the next 23 years.

Figure 3.4 Projected Transit Capital and Operating Costs 2007-2030. The expenditures for the 2007 to 2015 period represent the cost of the recently approved plan to build four new TRAX lines and a commuter-rail south line.

Expenditures	2007-2015	2016-2030	Total
Capital	$ 3,620,000,000	$ 6,266,000,000	$ 9,886,000,000
Operations	1,310,000,000	5,023,000,000	6,333,000,000
Other	684,000,000	1,690,000,000	2,374,000,000
Total	$ 5,614,000,000	$12,979,000,000	$18,593,000,000

* Source: *WFRC Regional Transportation Plan 2007-2030 Table 7-7*

A majority of the 2007 to 2015 capital expenditures will go toward the recently approved plan to build four additional TRAX lines and the commuter-rail south line. The funds spent for the 2016 to 2030 portion will go toward the construction of many additional rail lines and bus rapid transit systems, for the purchase of rail and bus vehicles, and for the cost of financing those purchases. Furthermore, the total cost of operating and

maintaining the existing system as well as the new lines during the 23-year period will reach $6.3 billion. Other expenses, including the costs of administration, fixed guideway maintenance, and operations support are expected to cost an additional $2.4 billion.

Unlike the Sandy and University TRAX lines, the cost of building future rail lines will be covered mainly by sales tax.

UTA will not be able to rely on federal funding to cover the majority of the costs of its transit system as it has in the past. The WFRC is expecting the federal government to provide $3.7 billion to build the expanded transit system. While a sizable amount, the federal government is not expected to be the major funding source as they were six years ago when they typically paid 80 percent of the cost to build UTA's light-rail lines. Instead, local sales taxes will be needed to cover the majority of new construction costs.

The above analysis only includes the expenditures and revenues for the region served by the WFRC. The above plan does not include the additional transit facilities to be built in Utah County. The Mountainlands Association of Governments proposes new light-rail, bus rapid transit, and commuter-rail facilities in Utah County that are estimated to cost $1.2 billion. To cover that cost, the regional plan proposes raising additional revenues through an increase in sales tax.

Other Communities Planning Additional Rail and Bus Lines

Capital costs for future projects may be understated due to local demand for additional rail and bus systems.

UTA's spending could increase even faster than forecasted by the regional 2030 plans. Several communities along the Wasatch Front are proposing additional bus and rail projects that are not yet included in the regional transportation plans. For example, the Mountainlands Association of Governments proposed an extension of the Draper TRAX Line that would reach to Provo. In addition, the FrontRunner rail system that will initially be built to Provo will eventually be extended to Santaquin in the south. Planners at UTA and the WFRC have also proposed building a light-rail line that extends from the west end of the Airport Line south to the Mid-Jordan Line, creating a light-rail line parallel to the Mountain View Corridor. What this means is that the regional 2030 plans may actually understate the cost of the transit system that is being contemplated.

Review of Three Specific Budget Areas

At the request of legislators, we examined three specific budget areas: the amount and use of federal grants, spending for public relations and advertising, and compensation and benefits paid to administrative staff. The following describes our findings in each of these areas.

Federal grants continue to help cover the cost of transit.

Federal Funds Used for Bus Operating Costs and Various Capital Projects

As mentioned previously, UTA receives a substantial portion of its funding from the FTA. In fact, since 1996, UTA has received nearly $900 million in federal grants to support the construction, operations, and maintenance of its transit system. We were asked to review the federal grants given to UTA and to describe how they were spent. We found that slightly more than half of the federal grants in 2006 were designated for UTA's capital projects. The remainder was spent on operations and maintenance.

In 2006 Federal Grants Were Used for Operations, Maintenance, and Capital Projects. During the year 2006, UTA was allocated funds by the FTA through some 26 separate grants. Most of the grant programs provide ongoing support that transit agencies need to cover the cost of operations and purchase new vehicles each year. Figure 3.5 identifies the amount of federal funds UTA received in 2006 by the type of grant and transit service.

Figure 3.5 Federal Grants Paid to UTA during 2006. FTA provides grants which may pay for capital improvements, operations, and maintenance of transit systems.

Grant Type/Service	Grant Amount
Capital	
Light Rail	$ 8,177,612
Bus	8,577,049
Commuter Rail	13,514,138
Vanpool	823,010
Subtotal Capital	**$ 31,091,809**
Operations and Maintenance	
Light Rail	$4,913,672
Bus	20,992,024
Vanpool	666,959
Paratransit	7,810
Subtotal Operations and Maintenance	**$ 26,580,465**
Total Federal Contributions	**$ 57,672,274**

Source: Utah Transit Authority 2006 Comprehensive Annual Financial Report

Figure 3.5 describes how UTA spent the federal grant monies it received during fiscal year 2006. Approximately half of the funds were used to pay for the expansion of the light-rail and commuter-rail lines and to purchase new buses. The other half was used for the operations and maintenance of UTA's transit services—most of that for the maintenance of the bus system.

Although UTA serves a proportionally small population, it has received a sizeable portion of discretionary federal funds.

Looking forward, the UTA has announced plans to build four additional light-rail lines in Salt Lake County and a commuter rail from Salt Lake City to Provo. The FTA has committed to cover approximately 20 percent of the cost of the $2.3 billion project. That will provide UTA with approximately $580 million in additional federal funds during the next seven years. Those federal funds will be matched by nearly $1.8 billion in local funds raised through sales taxes.

UTA Has Received More Federal Funds per Capita than Most Major Transit Districts. Although federal funding for transit projects throughout the country has become increasingly scarce, UTA has been quite successful in drawing down such assistance. We identified the

amount of federal funding received by each of the 50 largest transit districts in the country during the past five years and divided those amounts by the populations of each region. With $39.94 in federal funding per capita, UTA ranks 17th on the list ranking transit agencies in order of the per-capita federal funding received.

There were several western transit agencies that received even more federal support than UTA during the past five years. As mentioned, UTA received $39.95 per capita, but Denver received $45.76 per capita, and Portland's TriMet system received $84.61 per capita during the past five years.

Spending on Public Relations/Advertising Helps Promote Transit Services

UTA's advertising expenditures are used to promote the use of transit and to inform users of changes being made to the system. We could not identify how much other transit agencies spend on public relations and advertising, so we have no basis for evaluating UTA's expenditures. We are, however, concerned about the accuracy of some of the information released by UTA.

UTA spends about $1.3 million each year on public relations and advertising.

UTA Spends Less than 1 Percent on Advertising. UTA's 2006 expenditures for public relations and advertising equaled about $1.9 million, which is about one percent of the annual budget. We were unable to identify any criteria for evaluating whether this amount is reasonable. Other transit agencies in western states also spend a portion of their annual budget on advertising. For example, the Regional Transportation District (RTD) system in Denver has an advertising program similar to that used by UTA. However, because the expenditures on advertising are divided among many different operational units, we were unable to identify whether other agencies spend more or less than the amount spent by UTA.

Public Relations and Advertising Help to Inform the Public. Expenditures on public relations are necessary to provide information to users of the system. For example, UTA recently redesigned the routing and schedules for its bus system in Salt Lake County. To promote public input into the redesign process and to inform riders of the changes being made, UTA needed to fund an advertising campaign. Furthermore, advertising plays an important role in UTA's strategy to increase ridership

of its bus and rail lines. Advertising promotes the use of the transit system by helping people feel more informed about the routes they may take and about the convenience of using public transportation. The public relations effort is also important to help the public understand the benefits of using transit instead of their own personal vehicles.

Some of the Information Released to the Public Is Inaccurate. We identified several instances in which the information issued by the public relations office was inaccurate. For example, a press release dated October 25, 2006, two weeks before an election in which voters were asked to support funding for transit, UTA announced the arrival of a "major milestone." It announced that TRAX had carried its 50-millionth passenger "sometime during the evening commute on Sept. 25." In fact, we determined that the information was false. The actual number of passenger boardings at the time was far higher than 50 million.

Information that UTA has communicated to the public has, at times, been incorrect.

It is unclear why UTA would announce a major milestone prior to a major election without being able to explain how the agency arrived at the figures being reported. One UTA official said that it was only coincidental that the announcement of the major milestone occurred two weeks before an election when voters were being asked to approve an additional sales tax to fund transit. However, the case raises questions about accuracy of the information coming from UTA's public relations unit.

It is important that the information that UTA releases to the public be accurate. All of UTA's stakeholders, including the users of the service, taxpayers, local government officials, and the Legislature, all rely on information provided by UTA to make decisions regarding whether to support UTA's expansion efforts and whether to provide the ongoing financial support to operate and maintain the system. If information is not accurate, it can lead the public and other stakeholders to mistrust the agency and question their support for UTA. We recommend that UTA develop a procedure for verifying the accuracy of information before it is released to the public.

UTA Executive Compensation Is High Compared to Other Transit Agencies

A direct comparison of salaries and bonuses of UTA and similar transit agencies showed that UTA's executive salaries and bonuses are higher than the transit industry's standard. UTA maintains that a higher compensation package is justified because of the belief that the agency operates like a private business and also because UTA competes with private industry, not governmental agencies, for its employees. We think UTA's salaries should be compared to those of other transit agencies whose missions and goals are similar to UTA's.

Compensation for UTA executives is high when compared to that of other transit agencies.

UTA Executive Salaries Are Higher than Salaries at Other Transit Agencies. The majority of UTA's top management salaries are higher than those paid by other transit systems. Figure 3.6 describes the results of a 2006 salary survey completed by UTA that compared the base salaries of UTA's general manager and other executive positions with those of other transit agencies.

Figure 3.6 2006 Comparison of UTA and Survey Salaries. UTA salaries are higher than those of other transit agencies.

Position	UTA Salary	Transit Survey	Difference
General Manager	$ 266,614	$ 196,008	$ 70,606
Regional GM (3)	120,509 *	132,785	(12,276)
Chief Capital Dev. Officer	155,886	135,773	20,113
Support Services GM	152,581	118,538	34,043
Rail Service GM	140,292	133,883	6,409
Chief Technology Officer	135,550	121,152	14,398
Chief Comm. Officer	115,000	119,073	(4,073)

** average of three positions.*

Many of the other transit agencies in the survey are much larger organizations with far more employees than UTA. Without any adjustment for the cost of living, five of the seven UTA positions received a higher base pay than comparable positions in other transit agencies, while two of the positions had lower salaries. (The chief performance officer's salary was not compared due to lack of comparable data.) If the

salaries were adjusted 7 percent for the lower cost of living in Utah, UTA's compensation would be even higher when compared to that of other transit agencies. UTA claims that the experience of some individuals merits a higher salary than the comparable position within other transit agencies, but we were not able to perform an experience-level analysis with other transit agencies.

UTA believes its executive staff must be paid salaries that are comparable to those paid by private industry.

It is the policy of the UTA Board of Trustees to pay salaries that are comparable to others in the labor market. However, we question how the board and management define the labor market in which it competes. UTA policy states that *"the General Manager shall not . . . establish compensation and benefits which deviate materially from the comparable industry labor market value for the skills employed."* UTA justifies offering a higher compensation than other transit agencies because it includes private industry in its definition of "comparable industry labor market." According to UTA management and several current board members, the industry in which UTA competes for employees is not just the transit industry or the public sector, but also private business. As a result, UTA compares its salaries to those paid by both public and private industry, including comparisons with companies which are much larger than UTA and which compete in a nontransit industry and serve a different mission and purpose.

We question the interpretation of the "comparable industry labor market" in the board's policy. We believe the comparison to private industry is inappropriate due to the public nature of UTA's service. Therefore, UTA should focus their salary comparison on other transit agencies with similar goals.

UTA Executives' Nonsalary Compensation Is High. The annual bonuses and other incentive pay received by top UTA management are generous when compared to similar transit agencies and other Utah government agencies. A list of UTA's 2006 executive incentive pay, bonuses, and other compensation received (excluding base salaries) is described in Figure 3.7.

Figure 3.7 2006 Bonuses and Incentive Pay for UTA Executives. Annual bonus and other incentive pay data is shown for the General Manager and for the nine other executive positions. The average non-salary incentive pay was $49,431.

Position	Bonus	Other* Incentives	Total
General Manager	$39,860	$60,526***	$100,386
Regional GM (3)	16,193**	26,000	42,193
Chief Capital Dev. Officer	26,890	26,000	52,890
Support Services GM	22,887	26,000	48,887
Rail Service GM	21,745	26,000	47,745
Chief Perf. Officer	21,638	21,000	42,638
Chief Technology Officer	20,332	26,000	46,332
Chief Comm. Officer	17,250	11,600	28,850
Average:	**$21,918**	**$27,513**	**$49,431**

* *The other incentive figure includes 457 contributions and a car allowance.*

** *The regional GM figures are averages since there are three regional GM positions.*

*** *Also includes life insurance and 401(k) contribution.*

Figure 3.7 shows that in 2006 the average bonus paid to the general manager and other nine other senior executives equaled $21,918. With other incentives, the additional non salary compensation averaged 49,431.

Performance drives UTA's bonus program.

UTA Bonuses Are Based on Three Different Performance Criteria. The bonuses paid to administrative staff, including the executive staff identified in Figure 3.7, come from a bonus pool. The bonus pool is created as part of the regular payroll and equals 4 percent of the total annual salaries paid to administrative staff. The amount of actual bonuses paid out from the bonus pool depends on the agency's success in achieving its annual performance goals. In 2006, the three goals were:

1- **Ridership Goal: 2.29 Percent Increase over 2005 Actual**. UTA aimed at increasing the total systems ridership by 2.29 percent or more.

2- **Investment Per Rider Goal: $3.21**. To decrease IPR, UTA needed to minimize the net operating expenses and/or increase either passenger revenues or ridership.

3- **Revenue Development Goal: $21,200,000.** This revenue is generated by discretionary grants and other contributions excluding normal, ongoing revenue sources (such as sales tax or passenger fares).

UTA's 2006 goals were aimed at increasing ridership, improving the efficiency of the overall system, and obtaining a specific revenue goal. However, we question whether the size of the bonus pool should be based upon goals that are beyond the staff's control. For example, if ridership increases due to a rise in fuel costs, both the ridership goal and IPR goal would be affected, but the change could not be attributed to the efforts of UTA staff.

UTA Board Should Reconsider Its Policy to Base Its Compensation on that Offered by Private or Quasi-Governmental Entities. UTA's managers and several members of its Board of Trustees have told us that they view UTA similar to a private business enterprise and, as such, believe that the agency is justified in paying salaries and benefits comparable to those paid by private industry. In fact, a few board members told us that they thought the UTA general manager is so valuable to the success of the organization that they would be justified in paying him and his administrative staff much more than they currently receive.

UTA's compensation is not consistent with that normally offered by nonprofit enterprises.

The Board of Trustees' policy regarding compensation seems to be at odds with the observations made by two local experts in compensation practices. A professor from BYU's Marriott School of Management stated that he could not justify paying high salaries to the officers of publicly funded enterprises such as UTA because it is not a for-profit enterprise and, therefore, is not subject to the normal market discipline of an entrepreneurial business. Instead, the professor said that the survival of all public agencies such as UTA depends on their satisfying the expectations of their elected officials and, ultimately, the Legislature.

Experts in compensation from the Utah State Department of Human Resource Management (DHRM) also raised questions about UTA's bonus policy. Their experience suggests that bonuses are commonly offered in the private industry as a form of profit sharing. They said the bonus programs for the majority of state agencies are much smaller than that offered by UTA. To evaluate UTA's bonus program with other state agencies, the auditors obtained the 2006 bonuses awarded to UDOT's top executive positions and found that the largest annual bonus in 2006 was

$4,500. Furthermore, UDOT and other state agencies are required to follow the DHRM guidelines for compensation and bonus payout. For state agencies under the direction of DHRM, the annual bonuses awarded cannot exceed $8,000 in a fiscal year. Because UTA is not a state agency, it is not constrained by DHRM compensation guidelines when establishing annual salaries and bonuses.

Bonuses for UTA's executives are more generous than those of other transit agencies.

Finally, we also surveyed a number of transit agencies regarding their employee bonus programs. The majority of the transit agencies we contacted did not have an annual bonus program for its executives, and out of the few transit agencies which did, the highest amount offered was $1,000. Most transit agencies offered smaller incentives to their executives such as a phone allowance, 401(k)/457 plans, or on-the-job transportation, but the extent of these benefits were dwarfed by UTA's bonuses program.

We recommend that the UTA Board of Trustees change its policy regarding compensation and establish that salaries and benefits be comparable to that of other transit agencies and other local public-sector entities.

Recommendations

1. We recommend that the UTA Board of Trustees change its policy regarding compensation and establish salaries, benefits, and bonuses that are more in line with other transit agencies and public-sector entities.

2. We recommend that UTA develop a procedure for verifying the accuracy of information before it is released to the public.

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Chapter IV
Efficiency Varies by Type of Service

As part of our audit assignment, the legislators asked us to evaluate the reasonableness of UTA's cost per passenger for each of the agency's different types of service. We found that UTA's transit services vary widely both in how much they cost and in how much they are used. The low number of passengers using UTA's bus service, for example, has reduced the efficiency of that mode of transportation. In contrast, the high volume of passengers using light rail helps to keep the cost per passenger low for that service. Both paratransit and vanpool serve special populations; this greatly affects the cost and use of these services.

Cost efficiency is determined by: (1) the cost to provide the service, and (2) the number of passengers using the system.

The cost per passenger depends on two factors: how much it costs to provide the service, and how many passengers use the service. In general, the operating cost per passenger of each UTA service is reasonable compared to the costs of similar services offered by peer transit agencies. However, we could not compare UTA's **total** service costs to peer agencies because our main source of criteria, the National Transit Database (NTD), does not include capital costs. Especially for rail service, capital costs make up a significant portion of total costs and should be included in an evaluation of cost-effectiveness. This chapter first reviews the total costs and usage of UTA's services and later compares operating (but not capital) costs per passenger to those of peer transit agencies. In addition, we address some instances where UTA should review the amount of service provided. Since it is mostly funded by taxes, UTA needs clear processes to control service levels.

In addition to comparing UTA statistics with peer averages, tables throughout the chapter contain data from specific peer agencies that, based on their size and similar scope, we judged to be useful for comparisons with UTA. Tables in Appendix C provide more data about UTA's peer agencies.

Services Vary Widely in Both Cost and Usage

The types of transit services provided by UTA vary in many ways. This section first discusses the costs incurred to deliver each major transit service. Then, based on usage, we compare the cost per passenger of each

mode of service in terms of both passenger boardings and passenger miles of travel.

Both Capital and Operating Costs Are Significant

An analysis of transit costs should account for the differences in the capital costs and operating costs for each mode of service. Although the transit industry generally focuses only on operating costs, we think it is important to discuss both capital costs and operating costs because, as discussed in Chapter III, depreciation is becoming a much larger proportion of total expenses.

Due to high startup costs, light rail far exceeds other modes in total cost per vehicle mile.

Some transit services, such as light rail, require a tremendous initial investment in capital before the system can operate. In contrast, the bus system has relatively low startup costs. Capital costs include the initial cost of construction for light-rail lines and the cost to purchase light-rail vehicles, buses, and vans. Figure 4.1 describes the difference in the capital expense and the operating expense per vehicle mile for each transit service. Capital expenses include only the portion of total capital costs depreciated in 2006. Transit usage does not affect this data.

Figure 4.1. Comparison of 2006 Capital and Operating Expenses for Each Type of Transit Service. Light rail has the highest expense for capital and the highest expense for operations and maintenance. As a result, every mile traveled by a light-rail car costs $18.87.

Transit Mode	Capital Expense per Vehicle Mile	Operating Expense per Vehicle Mile	Total Expense per Vehicle Mile
Bus	$ .98	$ 5.62	$ 6.60
Light-Rail Car	9.86	8.18	18.87
Paratransit	.31	4.39	4.70
Vanpool	.20	.49	.69

Source: UTA data as shown in Appendix D

Of UTA's two main transit services, the total cost per mile of service for buses is $6.60, while light rail costs $18.87 per mile. In accordance with transit industry practices, light-rail costs are shown on a per-railcar basis. Since there were an average of over 2.4 cars on each train, the per-train costs are correspondingly higher. The figure shows that for light rail,

capital expenses exceed operating expenses, while for the other modes, capital expenses are much less than operating expenses.

Figure 4.1 shows the bus system has relatively low capital expenses. In recent years, UTA has spent between $260,000 for regular buses and $480,000 for commuter buses. The cost of a bus is amortized over the bus' operating life, which is between 12 and 15 years. In contrast, the startup costs of rail systems, including construction and purchase of rail cars are very high. Even though rail capital costs are amortized over a relatively longer period, the capital expense recognized each year are much higher than for the bus system.

The cost of the driver's wages is higher for bus service than rail.

The largest component of the operating cost for UTA's bus service is the cost of wages and benefits for the bus operators. Of the $5.62 per mile it costs to operate and maintain a bus, 37 percent, or $2.08, represents the compensation paid to the bus driver. In contrast, the cost of operators for light rail is only 20 percent of operation and maintenance costs, or $1.64 per vehicle mile. Because only one driver is needed to operate an entire train of light-rail cars, operator salaries represent a smaller portion of its overall cost of operations. On the other hand, the cost of maintaining the physical infrastructure of a light-rail line is quite high and represents the largest cost category in its operations and maintenance budget for the light-rail system.

Due to the higher startup costs, it is more difficult to adapt the light rail system to changing conditions than it is with the bus system.

Because of the different cost structures, the bus system offers greater flexibility than rail systems in managing the cost of service. Route adjustments that reduce costs and improve service can be made where demand or efficiency are low for a route or segment of a route. By comparison, fixed rail systems do not offer such flexibility. Light-rail routes cannot be easily changed to suit changes in passenger needs, although some adjustments to the schedule can be made.

Passenger Usage of Services Varies

We evaluated the cost per passenger of UTA's services using two measures: (1) the cost per passenger boarding the system, and (2) the cost per passenger mile of travel. Because some services are characterized by longer trips than others, the two measures both provide important insights into the cost of transit. Figure 4.2 shows the usage statistics for each type of service per revenue vehicle mile.

Figure 4.2 Transit Modes Vary in Usage. For each revenue vehicle mile of service, both passenger boardings and passenger miles vary significantly. Trip length is the ratio of passenger miles to boardings per mile.

Transit Mode	Boardings per Vehicle Mile	Average Vehicle Occupancy	Average Trip Length
Bus	1.29	8.90	6.90
Light-Rail Car	5.38	30.43	5.66
Paratransit	0.13	1.52	11.90
Vanpool	0.19	8.70	44.51
Average	**1.28**	**9.91**	**7.75**

Source: UTA data as shown in Appendix D.

The data shows that light-rail cars have many more boardings and a much higher occupancy than buses. Vanpools have a much longer trip length than other modes.

Of all UTA service modes, light rail offers the lowest total cost per passenger boarding.

Based on the data shown in the previous two figures, Figure 4.3 identifies the costs of each type of service for each boarding and passenger mile traveled. The total cost per boarding identifies the total cost of transit services each time a passenger boards the system. The total cost per passenger mile describes the cost of each transit service based on the total miles that passengers travel on the system.

Figure 4.3 Two Methods Used to Evaluate the Cost of UTA Services. The cost per boarding and per passenger mile are two common methods of evaluating the cost of transit services.

Transit Mode	Total Cost Per Passenger Boarding	Total Cost Per Passenger Mile
Bus	$ 5.11	$ 0.74
Light Rail	3.51	0.62
Paratransit	36.82	3.09
Vanpool	3.53	0.08
Average	**$ 4.82**	**$ 0.62**

Source: UTA data as shown in Appendices A & C.

The cost per passenger mile is a useful measure of the efficiency of each transit service.

The data shows some notable differences in the cost per passenger of the various transit services offered by UTA. Although Figure 4.1 shows that light-rail service cost much more to provide than bus service, when usage is considered, as shown in Figure 4.3, the comparison is different. Because light-rail cars carry many more passengers on average than buses, the cost per passenger boarding ($3.51 for rail vs. $5.11 for bus) and the cost per passenger mile traveled ($.62 vs. $.74) are lower than for the bus system. The cost of vanpool service is especially low on a passenger mile basis because this specialized service caters to individuals with long commutes. The specialized nature of paratransit service makes it by far the most expensive service.

As mentioned previously in Chapter II, any cost analysis that is based on UTA passenger counts may be inaccurate, particularly with regard to the light-rail trains because the reported passenger counts appear to be overstated by about 20 percent. As a result, our analysis may understate the actual cost of light-rail service.

Low Ridership Reduces The Efficiency of UTA's Bus System

The cost of UTA's bus service is higher than that of the other transit services offered by UTA (except paratransit). UTA's bus service is also more expensive than bus systems operated by other transit agencies. In addition, we found that some bus lines in particular are very expensive to operate. UTA needs to identify poorly performing routes and place them on a watch list while efforts are made to improve performance. Otherwise, these routes should be considered for elimination.

Some bus lines are more expensive to operate than others.

UTA's Bus System Has a Higher Cost per Passenger than Its Peer Bus Systems

UTA buses attract a relatively low number of passengers when compared to bus systems operated by transit agencies in other western states. As a result, the operating cost per passenger boarding of UTA's bus service is higher than that observed in 19 of its 24 peer transit systems nationwide. Even though UTA's buses are efficient in terms of the operating cost per mile, the data gathered by the NTD shows that a relatively small number of passengers are boarding UTA buses. Figure 4.4 shows that because the operating costs are spread among fewer

passengers, UTA's cost per bus-passenger boarding is higher than costs of other bus systems.

Figure 4.4 Comparison of 2006 Costs and Ridership for UTA and Other Bus Systems. Compared to peer transit agencies, UTA's relatively low ridership results in a higher cost per passenger.

Transit Agency	Operating Cost per Vehicle Mile	Passenger Boardings per Vehicle Mile	Operating Cost per Boarding
UTA (Salt Lake City)	$ 5.62	1.29	$ 4.35
Valley Metro (Phoenix)	6.15	2.73	2.25
Trimet (Portland)	8.79	2.85	3.08
RTD (Denver)	6.46	1.90	3.39
DART (Dallas)	7.47	2.04	3.66
RTD (Sacramento)	10.50	2.18	4.81
Peer Average	**$ 7.31**	**2.17**	**$ 3.65**

Source: National Transit Database, 2006

Due to low bus ridership, UTA's cost per bus boarding is lower than that for other transit agencies.

The data shows that UTA's bus system costs $5.62 per vehicle mile, which makes it a cost-efficient bus system when compared to its peers. However, UTA ranks low when compared to its peer agencies in terms of the number of passengers that use the bus service. In fact, during the past 10 years, UTA was the only transit agency in the list above (except Sacramento,) that had a decline in bus ridership. As a result, UTA's bus system has a relatively high-cost bus system at $4.35 per boarding. See Appendix C for a list of peer transit agencies included in our analysis.

To improve the efficiency of UTA's bus system, either ridership needs to increase, or UTA needs to cut unproductive routes. One of the goals behind UTA's recent redesign of its bus routes in Salt Lake County is to increase ridership. UTA should establish a watch list with clear service standards to help it address expensive bus routes with little ridership.

UTA Is Attempting to Improve Bus Service So It Can Increase Bus Ridership

As described in Figure 2.5 in Chapter II, UTA's bus system has experienced a steady decline in passengers during the past decade. In spite of the public criticism that UTA has received for doing so, a redesign of

the bus routes in Salt Lake County has been needed for many years in order to increase ridership. However, even though some predict that the redesigned routes will produce a 10 percent increase in ridership, that increase will not be sufficient to bring the cost of UTA's bus system in line with the costs of the bus systems operated by other transit agencies.

The Redesign of the Bus Routes in Salt Lake County May Increase Ridership. During our audit, we were able to observe the later stages of the redesign process and its implementation. We concluded that the agency followed a prudent approach toward designing a new set of routes. First, UTA made a careful analysis of the number of potential riders in each Salt Lake Valley community. Then routes were redesigned in a way that would maintain the same number of bus trips offered by the prior routing scheme but with an emphasis toward providing more frequent service to communities with the most potential riders. Finally, UTA then asked for public comment on the proposed changes and made many changes in response to concerns expressed by community leaders and bus riders. Within the next year, UTA should be able to report whether the new design succeeded in attracting additional riders.

By changing the bus routes, UTA hopes to increase boardings and improve cost-efficiency.

The Redesigned Bus System May Still Lack Adequate Ridership. Although the redesign is expected to increase ridership, it is quite likely the improvements will not be sufficient to make UTA's bus system as efficient as the bus systems operated in other western states. A transportation consultant hired by UTA reports that other systems which have conducted a similar redesign have experienced a 10 percent increase in passengers. Based on his prior experience, he predicts that UTA's redesigned routes will produce a similar increase in passengers. In fact, a few years ago when the routes in Utah and Weber counties were redesigned, those regions experienced an increase in ridership. So, it is reasonable to expect a 10 percent increase in bus ridership in Salt lake County.

Even a 10 percent increase in Salt Lake County riders would still leave UTA's bus system with one of the lowest boardings-per-mile figures among its peers. The problem, which is not being addressed by the redesign, is that UTA operates a bus system that covers a relatively large geographic area. This area is more sparsely populated than those of UTA's peer agencies. Among 25 peer agencies, UTA ranks 21st in terms of the population density of its service area. Utah's sprawling population

makes it difficult for UTA to attract the ridership that other transit agencies are able to achieve.

If the redesigned bus system does not produce a substantial increase in passengers, the UTA Board of Trustees may face some difficult choices. They may need to eliminate some of the less-traveled routes, reduce the number of times some routes are traveled, or choose to continue to devote a substantial amount of public funds to a relatively high-cost-per-passenger bus system.

Watch List Needed for Poorly Performing Routes

UTA can reduce the cost of its bus service by placing more attention on its most inefficient routes. We identified several routes that have high operating costs but attract relatively few riders. The fares generated by the passengers cover only a small fraction of the cost of service. UTA's management needs to place such routes on a watch list for a period of time while steps are taken to improve the route's performance.

UTA needs to evaluate the performance of individual bus routes in order to improve the efficiency of the bus system.

High Vehicle Miles Combined with Low Ridership Can Result in A Highly Inefficient Route. UTA's most inefficient routes are those that travel long distances with relatively few passengers. We estimated the total daily cost of operating each bus route by multiplying the average cost per mile for bus service by each route's total daily miles traveled. By dividing the total daily cost of a route by the route's daily average number of passengers, we estimated the average cost per passenger for each route. Figure 4.5 lists some of UTA's most expensive routes.

Figure 4.5 Some Bus Routes Are Very Expensive. The operating cost per boarding is a function of the average miles per trip and the average number of passenger boardings per trip.

Route	Miles per Trip	Boardings per Trip	Cost per Boarding
475 Tooele Army Depot	42.0	10.1	$19.71
454 Grantsville/Salt Lake	86.2	20.6	$18.14
346 Draper Fast Bus	48.5	12.0	$17.57
805 South Utah	118.9	32.6	$16.09
518 Riverton Shuttle	28.6	8.7	$14.82

Source: Audit calculations based on UTA data.

Figure 4.5 lists some of UTA's most expensive weekday routes during the year 2006. We believe there are some weekend routes that were even more expensive, but we were unable to gather the information needed to calculate the cost of weekend routes.

Our calculation of the "miles per trip" includes the actual revenue miles traveled with passengers onboard plus the garage miles traveled to and from the beginning and end of the route. For example, Route 454 carries passengers roughly 43 miles from Grantsville to Salt Lake City. However, an equal number of garage miles is traveled during each trip as the driver travels with an empty bus to the beginning or end of the route. So, the total mileage is actually 86 miles per trip. Even with an average of 20.6 passengers per trip, it is a very expensive route.

UTA needs clearly defined service standards, similar to those used by other peer agencies.

UTA Should Establish Performance Standards to Evaluate Bus Routes. UTA needs to take some of the same steps that other transit systems have taken to address poorly performing routes. Denver Regional Transportation District (RTD), for example, has developed a process for identifying poorly performing routes and services. Routes within the RTD system that fall below a certain subsidy per boarding or boardings per hour are placed on a watch list. Routes on the watch list must either be advertised or revised in order to attract more passengers and cut costs. After a six-month implementation period, the route is again evaluated and if performance has not improved, it is targeted again for additional corrective action or is eliminated. RDT imposes different sets of performance standards for different types of routes.

UTA currently monitors monthly route performance and has three change days throughout the year when routes within the system are adjusted. This process can be improved by developing an impartial evaluation process where any bus route that does not meet the minimum performance standards dictated by UTA is put on a watch list. Improvements should be made to routes on the watch list. Otherwise they should be considered for elimination. In our view, creating concrete service standards and a route adjustment process will improve UTA's overall system, cut back or eliminate poorly performing routes, and hold communities responsible for the continuation of service for poorly performing routes.

Light Rail Is Currently UTA's Most Efficient Type of Service

As shown in Figure 4.3, of all the services offered by UTA, light rail has the lowest total cost per boarding. As with UTA's bus system, the light-rail system has relatively low operating costs when compared to those of other transit agencies. However, unlike the bus system, light rail appears to be carrying a relatively large number of passengers. Even accounting for the fact that the ridership numbers have been overstated, UTA's current light-rail lines still provide a relatively low-cost means of transportation. On the other hand, UTA may have difficulty repeating the success of its Sandy and University lines as it builds new lines into areas with lower population densities that are expected to produce lower ridership.

TRAX Has Low Operating Costs per Boarding

When compared to UTA's other modes and peer transit agencies, light rail is a very efficient service.

As shown previously in Figure 2.5 in Chapter II, most of UTA's growth in ridership has come from its two light-rail lines. The Sandy light-rail line began operating in 1999 and its ridership has grown significantly since that time. The University Line has also been successful in drawing large numbers of passengers. As a result, the operating cost per passenger of UTA's current light-rail system is among the lowest of its peers. Figure 4.6 compares UTA's operating cost per passenger to that of peer light-rail systems.

Figure 4.6 Comparison of 2006 Costs and Ridership for UTA and Other Light-Rail Systems. UTA's TRAX ridership and operating costs compare favorably to light-rail systems of peer transit agencies.

Transit Agency	Operating Cost per Vehicle Mile	Passenger Boardings per Vehicle Mile	Operating Cost per Boarding
Utah Transit Authority	$ 8.18	5.38	$ 1.52
Trimet (Portland)	10.97	5.42	2.02
RTD (Denver)	7.98	2.58	3.09
RTD (Sacramento)	13.15	3.72	3.54
DART (Dallas)	15.76	3.65	4.32
Peer Average	**$ 13.91**	**4.21**	**$ 3.41**

Source: National Transit Database, 2006

Figure 4.6 shows that UTA's operating cost per vehicle mile at $8.18 is lower than the $13.91 average spent by the peer light-rail systems. In addition, UTA's rate of 5.38 passenger boardings per mile is above the average of its peer agencies. In combination, low operating costs and high ridership result in UTA ranking first among its peers in lowest operating cost per passenger boardings.

High ridership has been the key to light rail's success in Utah.

Although capital costs are relatively large for light rail, they are not included in Figure 4.6 because capital expenses are not part of the NTD. Therefore, we could not compare total light-rail expenses among transit systems. In comparison to other UTA modes, light rail has by far the highest capital expenses. For example, in 2006, 57 percent of TRAX expenses were from capital costs, compared to just 15 percent for the UTA bus system. Although transit system comparisons frequently focus on operating costs, the large difference in capital costs should be considered as transit system expansion decisions are made.

Efficiency of Light-Rail Lines Depends On Maintaining High Ridership

As with any system that requires a high initial capital investment, the critical factor in maintaining a low-cost light-rail service is whether UTA can achieve similarly high ridership on the new light-rail lines that it has on the current lines. If the ridership for the new lines exceeds current estimates, the expanded light-rail system could be a very cost-efficient mode of transportation. On the other hand, if ridership for the new light-rail lines only reaches the current projected levels, the huge capital costs associated with the construction of the new lines could cause light-rail costs to appear less favorable.

Emphasis on high ridership for the new lines is important because previously the cost burden of light-rail construction was borne mostly by the federal government, but going forward the heaviest financial responsibility will be carried locally. Federal funds paid for 80 percent of the construction costs of UTA's currently operating light-rail lines. Of the four light-rail lines yet to be constructed, only two of them will receive federal funding.

A plausible scenario that could easily affect demand for the new lines is if UDOT, for example, were to build additional freeway capacity. UTA may have difficulty attracting the number of riders that are needed to

make the light-rail system efficient. Furthermore, UTA already acknowledges that it will not achieve the same high ridership numbers on its future light-rail lines in Mid-Jordan, Draper, and West Valley, and to the Airport, as it has on its existing routes. As light-rail service is extended into communities with lower population densities and lower projected ridership, it may be difficult for UTA to maintain the level of cost efficiency achieved by the Sandy and University lines.

Paratransit Services Are Costly

UTA has chosen to offer a wider range of paratransit services than is required by the federal government. For this reason, UTA's cost of service is higher than most of its peer transit agencies. In particular, UTA exceeds the minimum distance requirement that paratransit buses are required to travel in order to accommodate patrons. Among other sensitive tradeoffs, the decision to bring service levels closer to federally required minimum standards would involve limiting the mobility of individuals who are physically or mentally unable to use UTA's other modes of transit.

UTA's Per-Passenger Paratransit Operating Costs Are Higher than the Peer Average

UTA's paratransit service costs more per passenger than in other states.

The cost of UTA's paratransit services is 20 percent higher than the average per-passenger operating cost paid by peer transit agencies. UTA's operating costs are higher than the peer average because of the longer distances the agency is willing to travel beyond that of other systems. As shown in Figure 4.7, UTA's operating costs both per vehicle mile and per boarding are higher than the peer average.

Figure 4.7 Comparison of 2006 Costs and Ridership for UTA and Other Paratransit Systems. UTA's per-passenger paratransit operating costs are higher than the peer average.

Transit Agency	Operating Cost per Vehicle Mile	Passenger Boardings per Vehicle Mile	Operating Cost per Boarding
Utah Transit Authority	$ 4.39	0.13	$ 34.36
Trimet (Portland)	4.16	0.16	25.73
RTD (Denver)	4.16	0.13	32.86
Valley Metro (Phoenix)	3.75	0.11	33.94
RTD (Sacramento)	4.16	0.11	37.61
Peer Average	**$ 3.83**	**0.14**	**$ 29.36**

Source: National Transit Database, 2006

Figure 4.7 shows that UTA's average operating cost per boarding at $34.36 is higher than the $29.36 average paid by its peer transit agencies. Paratransit service is more expensive than other modes because it provides curb-to-curb transportation services to individuals with disabilities.

UTA Exceeds ADA Minimum Service Requirements

UTA could reduce the total cost of the paratransit program by reducing the level of service it provides. Currently, UTA chooses to offer a broader range of paratransit service than is required under the Americans with Disabilities Act (ADA). UTA currently exceeds the ADA mandate in the following areas:

Offering paratransit service beyond what is federally required has increased the cost of UTA's program.

1. UTA is required to pick up paratransit-eligible riders who live up to three-quarters of a mile from a fixed-route line. UTA will currently pick up riders from anywhere within the counties that contribute to the transit district. Of the 12 transit agencies we spoke with, eight do not exceed the three-quarter-mile zone. Two of the other transit agencies that do exceed the three-quarter-mile pickup requirement will do so because of special local funding arrangements. One will go up to one mile of a fixed-route system. Only one other agency picks up riders at any distance beyond the three-quarter mile just as UTA currently does.

2. The ADA permits UTA to charge up to twice the fare that would be charged to an individual on a fixed-route system. In 2006 that would have allowed a fare of up to $3.00 for one-way paratransit service, but UTA charged only $2.05 for that service. Of the 12 agencies examined, only two others charge less than double the base fare of fixed-route service.

The two points above represent levels of service that UTA has chosen to offer beyond the requirements of the ADA. The following describes steps that UTA may take to trim back its level of service and the potential savings that could result.

UTA Could Reduce Costs by Following the ADA Minimum Service Requirements. To control costs, other states have chosen to follow policies that more closely reflect the minimum ADA requirements. Similarly, by reducing the added services that it provides beyond the level that is federally mandated, UTA could lower the operating cost of the paratransit service. In fact, UTA is currently reviewing their policies and is working with its paratransit customers to identify strategies to lower the cost of service.

Lowering the level of service provided to federal standards could increase efficiency of the paratransit service.

Currently, about 12.7 percent of all paratransit trips are outside the three-quarter-mile zone in which UTA is not required by the federal government to provide services. It is believed that the cost of the additional mileage traveled results in an additional cost of approximately 1.5 million dollars annually. UTA has been taking several steps to reduce coverage outside of the three-quarter mile zone including limiting Sunday service to the ADA required area and informing all new ADA eligible clients that they will only be picked up within the three-quarter-mile zone.

UTA could also increase the base fare for paratransit service. Raising the paratransit fare to double the base fare, which is consistent with other transit systems and allowable under ADA rules, could increase revenues or reduce costs by making riders more selective in how they use the service. Figure 4.8 describes the potential savings of reducing paratransit service and increasing fares.

Figure 4.8 Potential Savings from Reducing Paratransit Service. UTA estimates over $1.5 million could be saved by bringing its paratransit service into alignment with ADA minimum service requirements.

Possible Service Adjustments	Annual Savings
Pick-ups Only Within 3/4 Mile Zone	$ 1,500,000
Raise Fare From $2.05 to $3.00	147,000
Total Potential Savings	**$ 1,647,000**

Source: UTA estimates based on 2006 data.

Figure 4.8 shows the savings that UTA could achieve if both a shorter pickup distance requirement and a fare increase were adopted. The numbers used were taken from data supplied by UTA staff who have already begun implementing ways to reduce the cost of paratransit services. We recommend that UTA continue to examine these as well as other strategies in order to reduce the cost of paratransit service.

Vanpool Program Offers a Low-Cost Service

Low operating and capital costs make vanpools UTA's most efficient service on a per-passenger-mile basis.

Vanpool is one of the lowest-cost services that UTA provides. One reason that vanpool is so inexpensive is that there is no cost for a driver. The participants in the vanpool service provide their own driver. Because the support for vanpool is so high, the demand for the vanpool service currently exceeds the supply of available vans. In light of this high demand and low operating cost per passenger, UTA should continue to expand this program.

UTA's vanpool program offers interest-free loans for van purchases to individuals who are willing to transport a commuter group to and from work each day. Lease options are also available. The program enables companies or individuals to purchase a new 7- to 15-passenger van. The vanpool program has become so popular that applicants must currently wait for nearly a year to receive a van.

Cost per Passenger Mile Is Lowest for Vanpool

In terms of the cost per passenger mile, vanpool provides the lowest cost option of any UTA transit service. As shown previously in

Figure 4.3, vanpool has a total cost per passenger mile of $.08. This is a fraction of the cost for light rail, which has the next-highest cost per passenger mile of $0.62.

The reason that vanpool is such a cost-efficient transit service is that it combines low capital costs with low operating costs. UTA's cost for a typical van is approximately $26,000, but these vans can carry up to 15 commuters, a higher number of passengers than found on many buses. In addition, unlike a bus, a vanpool van has no operator costs because the vans are driven by the commuters using the service. Finally, the absence of garage miles also helps reduce the operating cost of vanpools. Garage miles are the distance that a bus must travel to arrive at the beginning of its route. On several express bus routes (such as the Payson-Salt Lake, Ogden-Salt Lake, or Grantsville-Salt Lake express routes), bus drivers must drive the vehicle a great distance just to arrive at the route's starting point. Vanpools, in contrast, allow UTA to provide transportation from remote locations while avoiding the expense of garage miles.

UTA's Vanpool Costs Compare Favorably To Those of Other Transit Agencies

The operating cost per boarding for UTA's vanpool program is less than the average for peer transit agencies.

UTA does not have the lowest-cost vanpool service, but its operating costs are lower than average of vanpool programs run by other transit agencies. Figure 4.9 compares the cost of UTA's vanpool program to that of other regional transit agencies.

Figure 4.9 Comparison of 2006 Costs and Ridership for UTA and Other Vanpool Systems. UTA's operating cost per vanpool boarding compares favorably to that of peer transit agencies.

Transit Agency	Operating Cost per Vehicle Mile	Passenger Boardings per Vehicle Mile	Operating Cost per Boarding
UTA (Salt Lake City)	$ 0.48	0.19	$ 2.52
DART (Dallas)	0.30	0.26	1.17
Metro (Houston)	0.44	0.24	1.89
RTD (Denver)	0.50	0.09	5.26
Peer Average	**$ 0.56**	**0.18**	**$ 3.48**

Source: National Transit Database, 2006

At $2.52 per boarding, UTA's service is not the lowest-cost service but is lower than the system in Denver.

In conclusion, we found that UTA's vanpool service is a low-cost option that provides services to a narrowly defined population of commuters. UTA should consider using vanpools as an alternative to some of UTA's more expensive bus routes where ridership is too low to justify continued bus service. On the other hand, if vanpool services are offered to a narrowly defined group of employees at certain area businesses, the Board of Trustees may need to consider the extent to which taxpayers should be subsidizing this service. The level of subsidies offered to various transit users is a subject that is addressed in Chapter V.

Commuter Rail Will Be a Relatively High-Cost Service

Commuter rail will likely come at a high cost to taxpayers but provides benefits that other modes do not.

UTA's commuter-rail system, which will begin operations in April of 2008, will be one of the system's more costly modes of transportation. The annual operating budget for commuter rail is projected to be comparable to that of light rail. However, commuter rail will not transport as many people as the light-rail system, so its cost per passenger will likely be much higher than that of light rail.

FrontRunner will Cost More than TRAX

The newly created commuter-rail line operating between Salt Lake and Ogden has not yet begun operations, so there is no information available to evaluate the actual cost of services. However, we reviewed forecasted cost and ridership data. UTA projects an annual operating budget of about $19 million. Annual ridership of about 1.7 million passengers is expected, with an average trip length of about 21 miles. Thus, based on UTA's projections, average operating cost will be about $11.20 per passenger boarding and about $0.53 per passenger mile. In contrast, the operating cost for light-rail service in 2006 was $1.52 per passenger boarding and $0.27 per passenger mile.

In addition to relatively high operating costs, commuter rail also has high capital costs. Even excluding land and right-of-way costs that are not depreciated, the cost of constructing the rail line and acquiring trains will lead to large depreciation expenses. As is the case with TRAX light rail,

the capital expenses for the FrontRunner commuter rail will be a significant part of the total expenses. However, the capital costs are not included in the above amounts.

Commuter Rail Provides Additional Benefits

While considering the cost of commuter rail, we must not disregard other benefits that commuter rail provides that light rail and bus service do not offer. For example, some of the benefits of commuter rail are that it can transport a large number of passengers over a long distance and at a relatively higher speed than light rail. Because it travels on a separate right of way, commuter rail offers an alternative form of transportation that is not affected by weather or highway incidents as express buses might be.

The strategy to build commuter rail is also based on the assumption that it will foster quality growth. As with light rail, transit-oriented development is expected to grow within walking distance of each commuter rail station and along interconnecting bus routes. Communities will be built in which people can live, work, and play in a pedestrian-friendly environment that does not require the frequent use of passenger cars. To accomplish that vision, the rail system may need to be subsidized for many years until transit-friendly residential areas are built near each train station. Policy makers must weigh the added costs of providing a higher-cost service against these benefits.

Commuter rail offers an alternative form of transportation that is not affected by weather or highway incidents as express buses might be.

Recommendation

1. We recommend that UTA develop a watch list for bus routes not meeting a set of minimum performance standards approved by the Board of Trustees.

Chapter V
Transit Is Highly Subsidized

Nationally, transit is a highly subsidized public service.

We were asked by the Legislature to identify the degree to which fares cover the cost of the services provided by UTA. We found that the farebox revenue covers about 17 percent of UTA's operating costs and about 13 percent of the total cost of service (which includes the cost of construction). It is unlikely that fares will ever cover even half of UTA's operating costs. However, there is a statutory requirement that an attempt be made to minimize the burden placed on taxpayers by the transit system. Instead, we found that UTA focuses on increasing overall ridership without a clearly articulated pricing strategy for fares. We believe that UTA's goal to increase ridership is important, but the agency should give additional consideration to the need to minimize the taxpayer subsidy of transit services. It is also important to acknowledge that the deficiencies in ridership data described earlier in Chapter II may affect the accuracy of the subsidy analysis in this chapter.

Utah Code requires that fares be "reasonable" and to the "extent practicable" cover the cost of services. However, current policy does not provide adequate guidance regarding an agency pricing strategy to minimize the level to which service is subsidized. The result has been a disparity in the subsidy provided to certain modes and types of passes over others. We believe UTA should more fully articulate an overall pricing strategy, consistent with that of other transit agencies. With a clear Board of Trustees approved policy, UTA can better balance the need to increase ridership while working to minimize the taxpayer subsidy of transit services.

Passengers Pay Little of Transit Costs

Taxpayers shoulder 87% of the total cost of transit.

In 2006, UTA collected about $24 million in fare revenue, a small portion of the cost of providing service. As discussed earlier, UTA's 2006 total service costs were $186 million, of which $137 million was considered operating costs. Thus, passengers paid for just 13 percent of the total costs or 17 percent of the operating cost of their transit trips. The remainder was covered by federal and state taxes as well as some

other minor sources of revenue. We also found that certain types of fare passes, the education pass for example, receive large discounts.

A UTA rider can pay for his or her trip fare using either cash or one of several types of passes. Besides the base cash fare, which was set at $1.50 in 2006, UTA offered discounted rates to senior citizens and to people with disabilities for $0.75 and charged higher fares for express buses at $3.00, ski buses at $3.00, and paratransit trips at $2.05. Passengers are also offered a wide range of fare options in the form of token packs, day passes, and monthly or annual passes, which provide frequent riders with a discount from the cash-fare prices. Some businesses and educational institutions receive discounted passes known as "Eco passes" and "Education passes" for their employees, students, and faculty. Figure 5.1 shows a breakdown of the revenues generated and the percent that each fare type contributes to total revenue.

31% of UTA's fare box revenue comes from cash fares.

Figure 5.1 Farebox Revenues in 2006 by Fare Type. About 31 percent of fare revenue comes from passengers paying full fare.

Fare Type	Fare Revenues	Percent Farebox Revenues
Full Fares	$ 7,374,052	31%
Pass Sales	6,526,563	27
Education Pass	3,094,124	13
Eco Pass	2,204,480	9
Token Sales	1,467,557	6
Paratransit Fares	1,322,303	6
Vanpool	1,181,797	5
Other Passes	749,849	3
Free Fare Zone	---	0
Total	**$23,920,725**	**100%**

As seen in this figure, most revenue comes from passengers using various types of passes.

Some Transit Services Appear to Be Subsidized More than Others

We found that in 2006, farebox revenues contributed about $1.00 toward each passenger trip on UTA. That amount equaled about 17 percent of UTA's operating cost. When capital costs are included, the fare only covered 13 percent of the cost of service. Figure 5.2 shows that the level of taxpayer subsidy varies by transit service.

Figure 5.2 Subsidy Levels by Type of Transit Service. The revenue generated from fares and the level of taxpayer subsidy differs from one transit service to another.

Transit Mode	Operating Cost per Passenger Trip	Total Cost per Passenger Trip	Farebox Revenue per Passenger Trip	Farebox Revenue % of Operating Costs	Farebox Revenue % of Total Costs
Bus	$ 7.66	$ 8.99	$ 1.14	15 %	13 %
Light Rail	2.34	5.40	0.76	32	14
Paratransit	34.36	36.82	2.78	8	8
Vanpool	2.52	3.53	0.90	36	25
Total	**$ 5.71**	**$ 7.76**	**$ 1.00**	**17 %**	**13 %**

Figure 5.2 shows cost per passenger trip (including transfers) for each type of transit service and the average fare paid by the users of each service. The cost per passenger trip is calculated by dividing the operating costs for each mode (see Appendix B) by the number of linked trips (previously shown in Figure 2.1).

UTA's various modes are subsidized at different levels, with vanpool being the most self-supporting.

Light-Rail and Bus Subsidies Are Difficult to Calculate. The cash fare for regular adult passengers on the light-rail and bus systems was $1.50 in 2006. However, based on UTA's revenue and passenger data, the average revenue generated by each passenger was only $0.76 for those using light rail and $1.14 for those using buses. These estimates are on a per-trip rather than a per-boarding basis, so the difference is mostly attributable discounts received by various types of pass users. Figure 5.2 shows that on an operating cost basis, light-rail fares appear to cover 32 percent of costs, compared to 15 percent for bus fares. However, because of the larger depreciation expenses of light rail, on a total cost

basis the percentages are much closer: 14 percent for light rail and 13 percent for bus.

It is important to recognize that the figures describing the cost and revenue per passenger are most likely understated for the light-rail system. As mentioned in Chapter II, light-rail passenger counts were overstated by 20 percent. Because passenger data was used to allocate a large portion of the farebox revenues between the bus and the light-rail system, and because the light-rail counts were overstated, the percent of farebox revenue for the buses is likely understated, and for light rail it is overstated. As a result, we have another example of how the lack of accurate passenger data has made analysis difficult. UTA needs to improve its passenger data so the Board of Trustees can make more informed decisions concerning subsidy levels.

Paratransit service is UTA's most heavily subsidized mode.

Paratransit Is Highly Subsidized While Vanpool Receives a Lower Subsidy. At $2.05, paratransit fares in 2006 were higher than regular fares. However, the average farebox revenue of $2.78 per paratransit passenger was more than the base fare because some trips received Medicaid payments at a much higher rate. Still, when compared to the cost of service, the fares represent a relatively small amount. As a result, paratransit is the most highly subsidized service offered by UTA with 8 percent of the cost covered by fares (including Medicaid payments). On the other hand, vanpool receives the lowest subsidy with passengers paying 36 percent of the operating cost, or 25 percent of the total cost of providing service. Appendix B provides greater detail of the costs and subsidies for each transit mode.

Education Passes Are More Heavily Subsidized than Others

There are also differences in the levels of subsidy offered to different types of fare passes. In addition to daily and monthly fare passes, UTA offers ECO and Education passes which are annual passes that educational, governmental, and commercial institutions can purchase for their students and employees. Education passes, when valued on a cost-per-ride basis, offer deep fare discounts to their holders.

When we examined the percentage of operating costs recovered through the fare-payment revenues, we found that the revenues generated through the sale of education passes (provided to college and university

students by their respective institutions) generate only 8 percent of the cost of service. The average revenue generated through other types of fare passes is about 24 percent. Expressed another way, other fare payment methods recover between $1.10 and $1.15 of the average $4.75 trip operating cost, while trips taken using an Education pass recover only $0.37 (See Figure 5.3). As a result, most of UTA's passengers who use a fare payment method other than the Education pass contribute, on average, three times more toward the actual operating costs of their trips.

Figure 5.3 Large Differences Are Observed in Subsidies Granted to Fare Type. UTA offers fare passes that are valid on either its bus or rail systems. UTA subsidizes some types of fare passes to a much greater extent than others.

Fare Payment Method	Farebox Revenue per Passenger Trip	Average Operating Cost per Bus/Rail Trip	Farebox Revenue as Percent of Operating Cost	Subsidized Portion per Trip
Cash Fare	$ 1.15	$ 4.75	24%	76%
Individual Passes	1.10	4.75	23	77
Education Passes	.37	4.75	8	92
Eco Passes	1.12	4.75	24	76
Other Pass Types	1.12	4.75	24	76
Total	**$ 0.87**	**$ 4.75**	**18%**	**82%**

Education passes are deeply discounted.

Figure 5.3 shows the average contribution made by the passenger-fare revenue toward the cost of rail and bus service. It is important to note that these costs are only estimates, which are based on the best available data. The linked trips used in the analysis above were taken from the 2004 onboard survey which makes a distinction between Education and Eco passes. Although UTA maintains accurate cost information, we have less confidence in the ridership data that was used in the above analysis. Because the revenue and cost information shown in Figure 5.3 are described in terms of the number of bus and light-rail passengers, and because the light-rail portion was overstated by as much as 20 percent, the revenue and operating costs per trip are, again, most likely overstated. On

the other hand, the percent of farebox revenue and the percent subsidized would not be affected by the overstated passenger data. Consequently, this dilemma reemphasizes the need for UTA to report accurate data to the Board of Trustees, so that informed decisions can be made regarding pass subsidies.

Based on the data provided by UTA, the average light-rail or bus trip, including transfers, costs $4.75 per trip. The final column reports the subsidized percentage of operating cost for each fare-payment method. Education passes pay only 37 cents for a trip that costs $4.75 and receives the highest subsidy. In contrast, the passengers who pay cash fares receive the lowest subsidy. The price of a regular cash fare in 2006 was $1.50, which is far above the average price paid in any other fare-payment-method category. The average actual revenue for regular fare is $1.15.

Due to discounts for seniors and youth, discounts for certain types of passes, and free fare zones, the average fare is much lower than the cost of a regular fare pass.

The fact that the average rate for regular fare passes at $1.15 is so much lower than the fare price of $1.50 can be explained in part by the reduced rates for senior citizens and youth, who pay only $0.75. In addition, children under age six travel for free. Those riding in the free fare zone also pay nothing for the service. However, the fact that passenger counts have been overstated (as described in Chapter II) may also explain why the average rate for regular fare passes is so much lower than the fare price.

UTA staff report that the price of Education passes is negotiated individually with each educational institution without board oversight or approval of the contracted amount. We estimate that the value of the discount granted to students and faculty beyond what other fare pass holders pay equals roughly $6.3 million each year. Considering the size of the subsidy being granted, we recommend that the UTA Board of Trustees provide policy guidance to staff regarding the extent to which annual passes may be discounted and require formal board approval for any subsidy above a certain level.

Subsidies and Farebox Recovery Unchecked by Board Policy

More board oversight is needed to manage subsidy levels.

We found insufficient governing policies that describe what the Board of Trustees considers an acceptable level of farebox recovery. UTA's farebox revenue is somewhat lower than that of other western transit

districts. Another concern is that growth in fare revenue per passenger has not kept up with the rise in fare. This suggests that UTA has been granting higher subsidies to Education passes and ECO passes than in the past. We believe that the UTA board needs to consider the degree to which it is willing to subsidize the transit system, by establishing a fare-pricing strategy for the agency to follow.

During the audit we observed that UTA did not have adequate Board of Trustees policy to guide agency decisions regarding the level of subsidy offered for various services. At present, competing criteria, combined with a steady revenue stream from sales tax dollars, allows UTA to make purchases, maintain inefficient routes, and subsidize different types of passes and services without great consideration for the cost benefit or level of subsidy it is willing to offer. We believe additional board policy should be established to help guide staff in making better decisions.

UTA's Fare Revenue Is Slightly Lower than Revenues of Other Western Transit Agencies

UTA's farebox recovery level is lower than that of most peer transit agencies.

The percentage of the operating costs that are covered by passenger fares is lower for UTA than four other western transit agencies. As seen in Figure 5.4 below, UTA recovers 17 percent of its operating costs through passenger fares, while most transit districts in other western states are recovering more.

Figure 5.4 UTA's Farebox Recovery Ratio Compared to Other Transit Agencies. The farebox revenue from UTA passengers using all types of transit services is somewhat lower than that of other western transit districts.

Transit Agency	Percent Subsidy	Percent Farebox Revenues
UTA (Salt Lake City)	83%	17%
DART (Dallas)	87	13
RTD (Sacramento)	82	18
Valley Metro (Phoenix)	80	20
RTD (Denver)	79	21
Trimet (Portland)	77	23

Figure 5.4 shows the farebox recovery ratio for UTA and other transit districts in the western states for fiscal year 2006. UTA passengers pay 17 percent of the cost of the transit services they receive, and 83 percent of the operating costs are subsidized. In contrast, Portland's Trimet passengers pay 23 percent of the cost of service. The DART system in Dallas is the only major transit agency in the west that has a lower farebox recovery ratio than UTA. One variable not considered here is the various capital costs, unique to each transit system, that would undoubtedly increase the subsidy.

The differences in farebox recovery among transit agencies can be explained in part by the size of the region served and the density of the population. One of the reasons UTA's farebox recovery is somewhat lower than that of other transit agencies is that UTA serves a large region which is less densely populated than most other cities served by transit. In contrast, most other transit agencies (as shown in Appendix C) serve more densely populated areas and are able to attract a large number of passengers who provide more farebox revenues than UTA can generate. For example, the Chicago Transit Authority has many more passengers than UTA on routes that are much shorter. As a result, that agency is able to cover about one-third of its operating costs through farebox revenues.

Some transit districts offer a larger subsidy of the cost of service than UTA.

On the other hand, a few regions seem to have chosen to keep their farebox recovery levels low. For example, Austin, Texas appears to be subsidizing its transit system to a much higher degree than other transit agencies its size. The base fare to ride the Capitol Metro system is just $.50—less than one-third of the $1.60 base fare charged by UTA in 2007. As a result, the fares cover just 4 percent of the operating costs in the Austin, Texas system.

Growth in Farebox Revenue Has Been Slower than Expected

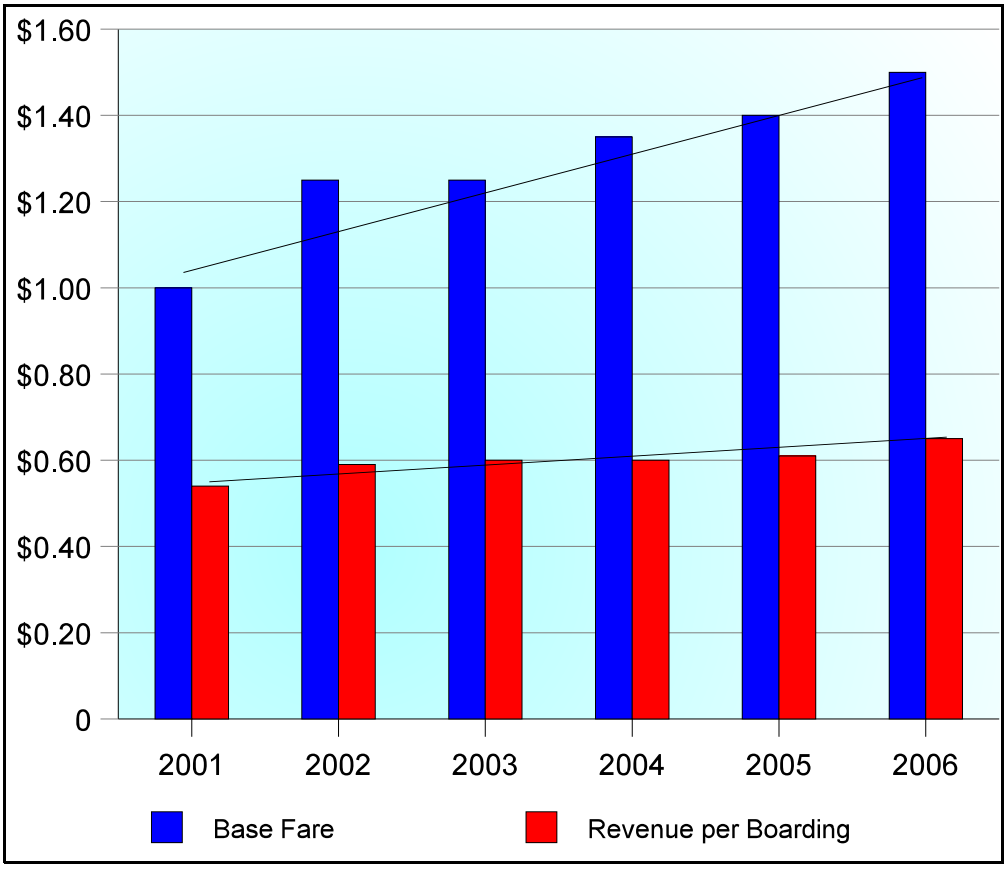
Considering the increases in the cost of fares and in the number of passengers, UTA should be generating more farebox revenue than it has in recent years. We have identified several possible explanations, but UTA's strategy of discounting its Eco pass and Education pass may be the primary cause for the slow growth in farebox revenue. UTA's Board of Trustees needs to review and approve the large subsidies that UTA offers to certain types of pass holders. Furthermore, the board should ensure

that these subsidies are consistent with the fare-pricing strategy they establish.

Growth in Farebox Revenues Has Not Kept up with Price Increases. Since 2001, the amount of fare revenue generated per passenger has increased at a much slower rate than would be expected considering the amount of fare increases that have occurred during that time. The base cash fare rose from $1.00 per passenger in 2001 to $1.50 in 2006. Other fare types had comparable increases. With base fares increasing 50 percent over a five-year period, one might expect a comparable rise in farebox revenues. Instead, as shown in Figure 5.5, fare revenues have increased at a much lower rate, from $0.54 per passenger in 2001 to $0.65 in 2006–a 20 percent increase.

UTA revenues did not increase at the same rate as fares, apparently, because of the increased discounts offer for fare passes.

Figure 5.5 Revenues per Boarding Have Not Kept up with Growth in Base Fares. The price of cash fares grew significantly from $1.00 in 2001 to $1.50 by 2006. However, growth in revenue increased only slightly.



UTA is more concerned with increasing ridership than decreasing subsidy levels.

Figure 5.5 shows that the cost of fares is increasing but farebox revenues are not increasing at a comparable rate. In addition to the base cash fare, the price of passes has also increased. If revenues had kept pace with increases in base fares and passenger boardings, UTA's total farebox revenue (not shown in figure) should have increased by 91 percent from 2001 to 2006 ; instead, it grew by only 53 percent. We believe that UTA's decision to heavily subsidize passes is the cause and that the Board of Trustees should be aware of these discounts and should be more involved in guiding that decision. However, it appears that the board has not been sufficiently apprised of the discounts being granted to different types of fare pass holders.

We spoke with UTA staff about their pricing strategy for passes and found that they do not follow a written guiding policy for establishing many types of fares. For its Eco pass, there is a well-established system of pricing fares based on an organization's access to transit services. However, for Education passes and other specialized services, UTA relies on a short-term philosophy in negotiating deeply discounted passes where the outcome will not decrease existing ridership or revenues. UTA admits, and we acknowledge, that the agency will not likely be able to cover operating expenses through fare box recovery, but board policy is needed to establish the extent to which they are willing to subsidize passes. On the other hand, another possible explanation for the slow rise in farebox revenues is that the passenger counts did not actually increase as quickly as reported by UTA.

UTA Board Policy Is Needed to Approve Subsidy Levels

UTA needs to create a pricing strategy in policy that requires the Board of Trustees' review and approval for the level of subsidy offered. Previously, this chapter described some differences in the level of taxpayer subsidy offered to different classes of fare pass holders. There is an expectation that transit services will be subsidized at some level, and we understand that UTA has the difficult task of balancing the need to increase ridership while attempting to recover costs through fares. However, in order to make sure that taxpayer funds are put to their best use, the board needs to develop, in policy, an overall pricing strategy that better governs the circumstances in which certain passes and service modes receive higher subsidies than others.

Board of Trustees Policy Should Address Efficiency Issues

Utah law directs UTA to establish passenger fares that will allow, to the greatest extent practicable, a recovery of the organization's operating costs. ***Utah Code*** 17B-2a-815(2) states:

State statute charges UTA to work toward setting rates that will make operations more self-supporting.

> Rates and charges shall:
> (a) be reasonable; and
> (b) to the extent practicable:
> (i) result in enough revenue to make the public transit system self supporting; and
> (ii) be sufficient to:
> (A) pay for district operating expenses;
> (B) provide for repairs, maintenance, and depreciation of works and property that the district owns or operates;
> (C) provide for the purchase, lease, or acquisition of property and equipment;
> (D) pay the interest and principal of bonds that the district issues; and
> (E) pay for contracts, agreements, leases, and other legal liabilities that the district incurs.

In fact, the Board of Trustees appears to recognize the importance of this directive because the board's own policies contain the same directive:

> The General Manager shall not disregard the legislative mandate that rates and charges shall be reasonable, and insofar as practicable, be fixed to result in enough revenue to make the transit system self-supporting.

UTA's policies to meet the legislative mandate to minimize subsidies are inadequate.

However, we found that the UTA Board of Trustees has not established adequate policies to meet this mandate. Instead, UTA places emphasis on increasing ridership, with the hope that as more riders are attracted to and become dependent on the system, an increase in farebox recovery will occur. In addition, the board policies are not specific enough because they provide no guidance as to how UTA should accomplish its policy of focusing more on increasing ridership rather than on farebox recovery. The result has been a transit system that is highly subsidized with taxpayer funds. The following describes a few topics that the board might address in policy in order to minimize the taxpayer subsidy of the transit system.

Fare Pass Subsidies Should Receive Board Guidance. The Board of Trustees should adopt a policy to guide the subsidy level that UTA offers for specific transit services and for different types of pass holders. For example, the education passes given to the colleges and universities have been discounted $6.3 million below the rates paid by other organizations that receive annual passes. We were told that the board was not consulted before the decision was made to grant such discounts. Although other transit agencies are required to seek board approval before agreeing to such subsidies, we do not believe that formal board approval of such contracts would be necessary. Instead, it would suffice if the UTA board were to establish clear guidelines regarding the level of revenue that should be generated by each type of pass.

In our view, the Board of Trustees should approve the specific standards that guide the sale of annual passes to individual organizations. Current board policy allows staff to offer subsidies under certain circumstances. For example, they indicate that subsidies might be given to disadvantaged populations or be used to promote new services. While the board may wish to continue offering such subsidies, they should approve the maximum subsidy amount for each type of fare pass and ask agency staff to provide an annual report identifying the level of subsidy offered by each type of fare pass.

A fare-pricing strategy is needed to guide subsidy levels.

The Board Should Establish, in Policy, the Services It Is Willing to Subsidize. The UTA Board of Trustees should identify in policy which types of services it is willing to subsidize and to what extent. In Chapter IV we identify individual transit lines that are highly subsidized. Moreover, even though some transit services are provided to individual businesses and industries, they still receive a sizable subsidy. For example, the cost of each passenger using Route 475 to the Tooele Army Depot is nearly $20. Fares cover only a tiny fraction of service for that route. Yet the service is offered to a narrow class of passengers working for one of the state's major employers—the Tooele Army Depot.

Similarly, UTA provides subsidized transit services to employees and the patrons of many of Utah's ski resorts. In 1981, during a previous audit of UTA, we found that the board had established a fare structure intended to make ski service approximately self-supporting. Today, ski service is provided for a premium fare, but it is still primarily subsidized through public funds, with an estimated farebox recovery of only 29 percent. One could argue that ski buses only serve a specific market of

users for non-essential travel, yet UTA maintains that this service meets the agency mission of getting single occupant vehicles off the road. The problem we see is that this reasoning could be used to justify any type of transit service, regardless of cost. We believe that the lack of a guiding board policy hurts UTA because it leaves staff without any guidance as to what services it should subsidize to meet the agency's mission.

UTA was unsuccessful in making ski service self-supporting.

Finally, vanpools are offered by UTA without sufficient guidance in board policy describing how much that service should be subsidized. Considering the mandate described in statute to minimize public subsidy of transit services, the UTA Board of Trustees should decide, as a matter of policy, the extent to which UTA should subsidize small groups of commuters and which should be more self-supporting.

The Board Should Approve a Minimum Overall Farebox Recovery Ratio. The Board of Trustees should also consider approving minimum requirements for the farebox recovery ratio for each type of transit service. The farebox recovery ratio is the amount of operating costs covered by passenger fares for all types of services. We have identified several states that have established a minimum farebox recovery ratio for their transit systems. Such standards can serve as an effective means to encourage a transit agency to focus on providing an efficient service.

One of the inherent challenges of operating a public transit system is that it does not face the disciplining effects of the marketplace. Transit is so heavily subsidized that there are no natural consequences when a poor investment decision is made or if a service is not operated efficiently. By requiring the transit agency to recover a minimum amount of its operating costs through passenger fares, it will force the transit agency to eliminate inefficient operations. For example, Maryland requires that transit agencies recover 40 percent of the cost of bus and light-rail services through passenger fares. Colorado state law requires the Denver RTD to recover 30 percent of operating costs through fare box and other revenues, including federal grant monies. Similarly, transit agencies in California and Illinois are subject to the same type of farebox recovery requirements. These states have established minimum farebox recovery in their statutes. Similarly, the Legislature could adopt a minimum farebox recovery requirement for UTA. However, such requirements could also be imposed by the Board of Trustees. In addition, rather than having a

single farebox recovery requirement for the entire system, different standards could be imposed for each type of service.

Recommendation

1. We recommend that the UTA Board of Trustees establish in policy a guiding fare-pricing strategy that includes:

    - The amount of taxpayer subsidy the agency grants to each type of fare pass
    - The level to which the agency subsidizes different types of services
    - An overall minimum farebox recovery ratio

Chapter VI
Transit Provides Benefit to Congestion But Not to Air Quality

We were asked by the Legislature to examine the impacts that UTA is having on congestion and air quality. It appears that the transit system has a positive impact on traffic congestion but not on the air quality along the Wasatch Front. There is a segment of commuters who choose to ride a bus, rail, or vanpool each day even though they own a passenger car. By choosing to use transit, they may be reducing the number of vehicles on local roads and highways by as many as 42,000 vehicle trips (about 21,000 round trips) each day. The extent to which freeway drive times might be affected by the reduced number of vehicles is unknown.

The pollution caused by UTA buses offsets the benefits of other, cleaner forms of transit.

Although light rail and vanpool generate much less air pollution than passenger cars, buses create so much pollution that they more than offset the benefits achieved by other, cleaner forms of transit. However, when all of the air pollution created in Utah is considered, the negative impact of transit is small. Considering the impact of transit as a whole, policymakers should be cautious about relying on transit as a way to improve the region's air quality.

Transit Provides Some Reduction in Congestion

It is difficult to measure the contribution that transit is having on the region's congestion. To the extent that it removes commuters from the region's roads and highways during peak travel times, transit is having a positive effect on congestion. The transit modes that appear to be contributing to the greatest reduction in passenger-car use during peak times are the light-rail systems, express buses, and vanpool. A traffic simulation model used by the Wasatch Front Regional Council (WFRC) estimates that transit reduces approximately 50,000 commuter work trips (about 25,000 commuters) a day, which would roughly equate to 42,000 vehicle trips (or 21,000 round trips) removed if all those using transit had access to vehicles.

By using transit, about 50,000 trips (about 25,000 commuters) are able to avoid driving their personal vehicles each day.

Transit users represent such a small percentage of all commuters that it is difficult to identify a cause-and-effect connection between an increase in transit use and the level of highway congestion. To put it in perspective, commuters travel about 37.6 million vehicle miles in personal cars and trucks on an average weekday in the Davis, Weber, and Salt Lake counties. UTA's transit system reduces that number by 676,000 miles, or 2 percent. However, WFRC has calculated that during peak travel times transit is moving 4.5 percent of the commuting traffic. Thus, transit has a positive impact on congestion by removing 4.5 percent of the personal vehicles during peak times.

Light Rail and Vanpool Provide Benefits to Congestion

Vanpools and light rail remove a number of cars from state and local roads during peak travel times. The timing of the removal of cars is important, as congestion is greatest during the peak times of travel. TRAX is most effective during peak travel times when it provides an alternative means of travel for commuters. Likewise, the vanpool operates during peak commuting times, consolidating what would be the equivalent of seven cars into one vehicle.

TRAX Provides Benefits to Congestion During Peak Travel Times. TRAX helps to mitigate congestion by removing individual commuters from the roadway during peak commuter times. The WFRC estimates that TRAX ridership on the Sandy Line during the peak hours and in the peak direction is equivalent to slightly less than one lane of freeway traffic in the same period. The WFRC modeled data estimates that TRAX reduces 22,719 work trips daily, moving 2 percent of the commuters each day, which is how it benefits congestion. However, nearly half of the TRAX riders use their cars to park at a park and ride, so their cars are not removed completely from the roadways.

The WFRC estimates that TRAX ridership on the Sandy Line is equivalent to slightly less than one lane of freeway traffic in the same period.

An additional benefit of TRAX is that it is typically free from traffic-induced delay caused by accidents and other traffic impairments. In 2005, the Texas Transportation Institute estimated that 53 percent of the delay experienced in Salt Lake City was due to incidents like accidents and road hazards. Incident management is an important aspect of congestion management and should continue to be explored as a way to mitigate delay.

Vanpools Also Provide Alternatives for Commuters Seeking to Consolidate Travel. The vanpool averages 8.7 passengers per trip. Consolidating those 8.7 people into one vehicle saves seven cars from traveling on the freeways. UTA reports that in 2007 it had 455 vanpools in operation. These 455 vans in operation save 3,300 vehicles from traveling on Utah roadways. It is difficult to determine what the impact would be if those vehicles were on the roads, but it would conceivably worsen the congestion situation.

Some Bus Routes Make an Impact on Reducing Vehicle Miles Traveled

Express buses move an average of approximately 5,385 people per day.

According to the WFRC model data, express buses move an average of approximately 5,385 people per day. Using a simple 1.2 people-per-car conversion, this amounts to a reduction of 4,500 cars on the road. Like vanpools, express buses, with their high ridership per trip, provide an undefined benefit to congestion by decreasing the vehicle miles traveled for those using the service by offering alternate transportation during peak travel times. It is likely that if these bus services were not available, the amount of cars on the roadways during peak times would increase.

Some bus routes have relatively low ridership and therefore offer few benefits to reducing congestion. Many routes only carry five or six passengers at a time and are only eliminating four or five cars from the roadways. We believe the average ridership increases during peak travel times but is generally not a significant amount as to provide a benefit to congestion.

Transit's Positive Impact on Congestion Is Difficult to Estimate

We could not obtain reliable information to quantify how transit affects congestion. As the percentage of commuters taking transit increases, it has a positive impact on congestion, but we cannot say how much. It cannot be said that by putting the 4.5 percent of commuters who use transit back on the roads in other vehicles that congestion would increase by 4.5 percent. There are many factors like travel patterns, carpooling, and volume-to-capacity ratios on the roadways that prevent such a calculation. Furthermore, UDOT does not currently maintain records of the day-to-day delay in travel time. Thus, we did not attempt

to quantify how transit use affects travel times for other vehicles on the roadways.

Only a small percentage of commuters use transit for their travel. Data in Figure 6.1, provided by the WFRC, indicates that the transit system currently serves a small portion of the overall population of commuters.

Figure 6.1 Breakdown of Commuter Travel Modes. WFRC estimated count of one-way commuter trips on workdays by mode of travel. The figures are taken from a 2005 WFRC model.

WFRC has calculated that, during peak travel times, transit is moving 4.5 percent of the commuters.

Mode Type	Number of Commuter Trips	Percent of Total Commuters
Auto		
1 Passenger per Car	829,091	74.62%
2 Passengers per Car	148,906	13.40
3+ Passengers per Car	48,400	4.36
Subtotal for Cars	**1,026,397**	**92.38%**
Transit		
Local Bus	22,390	2.02%
Express Bus	5,385	.48
Light Rail	22,719	2.04
Subtotal for Transit	**50,494**	**4.55%**
Other* Commuter Modes Total	**34,119**	**3.07%**
Grand Total	**1,111,010**	**100%**

** Other modes of travel include walking, biking, and other nonmotorized modes of travel.*

As seen in the figure above, during a typical rush hour, the state roads carry 93 percent of commuters, while transit only carries approximately 4 percent of the total trips. When its new rail lines and bus rapid transit systems are built, WFRC's most optimistic estimate is that they will carry as many as 7 percent of commuters in the year 2030.

Buses Diminish Positive Environmental Gains of Light Rail and Vanpools

Although light rail and vanpools offer a considerable reduction in emissions when compared to passenger cars, buses create so much air pollution that they negate any gains in air quality created by light rail and vanpools. It is important to note that these calculations are based on current ridership and current technology; if ridership were to increase and technology improves as expected, the negative effect that buses have on air quality will decline.

NOx Emissions Are the Greatest Cause for Concern

Staff at the Division of Air Quality (DAQ) told us the vehicle air pollutant of greatest concern along the Wasatch Front is nitrogen oxide (NOx). While cars generate a significant amount of NOx, buses generate much more per vehicle mile of travel. Another pollutant, carbon monoxide (CO), was a major concern to DAQ in the past but is no longer as significant a problem. Carbon dioxide (CO2) is also monitored, as it is emitted by the power plants that generate electricity for UTA's light-rail system and is also generated, to a lesser extent, in car and bus emissions.

NOx pollution is the greatest concern because it combines with volatile organic compounds (VOC) and sunlight to create ozone, which most experts agree harms the lungs and adds to the Wasatch Front inversion.

NOx Contributes to Ozone Creation and Lung Damage. While there are other pollutants created though emissions, NOx is the greatest concern because it combines with volatile organic compounds (VOC) and sunlight to create ozone, which most experts agree harms the lungs and adds to the Wasatch Front inversion. VOCs are created at about the same rate in both diesel buses and automobiles. However, buses create 18 times more NOx than cars do.

Carbon Monoxide Levels Are Within Federal Standards. Although CO has been a concern in the past, historical data shows and the DAQ confirms that CO is no longer a major problem in the Salt Lake Valley. Reasons for the improvements include increased technology, such as better combusting engines and catalytic converters, as well as increasing federal emission standards. The Salt Lake Valley has decreased CO emissions the last 13 years and has been below the federal standard since 1995. Therefore, even though buses do create considerably less CO than

automobiles, the CO emitted by cars and buses is so low that it is less of a concern than the generation of NOx.

Carbon Dioxide Emissions Are a Growing Concern. CO2 is a naturally occurring gas that has no direct effects on public health from an air-quality standpoint. However, production of CO2 is a growing concern because of increasing suspicions that it causes global warming, therefore indirectly affecting public health. It was ruled a pollutant in late 2006, and the Environmental Protection Agency (EPA) now has the authority to regulate CO2 created from auto emissions. However, the EPA has not yet decided what it will do as far as implementing new regulations on CO2 emissions.

Production of CO2 is a growing concern because of increasing suspicions that it causes global warming, therefore indirectly affecting public health.

CO2 is not currently regulated by the EPA as it relates to auto emissions and is not, according to Utah's Division of Air Quality, a focus of pollution control. Our calculations show that the energy needed to run TRAX from coal-fired plants creates less CO2 than would be created through automobiles driving the same number of passengers. Specifically, we determined that TRAX produced about 21 tons of CO2 in 2006, while the number of cars needed to carry the equivalent number of passengers would have produced 29 tons of CO2. As a result, TRAX should still be considered a significant source of CO2 creation, though its impact is less than that of automobiles.

Light Rail and Vanpools Reduce NOx Emissions, But Buses Increase Air Pollution

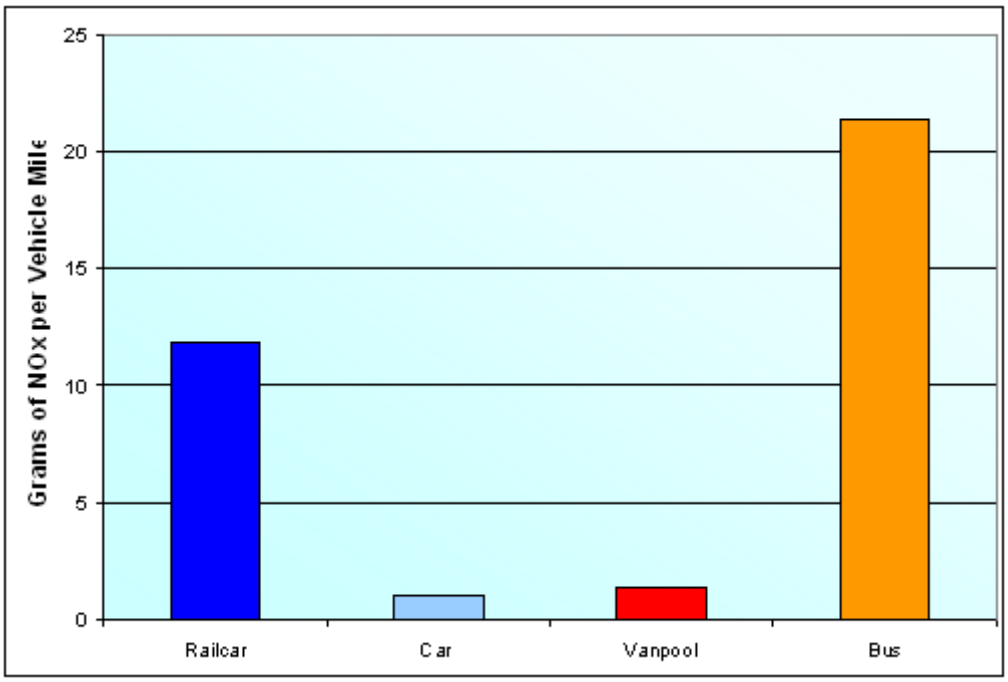
Each transit mode affects total NOx emissions differently depending on their own emissions and how many personal vehicle miles they replace. The amount of personal vehicle miles replaced is estimated, assuming all the transit passenger miles of travel would have been completed in personal vehicles that average 1.2 occupants. We also assume that given the mix of vehicles driven by people, the rate of NOx emissions is the average of the car and van rates. This method of analysis is consistent with those used by WFRC.

TRAX helps improve air quality because the light-rail system moves large numbers of people with less production of NOx when compared to cars.

As discussed below, we found that TRAX helps air quality because the light-rail system moves large numbers of people with less production of NOx when compared to cars. Additionally, vanpools still generate pollution through their operation, but it is relatively small considering the number of passengers they carry. In contrast, buses do not carry enough

passengers to offset the relatively high amount of NOx they create. Figure 6.2 shows how much NOx is generated by different types of travel modes on a per-vehicle-mile basis.

Figure 6.2 Amount of NOx Created by Vehicle Type. Diesel buses create about 17 times the amount of NOx per mile than personal vehicles.



Sources: The amount of NOx per railcar mile is based on audit analysis of power plant and UTA data. If calculated on a per Rail Train mile basis, an estimated 28.8 grams of NOx is created. Car, vanpool and bus NOx emission amounts provided by WFRC.

Figure 6.2 depicts the grams of NOx produced by cars and UTA's transit services. Cars, buses, and vans produce NOx through auto emissions, and rail produces NOx through the energy creation necessary to power the electric light-rail trains.

Based on the electricity used by TRAX, we estimate that in 2006, light rail created approximately 37 tons of NOx.

Light Rail Provides NOx Benefit. Coal-fired power plants, operated by various power companies, provide the primary energy source for UTA's light-rail system. In addition to producing CO2 as mentioned earlier, power plants also produce NOx. We examined NOx emissions data for two of the largest coal plants in Utah and determined that for each kilowatt of electricity produced, about 1.8 grams of NOx is created by the power plant. Based on the power consumed by TRAX, we estimate that in 2006 light rail created approximately 37 tons of NOx. In comparison, automobiles moving the same number of people would have

created 95 tons of NOx. Thus, we can attribute an 58-ton reduction in NOx in 2006 to TRAX.

In addition, the plants that provide energy for light rail are located outside of urban areas so the pollution they create does not have the same impact as the NOx created in urban areas. DAQ is less concerned about the NOx created by distant power plants because it does not become trapped during inversions as the locally created pollution does.

Considering the average passenger car carries 1.2 passengers, each vanpool's trip replaces about seven cars.

Vanpools Reduces NOx Emissions by Consolidating Trips. In 2006, UTA vanpools averaged 8.7 passengers per trip. Considering the average passenger car carries 1.2 passengers, each vanpool's trip replaces about seven cars. As Figure 6.2 showed, a van produces only slightly more NOx than a car, so replacing seven cars with one van is a significant savings. Based on the total miles traveled by UTA vanpool vehicles in 2006, about 11 tons of NOx were created. In contrast, if all the vanpool passengers had completed their trips in cars, about 65 tons of NOx would have been created. Therefore, we conclude that UTA vanpools led to a 54-ton reduction in NOx emissions in 2006.

Buses Create Significant NOx Emissions. Unlike vans, Figure 6.2 shows that a bus produces much more NOx than an automobile. In fact, WFRC data indicates that in order for a bus to make a positive impact on the emissions of NOx, it has to carry over 21 passengers. Our calculations show that only 8 percent of the revenue miles traveled by UTA buses in 2006 averaged more than 21 passengers on board. Therefore, roughly 92 percent of the revenue miles traveled in buses in 2006 were negatively affecting the air quality as it relates to NOx emissions.

Roughly 92 percent of the revenue miles traveled in buses in 2006 were negatively affecting the air quality as it relates to NOx emissions.

Overall, UTA buses had a sizeably negative NOx impact in 2006 because average bus occupancy was only 8.9, much less than the break-even point of 21 for a positive effect on emissions. Based on UTA's total bus miles traveled (including out-of-service miles), about 461 tons of NOx were created. In contrast, if all the bus trips had been completed by car, only 164 tons of NOx would have resulted. Thus, UTA buses caused a net 297-ton negative impact to air quality.

Bus Emissions Outweigh Benefits to Air Quality Created by Light Rail and Vanpool

While TRAX and vanpools help reduce NOx emissions, the large amount of NOx created by buses outweighs those benefits. In fact, buses create more NOx than if all 2006 transit passenger miles had been traveled in passenger cars. Figure 6.3 summarizes the NOx impact of light rail, vanpool, and bus that was discussed above. The figure shows that, taken as a whole, UTA is a net polluter for NOx.

Figure 6.3 Transit Impact on NOx Pollution. Buses create so much NOx that the reductions from light rail and vanpool are more than offset.

Transit Mode	Tons of NOx Created	Tons of NOx Avoided	Net Tons of NOx Saved
Light Rail	37	95	58
Vanpool	11	65	54
Bus	461	164	(297)
Total	**509**	**324**	**(185)**

The additional NOx pollution created by UTA buses more than offsets the reductions in NOx achieved by light rail and vanpool.

Figure 6.3 shows that UTA had a 183-ton negative impact on NOx pollution in 2006. The 461 tons of NOx pollution created by diesel buses exceed the 164 tons of NOx its passengers would have created if they had commuted in a passenger car. As a result, the added pollution created by buses outweigh the gains made by light rail and vanpool. The data suggests that if more riders used transit, including buses, it would result in better outcomes for air quality. However, at current ridership levels, transit is a net polluter. At the same time, as the following section suggests, the level of pollution caused by transit is not a serious concern because it is small compared to all the other sources of air pollution along the Wasatch Front.

Transit's Impact on Pollution Is So Small It Has Little Impact on the Region's Air Quality

The impact of the 461 tons of NOx created by UTA buses is very small (1 percent) when compared to the 43,695 annual tons of NOx created by the other mobile sources in Davis, Weber, Utah, and Salt Lake counties. So although buses do create more NOx than other transit

services, the effect is relatively small when one takes into account the total pollution being created in the four-county region.

Furthermore, transit will have little positive or negative impact on air quality in the coming years. In their Regional Transportation Plan, the WFRC suggests that the continued growth of transit in the coming years will have little impact on the region's air quality. For example, if light rail were to double ridership and carry 4 percent of all commuters instead of the 2 percent currently carried, the effect on reduced air emissions would be minimal at only 3.4 tons, or .01 percent, of the total NOx emitted in the four counties served by UTA. Of course, these estimates may change as cleaner technologies are developed and deployed.

UTA Has Attempted to Make Buses Better for Air Quality

UTA has already implemented several measures to mitigate bus pollution. UTA should continue to research ways, while keeping costs in mind, to make buses better for air quality as they are the greatest source of NOx pollution when compared to the other modes of transportation.

Regular maintenance of UTA buses helps ensure they are running as efficiently as possible and minimize emissions.

- UTA currently uses a 5 percent biodiesel mix in their buses, which burns cleaner and creates fewer pollutants.
- UTA currently has three hybrid buses in operation, but the purchase price of these buses is somewhat cost restrictive; hybrid buses cost approximately 56 percent more than regular buses.
- UTA performs routine maintenance on the buses to ensure that they are running at their most efficient level.
- UTA has also developed an idling policy, which prevents excessive and unnecessary engine idling and pollution creation. Policies like this one should be monitored and encouraged as a way to save fuel and increase air quality.
- UTA has purchased buses with good insulation and windows with better solar load to better insulate the buses against cold and heat.
- UTA has purchased upgraded buses, for an additional $2,000, that have auxiliary coolant heaters which heat the coolant in the cold months to the optimum running temperature for efficient engine operation.

We believe that UTA recognizes that buses create more NOx. The agency has attempted to utilize improvements in bus engine emissions technology to lessen its impact on air quality along the Wasatch Front.

However, the real benefit in reducing NOx will come from technological improvements in automobile engines, since the vast majority of NOx is created by trucks and automobiles.

Pollution by Cars and Trucks Is Expected to Decrease

Experts predict that the greatest improvements to air quality will come through improved technology rather than through the increased use of transit.

Experts in the control of air pollution predict that the greatest improvements to air quality will come through improved technology rather than through the increased use of transit. Cleaner engines and unleaded fuel as well as catalytic converters have helped to clean up automobile emissions in the past. A Federal Highway Administration report titled *Transportation Air Quality: Selected Facts and Figures 2006*, indicates that NOx emissions have decreased 21 percent since 1983 with similar results in CO emissions. The cause, they say, is more efficient and cleaner engines. Similarly, even stricter emission standards are currently forcing manufacturers to produce engines that produce cleaner vehicle emissions.

The WFRC predicts that by the year 2015, improvements in bus and auto engine technology will reduce the amount of NOx emitted by cars and trucks by 58 percent. Increasing the technology on cars and truck engines, which currently makes up 44 percent of the NOx creation in Utah, will provide the greatest benefit to air quality.

Improvements in bus and auto engine technology will produce reductions in NOx emissions.

UTA understands the importance of technology and is currently trying to replace their bus fleet at a rate that would have buses revolving out of the fleet after 14 years of operation. Fleet replacement is costly as it requires UTA to purchase more buses each year to replace aging buses. Purchasing hybrid buses or buses with the newest technology is more costly still. Yet a quick fleet-replacement policy will have a positive effect on pollution as the newer engines have greater pollution controls and provide benefits to air quality. Currently, UTA has buses older than 14 years in the fleet, which have the fewest pollution controls. As time passes and these buses are replaced, the fleet will have less impact on air quality.

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Chapter VII
Board Independence and Oversight Could Improve

We discovered that the board's internal audit staff have not been adequately used by the board to monitor agency performance and the accuracy of information.

Some of the problems described in this report have led us to ask whether the Board of Trustees is relying too heavily on UTA's management to guide its work. Our concerns about the board's independence increased when we discovered that the term limitations, which are designed to promote independent thinking among board members, have been ignored. Further concerns about the board's independence were raised when we discovered that the board's internal audit staff have not been adequately used by the board to monitor the agency's performance and the accuracy of its information. This chapter identifies several ways the Legislature can strengthen the board's independence and promote greater state-level accountability.

Board Independence Is a Concern

In view of the issues described in the previous chapters of this report, we are concerned about the strength of the board's oversight. We question whether the board is prepared to ask questions regarding such matters as the adequacy of ridership data, the level of taxpayer subsidy, and whether UTA has an appropriate pricing strategy. Compared to other systems we have contacted, UTA's board seems to be less involved than the boards of other major transit agencies in establishing specific expectations of performance. For example, other boards have required that bus routes conform to certain service standards. Other transit boards seem to have a better understanding of the level of subsidy being offered to various transit services and to types of pass holders, and they establish farebox recovery ratios.

The board may be relying too heavily on management to identify the issues to be addressed by the board and the information its uses to make decisions.

We are concerned that UTA's Board of Trustees lacks independence. The board may be relying too heavily on management to identify the issues to be addressed by the board and the information its uses to make decisions. One way to promote independent thinking is to make sure there is sufficient turnover among the members of the board. Term limits are one way to accomplish this goal. Another way the board can

strengthen its independence is to use its internal auditors to verify the accuracy of information provided by management and to independently monitor the activities of the organization.

Board Member Term Limits Need to Be Honored

The recent reappointment of the president of the Board of Trustees to a fourth term is inconsistent with the statutory requirement that board members be limited to "three successive terms." Although the statute appears to be clear on this matter, the Legislature may need to further clarify its intent that board members be limited to three terms.

We are concerned that the current members of the UTA board are at risk of being overly reliant on UTA staff for direction and information.

Term Limits for Board Members Are Designed to Promote Independent Thinking. The purpose of term limits is to ensure that the Board of Trustees is comprised of individuals who can bring fresh thinking and innovative ideas and who feel free to question the thinking of UTA administrative staff. If board members were to serve an unlimited number of terms, they may become entrenched in the organization's way of thinking and be less likely to question the views of the management team and provide an independent review of UTA policy. We are concerned that the current members of the UTA board are at risk of being overly reliant on UTA staff for direction and information.

Utah Law Limits Board Members to Three Two-Year Terms. ***Utah Code*** 17B-2a-807(4)(c) limits the service of a voting member of a public-transit-district Board of Trustees to no more than "three successive full terms." The current board president completed his third term in September 2006 after serving seven years on the board. He then continued his board service while waiting for the Salt Lake Council of Mayors to appoint someone in his place. Even though he had served three terms, the mayors decided in February 2007 that they wanted to reappoint the board president to another term. Although they recognized that board members were limited to "three successive terms," the mayors were advised by UTA's legal counsel that the term limit would not apply if the board president momentarily vacated his current seat and was then appointed to fill another seat on the board that was being vacated midterm.

Legislative Legal Counsel Believe the Term Limit Statute Has Been Misinterpreted. It is the opinion of our legal counsel in the Office of Legislative Research and General Counsel that the term limit statute

has been misapplied. They point out that the Salt Lake County Mayors appoint seven at-large board members. If the term limit applies to each seat separately, then the term limit provision would have no affect. Our legal counsel said:

Legislative legal counsel believe the term limit statute has been misinterpreted.

> If the statute is interpreted to limit a member's service on the board only to the particular seat that the member represents, a board member could serve two three-year terms in one seat and then be appointed to serve in a different seat, and so on. Under that interpretation, a board member would be eligible to serve in as many as seven board positions: 21 terms–a total of 42 years. This interpretation would render the Legislature's term limit statute meaningless.

In our opinion, the intent of the term limit statute is sufficiently clear. However, to avoid the continued misinterpretation of the statute, the Legislature may wish to further clarify its intent that service on a transit-district board be limited to three terms and add language requiring "a two-year hiatus before being eligible to serve on the board again."

Oversight Through Independent Audits Is Necessary

To be effective, a board must be able to independently verify that the information it receives from the administration is accurate and reliable. A board also needs to verify that its policies are being carried out correctly. A board cannot rely solely on the information provided by the administration as the basis for deciding whether its policies are being implemented correctly. For these reasons, governing boards employ internal auditors who may work independently of management's influence to examine the records and the practices of the agencies which the board oversees. However, we found that the board has not been using its internal audit staff as effectively as it should, and the auditors appear closely connected to the management team.

We found that the board has not been using its internal audit staff as effectively as it should and the auditors appear closely connected to the management team.

Internal Auditor Should Focus More on the Board's Needs. We examined the annual work plans used by UTA's internal auditors during the years 2006 and 2007. We found that none of the audits described in the work plans had been requested by the UTA Board of Trustees. Instead, each of their audits was either initiated by the auditors themselves or by UTA management. Even though board members have told us of their concerns about such matters as the amount of compensation paid to

certain administrators or the accuracy of the passenger counts, they have not been relying on their internal auditors to answer those concerns.

The concerns we raised about the passenger data, as described in Chapter II, provide a good example of the problems that could have been addressed by the internal auditors if the board had been using them as they should. Two years before we conducted our audit of the passenger counts, the UTA board and management had been told by outside consultants that there were problems with the passenger counts. Once the problem had been identified, the board should have directed its internal audit staff to examine the methods used to collect passenger data and to verify the accuracy of the passenger counts reported to the board. However, this was not done and, as mentioned in Chapter II, the agency continues to have problems collecting accurate passenger counts.

UTA may have avoided the current problems with its passenger counts if it had used its internal auditors to respond to prior reports that the data was not accurate.

Representatives from the National Transit Database (NTD) report that other transit agencies rely on internal auditors to verify the accuracy of the program data submitted to the NTD, including the passenger counts. UTA internal auditors report that they examine the ridership data each year, but during their cursory review, they did not identify any problems. However, they also report that they did not conduct tests to verify the reliability of the data and, until we uncovered problems with the data, had not been asked by the board to monitor the passenger data. Had the board requested such work of its auditors, they might have avoided many of the problems with the passenger data that are described in Chapter II of this report.

Internal Auditors Need to Be Independent. We found that the UTA Board of Trustees rarely relies on its internal audit staff to address its concerns. Although the internal auditor has done a few projects at the request of UTA's management team, the majority of projects are identified by the internal auditor himself. While the board's finance committee has reviewed and approved the auditor's work program and the internal auditor does submit reports to the board, in some ways, the internal audit staff appear to us to serve more as a resource to the management team than as an independent resource of the Board of Trustees. This situation could be rectified if the board were to take a more active role in using the internal auditors for their purposes, by requesting audits that meet their needs and by following up on recommendations. This would be beneficial to the organization because it

would provide the independent review that is necessary for the board to effectively monitor the agency's activities.

We recommend that the board provide direction in developing audits for the internal audit staff focusing on those areas which are the most critical to the success of the organization as defined by the board. The audit staff should report their findings to the board audit committee apart from the agency. The board's role is then to follow up with agency management to see that the audit recommendations were addressed to their satisfaction.

In conclusion, the Board of Trustees can become a stronger, more independent governing body. This can be accomplished, in part, by complying with the term limit requirements and by utilizing the internal auditors more effectively. In addition, however, the following describes several steps the Legislature might take to further strengthen the independence of the Board of Trustees.

Legislature Should Consider Making UTA More Accountable

In view of the concerns raised about the board's independence and the agency's growing importance in the state, it may be necessary for the Legislature to take steps to provide UTA with better oversight and to hold the agency more accountable for its use of public funds. Although UTA is a special-service district that is governed by the local entities it serves, it has become one of the largest governmental entities in the state. For this reason, the Legislature should consider some of the strategies that other states have taken to provide their transit agencies with the level of oversight they need.

UTA Is a Local Government Entity With Statewide Influence

UTA may require more state-level oversight than special districts normally receive.

UTA is unlike most special districts due to its size and importance to the overall state economy. For this reason, UTA may require more state-level oversight than special districts normally receive. Because it is a special district, UTA has a Board of Trustees that is appointed by local government authorities. However, UTA's service region includes 79 percent of the state's population, and it has a yearly operating budget

of $200 million. The only local government entity in the state with a larger budget is Salt Lake City. In addition, the agency is preparing to spend $18 billion during the next 23 years as it expands its transit system. Considering the important role that UTA plays, it may be prudent for the Legislature to provide the agency with more state-level oversight than special districts normally receive.

The Legislature May Take Steps to Strengthen Governance and Improve Accountability

We identified several other major transit agencies in other states in which the board seems to have avoided many of the problems described in earlier chapters of this report. One reason may be that their boards provide greater oversight of the transit agency than does UTA's Board of Trustees. These other boards have required the bus systems to abide by certain minimum service standards, they provide greater oversight of the pricing of services and they know the level of subsidy that is offered for specific services and types of fare passes. Furthermore, these transit agencies do not seem to have the same problem generating accurate passenger data as UTA has had. The following describes some of the strategies that other states have used to strengthen their oversight of transit agencies.

We identified other major transit agencies in which some board members are appointed by the Governor and the Legislature.

Governor and Legislature Can Make Appointments to the Board. We found that major transit agencies use many different approaches to appoint members to their boards of directors. UTA's method of having the various local government entities appoint members to the board is a common practice. However, in some states one or more board members are appointed by the Governor or the Legislature. For example, the Chicago Transit Authority has a seven-member board, of which two members are appointed by the Governor, and five by the Mayor of the City of Chicago. All seven members of the board for New Jersey Transit and the board for Portland's Trimet transit system are appointed by the Governor. The Massachusetts Bay Transportation Authority has a nine-member board that is appointed by the Governor. Five are at-large members, while the remaining represent specific jurisdictions. The Southeastern Pennsylvania Transportation Authority has a 15-member board of which one member is appointed by the Governor, four by legislative leaders, and the remaining members by local elected officials.

Governor Can Appoint the Chairman of the Board. The board for New York's Metropolitan Transit Authority is comprised of 17 board members, of which five members and the chairman are appointed by the Governor. By having the Governor appoint the chairman of the board and several board members, the board provides some level of accountability back to the state's chief executive.

Transit Boards Can be Publicly Elected. One way to make the Board of Trustees more responsive and accountable is to make them answer directly to voters through elections. For example, the Board of Trustees in Denver, Colorado is publicly elected to four-year terms with seven elected in one general election and eight in the next. Salem, Oregon follows a similar method with their seven-member board being elected every four years. The members of the board for the Bay Area Rapid Transit in California are also elected by the public.

In the state of New York, the Inspector General (the equivalent to UTA's internal auditor), is appointed by Governor and approved by the state House and Senate.

Internal Auditor Can be Appointed by Governor with Legislative Approval. In the state of New York, the Inspector General, which is equivalent to UTA's internal auditor, is appointed by the Governor and approved by the state House and Senate. This practice allows the Governor and the Legislature to maintain some level of oversight.

Legislature Can Establish Minimum Farebox Recovery. As mentioned in Chapter V, the UTA Board of Trustees could impose a minimum farebox recovery ratio. However, there are states in which the minimum farebox recovery ratio is established in state law. We view this as a means of imposing a certain level of discipline that would otherwise be present if the agency were subject to normal market forces. For example, the Maryland Legislature has set the farebox recovery ratio at 40 percent with a cost recovery goal of 50 percent. Similarly, California's Regional Transit Authority (RTA) has set minimum farebox recovery limits for urban and non-urbanized routes in an effort to hold the transit agencies accountable. Colorado requires a 30 percent minimum farebox recovery ratio but allows a transit agency to add revenue from other sources (such as from advertising) to accomplish that requirement. Of course, for UTA, the Legislature would need to establish a farebox recovery ratio that is suitable for the conditions found in Utah and not try to apply a rate required by other states.

Some legislatures also provide budgetary oversight for their regional transit agencies.

Budget Can be Reviewed by Legislative Committee. Some Legislatures also provide oversight of the budgets of their regional transit

agencies. The Colorado General Assembly, for example, has a Transportation Legislation Review Committee that provides guidance to Denver's Regional Transportation District and, among other things,

reviews and approves the transit agency's long-term, comprehensive funding plan.

To summarize, if the Legislature is concerned about the independence of the Board of Trustees and their ability to hold UTA accountable, there are several steps the Legislature could take to participate in UTA's governance. It is certainly worth considering in view of the large amount of money being spent in the next several years and the impact that UTA has on nearly all the state's residents.

Recommendations

1. We recommend that the Legislature clarify its intent that service on a transit district Board of Trustees be limited to three terms by adding language requiring "a two-year hiatus before being eligible to serve on the Board of Trustees again."

2. We recommend that the UTA Board of Trustees verify compliance with its policies by requiring and requesting internal audits.

3. If the Legislature is concerned about the level of oversight and accountability they provide to the UTA Board of Trustees, we recommend they consider some of the strategies used by other states.

Appendices

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Appendix A:
Calculation of UTA's 2006 Costs Per Passenger Boarding and 2006 Subsidy Per Passenger Boarding

Annual Operating Costs, Annual Passenger Fare Revenue, and *Passenger Boardings* figures presented in this appendix were obtained from data reported by UTA in the National Transit Database. *Total Cost* figures presented in this appendix have both operating and capital cost components. We worked with UTA staff to properly identify (and allocate where necessary) those costs for each of the different modes.

Operating Costs

2006 Operating Cost Per Passenger Boarding:

	Annual Operating Costs	Annual Passenger Boardings	Operating Cost Per Boarding
Bus	$ 94,016,983	21,598,392	$ 4.35
Light Rail	$ 23,131,704	15,203,660	$ 1.52
Paratransit	$ 16,355,021	476,039	$ 34.36
Vanpool	$ 3,320,527	1,316,599	$ 2.52
Total	$ 136,824,235	38,594,690	$ 3.55

Bus and Light Rail	$ 3.18

2006 Revenue Per Passenger Boarding:

	Annual Passenger Fare Revenue	Annual Passenger Boardings	Revenue Per Boarding
Bus	$ 13,938,564	21,598,392	$ 0.65
Light Rail	$ 7,478,060	15,203,660	$ 0.49
Paratransit	$ 1,322,303	476,039	$ 2.78
Vanpool	$ 1,182,196	1,316,599	$ 0.90
Total	$ 23,921,124	38,594,690	$ 0.62

Bus and Light Rail	$ 0.58

2006 Subsidized Portion of Operating Cost Per Boarding:

	Operating Cost Per Boarding	Operating Cost Recovered Through Revenue Per Boarding	Subsidized Operating Cost Per Boarding	Subsidized Percentage of Operating Cost Per Boarding
Bus	$ 4.35	$ 0.65	$ 3.71	85%
Light Rail	$ 1.52	$ 0.49	$ 1.03	68%
Paratransi	$ 34.36	$ 2.78	$ 31.58	92%
Vanpool	$ 2.52	$ 0.90	$ 1.62	64%
Total	$ 3.55	$ 0.62	$ 2.93	83%

Bus and Light Rail	$ 2.60	82%

Total Costs*

2006 Total Cost Per Passenger Boarding:

	Annual Total Costs	Annual Passenger Boardings	Total Cost Per Boarding
Bus	$ 110,396,062	21,598,392	$ 5.11
Light Rail	$ 53,361,912	15,203,660	$ 3.51
Paratransit	$ 17,528,353	476,039	$ 36.82
Vanpool	$ 4,647,831	1,316,599	$ 3.53
Total	$ 185,934,157	38,594,690	$ 4.82

Bus and Light Rail	$ 4.45

2006 Revenue Per Passenger Boarding:

	Annual Passenger Fare Revenue	Annual Passenger Boardings	Revenue Per Boarding
Bus	$ 13,938,564	21,598,392	$ 0.65
Light Rail	$ 7,478,060	15,203,660	$ 0.49
Paratransit	$ 1,322,303	476,039	$ 2.78
Vanpool	$ 1,182,196	1,316,599	$ 0.90
Total	$ 23,921,124	38,594,690	$ 0.62

Bus and Light Rail	$ 0.58

2006 Subsidized Portion of Total Cost Per Boarding:

	Total Cost Per Boarding	Total Cost Recovered Through Revenue Per Boarding	Subsidized Total Cost Per Boarding	Subsidized Percentage of Total Cost Per Boarding
Bus	$ 5.11	$ 0.65	$ 4.47	87%
Light Rail	$ 3.51	$ 0.49	$ 3.02	86%
Paratransi	$ 36.82	$ 2.78	$ 34.04	92%
Vanpool	$ 3.53	$ 0.90	$ 2.63	75%
Total	$ 4.82	$ 0.62	$ 4.20	87%

Bus and Light Rail	$ 3.87	87%

* Total Costs = Operating Costs + Capital Costs

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Appendix B:
Calculation of UTA's 2006 Costs Per Passenger Linked Trip and 2006 Subsidy Per Passenger Linked Trip

Annual Operating Costs, Annual Passenger Fare Revenue, and *Passenger Boardings* figures presented in this appendix were obtained from data reported by UTA in the National Transit Database. *Total Cost* figures presented in this appendix have both operating and capital cost components. We worked with UTA staff to properly identify (and allocate where necessary) those costs for each of the different modes.

Appendix A expressed cost statistics in terms of *passenger boardings*. Costs in this appendix are shown in terms of *linked trips*. A *linked trip* refers to the sum of a passenger's initial boarding and any transfer boardings incurred in the passenger's trip from point of departure to destination. In 2006, UTA conducted a series of onboard surveys from which ridership and transfer statistics for the bus and rail modes were obtained. The transfer data in those surveys shows which boardings are part of linked trips. The linked trips to boardings ratios that we observed in the 2006 onboard surveys were applied to the annual passenger boardings figures (used in Appendix A) in order to arrive at estimates of the annual linked trips made by UTA passengers in 2006.

Operating Costs

2006 Operating Cost Per Passenger Linked Trip:

	Annual Operating Costs	Estimate of Annual Linked Trips	Operating Cost Per Linked Trip
Bus	$ 94,016,983	12,279,000	$ 7.66
Light Rail	$ 23,131,704	9,880,000	$ 2.34
Paratransit	$ 16,355,021	476,039	$ 34.36
Vanpool	$ 3,320,527	1,316,599	$ 2.52
Total	$ 136,824,235	23,951,638	$ 5.71

Bus and Light Rail	$ 5.29

2006 Revenue Per Passenger Linked Trip:

	Annual Passenger Fare Revenue	Estimate of Annual Linked Trips	Revenue Per Linked Trip
Bus	$ 13,938,564	12,279,000	$ 1.14
Light Rail	$ 7,478,060	9,880,000	$ 0.76
Paratransit	$ 1,322,303	476,039	$ 2.78
Vanpool	$ 1,182,196	1,316,599	$ 0.90
Total	$ 23,921,124	23,951,638	$ 1.00

Bus and Light Rail	$ 0.97

2006 Subsidized Portion of Operating Cost Per Linked Trip:

	Operating Cost Per Linked Trip	Operating Cost Recovered Through Revenue Per Linked Trip	Subsidized Operating Cost Per Linked Trip	Subsidized Percentage of Operating Cost Per Linked Trip
Bus	$ 7.66	$ 1.14	$ 6.52	85%
Light Rail	$ 2.34	$ 0.76	$ 1.58	68%
Paratransit	$ 34.36	$ 2.78	$ 31.58	92%
Vanpool	$ 2.52	$ 0.90	$ 1.62	64%
Total	$ 5.71	$ 1.00	$ 4.71	83%

Bus and Light Rail	$ 4.32	82%

Appendix C:
Summary of NTD Rankings for UTA and Peers

UTA's 2006 Comprehensive Annual Financial Report contains 2005 statistical data for other transit agencies in the U.S. which, after review, we accept as being comparable to UTA. This appendix contains 2006 data for those agencies.

2006 Performance Measures - Bus Service

	Service Area Statistics		Service Efficiency		Cost Effectiveness				Service Effectiveness	
City	Population per Square Mile	Rank (Highest to Lowest)	Operating Cost per Vehicle Mile	Rank (Highest to Lowest)	Operating Cost per Passenger Mile	Rank (Highest to Lowest)	Operating Cost per Boarding	Rank (Highest to Lowest)	Passenger Boardings per Vehicle Mile	Rank (Highest to Lowest)
Arlington Heights, IL	2,208.44	15	$6.37	17	$0.58	20	$3.87	10	1.65	20
Buffalo, NY	750.58	24	$8.47	5	$1.15	4	$4.18	9	2.03	12
Cincinnati, OH	3,226.35	8	$6.61	15	$0.56	21	$2.88	18	2.30	7
Cleveland, OH	3,083.28	10	$8.05	7	$0.79	13	$2.84	20	2.84	5
Dallas, TX	3,266.04	7	$7.47	9	$0.83	11	$3.66	11	2.04	11
Denver, CO	1,125.97	23	$6.46	16	$0.64	15	$3.39	13	1.90	17
Detroit, MI	2,938.84	12	$6.78	12	$0.91	9	$7.31	1	0.93	25
Fort Worth, TX	2,081.62	18	$6.64	14	$0.85	10	$4.28	7	1.55	22
Honolulu, HI	3,163.02	9	$7.65	8	$0.43	25	$1.96	24	3.91	1
Houston, TX	2,176.65	17	$6.73	13	$0.53	22	$3.04	16	2.21	9
Kansas City, MO	1,962.71	19	$6.85	11	$1.12	5	$4.19	8	1.63	21
Las Vegas, NV	6,415.64	2	$6.19	19	$0.49	23	$1.77	25	3.50	2
Louisville, KY	2,666.98	14	$6.31	18	$0.93	7	$3.34	14	1.89	18
Omaha, NE	2,820.17	13	$4.66	25	$1.43	3	$4.61	5	1.01	24
Orange, CA	6,253.12	3	$8.34	6	$0.70	14	$2.87	19	2.91	3
Orlando, FL	595.01	25	$5.21	23	$0.47	24	$2.88	17	1.81	19
Phoenix, AZ	2,961.94	11	$6.15	20	$0.58	18	$2.25	23	2.73	6
Portland, OR	2,183.80	16	$8.79	4	$0.82	12	$3.08	15	2.85	4
Sacramento, CA	3,998.79	5	$10.50	3	$1.48	2	$4.81	4	2.18	10
San Antonio, TX	1,226.07	22	$5.22	22	$0.58	19	$2.28	22	2.29	8
San Carlos, CA	7,598.97	1	$12.07	2	$1.11	6	$5.99	3	2.01	13
San Diego, CA	3,580.93	6	$4.89	24	$0.64	16	$2.43	21	2.01	14
San Jose, CA	5,397.50	4	$12.18	1	$1.60	1	$6.21	2	1.96	16
St. Louis, MO	1,753.61	20	$6.96	10	$0.93	8	$3.52	12	1.98	15
Average			$7.31		$0.84		$3.65		2.17	
Salt Lake City (UTA)	1,235.42	21	$5.62	21	$0.63	17	$4.35	6	1.29	23

2006 Performance Measures - Light Rail

	Service Efficiency		Cost Effectiveness				Service Effectiveness	
City	Operating Cost per Vehicle Mile	Rank (Highest to Lowest)	Operating Cost per Passenger Mile	Rank (Highest to Lowest)	Operating Cost per Boarding	Rank (Highest to Lowest)	Passenger Boardings per Vehicle Mile	Rank (Highest to Lowest)
Buffalo, NY	$27.15	1	$1.51	1	$3.72	3	7.30	1
Cleveland, OH	$14.94	4	$0.59	6	$3.43	5	4.36	4
Dallas, X	$15.76	3	$0.59	5	$4.32	2	3.65	8
Denver, CO	$7.98	9	$0.59	4	$3.09	6	2.58	10
Portland, OR	$10.97	6	$0.39	7	$2.02	8	5.42	2
Sacramento, CA	$13.15	5	$0.65	3	$3.54	4	3.72	7
San Diego, CA	$6.73	10	$0.26	10	$1.63	9	4.14	5
San Jose, CA	$19.17	2	$1.29	2	$6.51	1	2.95	9
St. Louis, MO	$9.31	7	$0.34	8	$2.46	7	3.79	6
Average	$13.91		$0.69		$3.41		4.21	
Salt Lake City (UTA)	$8.18	8	$0.27	9	$1.52	10	5.38	3

2006 Performance Measures - Paratransit

	Service Efficiency		Cost Effectiveness				Service Effectiveness	
City	Operating Cost per Vehicle Mile	Rank (Highest to Lowest)	Operating Cost per Passenger Mile	Rank (Highest to Lowest)	Operating Cost per Boarding	Rank (Highest to Lowest)	Passenger Boardings per Vehicle Mile	Rank (Highest to Lowest)
Arlington Heights, IL	$3.66	14	$3.48	8	$23.56	18	0.16	6
Buffalo, NY	$4.62	4	$5.58	2	$50.35	1	0.09	20
Cincinnati, OH	$3.75	12	$2.83	14	$29.57	10	0.13	12
Cleveland, OH	$6.36	1	$5.88	1	$42.04	2	0.15	7
Denver, CO	$4.16	8	$3.94	7	$32.86	7	0.13	13
Detroit, MI	$5.48	2	$3.33	9	$24.09	17	0.23	1
Fort Worth, TX	$3.00	17	$2.42	16	$28.66	12	0.10	19
Honolulu, HI	$5.12	3	$2.27	19	$28.20	13	0.18	4
Houston, TX	$2.41	21	$1.98	22	$21.75	20	0.11	16
Kansas City, MO	$3.53	15	$2.68	15	$18.60	21	0.19	2
Las Vegas, NV	$4.38	6	$2.93	11	$32.82	8	0.13	8
Louisville, KY	$2.36	22	$2.33	18	$26.71	14	0.09	21
Omaha, NE	$3.08	16	$4.30	5	$26.24	15	0.12	15
Orlanda, FL	$2.44	20	$2.01	21	$28.98	11	0.08	22
Phoenix, AZ	$3.75	13	$3.99	6	$33.94	6	0.11	18
Portland, OR	$4.16	9	$2.91	12	$25.73	16	0.16	5
Sacramento, CA	$4.16	10	$4.45	4	$37.61	3	0.11	17
San Antonio, TX	$2.83	19	$2.04	20	$22.28	19	0.13	11
San Carlos, CA	$4.32	7	$4.50	3	$36.02	4	0.12	14
San Diego, CA	$2.98	18	$2.38	17	$15.98	22	0.19	3
St. Louis, MO	$3.95	11	$3.17	10	$30.47	9	0.13	9
Peer average	$3.83		$3.30		$29.36		0.14	
Salt Lake City (UTA)	$4.39	5	$2.89	13	$34.36	5	0.13	10

2006 Performance Measures - Vanpool

	Service Efficiency		Cost Effectiveness				Service Effectiveness	
City	Operating Cost per Vehicle Mile	Rank (Highest to Lowest)	Operating Cost per Passenger Mile	Rank (Highest to Lowest)	Operating Cost per Boarding	Rank (Highest to Lowest)	Passenger Boardings per Vehicle Mile	Rank (Highest to Lowest)
Arlington Heights, IL	$0.60	3	$0.13	3	$3.07	4	0.20	3
Dallas, TX	$0.30	7	$0.03	7	$1.17	7	0.26	1
Denver, CO	$0.50	4	$0.11	4	$5.26	2	0.09	7
Houston, TX	$0.44	6	$0.06	5	$1.89	6	0.24	2
Kansas City, MO	$0.74	2	$0.15	1	$5.35	1	0.14	6
Orlanda, FL	$0.75	1	$0.14	2	$4.13	3	0.18	5
Peer Average	$0.56		$0.10		$3.48		0.18	
Salt Lake City (UTA)	$0.48	5	$0.06	6	$2.52	5	0.19	4

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Appendix D:
Cost Measures of Transit Service

This appendix provides source data, formulas, and computations for certain cost measures cited in the report.

Activity Measures

	Passengers (unlinked trips)	Total Vehicle Miles	Revenue Vehicle Miles	Passenger Miles	Average Trip Length	Average Vehicle Occupancy
Bus Service	21,598,392	19,548,645	16,732,379	148,984,636	6.9	8.9
Light Rail	15,203,660	2,841,912	2,827,710	86,039,042	5.66	30.43
Paratransit	476,039	4,393,853	3,727,323	5,665,436	11.9	1.52
Rideshare	1,316,599	6,821,625	6,900,915	58,598,969	44.51	8.7
Total	38,594,690	33,606,035	30,188,327	299,288,083	7.75	9.97

Sources and Formulas

Total Costs: **Operating costs plus capital costs.**

Operating Costs: **From data reported by UTA in the National Transit Database. Operating costs relate to building and vehicle maintenance, salaries, unit operations, and overhead.**

Capital Costs: **Capital cost figures in this and the other appendices represent the 2006 depreciation amounts (also known as the "current portion") of UTA's total capital expenditures. Where a capital expenditure relates to more than one mode, the amount of capital cost (or depreciation) assigned to a particular mode is based on that mode's contribution to total *operating* costs.**

Passengers: **The number of boardings for each transit mode reported to the National Transit Database.**

Total Vehicle and Revenue Miles: **Revenue miles represent total vehicle miles traveled minus deadhead miles. These statistics are also reported in the National Transit Database.**

Passenger Miles: **Obtained from UTA on-board survey results and reported National Transit Database.**

Average Trip Length: **Passenger miles divided by passengers.**

Average Vehicle Occupancy: **Passenger miles divided by revenue vehicle miles.**

Utah Transit Authority
2006

Cost of Services

	Operating Costs	Cost per Passenger	Cost Per Revenue Vehicle Mile	Cost Per Passenger Mile
Bus Service	$94,016,983	$4.35	$5.62	$0.63
Light Rail	$23,131,704	$1.52	$8.18	$0.27
Paratransit	$16,355,021	$34.36	$4.39	$2.89
Rideshare	$3,320,527	$2.52	$0.48	$0.06
Total	$136,824,235	$3.55	$4.53	$0.46

	Capital Costs	Cost per Passenger	Cost Per Revenue Vehicle Mile	Cost Per Passenger Mile
Bus Service	$16,379,079	$0.76	$0.98	$0.11
Light Rail	$30,230,208	$1.99	$10.69	$0.35
Paratransit	$1,173,332	$2.46	$0.31	$0.21
Rideshare	$1,327,304	$1.01	$0.19	$0.02
Total	$49,109,923	$1.27	$1.63	$0.16

	Total Costs	Cost per Passenger	Cost Per Revenue Vehicle Mile	Cost Per Passenger Mile
Bus Service	$110,396,062	$5.11	$6.60	$0.74
Light Rail	$53,361,912	$3.51	$18.87	$0.62
Paratransit	$17,528,353	$36.82	$4.70	$3.09
Rideshare	$4,647,831	$3.53	$0.67	$0.08
Total	$185,934,157	$4.82	$6.16	$0.62

Agency Response

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UTAH TRANSIT AUTHORITY

UTA

3600 South 700 West

P.O. Box 30810

Salt Lake City, UT 84130

January 21, 2008

John M. Schaff, CIA
Utah State Auditor General
W315 Utah State Capitol Complex
Salt Lake City, Utah 84114

Dear Mr. Schaff,

On behalf of the Utah Transit Authority, thank you for the opportunity to respond to the Performance Audit of the Utah Transit Authority, dated January 11, 2008. We appreciate the extensive effort your team has dedicated over the last several months. We are pleased that we are able to constructively respond to the audit's recommendations and have already commenced the implementation of appropriate solutions. We also appreciate that the audit recognized that transit growth is outpacing population and traffic growth, currently carrying 300 million passenger miles per year, and that the agency has been extremely effective at securing federal dollars.

As an organization with an adopted culture of continuous improvement, UTA is regularly subject to audits by federal agencies, oversight and regulatory agencies, transit industry auditors, financial entities, and more. Since 1997, UTA has been subject to 86 audits covering every aspect of the agency including procurement, administration, finance and budgeting, operations performance, ADA compliance, DBE programs and capital project construction. Additionally, for every major UTA capital project, formal reviews are conducted by federal oversight agencies on a monthly basis.

The underlying purpose of any audit is to evaluate an organization's practices and identify areas for improvement, and this audit is no exception. UTA welcomes this audit, and offers the following comments and additional information - taken chapter by chapter - about the actions UTA is taking with regard to the audit's findings and recommendations. In general, UTA acknowledges the findings and recommendations of the audit. However, although we recognize the issues with NOx, UTA contributes to improved air quality with a savings in total pollutants. Additional information is provided in the section on Chapter 6.

Chapter I: Introduction

UTA is an achievement-focused organization. The management decisions and systems are designed to accomplish the mission and goals of the agency, as determined by the Board of Trustees, serving a broad and diverse set of stakeholders and balancing competing objectives. Fares are set to maximize both ridership and revenue. Services are designed to support a variety of travel needs and rider markets. Labor contracts are designed to maintain a professional workforce and be economical. Rail lines are built with a "bare bones / no frills" philosophy, delivering a high quality service at a low cost.

UTA has endeavored to balance the interests of its numerous stakeholders, while accomplishing an ambitious set of objectives year after year, some of which include:

- Since 1998, UTA has secured over $1.5 billion in discretionary federal funding (including the FrontRunner: Weber County to Salt Lake City project and the Memorandum of Understanding for the FrontLines 2015 program). Through this effort, UTA has introduced innovative funding strategies and influenced federal law to provide more flexibility and increase federal funding opportunities.
- Since 1999, UTA has completed three major light rail projects on time and under budget - rarely achieved within other transit agencies within the United States.
- UTA's administrative overhead for major capital projects is one-third to one-half of the industry average. Additionally, UTA has saved hundreds of millions of dollars in project scope and construction costs, making UTA one of the lowest cost-per-mile rail programs in the country.
- This year, UTA will open three major new lines – Frontrunner commuter rail, TRAX to the Salt Lake Intermodal Hub, and the MAX bus rapid transit line on 3500 South. All three lines are projected to be completed ahead of schedule and under budget.
- In 2005, UTA became the first transit agency to achieve ISO 9001 quality management system certification and ISO 14001 environmental management system certification. This demonstrates UTA's commitment to effective, efficient and ethical management practices.
- UTA is one of only six organizations to achieve the partner level in the Clean Utah program.
- In 2002, UTA designed and implemented the spectator transportation for the Olympic Winter Games. Hailed as one of the best Olympic transportation plans ever, UTA carried over 4 million people during the 2002 Olympic Winter Games.
- UTA has implemented several initiatives to improve the efficiency of Paratransit services while also improving quality of service to its Paratransit customers.
- In 2006, UTA piloted the first contactless, credit card supported electronic payment system in the transit industry on its Ski bus fleet, and will implement the program system-wide. This unique technology will improve customer convenience, provide for the implementation of distance-based fares, expand public-private partnerships, and allow UTA to design routes and schedules to better meet customer needs.
- UTA is a nationally-recognized transit agency, having received the American Public Transportation Association's (APTA) "Outstanding Public Transportation System" three times, and having received the prestigious John Volpe award for safety.
- In 2006, through an innovative "interest-based" negotiation process, UTA and the Amalgamated Transit Union (ATU) settled the labor contract three months early. Since that contract was settled, UTA and ATU have implemented creative solutions to several other issues, including increasing skills and retention of maintenance technicians, creating a new type of service that blends Paratransit and regular service, and reducing unscheduled absences by allowing operators to trade work.
- In 2003, UTA implemented a comprehensive organizational restructuring that provided a flattened, more flexible and responsive organization that resulted in improved ridership, on-time reliability and frequency of service, while planning, funding and building multiple major construction projects simultaneously.
- In 2002, UTA executed one of the largest transit right-of-way purchases in the United States, preserving 175 miles of valuable railroad corridors along the Wasatch Front and setting the stage to construct rail projects at a fraction of the cost-per-mile that other communities will have to pay.
- In collaboration with the Amalgamated Transit Union, UTA has secured over $1 million in incumbent worker training funds for UTA and other transit agencies in the state.
- UTA's vanpool program has increased six-fold over the past ten years - from 70 vanpools to over 400 - providing a high quality and highly efficient commute for thousands of people.

- UTA purchased 29 used light rail vehicles from San Jose, CA. These vehicles, even after full rehabilitation, will be less than one-fifth the cost of new light rail vehicles. The purchase saved tens of millions of dollars while allowing UTA to expand TRAX capacity quickly in response to increased ridership demand.
- Since UTA implemented an automated vehicle locating system on the bus fleet, on-time reliability of bus service has increased 19 percent. This technology also allows UTA to provide drivers with real-time feedback about on-time performance, modify schedules and change driver behavior.

Chapter II: Unreliable Passenger Data Makes Analysis Difficult

UTA Management Agrees with Passenger Data Recommendations
The audit recommends improvements in the survey procedures for passenger counting, more widespread implementation of automated counting systems, and more frequent on-board surveys. UTA agrees with these three recommendations and has already taken steps to implement them. UTA is working through specific action plans in bus, TRAX and Frontrunner; including manual and automated counting.

The audit commented that UTA counts bus and rail ridership according to individual boardings, as opposed to complete or "linked" passenger trips. UTA acknowledges this methodology; it is standard in the transit industry and mirrors the methodology used by highway departments to produce traffic counts.

UTA has made significant improvements to ensure that employees performing and supervising ridership counting and reporting are fully capable to detect and correct data problems. UTA has also retained the services of a leading national consultant to review the agency's ridership counting issues and to assist UTA in developing more automated and accurate ridership counting systems.

The UTA Board of Trustees is aware of the ridership counting issues. The Finance and Operations Committee of the Board has been charged to oversee the restatement of TRAX ridership counts for 2007 and ensure the integrity of future ridership counting procedures.

NTD Reporting Corrected
Since 2004, UTA has been refining its procedures for collecting ridership information for the National Transit Database (NTD). While NTD ridership information has never been used by UTA for strategic or operational decision making, it is important that it be accurate and in conformance with federal requirements.

After observing large differences in the NTD and bus driver counts for 2004, UTA determined that the NTD count suffered from an inadequate sample size and non-randomized sample trips. By implementing a larger, more randomized sample, NTD and bus driver counts returned to comparable levels as of 2005. As the audit team pointed out, NTD and bus driver counts were relatively close in prior years.

UTA is confident that it can provide acceptable rider counts to the NTD using a manual sample process; however, UTA agrees with the audit team that it should continue to work toward utilizing the APC's for NTD counts.

UTA Data is Used for Strategic and Operational Decisions
While bus driver counts and TRAX surveyor counts are based on samples that inherently contain statistical variation, counting procedures have been consistent from year to year and have provided UTA with information to gauge performance of its various transit modes and business units. For example, over 90 percent of the bus routes with higher than average taxpayer subsidy (what UTA calls investment per rider) have been modified in some fashion in the past two years.

Since 1999, UTA has maintained roughly the same number of bus miles, but has streamlined bus routes overall from 162 to 98 routes (excluding seasonal service), and reduced the average time between buses from 35 minutes to 27 minutes. The result is a more efficient, more reliable bus service that better serves customers.

Rail Expansion Affects Bus Ridership
UTA expected and planned for initial declines in bus ridership as rail lines were built. The rail lines often replace the most productive bus service. However, each bus system overhaul has produced significant ridership increases. The UTA Board of Trustees is closely monitoring the most recent Salt Lake bus system redesign. A preliminary evaluation of the first three months since the redesign, reported to the Board's Finance and Operations Committee, indicates that bus ridership in Salt Lake County is on an upward trend.

Chapter III: UTA's Budget Growth Fueled by Sales Tax Receipts

Growth Has Followed Plans Established by Local Government Leaders
UTA came into being under the auspices of two metropolitan planning organizations, the Wasatch Front Regional Council (WFRC) and the Mountainlands Association of Governments (MAG). Capital projects undertaken by UTA since the early 1970's have been part of the approved short and long-range plans of the local elected officials that comprise the two MPOs. Like highways, transit could not function without public financial support. Highways typically receive their funding from the legislature through gas taxes or other state revenues. Transit's funding has come from local option sales taxes, authorized by the state legislature but approved in a general referendum by voters.

In the mid 1980's, the WFRC began to study with UTA and UDOT, the need for major transportation improvements to the I-15 corridor to cope with congestion, environmental issues and the aging freeway system. A Light Rail Corridor was identified and made part of the long range plan. With federal support, UTA was able to build and open the first TRAX line in 1999. As successful as the line was, it was determined that additional rail extensions to the University of Utah and Ogden were in order and they became part of the plan. Local government leaders in Salt Lake, Davis and Weber Counties placed a ¼-cent sales tax referendum on the ballot in 2000 to improve the transit system. The referendum passed; the first phase of the University Line opened in 2001 and the extension to the Medical Center opened in 2003. Work also began on commuter rail to Weber County, which will open in Spring 2008.

Subsequent to the referendum passed in 2000, the local elected officials within WFRC and MAG, recognizing the state of crisis developing in the regional transportation network, began developing a new Long Range Transportation Plan through the year 2030, which would be a balanced program of highways and transit. Over several years a detailed plan, identifying priorities, funding strategies and phasing emerged and was approved by both MPOs. Legislative authorization was sought and achieved, and another referendum for a ¼-cent sales tax was held in Salt Lake and Utah Counties in November 2006 to fund the first phase of the plan. This

referendum also passed, placing another challenge to UTA to build 70 new miles of light rail and commuter rail by 2015.

As a result of the referendums of 2000 and 2006, UTA's revenue has increased rapidly in order to complete the projects and continuously operate them, as directed by local government, in significantly accelerated time frames. Federal funds alone will not be sufficient to support this rate of expansion, so UTA's strategy is to find innovative ways to secure the maximum level of discretionary funding.

UTA's Executive Compensation is in Line with Appropriate Market Data
The Utah Legislature commissioned an audit of UTA's compensation practices in 1990. UTA implemented the audit recommendations to establish and follow a formal compensation policy. The following describes the compensation practices and processes that UTA has incorporated.

UTA's Department of Human Resources staff are Certified Compensation and Benefits Professionals that follow generally accepted compensation practices and UTA Corporate Policy and Standard Operating Procedures in the practice of market matching jobs. UTA also contracts with an independent Compensation Professional who audits UTA's compensation program and verifies that the market matches used are accurate and relevant.

UTA uses market data that is relevant to the agency's recruiting market and that will help the agency attract and retain talent within the organization. UTA uses multiple sources of market data, described below, which are analyzed and audited on an annual basis. UTA believes that local and regional data, transit data, and not-for-profit/government data are most relevant for comparison of its jobs.

Local and Regional Data: UTA is continually competing with the private sector for goods, services and employees. As such, local and regional market data for the private sectors is used regularly in market matching jobs at UTA. The following surveys are used by UTA provide local market data: Watson Wyatt, Mercer, Compensation Data, Employers Council, and Greater Salt Lake Area Compensation Report. UTA is continually competing with the private sector for its employees.

Transit Data: UTA matches with other transit agencies that have comparable jobs (a minimum of 75% of the duties and responsibilities as the UTA job). UTA also looks at transit agencies with comparable modes of service delivery, i.e. light rail, heavy rail, bus, vanpool, bus rapid transit, etc. In addition, when calculating market values for the transit industry, UTA uses an adjustment factor that adjusts for the difference in the cost of labor from state/city to state/city. These adjustment factors are obtained through the Economic Research Institute (ERI). Costs of labor comparisons are considered sound practice under generally accepted compensation practices.

Not-for-Profit/Government Data: Out of the seven executive positions referenced in the audit report, five have been matched to Not-for-Profit/Government data. Not-for-Profit/Government data is not always available for comparison to UTA jobs.

UTA uses a bonus program that is aligned with the business strategy, vision and mission in order to achieve organization results. Organizations generally use a mix of total rewards that assist in attracting, motivating and retaining the talent needed to effectively contribute to organizational objectives.

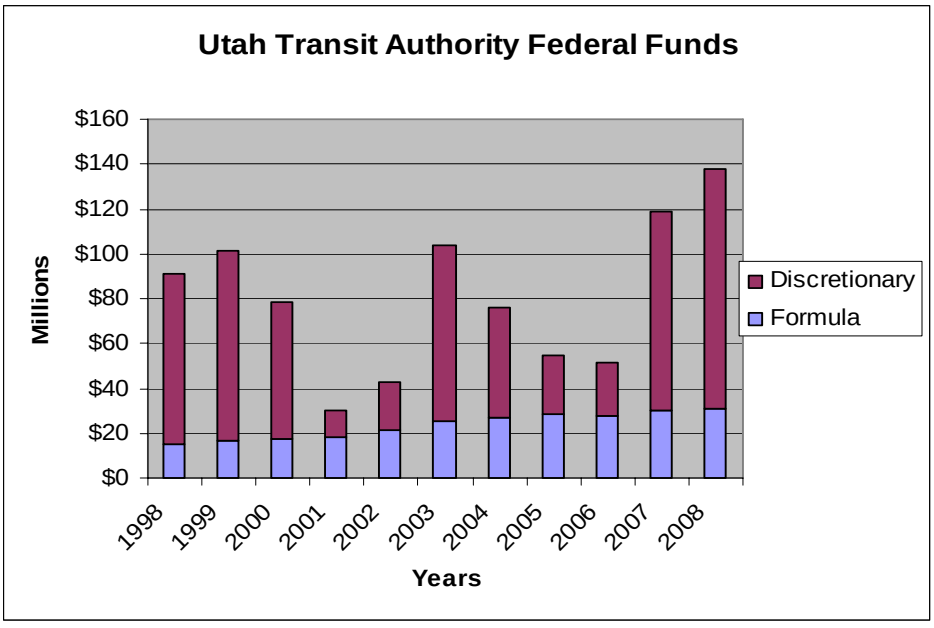
In response to the audit's recommendation about executive compensation, UTA will recommend to the Board of Trustees to review the current practices and policies.

UTA Takes Pro-Active Steps to Verify Information Released to the Public
In response to the audit's recommendation to verify the accuracy of information released to the public, UTA staff will revisit procedures and make appropriate improvements. The October 2006 announcement about the "50 millionth passenger" on TRAX was based on ridership reports available and used by UTA at the time, prior to resolving the broader counting methodology issues addressed in the audit.

In the process of keeping the public informed, UTA has thousands of news articles each year (over 1,300 in 2007 alone) and coordinates numerous media announcements and events. The public relations staff use official UTA documents and reports and consults with appropriate staff experts to confirm the accuracy of information before it is released.

UTA Has Been Extremely Successful in Securing Discretionary Federal Funding
UTA is pleased that the audit reports on the significant amounts of discretionary federal funding the agency has secured for major capital projects, and that while UTA serves a proportionally small population, the agency has received a sizeable portion of discretionary federal funds.

In addition to the 2006 information provided in Figure 3.5 of the audit, titled "Federal Grants Paid to UTA during 2006," the following graph illustrates a ten-year history of federal funding UTA has secured, totaling over 1.7 billion ($260 million in formula funds and $1.5 billion in discretionary funds.)



Chapter IV: Efficiency Varies by Type of Service

UTA Has Established Service Standards
As stated in the audit report, UTA's operating costs per mile for bus service is among the lowest in the country. However, because of UTA's large service area, the agency's boardings per mile and cost per boarding are at the upper end of the scale. UTA acknowledges this finding. In a 2005 performance report commissioned by UTA, an independent management firm stated that stated while there are other transit agencies that are more "cost effective", UTA is more "cost efficient."

UTA is already addressing the audit's recommendation to develop a "watch list" for bus routes not meeting minimum performance standards. UTA's Corporate Policy titled "Corporate Service Standards" requires that the 20% lowest performing bus routes in the system, as determined by Investment Per Rider (IPR) and investment per passenger mile, be reviewed and modified. UTA continues to refine its route-level evaluation process to maintain the agency's philosophy of continuous improvement.

The audit concludes that Paratransit services are costly, more costly on average than peer transit agencies. UTA believes this is due to our large service area and unique market conditions, and due to the fact that UTA has exceeded ADA minimum service standards. In response to the audit, UTA maintains that we have endeavored to balance Paratransit costs with political and social considerations. UTA has also mitigated Paratransit costs by implementing programs to better integrate riders with disabilities into the fixed route system. For example, the Freedom Access Pass allows Paratransit-eligible riders to ride TRAX and fixed-route bus without paying a fare, providing a significant net cost savings to UTA on a per-trip basis.

UTA has recognized the rising costs associated with providing Paratransit service and is continuing to improve efficiency and provide a balance between fixed route and Paratransit service. Additionally, UTA has initiated a comprehensive Future Search effort, involving multiple service providers and disabled organizations, in an attempt to identify and resolve transportation funding and service issues for people with disabilities.

Legislative Audit Findings Reflect Recent Independent Audit

In 2005, UTA implemented a comprehensive FY01-FY05 performance report by independent management firm Booz Allen Hamilton, Inc. The UTA executive staff reviewed the recommended corrective actions contained in the Booz Allen report and outlined a plan for implementation. UTA appreciates that the legislative auditors acknowledged the Booz Allen Hamilton report and used it as a resource. The following is a summary of two chapters from the report, titled *Agency-wide Performance* and *Operations Performance*.

Agency-wide Performance, contains a review of system-wide performance trends providing a starting point for more detailed modal and functional analyses. Trends in key performance indicators which are cost efficiency, cost effectiveness, service effectiveness/productivity and revenue generation, were reviewed in their report. UTA's performance results were also compared to peer agencies providing bus, light rail and Paratransit services. An effort was also made to identify agencies that operate in similar environments or use infrastructures similar to UTA. All of the peers included are located west of the Mississippi River and operate light rail systems that have been built in the last 30 years.

The report noted that, based on system-wide data, it appears that UTA has worked diligently to control operating costs and to operate efficiently and effectively. Specifically, at $4.92, UTA's cost per revenue mile was notably lower that each of the peers and significantly lower that the peer average ($6.85).

It was also pointed out that notwithstanding problems with ridership data, UTA's ridership increased consistently through out the audit period, at a time when other transit agencies experienced recession-related ridership losses. Ridership also does not appear to have been seriously impacted by UTA's annual, but small fare increases.

This chapter further states that one of UTA's Quantitative Performance Goals is Investment per Rider, which measures the extent to which each boarding is subsidized by non-farebox revenue.

This measure targets a balance among cost effectiveness, the use of non-fare revenue funds, and revenues generated through the fare structure.

Transit Operations Performance includes a performance review of UTA's transit operations by mode. The operations review discusses the performance, accomplishments and challenges of each of UTA's modal operating functions including fixed route bus, which is operated directly by the Authority; light rail (TRAX), which is also operated directly by UTA; and paratransit (Flextrans), which is operated directly in part and in part under contract.

In the section covering the fixed route system, it was noted that UTA's fixed route bus services include both local and express bus routes. UTA's bus operations and maintenance functions support a large bus transit operation that carries 65% of total UTA riders. It was pointed out that, over the course of the report timeframe many bus operations performance indicators improved, including significant improvements in productivity such as passenger boardings per full-time equivalent employee, which improved 18%.

The report also noted that bus operations are organized into small teams of operators, each managed by a supervisor or manager. This is atypical in the industry, because many systems are burdened with first line supervisors that are members of the same bargaining unit as the operators. This is not the case at UTA, enabling UTA to incorporate operations supervisors into the management structure. Several additional operations efficiencies were identified including low operator violations, a ratio of pay hours to platform hours that is currently less that 1.075, and an extremely efficient extraboard. The report noted that each operating division set written annual goals and management performance is evaluated on the achievement of these goals.

The report commented on the efficiency of UTA's TRAX light rail service. The system includes two routes serving 24 stations, using a fleet of 69 vehicles. UTA buses are well-integrated with TRAX, with multiple bus routes serving most stations. UTA's rail service business unit is responsible for operation and maintenance of light rail vehicles, track and wayside systems. Rail Service maintains a lean workforce that is not top-heavy and its maintenance department is efficiently organized. The report also noted that UTA's light rail service takes advantage of the inherent efficiencies of rail systems.

TRAX efficiency and effectiveness indicators are competitive with UTA's peers including UTA's cost per revenue mile, which is below peer averages. Overall, UTA has performed well on measures that are indicators of light rail service quality including accident rates, on-time performance and vehicle reliability.

Chapter V: Transit is Highly Subsidized

Transit, highways and other transportation modes are highly subsidized in the United States, and UTA appreciates the audit's acceptance of the notion that subsidies are required for transportation. UTA has a much larger service area than most other transit agencies, coupled with lower densities. As such, farebox recovery is more complex and harder to achieve consistently across all services and routes.

Farebox Revenue Inherently Varies by Transit Mode

Due to inherent factors, different modes of transit service are operated at different costs and provide different levels of service for a wide variety of customer needs. The Investment Per Rider (IPR), which is the mainstay of UTA's efficiency calculations, calculates the difference between light rail transit, bus service in different regions and paratransit service. IPR is a

surrogate measure, comparable to ROI in the business world, which allows one to compare the value of various types of service.

The IPR represents a subsidy per rider, and was intended to allow policymakers to evaluate the investment being made in different types of service. The Board of Trustees annually sets the IPR goal, which includes the subsidy for the various modes, as recommended by the audit. UTA believes that IPR is a more comprehensive measurement of fiscal management than farebox recovery.

In keeping with the recommendations of the audit, UTA and the Board of Trustees will revisit policies on fares, farebox recovery, and subsidies according to relevant rider markets and service types.

Fares and Pass Program to Maximize Balance Between Ridership and Revenue
In 2009, the base fare will be $2.00, the adult monthly pass will be $67.00 and the adult premium express monthly pass will be $162.00. This represents respective increases of 33%, 34% and 62% since 2006. UTA has consistently raised fares – four times since 2006 - in an effort to achieve farebox recovery goals contained in the annual budget. Fare increases are designed to maintain a fare that is competitive with driving an automobile, while balancing passenger responsibility with taxpayer subsidy.

Data from national sources on fare elasticity suggest that raising fares beyond a certain point cannibalizes ridership, and continuing to raise fares will ultimately diminish ridership and farebox recovery. In other words, there is an optimal fare that maximizes ridership and revenue; UTA continues to strive to find this point. The efficiencies of TRAX and FrontRunner, with higher farebox recovery ratios, will further contribute to this effort.

UTA has implemented highly successful discount programs for large employers (EcoPass) and educational institutions (Ed Pass). Total revenue from the EcoPass and EdPass programs has increased approximately three-fold since 2000.

New Systems and Technology Will Improve Fare Structure and Recovery
In reference to the audit recommendation, UTA has embarked on an electronic fare collection program, set to be implemented in 2009. This newly-developed technology for transit will allow UTA to implement new fares and fare policies such as time of day, distance-based, type of service, type of user, etc. This technology will increase the flexibility of UTA's fare policies and fare structure, and allow the agency to improve customer convenience, increase ridership and increase fare revenue.

Chapter VI: Transit Provides Benefit to Congestion but Not to Air Quality

The audit focuses on two of what UTA feels are several benefits of public transit: congestion and air quality. UTA acknowledges that these two benefits were specific to the scope of the audit, however, we submit that transit provides additional environmental, social and economic benefits not contained in this audit including:

- Energy savings
- Mobility for those who can't drive or choose not to drive
- Land use change
- Individual cost savings
- Infrastructure reduction

While UTA believes these benefits are significant, we will address the congestion and air quality benefits included in the audit.

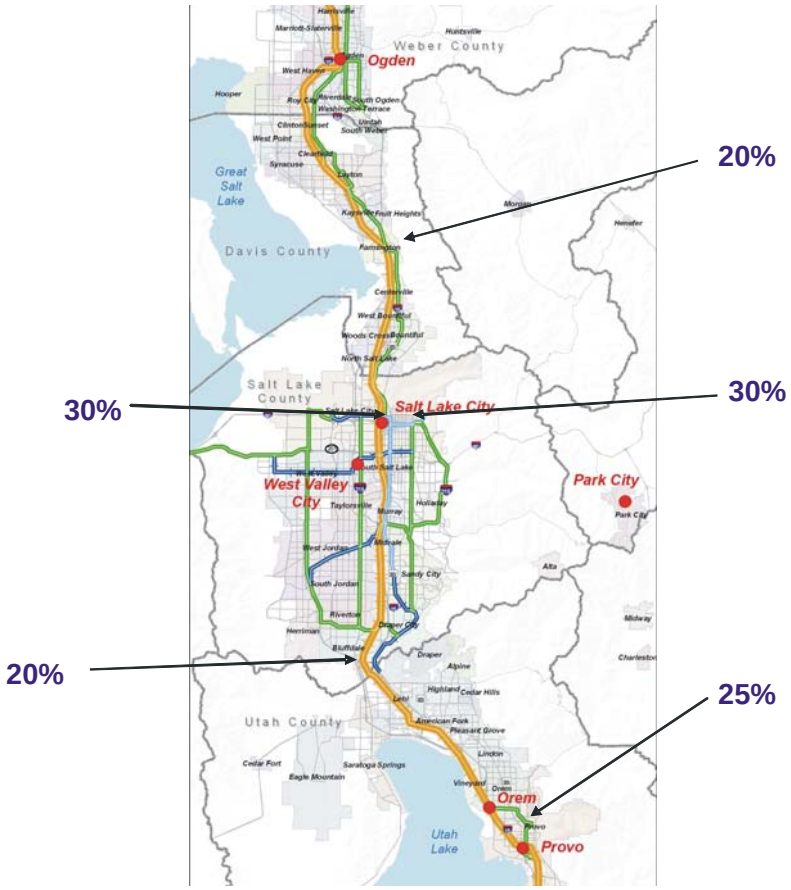
Transit costs are approximately equal to its overall share of person travel in the region. The public and private costs of transit along the Wasatch Front are approximately $185 million per year. Out-of-pocket costs (at $0.60 per mile as estimated by AAA) for the 14.7 billion miles traveled each year by private automobiles is approximately $8.8 billion per year. In comparison, the cost of transit services is approximately 2% of automobile expenditures.

Congestion Relief

The audit examines the overall percentage ridership on public transit and concludes that public transit has a small effect on congestion. While transit may carry only 2-3% of total trips, an evaluation of comparable travel corridors, peak travel periods and highly congested corridors reveals that transit does play a significant role in mitigating congestion. TRAX is currently carrying 18 percent of weekday work trips to downtown Salt Lake City; during peak commute hours, that equals one lane of traffic on I-15. TRAX has also had a significant impact at the University of Utah, currently accounting for greater than 25 percent of weekday student trips.

The developments that UTA is focused on today are designed to develop a regional alternative transportation network to cope with current and future growth in population and traffic congestion. The following map illustrates the 2030 projected transit usage during peak periods in congested corridors.

Transit Usage in Congested Corridors: Peak Travel in 2030



Air Quality

The audit focuses on the impact on overall Nitrogen Oxide (NOx) reductions. UTA agrees that current emission concerns are NOx and that diesel engines are a major contributor, however, NOx is not the only air-quality pollutant in the region. Both buses and rail transit are effective at reducing hydrocarbons (HC) which contribute to smog and to the reduction of both Carbon Monoxide (CO) and Carbon Dioxide (CO2).

UTA understands that NOx is the mobile source pollutant of most concern because of its contributions to fine particulate concentrations. However, past progress in controlling emissions is the reason that carbon monoxide and hydrocarbons are not as important today and that contribution should not be completely dismissed. The table below shows transit's contribution to the full set of mobile sources. Buses and light rail in general reduce over 2,790 tons of carbon monoxide annually along the Wasatch Front as well as more than 126 tons of Hydrocarbons, which are a contributor to smog.

The table below illustrates that, overall, transit provides net reductions in air pollution for 2007.

Transit Savings in Air Quality Emissions: 2007

		Carbon Monoxide	Hydrocarbons	Nitogen Oxides	Total
Emission from Transit Vehicles	Daily Bus Vehicle mi.		61010	bus miles	
	Emission Rate gram / mi	6.95	0.51	21.80	
	Emissions tons / day	0.47	0.03	1.47	1.97
Emission Reductions	Reduction in VMT		517816	fewer auto miles	
	Emission Rate gram / mi	14.79	0.67	1.14	
	Emissions tons / day	8.44	0.38	0.65	9.47
	Net Emissions tons/ day	7.98	0.35	-0.82	7.51
	Tons / year	2910.97	126.63	-297.89	2739.72

Other factors which should be considered when examining transit's contribution include 1) transit's reduction in miles traveled often extends beyond just the trips on transit because it contributes to more walking and trip consolidation, 2) the emission factors used for both passenger vehicle and bus emissions are based on national averages whereas local emissions will be less because the transit authority employs more aggressive maintenance, uses 5% bio-diesel

and has a policy that limits idling. UTA estimates that our fleet NOx emission is closer to 15.53g per mile, rather than the general 21g used in the audit, and 3) recent changes in diesel engine emission levels will reduce NOx emissions from a diesel bus dramatically.

UTA buses purchased in 2007 emit 1/3 of the NOx emitted by the buses bus bought seven years ago. Additionally, in five years new buses will emit 1/20 (5%) of the NOx of a bus bought just ten years earlier. UTA's ongoing fleet management program will replace 50-70 buses annually; as a result, UTA estimates that by 2012 transit will provide a net decrease in NOx pollutants.

Chapter VII: Board Independence and Oversight Could Improve

Board Appointment and Independence
The audit report concludes that Board term limits have been ignored, raising issues of Board independence, but cites only one instance for support of this broad statement where a Board appointment is challenged. The term limit challenge is based on a definitional vagueness in the statute as to whether the reappointment of a Board member following a very short period of time after the expiration of three consecutive terms is consistent with the statute. Locally elected officials, not UTA, are charged with determining who should be appointed to the UTA Board of Trustees and for what period of time within the statutory term limitations. While elected officials can speak for themselves in regard to this issue, Board independence may be fostered by experienced Trustees with historical perspective. In any event, UTA supports compliance with all statutory term limits.

UTA Board Trustees are highly qualified individuals appointed by locally elected officials. Currently, the Board includes a state legislator, elected officials and other highly regarded individuals with a record of community involvement. At this time, more than half of the Board is comprised of current or past elected officials.

Service on the Board of Trustees involves many hours of very detailed work with very minimal compensation. UTA would reference the audit response of the Board President in regard to issues of oversight, independence, appointment and involvement in performance expectations and other significant agency decisions.

Please see the additional response to this chapter, submitted by the Board President under separate cover.

Again, on behalf of UTA, we appreciate the opportunity to respond to the 2007 legislative audit. We look forward to providing additional input to the audit team and the Legislature as requested.

Sincerely,

John M. Inglish
General Manager/CEO
Utah Transit Authority

UTAH TRANSIT AUTHORITY

UTA

3600 South 700 West
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January 21, 2008

John M. Schaff, CIA
Auditor General
Office of the Legislative Auditor General
W315 Utah State Capitol Complex
Salt Lake City, UT 84114

Re: A Performance Audit of the Utah Transit Authority (Report No. 2008-03)

Dear Auditor General:

Response

This letter is in response primarily to Chapter VII, Board Independence and Oversight Could Improve, in the subject Audit conducted by your office and confidential "Exposure Draft" report dated January 11, 2008.

The confidential "Exposure Draft" of the Audit report has not, as directed by your letter of January 11, 2008, been circulated to the Board of Trustees and therefore this response is as I anticipate would be the wisdom of the entire Board. Further, as directed, the report has not been shared with any other party.

Board Process and Governance

The entire notion of Board Process and Board Governance is an interesting thing and widely subject to interpretation and criticism based on the experience and view of those reviewing.

It may be instructive to back up to the period prior to 2002, the process which began in mid-2002 and resulted in the current enhanced governance process in place today. One must bear in mind also, that over this period there has been a significant turnover in Board membership and one primary goal of governance is to have a process in place that is not subject to frequent change and the whims of changes in individual Board membership.

Prior to 2000, the governance process involved Board intrusion into day to day operations of the Authority and as Board membership changed from time to time, that intrusion became disruptive and lacked consistency. The minutia to which the Board was involved resulted in minimal oversight of policy, procedure and Authority planning for the future.

Beginning at that time, the Board studied various philosophies about Board governance and moved toward a philosophy called the Carver Model, with modifications applicable to our situation. This philosophy assumes that the Board governs by setting parameters for Ends, Means and Limitations Policies and monitors those Policies on an ongoing basis. Ends refers to Policies which direct desired results; Means refers to Policies which the Board feels are appropriate to direct management how to accomplish desired Ends; Limitations is where the Board sets limits within which management may operate. Policies are reviewed, modified, added and deleted on an ongoing basis.

Trustees come from a variety of walks of life and backgrounds. The makeup of the Board changes from time to time. Management has a high level of expertise and is expected to operate within parameters that allow their unique expertise to shine.

Within this framework of governance, the Board has changed the complexion of the Authority from a small bus company to a major transporter of our citizenry within the Transit District, utilizing modern day technology and methodology to achieve a higher degree of success.

When viewed from our historical experience, the weaknesses of prior models and the very positive impact of the Carver Model, Board governance is the most effective it has ever been (in terms of results, independence and all other factors).

Trustee Appointment

In that locally elected officials have been charged by the governing legislation to determine who should serve on the Board of Trustees and for how long, within designated limitations, it seems anti-productive to criticize how they administer that authority to meet critical needs at the time.

The audit report implies two things regarding Board appointment which is not accurate – that the Authority has something to do with appointments and that the single instance cited where the auditors challenge compliance with term limitations is somehow a commonplace, recurring circumstance.

In fact, the locally elected officials should be complimented in their selection of good, well qualified citizens to serve on this non-compensated, voluntary Board. Trustees are engaged in a selfless, time consuming activity, without compensation. In that process, the Authority has had no input as to who should serve.

In the instance cited by the audit, regarding the latest reappointment of the President of the Board, neither that Board member nor the Authority had any influence upon the appointment in question.

This instance occurred in 2007 when the locally elected officials were attempting to implement a significant increase in sales tax funding for the Authority and to implement the most significant and aggressive expansion of transit services in this region in history. Further, the time required by the person serving in that capacity borders on the equivalent of one-half FTE (one half time executive level Full Time Employee). Again, this position, like all other positions on the Board does not receive compensation. Clearly, it was difficult, in the minds of the appointing authority, to determine how to meet the crucial needs of the Board, during this challenging time, by a change in leadership. The appointing authority determined, after review by legal counsel (not just UTA counsel), that a vacancy in a separate Board position had existed for a period of some five months. When the President's tenure in his Board position expired, the appointing authority elected to ask him to fill the long standing open position of another Trustee. We suggest that the point could be argued either way and therefore while reasonable to disclose in the Audit, perhaps the tone of the finding should be reexamined. The appointing authority (in this instance, all mayors in Salt Lake County and affirmed by the Salt Lake County Council) acted in good faith, in a trying time, to accomplish what they considered the best public good. Further, in that this is the only incident of such appointment, it hardly rises to the level of a chronic or significant issue as seemingly described in the Audit.

We recognize the parameters of tenure on the Board is the prerogative of others and certainly express our willingness as a Board and as individual Trustees to continue to abide by the determination of the designated Appointing Authority, but this was a decision of the Mayors based on what they believed to be an unprecedented period in transit history in the District. There was no devious motive involved.

Board Use of the Independent Internal Auditor

As regards Board oversight and use of the Independent Internal Auditor, the Board takes exception to the Audit report in several regards.

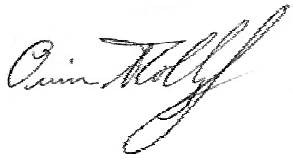
Use of the Auditor is at the discretion of the Board – he reports only to the Board, through the Board Audit Committee, his compensation is determined by the Board, audits are determined by the Board Audit Committee and any audits performed for management are brought to the Board Audit Committee for approval.

The Board is well aware of the talent and limitations of our limited audit staff. However, the limited staff has been a deliberate determination by the Board. No one person or small staff can adequately review and advise on all issues of import in the mind of the Board. Therefore, while the Board Audit Committee determines the audits to be performed, the Board also determines other areas of review (or audit, if you will) that require a different set of expertise and thus engage outside auditors and consultants frequently to review and advise on matters of concern.

We caution that the deficiencies the Audit report suggests in how the Board uses the Internal Auditor for some of the issues advised, rather than engaging him as we determine and others to expand the function, would be less productive and an error.

What we would suggest, and agree with the Audit report, is to better document the process, reassess how we engage experts and whether we have the proper talent in the Authority Audit staff.

Respectfully,



Orrin T. Colby Jr.
President
UTA Board of Trustees