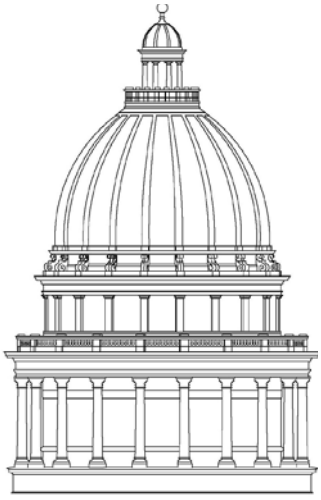
REPORT TO THE

UTAH LEGISLATURE

Number 2012-01



A Performance Audit
Of the Utah Transit Authority

January 2012

Office of the
LEGISLATIVE AUDITOR GENERAL
State of Utah

STATE OF UTAH
Office of the Legislative Auditor General

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JOHN M. SCHAFF, CIA
AUDITOR GENERAL

January 2012

TO: THE UTAH STATE LEGISLATURE

Transmitted herewith is our report, **A Performance Audit of the Utah Transit Agency** (Report #2012-01). A digest is found on the blue pages located at the front of the report. The objectives and scope of the audit are explained in the Introduction.

We will be happy to meet with appropriate legislative committees, individual legislators, and other state officials to discuss any item contained in the report in order to facilitate the implementation of the recommendations.

Sincerely,

John M. Schaff, CIA
Auditor General

JMS/lm

Digest of
A Performance Audit
Of the Utah Transit Authority

Chapter I: Introduction

The Utah Transit Authority (UTA) is a public transit district whose service area includes 79 percent of the state's population. Local sales tax provided most of the agency's $275 million budget in 2010. UTA is governed by a 15-member Board of Trustees appointed by local municipalities and state government representatives. UTA is now in the midst of a major expansion of its rail system. The FrontLines 2015 project will add 70 miles of rail service over the next few years, but it remains uncertain whether UTA will have the revenue to satisfactorily operate the costly systems that it is building.

Given the uncertainty of the future, UTA should work closely with the communities and taxpayers it serves to ensure they understand the costs of continuing to expand transit service. Naturally, cities and their residents want the best and most extensive transit system possible. However, the public may not fully understand the ongoing operating subsidy transit systems require even after they have been built. Because UTA is the expert at understanding the extent to which future operating costs will need to be subsidized, it is important that it communicates that message widely before new systems are built. Otherwise, taxpayers may face an unexpected tax increase.

Chapter II: Cost of New Rail Lines Will Affect Service Levels and Future Transit Projects

Debt Service Payments Will Consume a Great Portion of Future Sales Tax Revenues. UTA is currently building the most expensive rail project in the agency's history. UTA's previous rail lines totaled $1.1 billion, but 78 percent of the capital expenses were covered by federal subsidies. In contrast, UTA's current FrontLines 2015 projects will cost about $2.3 billion, with only 24 percent of the capital costs to be covered by federal funds, as shown in the following figure.

Project and Actual/Proposed Year of Completion	Total Cost (in millions)	Federal Funding	Local Funding	Local Cost (in millions)
Rail Projects (1999-2008)	$1,133	78%	22%	$251
FrontLines 2015 Projects	$2,292	24%	76%	$1,748

Local sales tax revenues must cover the majority of the FrontLines 2015 projects' capital and financing costs. However, the recent recession has significantly reduced the amount of UTA's projected

sales tax revenue; 2010 UTA sales tax revenues were $67 million below 2007 projections and by 2020, UTA's cumulative sales tax revenues are estimated to be $1.2 billion below 2007 projections. In future years, increasing debt service payments will consume a larger portion of sales tax revenues and impose a financial strain on UTA.

UTA's Revenue Projections Are Optimistic; Expense Projections May Be Understated. Between 2010 and 2020, UTA projects a 60 percent increase in sales tax revenue, a 141 percent increase in federal operating subsidies, and a 125 percent increase in farebox revenue. In contrast, operations and maintenance (O&M) costs are forecast to increase by a much more modest 52 percent. In our opinion, UTA runs a risk of being overly optimistic. If revenue projections prove to be too high or cost projections prove to be too low, UTA may have to cut bus and rail service.

Financial Limitations May Affect Future Service Levels and Transit Projects. In years past, UTA has carried forward substantial amounts of excess reserves that have provided a cushion against revenue shortfalls or cost increases. However, in the future, UTA expects to maintain just enough reserves to cover required levels, leaving little margin for error in revenue and cost projections or to pay for additional expansions such as the Sugarhouse Streetcar costs that are not included in our review. Unexpected revenue shortfalls would likely require cutbacks in transit service and planned expansions.

Chapter III: Cost Growth Outpaces Ridership, Reducing UTA Cost-Effectiveness

Cost Structure Has Changed as Capital Expenses Have Grown Rapidly. Between 2006 and 2010, UTA's total annual expenses grew 37 percent to $275 million. Due to higher depreciation and interest expenses related to expanded rail services, capital costs grew by 66 percent compared to just 24 percent for operating costs. Although transit agencies usually focus on operating costs, capital costs are also important.

Cost-Effectiveness Has Decreased. Moving people in a cost-effective manner is the transit industry's core function. Between 2006 and 2010, the bus and light rail services' cost-effectiveness decreased. Although both passenger boardings and passenger miles travelled have remained static, costs have increased. Light rail continues to appear more cost-effective than buses, and commuter rail is less cost-effective than both bus and light rail.

Chapter IV: UTA Has Increased Farebox Recovery Rate, but Faces Challenges to Implement Additional Changes to Fare Policy

Farebox Recovery Has Improved Since 2006. In 2010, fares paid by transit users covered 20 percent of UTA's operating costs, an improvement from 17 percent in 2006. Farebox recovery is important because costs not covered by transit users are subsidized by taxpayers. The table summarizes farebox recovery levels for 2006 and 2010.

Year	Fare Revenue (In Millions)	Expenses (In Millions)		Farebox Recovery Based on:	
		Operating Costs	Total Costs	Operating Costs	Total Costs
2006	$24	$140	$201	17%	12%
2010	$35	$174	$275	20%	13%

UTA Board Policy Is Needed to Address Subsidy Levels. In our 2008 audit, we recommended that UTA's board establish in policy an overall pricing strategy to address the disparity in the subsidy provided to some transit modes and types of passes over others. UTA's board has, instead, issued broad directives to provide the highest level of service to the most riders possible and continued the practice of annually establishing an investment per rider (IPR), which measures the subsidy per boarding. We think IPR is a flawed measure because increasing transfers improves the IPR while inconveniencing passengers. The farebox recovery ratio does not have that flaw.

Farebox Recovery Has Increased, but Is Still Slightly Lower than That of Peer States. UTA has had an impressive 47 percent increase in fare revenue between 2006 and 2010. However, its farebox recovery rate (20 percent of the operating costs) remains slightly lower than other western transit agencies. In addition, some transit services are subsidized more than others, as shown in the following figure. In particular, FrontRunner commuter rail service recovers only 10 percent of its operating costs or 5 percent of its total costs.

Transit Mode	Per Boarding:		Per Boarding:	Farebox Revenue as % of:	
	Operating Cost	Total Cost	Farebox Revenue	Operating Cost	Total Cost
Bus	$4.89	$5.67	$0.86	18%	15%
Light Rail	$2.09	$4.43	$0.78	37%	18%
Commuter Rail	$14.27	$30.34	$1.49	10%	5%

Balancing Subsidy and Ridership Will Be a Challenge for UTA. UTA management has plans to fundamentally revamp the agency's fare policy. Plans call for customers to pay for each trip based on the distance they travel and to eliminate unlimited use passes. With these changes, UTA plans to achieve a farebox recovery level of 30 percent by 2020 (up from 20 percent in 2010). While UTA's planned changes are promising, the ability to implement them remains unclear. UTA's consultant reports that the planned system is "significantly different from both the current UTA fare structure and those of other U.S. transit agencies." While it seems reasonable for users to pay more of UTA's operating costs, their willingness to do so is not yet clear.

Implementing New Fare Structure Also Faces Technical and Data Obstacles. UTA faces implementation challenges as it makes fundamental changes to its fare policy. First, UTA may not have the technology to make such changes as quickly as first envisioned. Second, UTA may not have sufficient, reliable data to make good decisions.

Chapter V: More Complete Ridership Data Is Needed to Fully Assess Transit Use

UTA's Boarding Data Has Improved, but Some Concerns Need Attention. UTA primarily tracks ridership by counts of passenger boardings. The accuracy of UTA's TRAX boarding data appears to have improved since our 2008 audit. However, a flaw in bus ridership sampling methodology likely resulted in a 6 percent overstatement of 2010 bus boarding totals.

Passenger Mileage Data Needs Improvement. Unlike boardings that only measure when a passenger enters a transit vehicle, passenger miles also consider the distance traveled. Similar to our 2008 audit findings, our review of UTA's passenger mileage data found some problems that need attention, as suggested by the large year-to-year fluctuations observed in those amounts.

UTA Could Benefit from a More Thorough Analysis of Ridership. We were unable to determine the number of people who ride UTA services today compared to past years because UTA does not regularly track and update the number of boardings required to complete a single trip. Transfer rates appear to be increasing as more rail service is added and bus route changes are redesigned to feed the rail system. Therefore, maintaining or slightly increasing previous boarding levels may not indicate ridership growth.

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January 2012

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Table of Contents

Chapter I
Introduction

This report presents an in-depth follow-up of portions of *A Performance Audit of the Utah Transit Authority* (Report 2008-03) issued by our office in January 2008.[1] We conducted this follow-up work at the request of the Legislative Audit Subcommittee.

The Utah Transit Authority (UTA) provides public transit services through light rail vehicles, commuter rail trains, and buses. It also provides vanpool and paratransit services to approved or eligible individuals. UTA was founded in 1970 to provide transit services along the Wasatch Front and is based in Salt Lake City, Utah. In 2010, UTA received revenues of almost $275 million and had about 2,000 full-time equivalent employees. UTA's service area includes Salt Lake, Utah, Davis, and Weber counties, as well as various cities in Tooele and Box Elder counties. The Utah population within UTA's service area is estimated at almost 2.2 million people or 79 percent of the state's total population.

UTA operates within six counties and serves an area containing 79 percent of Utah'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 is appointed by local municipalities and state government representatives. The board's role is to establish agency policy and to monitor performance. It is also responsible for appointing the agency's general manager, general counsel, and internal auditor.

UTA is governed by a 15-member Board of Trustees who is appointed by local governments and state representatives.

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:

[1] A Performance Audit of the Utah Transit Authority - http://le.utah.gov/audit/08_03rpt.pdf

> 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.

UTA management's four long-term goals (2010-2020) for transit success and support of its mission are:

1. Increase transit market share through improving transit quality and retaining riders.

2. Maintain fiscal responsibility by leveraging investments, generating new revenue sources, improving farebox revenue and recovery, and managing costs.

3. Continually improve current operations, maintenance, and other key processes.

4. Ensure a healthy UTA internal environment by developing leaders within the organization and fostering the union and management working relationship.

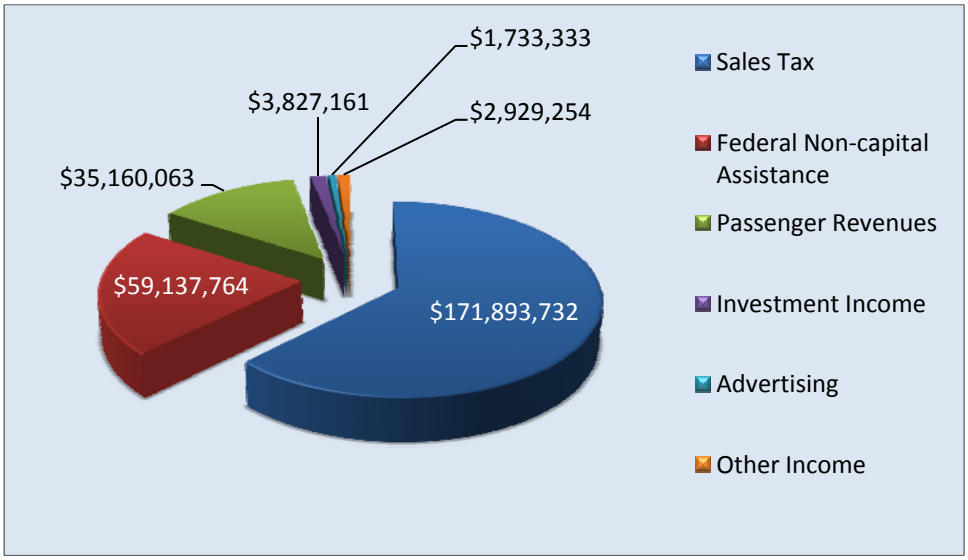
In addition to its four main goals, UTA has established specific strategies that guide the organization's efforts to accomplish its goals and mission.

Sales Tax and Federal Assistance are Largest Sources of Ongoing Revenues

Sales taxes are UTA's largest operating revenue source, followed by federal assistance.

Sale tax revenues have always been UTA's largest operating revenue source. In 2010, sales tax collections represented 63 percent of UTA's $275 million total revenue. Federal non-capital assistance funds were the second-largest source of revenue (22 percent). Figure 1.1 graphically displays the sources of revenues and amounts collected in 2010.

Figure 1.1 UTA's Revenue Sources in 2010. Sales tax collections represent the largest source of funding for UTA followed by Federal O&M assistance. Passenger revenue, or farebox, represents 13 percent of UTA's total revenue.



Source: UTA's 2010 Comprehensive Annual Financial Report (CAFR).

Beyond UTA's two main revenue sources of sales taxes and federal assistance, other revenue sources include: passenger fares (13 percent), investment income (1 percent), advertising (1 percent), and other income (1 percent).

UTA's other revenue sources include: passenger fares, investment, advertising, and other income.

UTA receives various sales tax revenues in the six counties where it provides transit service, including: a local mass transit tax, an additional local mass transit tax, a supplemental state sales and use tax, and an additional county option transportation tax. The rates vary by county. Figure 1.2 shows the total transit sales tax rates for UTA by county service area.

Figure 1.2 Sales Tax Rates by County in 2010 for UTA's Service Area. Salt Lake County pays the highest overall transit sales tax rate.

County	Local Mass Transit Tax	Add'l Local Mass Transit Tax	Supplemental State Sales and Use Tax	Additional County Option Transp. Tax	Total
Salt Lake County	0.30%	0.20%		0.1875%	0.6875%
Box Elder	0.30% [1]	0.25% [1]			0.5500%
Davis	0.25%	0.25%	0.05%		0.5500%
Utah	0.25% [1]	0.276%			0.5260%
Weber County	0.25%	0.25%	0.05%		0.5500%
Tooele	0.30% [1]				0.3000%

Sources: Utah State Tax Commission and county interlocal agreements.
[1] Not all cities participate.

Sales tax rates for transit purposes range between counties from 0.30 percent in Tooele County to 0.6875 percent in Salt Lake County.

UTA Offers a Range Of Transit Services

UTA provides five transit services: bus, light rail, commuter rail, vanpool, and paratransit.

UTA has five main services. It provides local bus service to communities in each of the six counties it serves and offers commuter (express) bus service between several major cities. In 1999, UTA opened its first TRAX light rail line which now consists of three lines and will expand with two new extensions by 2015. UTA's newest mode is commuter rail, called FrontRunner, which opened in 2008 and operates between Salt Lake and Weber counties. The FrontRunner line is currently under expansion with service to Utah County projected to begin operation by 2015. A vanpool program is also operated by UTA which allows groups of individuals to commute together. Finally, UTA operates or oversees a federally mandated bus service for people with disabilities called paratransit.

Vanpool and paratransit services are not readily available to the public but instead require users to meet approval or eligibility requirements before participating.

Three UTA services, bus, TRAX, and FrontRunner, are readily available to the public. However, UTA's two other services, vanpool and paratransit, require users to meet approval or eligibility requirements in order to participate. Figure 1.3 shows three indicators of the amount of service provided on an average weekday for each mode of UTA service.

Figure 1.3 Average Weekday Service Provided By UTA In 2010 By Transit Mode. In 2010, UTA offered over 9,700 hours of transit service while traveling over 135,000 miles every weekday.

Transit Mode	Vehicles in Operation	Vehicle Hours of Service	Vehicle Miles of Service
Bus	373	3,197	58,384
Light-Rail Trains	16[1]	260	3,888
Commuter Rail Trains	6[1]	80	2,429
Vanpool	420	715	28,762
Paratransit[2]	125	5,509	42,428

Source: UTA data reported to the National Transit Database (NTD)
[1] Rail modes typically have multiple passenger cars not included in this total.
[2] In 2010, paratransit service included a new taxi service subgroup which greatly increased hours and miles of service over 2006 totals reported in our prior 2008 audit.

Buses Provide the Most Widely Available Service. Since UTA's creation, bus service has been the primary service offered to passengers. In 2010, UTA's bus service accumulated over 58,000 vehicle miles of service; similar to 2006 miles of service. Beyond standard local bus services, UTA now also provides some long-distance commuter routes and bus rapid transit (BRT) service. UTA also provides specialty bus services to ski resorts and other special-event destinations.

Although UTA is expanding its rail services, buses still provide the most widely available transit option.

TRAX Light Rail Provides an Additional Transit Choice in Salt Lake County. UTA light rail service originally began operation in 1999 along a 16-mile corridor between Salt Lake and Sandy cities. In 2001, a second rail line was extended to the University of Utah and later to the University medical complex in 2003. TRAX light rail cars are powered by an overhead electrical wire system. Light rail vehicle miles of service did not significantly increase from 2006 to 2010, but the opening of two new rail extensions occurred in August 2011 creating an overall network of three TRAX lines named by color-coding of Red, Blue, or Green.

FrontRunner Offers Commuters an Alternative Mode of Transportation. FrontRunner is UTA's commuter rail transit service that currently operates on a 44-mile corridor which passengers can access on one of the eight train stations between Salt Lake City and Weber County. FrontRunner is a diesel train system with bi-level passenger cars which can travel up to 79 miles per hour. FrontRunner currently operates weekdays and Saturdays.

This audit focuses primarily on UTA's services readily available to the public: bus, TRAX, and FrontRunner.

UTA's Vanpool and Paratransit Modes Provide Specialty Transit Services. Vanpool and paratransit services are UTA modes of transit available to individuals approved or eligible to participate. In 2010, UTA's vanpool and paratransit services reached around 1.9 million passenger boardings (around 5 percent of total boardings). Vanpool accumulated a similar level of vehicle hours and miles of service when compared to 2006, but paratransit totals in 2010 are much greater than 2006 due to the inclusion of a new taxi service subgroup. Although these services are an important part of UTA's service offering, our audit focuses on the other three modes of transportation (bus, TRAX, and FrontRunner) that are directly open to the public.

Metropolitan Planning Organizations And UTA Plan Expanded Transit Service

Two metropolitan planning organizations (MPOs) are responsible for transit and highway planning in the urban communities served by UTA.

Two separate metropolitan planning organizations (MPOs) are responsible for evaluating and planning the transit and highway needs in the urban communities served by UTA. The Wasatch Front Regional Council (WFRC) oversees the planning for Salt Lake, Davis, and Weber counties. The Mountainlands Association of Governments (MAG) manages transportation planning for Utah County. Both MPOs are continuously planning and forecasting the future transportation needs of the communities they serve. Of note, for other communities served by UTA that fall outside the two MPO's areas of responsibility that are federally defined as urban, the transportation planning is conducted by the Utah Department of Transportation (UDOT).

One of the roles of WFRC and MAG is to establish long-range transportation plans for both transit and road needs, which currently run through 2040. WFRC and MAG conducts the initial determination and prioritization of the region's transit projects and partners with UTA to perform the necessary studies required for major capital endeavors (rail lines, bus rapid transit projects, etc.).

WFRC adopted its *2011-2040 Regional Transportation Plan* on May 26, 2011.[2] Similarly, MAG recently adopted its *2040 Metropolitan*

[2] WFRC's 2011-2040 Regional Transportation Plan - http://www.wfrc.org/cms/index.php?option=com_content&view=article&id=134:draft-2011-2040-regional-transportation-plan&catid=22&Itemid=38

Transportation Plan on May 5, 2011.[3] Both plans describe transportation needs expected to exist by 2040 in response to projected population increases in the MPOs' service areas.

FrontLines 2015 Project Will Add 70 Miles of Rail Service

In 2007, UTA began construction of the Frontlines 2015 Project which consists of five major rail lines over 70 miles including: four new TRAX light rail extensions in Salt Lake County (Mid-Jordan, West Valley, Airport, and Draper) and one commuter rail extension from Salt Lake City to Provo (FrontRunner South). The Mid-Jordan and West Valley TRAX lines opened in August 2011 adding thirteen new rail stations and nearly 16 miles of additional track to UTA's light rail system.

UTA is currently working on the FrontLines 2015 construction project which consists of five rail line extensions.

The other two light rail lines and FrontRunner South are expected to begin operations by 2015, if not earlier. When these new lines are operational, UTA will offer around 135 miles of rail service within its transit area. Beyond the scope of the 2015 project, UTA's near-term plans include the Sugarhouse Streetcar Project in Salt Lake County.

Audit Scope and Objectives

Legislators have asked the Auditor General's office to re-examine areas discussed in the 2008 UTA performance audit; specific audit objectives addressed in this report include:

- Review UTA's long-term financial outlook including an analysis of UTA's debt structure, revenues, and expenditures. (Chapter II)
- Review the change of UTA's costs per passenger boarding on the bus and rail systems between 2006 and 2010. (Chapter III)

[3] MAG's 2040 Metropolitan Transportation Plan - http://67.137.116.245/site/articles/view/2

- Review UTA's historical farebox recovery rates and assess plans to meet future farebox recovery objectives. (Chapter IV)

- Evaluate the accuracy of ridership data provided by UTA, and review ridership changes over the past decade. (Chapter V)

This report does not address two areas that were included in the audit request: (1) a comparison of the cost-effectiveness of transit versus roads, and (2) an evaluation of the pros and cons of merging UTA and UDOT under a single oversight body. Both areas raise the issue of how decisions are made to allocate scarce public funds to alternative transportation investments.

We reviewed some work that had previously been done in each area. In particular, the WFRC developed a methodology to compare transit and road projects on five criteria including cost-effectiveness. The transportation prioritization process was reviewed in a 2007 audit[4] by our office. Our initial review of the issue of combining UTA and UDOT found that in 2003-2004 a legislative task force considered the issue but did not make recommendations. We conducted a limited review of seven states in the western region and found that all appear to have transit authorities separate from their DOTs. Based on the results of our limited survey work, we decided to focus audit resources on the other objectives listed above and discussed in the remainder of this report.

[4] Report Number ILR 2007-F: A Review of the Transportation Prioritization Process - http://le.utah.gov/audit/07_filr.pdf

Chapter II
Cost of New Rail Lines Will Affect Service Levels and Future Transit Projects

UTA is currently building the most expensive rail project in the agency's history. The cost of UTA's previous rail lines totaled over $1.1 billion, but 78 percent of the capital expenses were covered by federal subsidies. In contrast, UTA's current FrontLines 2015 projects (scheduled to be completed in 2014) will cost about $2.3 billion, with only 24 percent of the capital costs to be covered by federal funds. Thus, local funding for the FrontLines 2015 projects will be $1.7 billion, compared to $0.25 billion for the previous rail lines. These large expenditures, with the associated debt service costs, will put a strain on UTA's ability to provide services.

UTA' FrontLines 2015 project will cost over $2.3 billion, and subsequent debt payments will limit UTA's future transit service.

Because UTA has needed to bond for capital, UTA's annual debt service payments will increase from $70.7 million in 2010 to more than $166 million by 2020. In fact, existing and planned bonds will require over $4 billion in debt service payments over the next thirty years. The increasing debt service is occurring during a time of recession that has significantly affected the agency's operating revenues; UTA's 2010 sales tax revenues were $67 million below 2007 projections, and by 2020, UTA's cumulative sales tax revenue is expected to be $1.2 billion below 2007 projections. Part of that shortfall is expected to be offset by projected increases in federal operating funds and farebox revenue. Our concern is that UTA's revenue projections are optimistic, while expenses may be understated.

If UTA's revenue and expense projections are overly optimistic, it may threaten the agency's ability to operate the system that is being built. UTA officials told us they have no plans to ask for another sales tax increase to fund the system. Therefore, any shortfall in projected revenues or increase in projected costs may force UTA to reduce transit service and/or delay future transit projects.

Local Funds Must Pay for 76 Percent of the FrontLines 2015 Projects

The capital cost of the five FrontLines 2015 rail projects is expected to be about $2.3 billion. In contrast to earlier rail projects, which received substantial federal capital funds, local sales tax revenues must cover the majority of the FrontLines 2015 projects' capital and finance costs. Further, we note that as UTA has issued more debt, UTA's bond rating has been downgraded.

Local Sales Tax Will Pay for Majority of FrontLines 2015 Capital Costs

After the 2006 sales tax referendum passed in Salt Lake and Utah counties UTA accelerated construction of the five FrontLines 2015 projects. While the public vote in Utah County was specifically for a transit tax, the ballot language in Salt Lake County was broadly written to allow funding of either transit or road projects. The additional tax in Salt Lake County was "for corridor preservation, congestion mitigation, or to expand capacity for regionally significant transportation facilities."

In Salt Lake County, the public vote in 2006 was to allow funding of either transit or road projects; Salt Lake County's COG decided to fund transit.

The decision of how to spend most of the additional .25 percent sales and use tax was made by local government officials. Salt Lake County's Council of Governments (COG) decided to fund three of the five FrontLines 2015 projects (Mid-Jordan TRAX, West Valley TRAX, and FrontRunner South). These additional funds allowed UTA to accelerate construction of other major projects in the 2030 long-range plan with less federal assistance than had been given to earlier rail projects. Management believes that all projects may have qualified for federal funding if UTA had proceeded more slowly, but the decision was made to forgo some possible federal funding in order to complete the projects sooner.

The total capital expense for the five FrontLines 2015 projects is expected to be about $2.3 billion. Figure 2.1 displays UTA's major completed and in-process transit projects, the sources of capital funds, and the cost of each project.

Figure 2.1 Cost Comparison of Past and Current Rail Projects. Previous rail projects were heavily subsidized by federal grants (78 percent) compared to the FrontLines 2015 projects, which received only a 24 percent federal subsidy.

Project and Actual/Proposed Year of Completion		Total Cost (in millions)	Federal Funding	Local Funding	Local Cost (in millions)
Previous Rail Projects:					
TRAX North-South	(1999)	$313	77%	23%	$71
TRAX University	(2001)	119	82%	18%	22
TRAX Medical Ext.	(2003)	89	60%	40%	36
FrontRunner North	(2008)	612	80%	20%	122
Previous Rail Projects		**$1,133**	**78%**	**22%**	**$251**
FrontLines 2015 Projects:					
TRAX Mid-Jordan[1]	(2011)	$535	80%	20%	$107
TRAX West Valley[1]	(2011)	346	0%	100%	346
TRAX Airport	(2013)	344	0%	100%	344
TRAX Draper	(2013)	193	60%	40%	77
FrontRunner South[1]	(2014)	874	0%	100%	874
FrontLines 2015 Projects		**$2,292**	**24%**	**76%**	**$1,748**

Source: Estimated costs were taken from internal UTA project budgets. Federal funding amounts are found in full funding grant agreement (FFGA) documents.
[1] These three projects were prioritized to receive the sales tax revenue from the 2006 referendum.

The Mid-Jordan and Draper light rail lines received a substantial amount of federal grants, but overall, the five projects received only a 24 percent federal subsidy. Sales tax collections within UTA's transit district will need to pay for the projects' remaining $1.7 billion capital costs and associated interest expense.

Previous UTA Rail Projects Received Larger Federal Subsidies. UTA received large amounts of federal funds to build the previous light rail and commuter rail projects; federal funds subsidized 78 percent of the capital costs and all four projects received federal funds. The overall federal subsidy level for the FrontLines 2015 projects was much lower than the previous rail projects, and only two of the five projects received federal funds.

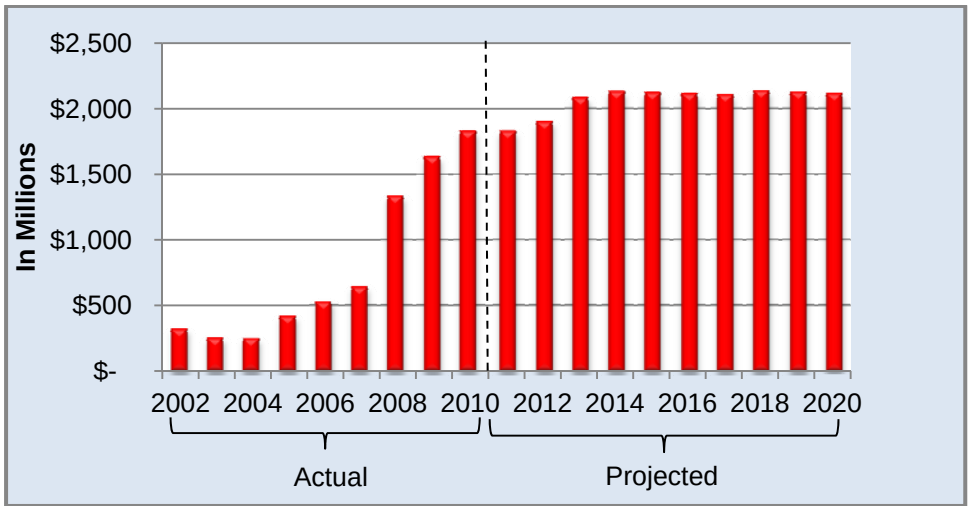
Acceleration of Transit Projects Required UTA to Issue Bonds

UTA's total debt has increased from $321 million in 2002 to $1.8 billion in 2010. According to UTA staff, UTA will need to issue an

UTA's outstanding debt at the end of 2010 was over $1.8 billion, and UTA expects to issue an additional $325 million in bonds in the near future.

additional $325 million in bonds to complete the current rail projects. UTA's total debt and projected future debt are found in Figure 2.2.

Figure 2.2 UTA's Current and Projected Total Debt. At the end of 2010, UTA had outstanding debt in excess of $1.8 billion; this amount equates to over $661 per person in UTA's service area. Over the next 10 years, UTA's outstanding debt will exceed $2 billion.



Source: UTA's 2010 CAFR and planning documents.

The additional capital required to build the new rail lines came from bonds issued by UTA in 2008, 2009, and 2010. In 2008 alone, UTA issued $700 million of 30-year bonds, which represent a long-term sales tax revenue commitment by UTA and the communities UTA serves. As a result of the large amounts of debt UTA has issued, UTA's bond ratings have been downgraded, which will increase the cost of financing future transit projects.

Debt Service Payments Will Consume a Greater Portion of Future Sales Tax Revenues

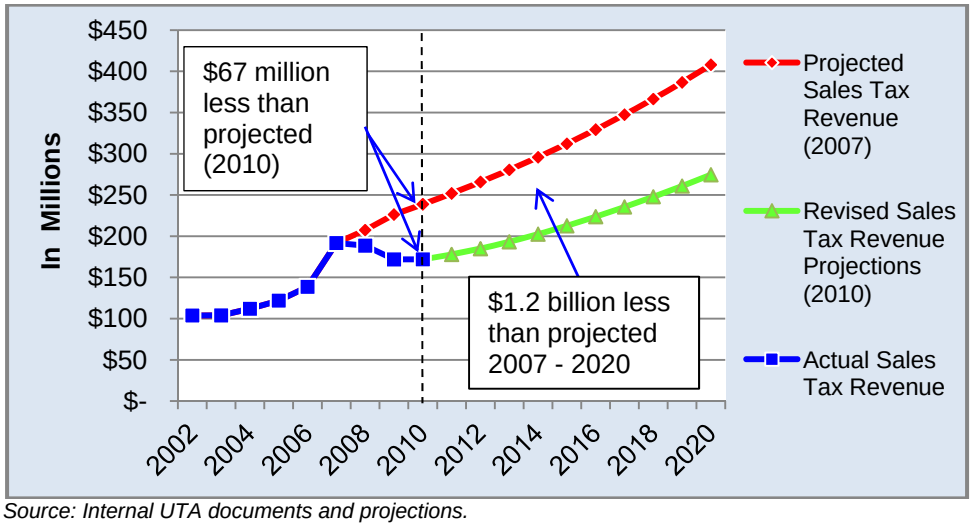
The recent recession has significantly reduced the amount of UTA sales tax revenue; 2010 UTA sales tax revenues were $67 million below projections and by 2020, UTA's cumulative sales tax revenues are estimated to be $1.2 billion below 2007 projections. Although UTA still projects sales tax revenue to grow each year, the increasing debt service payments will consume a larger portion of the revenues.

Economic Downturn Has Significantly Reduced UTA's Sales Tax Revenues

Sales tax revenues in 2010 were $67 million lower than 2007 projections. By 2020, UTA's cumulative sales tax revenue is expected to be $1.2 billion below 2007 projections.

UTA has experienced lower sales tax revenues due to the recession and a reduction in consumer spending. In 2010, sales tax revenue collections were $67 million lower than what was projected in 2007, which caused UTA to revise its future projections. Figure 2.3 shows actual revenues, UTA's 2007 projections and the revised 2010 projections.

Figure 2.3 UTA Sales Tax Revenues and Projections. UTA's sales tax collections increased dramatically in 2007 due to the sales tax referendum and a healthy economy. However, sales tax collections during the recession have been significantly lower than 2007 projections.



Source: Internal UTA documents and projections.

After the 2006 sales tax referendum, UTA accelerated construction of the five rail projects based on future sales tax projections. However, UTA's sales tax revenues have been significantly lower than 2007 projections. In 2010, UTA's sales tax revenues were $67 million below 2007 projections, and by 2020, UTA's cumulative sales tax revenues are expected to be $1.2 billion below 2007 projections.

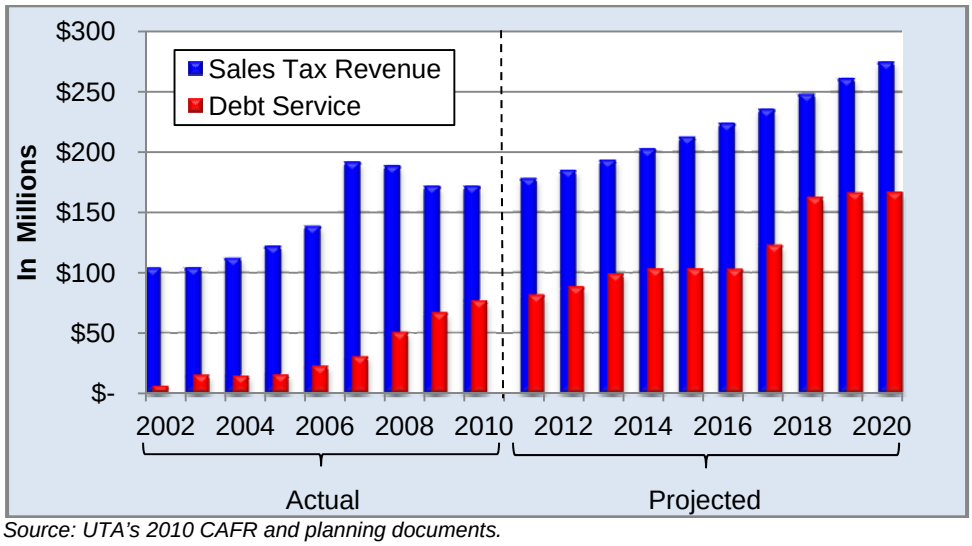
Future sales tax revenues are vital to UTA's financial plan because sales tax revenues remain the agency's largest source of ongoing funding. If consumer spending in UTA's transit district remains low, UTA will need to either operate more efficiently to maintain current service levels or reduce services to stay fiscally solvent. As discussed in the next section, current projections show that a growing portion of sales tax revenue will pay for increasing debt expenses.

Debt Service Payments Are Projected to Consume a Larger Portion of Sales Tax Revenue

A review of Figure 2.2 shows that UTA's debt will exceed $2.1 billion by 2013. UTA will also incur bond interest in excess of $2 billion. Consequently, over the life of the bonds, repaying the debt will require over $4 billion in debt service payments. The debt service payment schedule, or how much UTA pays each year for debt, is dependent upon how UTA structured the bonds at the time of issuance. Although UTA only paid $70.7 million for debt service in 2010, UTA projects that by 2020, debt service will exceed $166 million a year. Figure 2.4 displays the historic and projected debt service and sales tax revenues from 2002 to 2020.

UTA's debt service payments are expected to double by 2020 to over $166 million a year.

Figure 2.4 Debt Service and Sales Tax Projections. UTA expects sales tax to increase 3.5-5.25% each year. Annual debt service costs are expected to consume a greater percentage of sales tax revenues.



Source: UTA's 2010 CAFR and planning documents.

The percentage of sales tax revenues needed for debt service has grown and will continue to do so:
2002 – 6 percent
2010 – 41 percent
2018 – 65 percent.

In 2010, UTA's debt service consumed around 41 percent of the sales tax revenue. However, the debt service is projected to increase significantly. In fact, by 2018, 65 percent of the sales tax revenue will be used to pay for debt service. The projected debt service includes the payments associated with UTA issuing an additional $325 million of bonds to complete the FrontLines 2015 project. Even as sales tax revenues increase, UTA projects that debt service will consume an increasing portion of the sales tax revenues, so that the available sales tax revenues after debt service will remain around $100 million per year over the next ten years.

With more sales tax revenues needed to pay for UTA's debt service, fewer funds will be available for operating UTA's transit services. UTA will need to rely on other revenues sources or lower operating expenses to stay fiscally solvent. The next section outlines additional financial assumptions found in planning documents.

UTA's Revenue Projections Are Optimistic; Expense Projections May Be Understated

Between 2010 and 2020, UTA projects a 60 percent increase in sales tax revenue, a 141 percent increase in federal operating subsidies and a 125 percent increase in farebox revenue. In contrast, operations and maintenance (O&M) costs are forecast to increase by a much more modest 52 percent.

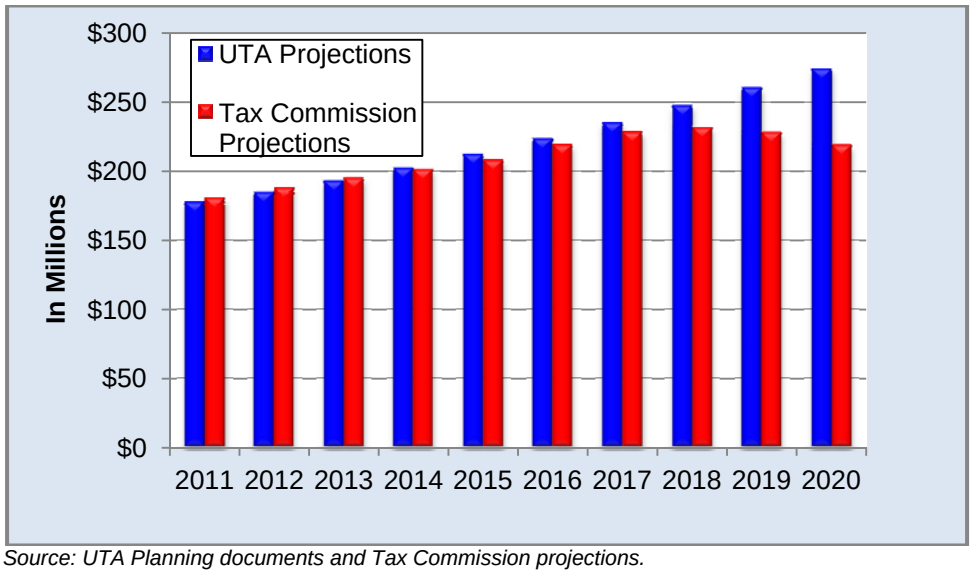
If revenue projections prove to be too high or cost projections prove to be too low, UTA's operations and expansion plans may be affected. Ideally, the economy will rebound and sales tax receipts will greatly exceed the projections discussed in the prior section. But, if that does not happen, future unknown factors could significantly affect planned transit services. This section examines UTA's future financial assumptions for federal non-capital assistance, farebox revenues, and O&M expenses.

UTA Sales Tax Projections Are More Optimistic than Tax Commission Projections

We believe UTA's revised sales tax projections shown in Figure 2.3 still may be optimistic. When compared to the State Tax Commission cumulative sales tax projections through 2020, UTA's cumulative projections are $111 million higher. Figure 2.5 graphs UTA and the Tax Commission sales tax projections from 2011 to 2020.

UTA's sales tax revenue projections are $111 million higher than the Utah Tax Commission projections during the next 10 years.

Figure 2.5 Tax Commission and UTA Sales Tax Projections. By 2020, UTA's cumulative sale tax projections are $111 million higher than the Tax Commission projections.



Source: UTA Planning documents and Tax Commission projections.

After 2015, UTA projects sales tax revenues to annually increase by 5.25 percent. In contrast, the Tax Commission projections show sales tax revenue to decline/grow between -4 and 5.4 percent each year during the next ten years. We also discussed UTA's sales tax revenue projections with the chief economist of the Office of the Legislative Fiscal Analyst who agrees that UTA's projections are optimistic. She believes future average sales tax growth rates will be around 4 percent a year.

Instead of projecting future sales tax revenues by applying a constant growth factor, we recommend that UTA compare sales tax revenue projections with other planning entity models. If significant differences exist between projections, we recommend that UTA reconcile its numbers with the planning agency's forecasted revenues.

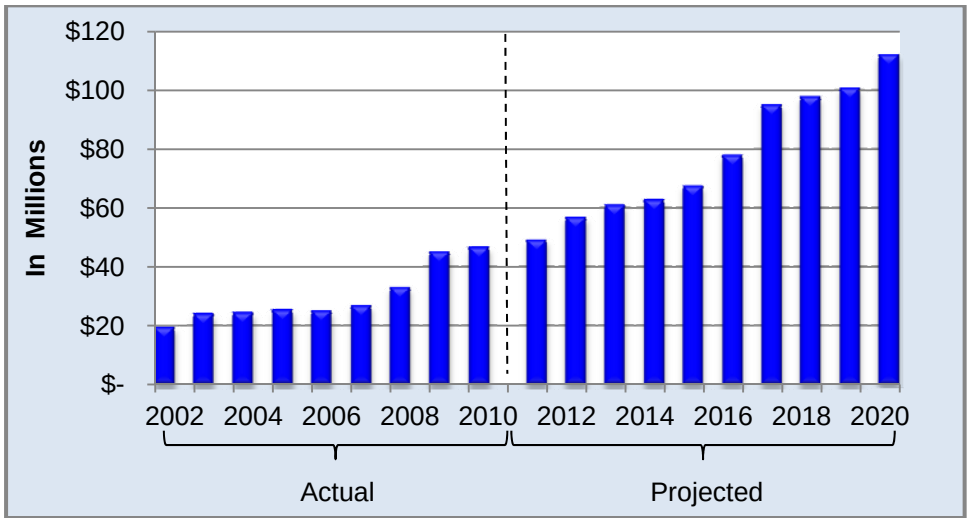
UTA's Federal Preventative Maintenance Grant Projections Are Optimistic

UTA expects to receive larger sums of federal preventative maintenance grants in the future because of the additional five new rail segments. UTA's forecast is largely based on federal funding formulas that have been used in the past. However, given federal budget and debt concerns, the transit operating subsidies provided by the federal

government could be curtailed. While we have no way of assessing future federal transit funds, we believe UTA needs to be conservative in its expectations for significant increases. Figure 2.6 graphically displays UTA's projected federal preventative maintenance grant levels into 2020.

Figure 2.6 Federal Maintenance Grants and Projections. UTA expects that federal preventative maintenance grants will increase 141% from $46.5 million in 2010 to $112 million in ten years.

UTA projects that, by 2020, federal maintenance grants will have increased 141% from $46.5 million to total more than $112 million.



Source: UTA's 2010 CAFR and planning documents.

We believe UTA has taken an aggressive outlook on the growth of federal preventative maintenance funding given the current federal deficit reduction discussions. Although these revenue projections are an important part of planned future operating revenues, there is a risk that federal grants could be curtailed. UTA projects that federal grant amounts for non-rail service (bus, vanpool, and paratransit) will increase each year despite the fact that UTA's non-rail services are expected to remain fairly constant in the future. In addition, calculation errors incorrectly enlarged projected federal subsidy levels.

UTA Double Counted a Paratransit Federal Grant in Its Planning Document. We analyzed UTA's planning documents and found that UTA inadvertently double counted future federal assistance for paratransit service. The result of UTA's error increased annual federal preventative maintenance grant projections by $4.1 million in 2011. Over time, the calculation error steadily increases to $7.2 million in 2020. UTA has stated that it will fix the calculation in

UTA's calculation error resulted in overstated preventative maintenance grants in excess of $4.1 million a year.

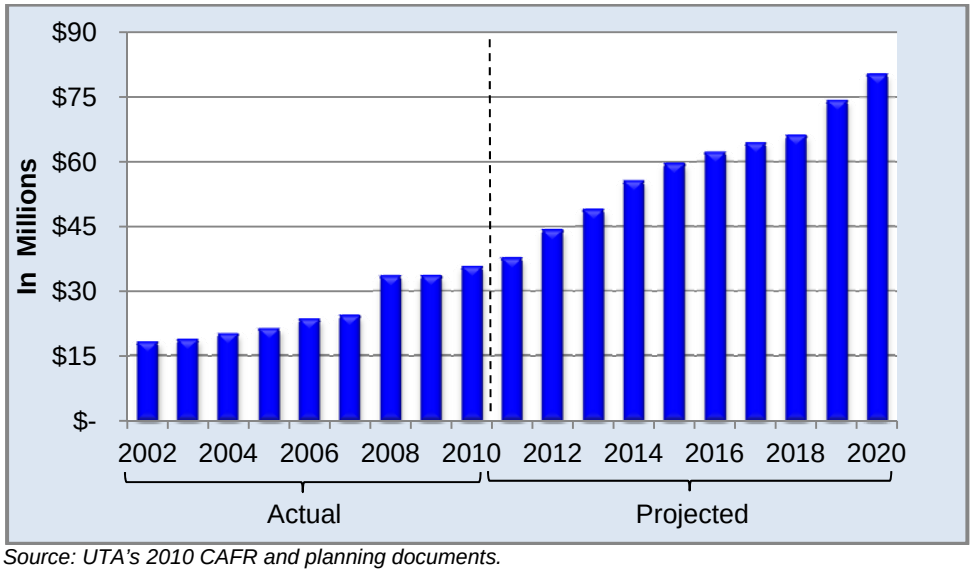
revised planning documents, but the data shown in Figure 2.6 has not been corrected.

UTA's Farebox Revenue Projections Are Optimistic

Another risk to UTA's revenue projections involves the uncertainty in whether passenger revenue will increase as much as expected. UTA plans to fundamentally revamp how transit users pay to use the system. Plans call for payment for every trip taken based on distance travelled and for UTA to significantly increase the proportion of operating costs paid by transit users. UTA projections assume farebox revenue will increase from $35 million in 2010 to $80 million in 2020. The proportion of operating cost paid by users is expected to increase from 20 to 30 percent. Chapter IV will discuss some of the challenges UTA faces as it works to increase farebox revenue. This section addresses the importance of the projected revenue to UTA's financial plan.

Figure 2.7 trends the actual and projected farebox revenues from 2002 to 2020.

Figure 2.7 UTA Fare Revenue and Projections. UTA projects farebox revenue to increase 125% in the next ten years, from $35 million in 2010 to $80 million in 2020.



Source: UTA's 2010 CAFR and planning documents.

UTA projections assume fare revenue will more than double from $35 million in 2010 to $80 million in 2020. UTA's fare revenues are

expected to grow due to increases in both fares and ridership. UTA projects boardings on the existing system and future projects to increase between 2.4 and 4.2 percent each year. In addition, fares charged to riders are expected to be raised several times during the next ten years. There is a risk that revenue projections may not increase as much as projected because some riders may be dissuaded from using transit because of increasing fares. In the next section, we discuss how UTA's ridership projections are higher than projections found in travel demand model estimates.

2016 Rail Boardings Are Overstated by 4.5 Million. In order to assess the reasonableness of UTA's boarding projections, we compared UTA's Transit Development Plan's (TDP) 2016 rail boarding projections with travel demand model estimates. The TDP is UTA's main planning spreadsheet, which UTA officials use each year to project revenues and expenses for 30 years into the future. The travel demand model is maintained by the Wasatch Front Regional Council (WFRC); it forecasts future road and transit needs from current and expected demographic conditions.

2016 ridership boarding projections are 4.5 million higher than travel demand model estimates. As a result, UTA's farebox revenue is overstated by $5.3 million.

According to the TDP, 2016 rail boardings are projected to be over 28.5 million. However, the travel demand model estimates 24 million boardings, a difference of 4.5 million that potentially overstates the estimated farebox revenue by $5.3 million in 2016. We recommend that UTA regularly reconcile the boarding projections in the TDP with the travel demand model numbers to improve planning accuracy.

Commuter Rail Boardings Are Below Projections. When the commuter rail first opened in 2008, UTA estimated that there would be 5,900 weekday riders. In the first six months of service, the commuter rail north line exceeded projections. However, commuter rail weekday boardings have since dropped below earlier ridership projections. In 2010, commuter rail north averaged 5,125 weekday boardings, which was 13 percent below the initial projections for 2008.

At the end of 2010, commuter rail boardings were lower than 2008 opening-day projections.

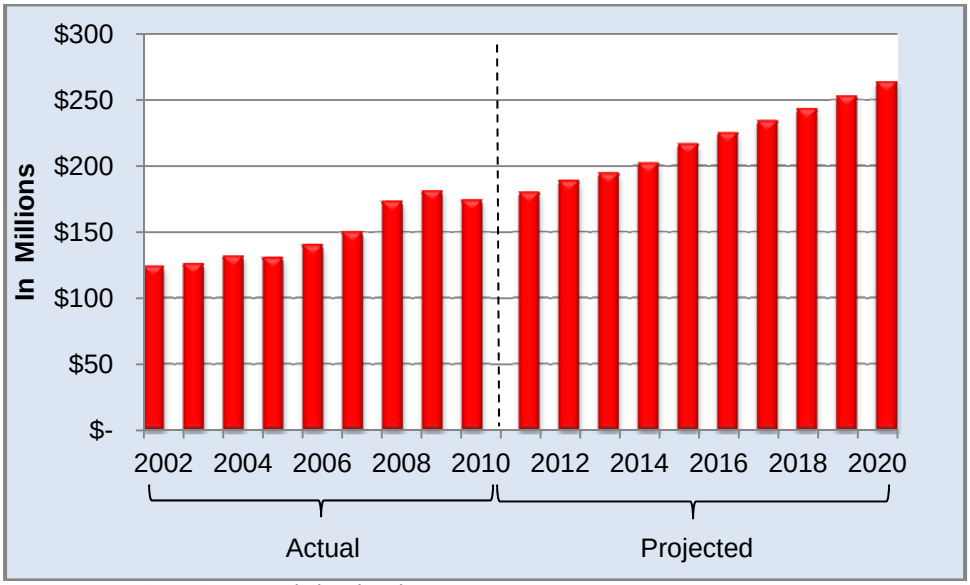
UTA's O&M Expense Projections May be Understated

Compared to the projected revenues discussed above, UTA forecasts that its operating and maintenance (O&M) costs will increase

much less. Similar to the risk posed by future revenues being less than expected, future costs could also be more than anticipated. In part, the slower growth of O&M costs results from assumed efficiencies that would enable future rail lines to operate more efficiently than originally planned.

UTA planners expect annual O&M to increase at a constant 2 percent rate each year until 2015, at which point they expect ongoing O&M expenses to start increasing 3.75 percent each year. Figure 2.8 displays the historic and projected O&M expenses from 2002 to 2020.

Figure 2.8 Operations and Maintenance (O&M) Costs and Projections. UTA projects that O&M costs will increase 52% from $173.9 million in 2010 to $263.8 million in 2020.



Source: UTA's 2010 CAFR and planning documents.

UTA expects to offset rising O&M costs with service reductions in 2012 and efficiency gains in 2015.

Figure 2.8 includes an additional $44 million annual O&M costs from the five FrontLines 2015 projects. To offset cost increases for new service, UTA expects to implement service reductions in 2012 to trim $4.2 million from its budget. In addition, UTA hopes to realize additional efficiencies once all FrontLines 2015 projects come online.

$10 Million Efficiencies Expected by 2015. UTA expects to trim an additional $10 million from O&M, once all new rail projects are online, through efficiencies gained from a larger system and reductions to rail administrative and support functions. We question UTA's $10 million savings supposition and low O&M growth rate.

We believe the volatility of fuel prices, maintenance costs, and other operational expenses could significantly alter UTA's O&M costs in the future. Should UTA experience higher than projected expenses or a significant decline in revenue sources, UTA will need to reduce service and/or scale back future expansion plans.

In this chapter, we have examined UTA's major sources of ongoing revenues and expenses. However, UTA collects other revenue, including advertising and investment income, which equated to roughly 3 percent of UTA's revenue in 2010. In addition, UTA has additional capital revenue sources and capital expenditures that were indirectly discussed in the capital debt service section of this report. In the next section, we discuss UTA's future capital reserve levels and potential effects of a budget shortfall.

Financial Limitations May Affect Future Service Levels and Transit Projects

In years past, UTA has carried forward substantial amounts of excess reserves in addition to its required reserves. These excess reserves have provided a cushion against revenue shortfalls or cost increases. However, in the future, UTA expects to maintain just enough reserves to cover required levels. The reduced reserves leave little margin for error in revenue and cost projections. Assuming sales tax rates do not increase, unexpected shortfalls would likely require cutbacks in transit service and planned expansions. During the past August service change day, the introduction of two new rail lines resulted in a 6 percent decrease of overall bus service. As UTA begins to integrate more rail lines within its current system, route adjustments and additional service cuts may be needed. Similarly, revenue shortfalls may require adjusting expansion plans.

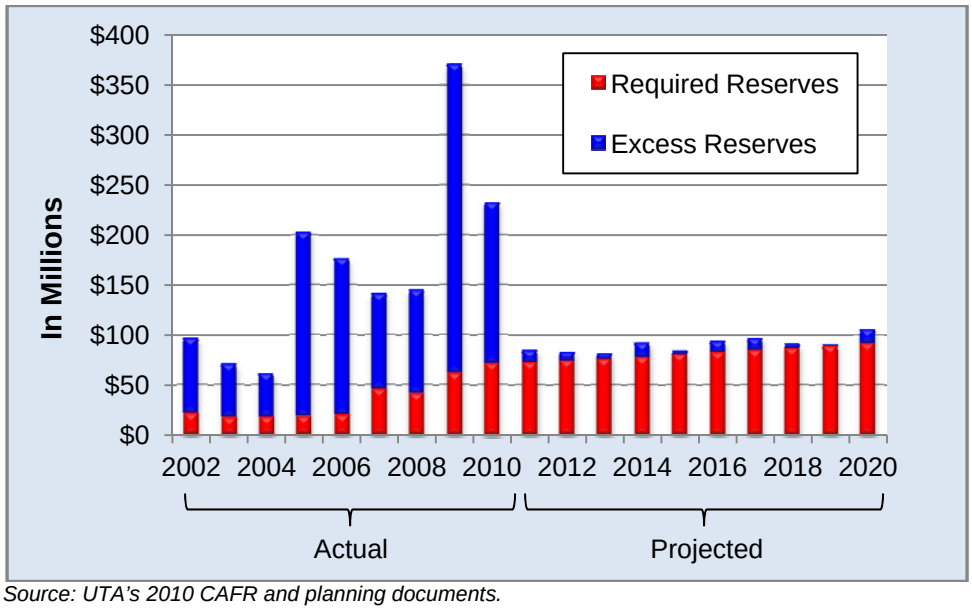
UTA's Excess Reserve Levels Are Projected to Significantly Decrease

UTA has historically had excess reserves that provided a cushion for unexpected budget shortfalls and variances in revenue and cost projections. At the end of 2010, UTA held over $161 million of excess reserves (in addition to $71 million of required reserves), but future projections show that excess reserves are expected to significantly decrease. Figure 2.9 displays required and excess reserves.

In 2010 UTA held over $161 million in excess reserves.

Figure 2.9 Required and Excess Reserves and Projections. Since 2002, UTA has had year-end excess reserves in the range of $43 million to $309 million. Future excess reserves projections are much lower.

Excess reserves are projected to be less than $15 million per year.



Source: UTA's 2010 CAFR and planning documents.

The excess reserve amounts shown in Figure 2.9 are comprised of cash, cash equivalents, and investments. From 2011 to 2020, UTA expects that excess reserves (excluding required reserves) will be lower than $15 million at the end of each year.

UTA maintains required reserves to cover unexpected costs, self-insurance liabilities, and debt service. Some of these reserves are required by bonding agencies while others are required by UTA's board. According to UTA's TDP, at the end of 2010, the required reserves totaled over $71 million. Although this amount is substantial, board policy and bonding documents require the reserves to be used only in specific circumstances. Because UTA's available excess reserves in the future are low, UTA's financial flexibility will be limited for many years.

Operating Costs of New Rail Lines May Lead to Less Bus Service

In the future, paying the operating costs of new rail lines may require UTA to reduce the costs of its other services. In fact, that type of reduction occurred in August 2011, when UTA opened two new TRAX lines that increased UTA's overall level of rail service by 38 percent. However, many bus routes experienced route changes, altered

service hours and frequency, or elimination. UTA estimates that overall bus service decreased by 6 percent as a result of the changes. According to UTA, the bus redesign was intended to feed the new TRAX lines.

The August 2011 change day reduced bus service by 6 percent and increased rail service by 38 percent.

Although UTA's bus service was reduced, producing a savings of $5.4 million, the overall financial effect of the changes was an increase in O&M of $8.6 million. Future change days may have similar results to the results of the August 2011 change day: improved rail service at the detriment of UTA's bus service. Although rail lines stimulate development around transit corridors and are able to move more people, bus service represents a lower capital investment and provides flexible service to riders.

As new rail lines become operational, UTA will continue to adjust service levels based on available revenues. UTA's planning documents are complex and contain multiple assumptions about future financial circumstances. As discussed earlier, UTA's financial standing is dependent on many factors, including adequate levels of revenue from multiple sources and expenses at or below projections. Financial planning and forecasting are difficult because many factors are outside of UTA's control. Future revenue levels will determine how much transit service UTA will be able to provide customers. In addition, UTA may need to delay construction of new projects if revenue levels are not adequate to build and maintain the new projects.

UTA May Not Be Able to Afford Additional Transit Projects in the Near Future

UTA has ambitious plans to build additional transit projects in the future to better connect residents in their transit district. However, UTA has financial constraints which may delay or limit the expansion plans. We believe UTA should identify reliable ongoing operating funds before embarking on new expansions. If expansion plans need additional taxpayer support for operations, UTA should obtain that support before beginning additional construction.

UTA Plans to Build Several Large Transit Projects in the Future. According to UTA's vision, every resident of the Wasatch Front should reside within one mile of a major transit stop by 2030. To help meet this goal, UTA has been actively expanding its transit system. UTA plans to construct various streetcar, rail, and bus rapid

UTA plans to continue expanding transit during the next twenty years.

transit (BRT) lines during the next twenty years. Appendix A shows UTA's expansion projects as posted on the agency's website. We compared the 10 projects on that list to the planning documents for the two metropolitan planning organizations, Wasatch Front Regional Council (WFRC) and Mountainlands Association of Governments (MAG), and found the following timeline.

Phase 1: 2011-2020

- Sugarhouse - Streetcar
- Ogden - Streetcar
- Mountain View Corridor/5600 West - BRT
- Utah County - BRT
- 3500 South - BRT

Phase 2: 2021-2030

- Payson - FrontRunner Extension

Unfunded (no specific timetable)

- South Davis County - Streetcar
- Brigham City - FrontRunner Extension

Transit Studies

- Taylorsville/Murray
- 9400 South

Sugarhouse Streetcar Will Need Additional Subsidies. The next major transit project to go forward will be the Sugarhouse Streetcar; construction is expected to begin in April 2012 and be completed in mid 2013. Sources for most, but not all, of the $55.5 million capital costs have been identified. Much of the construction will be funded by a federal grant with additional contributions from Salt Lake City and the City of South Salt Lake. UTA will contribute the right-of-way valued at $6.3 million and three vehicles with a combined value of $12 million.

Paying for the operating subsidy of the Sugarhouse Streetcar remains a serious concern.

Although construction will soon begin, paying for the ongoing operating subsidy of the streetcar remains a serious concern. UTA has indicated that its long-range revenue projections would not likely be strong enough to pay for operations of the Sugarhouse Streetcar. Therefore, UTA has insisted that the cities consider sharing the O&M costs. Annual operating costs and revenues are uncertain, but

according to planning documents, they are forecast to be about $1,500,000 and $300,000 respectively. Thus, an ongoing subsidy of $1.2 million is required.

Operating costs of the Sugarhouse Streetcar are expected to require an annual subsidy of $1.2 million.

Because of UTA's shortage of adequate operating funds, the cities have agreed to help pay for the first two years of operations. During that time period, UTA and the two cities have agreed to each pay one-third ($400,000 each per year) of the operating subsidy for the streetcar. After the end of two years, UTA will assume full responsibility for the O&M costs on the line.

The interlocal agreement among UTA, Salt Lake City, and South Salt Lake addresses the possibility of a voter referendum to increase UTA's sales tax collections. If voters agree to increase the sales tax rate for transit purposes, the cities will not have to provide additional O&M funds. However, as mentioned earlier, UTA has told us it has no plans for a sales tax increase.

Additional projects and studies, which may take place after 2030, are included in UTA's planning documents. Before UTA begins construction on any new project, adequate analysis of revenues, expenses, and demand for the new projects should be performed.

Revenue Sources for New Projects' Capital and O&M Expenses are Unclear. The actual costs associated with future projects are unknown, as are the sources of revenues required for construction and maintenance. Within UTA's TDP are estimates of possible federal grants for new projects, but if UTA fails to secure federal funds, some projects will not be built. In the future, UTA may need to make difficult decisions to operate within its budget should revenues be less or expenses greater than expected. If UTA is faced with a budget shortfall, it will need to delay opening new rail projects or cut existing service.

We question if UTA should begin other large capital projects when future budgets appear to be tight. It is essential that UTA ensure that it has adequate levels of revenue for future transit projects' capital and O&M expenses before construction is initiated. Otherwise, UTA may find itself unable to satisfactorily operate the costly systems that it has built.

We recommend that UTA reserve adequate funding for future transit projects before construction is initiated.

Given the uncertainty of the future, UTA should work closely with the communities and taxpayers it serves to ensure they understand the costs of continuing to expand transit service. Naturally, cities and their residents want the best and most extensive transit system possible. However, the public may not fully understand the ongoing operating subsidy transit systems require even after they are built. Because UTA is the expert in understanding how much future operating costs need to be subsidized, it is important that UTA communicate that message widely before new systems are built. Otherwise, taxpayers may face an unexpected tax increase.

Recommendations

1. We recommend that UTA identify reliable revenue sources for future transit projects' capital and O&M costs before construction is initiated.

2. We recommend that UTA utilize sales tax revenue models from planning entities to establish sales tax revenue projections rather than applying constant growth factors to current sales tax figures.

3. We recommend that UTA periodically reevaluate the boardings projections within its TDP. If travel demand model boardings significantly disagree with the TDP numbers, we recommend that UTA reconcile the TDP numbers with the travel demand model figures.

Chapter III
Cost Growth Outpaces Ridership, Reducing UTA Cost-Effectiveness

Between 2006 and 2010, UTA's operating expenses grew 24 percent to $174 million. Driven by much more rapid growth in non-operating (or capital) expenses related to rail construction projects, UTA's total expenses grew 37 percent to $275 million. Reported ridership on UTA vehicles, on the other hand, changed little in the four-year time period. With costs growing and ridership remaining stagnant, UTA's cost-effectiveness has decreased.

UTA's total expenses grew 37 percent to $275 million between 2006 and 2010.

This chapter reports cost data for UTA's three largest services: bus, light rail, and commuter rail. The chapter is divided into two sections:

- Capital costs have become a more significant part of UTA's total costs since 2006 as UTA has expanded rail service. Local taxpayers (rather than federal subsidies) are responsible for an increasing portion of transit costs.

- Cost-effectiveness has declined as growth in expenses has far outpaced the growth in ridership, as measured by two standard industry metrics of cost per passenger boarding and cost per passenger mile.

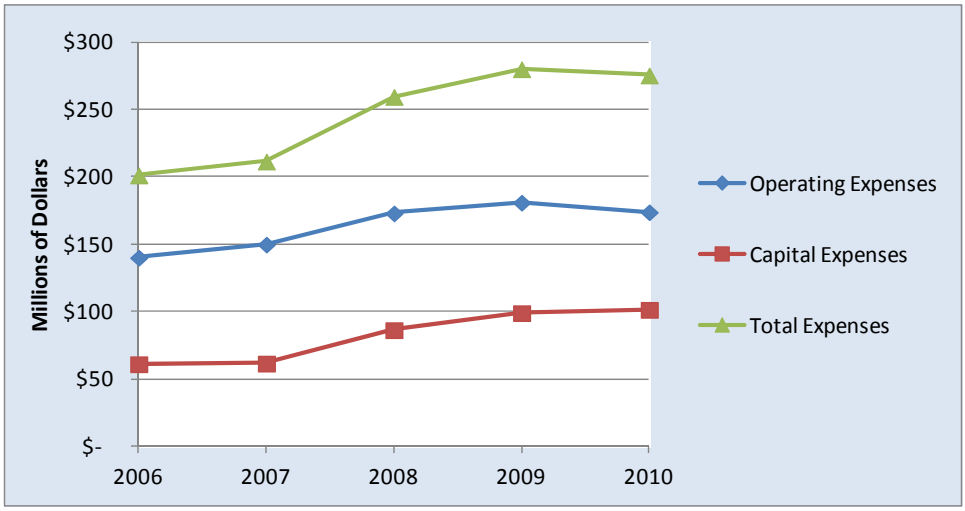
Cost Structure Has Changed as Capital Expenses Have Grown Rapidly

As noted, between 2006 and 2010, UTA's total expenses grew 37 percent. Total expenses are comprised of operating expenses (costs to run the system such as fuel, salaries, maintenance, etc.) and capital costs (primarily depreciation and bond interest related to capital investments). Operating costs grew 24 percent between 2006 and 2010; capital costs grew 66 percent. Due in large part to the addition of the commuter rail line in 2008, 2010 rail service expenses were just over double the cost of rail service in 2006.

Rail services now comprise a much greater proportion of UTA's total costs.

As shown in Figure 3.1, UTA's 2010 total expenses reached $275 million, up $74 million from 2006's total costs of $201 million.

Figure 3.1 UTA's Expenses Grew Noticeably Between 2006 and 2010. Capital expenses related mostly to rail projects have been the primary drivers of the overall growth.



Source: UTA's 2009 and 2010 CAFRs.

Between 2006 and 2010, UTA's costs changed as follows:

- Total annual expenses increased 37 percent (from $201 to $275 million),
- Operating expenses increased 24 percent (from $140 to $174 million), and
- Capital expenses increased 66 percent (from $61 to $101 million).

Expenses related to commuter rail have been the largest factor contributing to the growth of UTA's expenses.

Expenses related to the commuter rail north line, which became operational in 2008, are the single largest factor contributing to the growth in UTA's expenses. Because costs associated with capital projects are capitalized until the services become operational, no costs related to the $2.3 billion 2015 FrontLines are included above. As explained in Chapter II, as those services become operational over the next two to three years, operating expenses will continue to increase. Capital expenses will increase in excess of $50 million annually.

The next figure provides greater detail of UTA's 2010 expenses.

Figure 3.2 UTA's 2010 Operating and Capital Expenses by Mode. Depreciation represents a much more significant portion of total costs for rail modes than it does for bus. Multi-modal expenses are those for which UTA does not have a basis for allocating among the different modes.

Transit Mode	2010 Operating Expenses	2010 Capital Expenses (Depreciation, Interest, etc.)	2010 Total Expenses (Operating + Capital)
Bus	$ 106,093,464	$ 17,089,977	$ 123,183,442
Light Rail	28,006,025	31,380,488	59,386,513
Commuter Rail	19,839,534	22,325,548	42,165,082
Paratransit	18,577,110	1,986,797	20,563,908
Rideshare	1,378,362	2,059,471	3,437,834
Total	**$ 173,894,497**	**$ 74,842,282**	**$ 248,736,779**
Multi-modal:			
Depreciation		$ 8,521,871	$ 8,521,871
Interest		17,313,507	17,313,507
Other		819,892	819,892
Total		**$ 26,655,270**	**$ 26,655,270**
Grand Total	**$ 173,894,497**	**$ 101,497,552**	**$ 275,392,049**

Sources: UTA's 2010 CAFR, data UTA reported in the National Transit Database (NTD), and UTA internal documents.

Industry practice is to focus on operating expenses, which allows for greater comparability among different transit agencies. Capital expenses, however, are large. As can be seen in Figure 3.2, the depreciation expenses for the two rail modes ($31 and $22 million) exceed the rail modes' operating expenses ($28 and $20, respectively). On the other hand, bus depreciation ($17 million) is much smaller than bus operating expenses ($106 million). In summary, we believe that total cost, rather than operating cost, provides a more complete comparison of the cost of different transit modes.

We believe that total cost, rather than operating cost, provides a more complete comparison of the cost of UTA's different transit services.

Referring again to the preceding table, if the $174 million of annual operating expenses were focused on exclusively, 37 percent ($101 of capital expenses) of total expenses ($275 million) would be ignored. Discussion of the cost measurements used in the next section refer back to the difference between operating and total expenses.

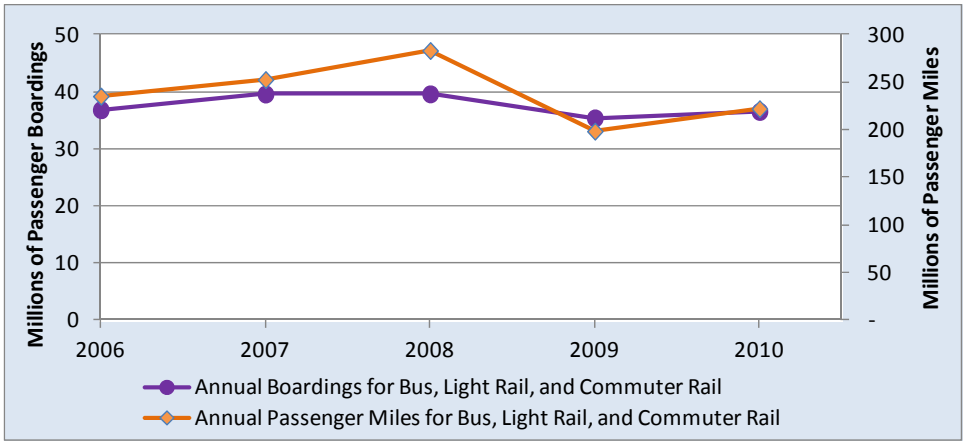
Cost-Effectiveness Has Decreased

Moving people in a cost-effective manner is the core function of transit service.

The transit industry has described its core function as moving people in a cost-effective manner. Between 2006 and 2010, the bus and light rail services' cost-effectiveness decreased. Light rail continues to appear more cost-effective than buses, and commuter rail is less cost-effective than both bus and light rail.

Cost-effectiveness is a function of both costs and ridership (boarding and passenger mile) levels. Cost per boarding and cost per passenger mile are standard industry measurements of cost-effectiveness. The figure below shows changes in boardings and passenger miles for the aggregate of UTA's three largest services: bus, light rail, and commuter rail.

Figure 3.3 UTA's Annual Boardings and Annual Passenger Miles Have Remained Static. 2010 boardings were 1 percent less than in 2006; 2010 passenger miles were 6 percent less than in 2006. Boardings and passenger miles both peaked in 2008.



Source: UTA report to the National Transit Database (NTD).

Boardings and passenger miles were both lower in 2010 than in 2006; these measures peaked in 2008. As the first half of the chapter explained, expenses grew a great deal over that same period. The remainder of this chapter will discuss how the changes in costs, boardings, and passenger miles have decreased UTA's cost-effectiveness from 2006 levels.

The following Figure 3.4 summarizes changes in each mode's operating expense per boarding and operating expense per passenger mile. The calculations of these amounts are found in Appendix B.

Figure 3.4 UTA's Operating Expense per Boarding and Operating Expense per Passenger Mile Have Increased Significantly. The data indicate a decrease in cost-effectiveness.

Transit Mode	Operating Expenses per Boarding			Operating Expenses per Passenger Mile		
	2006	2010	Change	2006	2010	Change
Bus	$ 4.35	$ 4.89	12%	$ 0.63	$ 0.83	32%
Light Rail	1.52	2.09	38%	0.27	0.49	81%
Commuter Rail[1]	n/a	14.27	n/a	n/a	0.55	n/a

Source: National Transit Database.
[1] Began operation in 2008.

Between 2006 and 2010, both measurements increased for bus and light rail far in excess of the rate of inflation for the period (which was 8 percent, per the consumer price index). No increase can be measured for commuter rail, however, which was not in service in 2006.

Capital costs have increasingly become a local rather than federal cost, making the consideration of total cost even more important.

Capital costs in previous years were paid for largely with federal grants, but capital costs for newer projects require a much larger local taxpayer subsidy. Consequently, we believe it is more important than ever to look at total costs and not just operating costs.

Figure 3.5 UTA's Total Expense per Boarding and Total Expense per Passenger Mile Have Also Increased Significantly. The data indicate a decrease in cost-effectiveness.

Transit Mode	Total Expenses (Operating + Depreciation) per Boarding			Total Expenses (Operating + Depreciation) per Passenger Mile		
	2006	2010	Change	2006	2010	Change
Bus	$ 5.01	$ 5.67	13%	$ 0.73	$ 0.96	32%
Light Rail	3.30	4.43	34%	0.58	1.04	79%
Commuter Rail[1]	n/a	30.34	n/a	n/a	1.16	n/a

Source: Auditor computations made from UTA data submitted to the National Transit Database.
[1] Began operation in 2008.

Between 2006 and 2010, total expenses per boarding and per passenger mile for bus and light rail also increased in excess of the rate of inflation for the period. These changes represent decreases in cost-effectiveness.

Figure 3.5 does not include multimodal expenses ($21 million in 2006, $27 million in 2010) detailed in Figure 3.2 which UTA has no basis for allocating to the modes. In other words, the total expenses per passenger and per boarding are actually higher than shown in Figure 3.5.

Bus Service's Cost-Effectiveness Has Decreased Due to Increased Costs

Both cost-effectiveness measurements (cost per boarding and cost per passenger mile) increased beyond the rate of inflation between 2006 and 2010. This analysis suggests that the bus service has become less cost-effective.

As shown in Figure 3.5, from 2006 to 2010, the bus mode's total expense per boarding increased 13 percent to $5.67 per boarding. Over the same period, total cost per passenger mile increased 32 percent to $0.96. Operating expense per boarding and per passenger mile increased by comparable amounts.

Decrease in bus service cost-effectiveness is due primarily to cost increases rather than decreased boardings.

The higher cost per boarding is attributable primarily to cost increases rather than decreases in bus boardings. Total bus mode annual expenses increased 14 percent to a total of $123 million between 2006 and 2010, but bus boardings remained almost the same over the period, growing only 1 percent. In short, lower bus passenger miles worked in tandem with the year's higher costs to cause cost per passenger mile measure to worsen in 2010.

Although UTA operates several different types of buses (local, express, ski, bus rapid transit (BRT), long-distance commuter coaches, etc.), the data is shown at the aggregate level. (In 2010, local buses accounted for 96.5 percent of all bus service.) Each type of bus service and route would likely experience differing levels of cost-effectiveness. We did not examine how the mix of bus services changed over time.

Light Rail's Cost-Effectiveness Has Declined But Still Appears More Cost-Effective than Bus

Figure 3.5 shows that light rail had the lowest 2010 total expense per boarding ($4.43) of UTA's three largest services. Light rail's total cost per passenger mile is comparable to the bus mode ($1.04 versus $0.96, respectively). Light rail's total expense per boarding, however,

increased 34 percent from 2006, and total expense per passenger boarding increased 79 percent. In other words, as was the case with the bus mode, the light rail mode's cost-effectiveness has decreased since 2006.

This decline in cost-effectiveness reflects a combination of increased costs and decreases in both boardings and passenger miles. Light rail's total annual costs increased 18 percent between 2006 and 2010, boardings decreased by 12 percent, and passenger miles decreased by 33 percent.

Light rail has decreased in cost-effectiveness due to both increased cost and decreased boardings.

Commuter Rail Is Less Cost-Effective Than Bus and Light Rail

In 2008, UTA opened a 44-mile commuter rail train route between Salt Lake and Pleasant View. In early 2008, UTA estimated 2008 operating cost per boarding to be about $11.20 and operating cost per passenger mile to be $0.53. Figure 3.4 shows that actual 2010 operating cost per boarding was $14.27 and operating cost per passenger mile was $0.55.

As seen in Figure 3.5, the commuter rail mode's 2010 total cost per boarding ($30.34) was higher than bus ($5.67) and light rail ($4.43). Because commuter rail trips are typically several times longer than bus and light rail trips, a significantly higher cost per boarding would be expected.

UTA commuter rail is less cost-effective than both bus and light rail.

In terms of total cost per passenger mile, commuter rail's 2010 measurement ($1.16) was 21 percent higher than bus ($0.96) and 12 percent higher than light rail ($1.04).

In September 2011, UTA ceased operating commuter rail service between Ogden and Pleasant View. Low ridership and low cost-effectiveness have been reported as the cause for that decision. UTA replaced the two morning and two evening commuter rail trips between Ogden and Pleasant View with 18 bus trips that run throughout the day.

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Chapter IV
UTA Has Increased Farebox Recovery Rate, but Faces Challenges to Implement Additional Changes to Fare Policy

In 2010, fares paid by transit users covered 20 percent of UTA's operating costs, an improvement from 17 percent in 2006. Farebox recovery is important because costs not covered by transit users are subsidized by taxpayers. Utah law directs UTA to balance two competing objectives. Fares should (1) be reasonable and (2) to the extent practicable, make the transit system self-supporting. Because fare policy is so important, we believe the UTA's Board of Trustees should establish, in policy, a fare-pricing strategy. We made the same recommendation in our 2008 audit because we believe that, with a clear board-approved policy, UTA can better balance the need to increase ridership with working to minimize taxpayer subsidy.

UTA has had an impressive increase in fare revenue since 2006 as shown in Figure 4.1. However, UTA remains more highly subsidized than some comparable transit systems. As mentioned in Chapter II, UTA management has plans to fundamentally revamp the current fare system and charge customers for every trip taken based on the distance traveled, in order to increase the farebox recovery rate to 30 percent of operating costs by 2020. We believe this is a promising initiative by UTA, but it faces significant challenges. One important unknown is the extent to which transit users are willing to pay for the service. In addition, technical obstacles and the lack of reliable data could affect UTA's implementation plans.

Figure 4.1 Comparison of Farebox Recovery Rates. From 2006 to 2010, the growth rate in fare revenue exceeded that of costs, resulting in improvement to the farebox recovery rate.

Year	Fare Revenue (In Millions)	Expenses (In Millions)		Farebox Recovery Based on:	
		Operating Costs	Total Costs	Operating Costs	Total Costs
2006	$24	$140	$201	17%	12%
2010	$35	$174	$275	20%	13%
Change	47%	24%	37%		

Source: UTA's 2006 and 2010 CAFRs and the National Transit Database.

Taxpayers shoulder 87% of the total cost of transit.

The above figure shows that fares increased at a higher percentage than costs from 2006 to 2010, and therefore the farebox recovery rate improved (with a corresponding decrease in taxpayer subsidy). The farebox recovery ratio can be calculated based on operating costs or total costs.

UTA Board Policy Is Needed to Address Subsidy Levels

In our 2008 audit, we found that UTA's fare policy did not provide adequate guidance on an agency pricing strategy. The result was a disparity in the subsidy provided to some transit modes and types of passes over others. In our 2008 audit, we recommended that UTA's board establish an overall pricing strategy. However, UTA's board developed neither a specific policy for subsidy levels nor a farebox recovery rate goal. Instead, the board issued broad directives to provide the highest level of service to the most riders possible and continued its practice of annually establishing an investment per rider (IPR), which measures the subsidy per boarding.

Greater Board of Trustees Policy Guidance Is Needed

We think UTA should be guided by a clear fare-pricing strategy established by the Board of Trustees. There is an expectation that transit services will be subsidized at some level, and UTA has the difficult task of balancing the need to increase ridership with attempting to recover costs through fares. In addition, statute directs UTA to consider not only operating costs, but capital costs as well in setting its fares. According to ***Utah Code*** 17B-2a-815(2):

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.

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

The Board of Trustees can provide a broad perspective as UTA tries to strike a balance between keeping transit service affordable and having transit users cover as much of the costs as possible. Because fare policy affects many stakeholders, we believe it is necessary for UTA's Board of Trustees to establish the policy. Many specific policy questions could be addressed. For example, should certain user groups (e.g., students or transit-dependent individuals) receive greater subsidies than other users? Or, should certain types of transit services (e.g., paratransit or commuter rail) receive greater subsidies than other services? However, perhaps the single most important guidance the Board of Trustees could provide would be to establish farebox recovery goals.

Many specific policy questions can be addressed by the Board of Trustees in policy.

Board of Trustees Should Establish A Minimum Farebox Recovery Rate

In our 2008 audit, we recommended that the Board of Trustees establish, in policy, a guiding fare-pricing strategy that included 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, and an overall minimum farebox recovery ratio.

UTA's Board of Trustees did not implement that recommendation but instead continued its practice of annually setting an Investment per

Rider (IPR) goal. The IPR is an internal metric created by UTA that shows the net of operating expenses and passenger fares for each boarding with a goal of continual improvement (lowering) of the IPR. In 2006, the IPR goal was $3.15 and in 2010 it was $3.96.

The IPR may not correspond with the cost-effectiveness of service provided.

For several reasons, we are concerned about UTA reliance on the IPR. Our greatest concern is that it may not correspond with the cost-effectiveness of service provided. For example, transit route changes may require passengers to transfer between vehicles to complete a trip that previously did not require a transfer. Although it is an inconvenience for the passenger to transfer, the IPR metric would improve because the passenger could be counted twice in the denominator of the IPR rather than just once. Therefore, we think the IPR is a flawed metric.

We are also concerned that the IPR may not be well understood or sufficiently descriptive. First, the IPR is difficult to understand because there is no context for the dollar amount shown. In contrast, a farebox recovery ratio, a commonly used industry metric, shows the percentage of costs covered by fares (i.e. 20 percent of costs covered by fares and the corresponding 80 percent are covered by taxpayer subsidy). Second, since the IPR is not reported in federal databases or widely used in other states, it does not facilitate comparisons to other transit agencies.

We reiterate our 2008 recommendation that the 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, and an overall minimum farebox recovery goal.

Farebox Recovery Has Increased, but Is Still Slightly Lower than Peer States

In 2010, UTA collected about $35 million in fare revenue. While that amount represents an impressive increase since 2006, it remains a small portion of the cost of providing service. As discussed in the previous chapter, UTA's total costs were $275 million, of which $174 million were considered operating costs. Thus, passengers paid for just 13 percent of the total cost, or 20 percent of the operating cost, of their transit trips. The farebox recovery rate has improved since 2006,

but is still slightly lower than rates in other western transit agencies. Also, farebox recovery varies greatly by type of service, with light rail the least subsidized and commuter rail the most subsidized.

Fare Revenue Has Increased

From 2006 to 2010, UTA's fare revenue increased from $24 million to $35 million. The largest increases came from educational institutions and employers who were charged more for annual passes for students and employees. Because the number of passenger boardings was flat from 2006 to 2010, we assume much of the revenue increase came from fare increases rather than new riders. Since 2006, UTA has increased base fares and the contracted amounts charged to institutions several times. Figure 4.2 shows a breakdown of the revenues generated by type of fare in 2006 and 2010.

Much of the increase in fare revenue comes from fare increases rather than new riders.

Figure 4.2 Farebox Revenues Increased from 2006 to 2010. Fare revenue increased 47 percent in four years.

	2006 Fare Revenue	2010 Fare Revenue	Percent Change
Fixed Route			
Eco Pass	$ 2,204,480	$ 4,847,403	120%
Education Pass	3,094,124	5,783,924	87%
Pass Sales	6,526,563	8,994,475	38%
Passes Purchased by DOH[1]	749,849	1,024,855	37%
Full Fares	7,374,052	9,725,041	32%
Token Sales	1,467,557	883,609	-40%
Fixed Route	**$ 21,416,625**	**$ 31,259,307**	**46%**
Other			
Vanpool	1,181,797	2,528,801	114%
Paratransit Fares	1,322,303	1,371,955	4%
Other	**$ 2,504,100**	**$ 3,900,756**	**56%**
Total	**$ 23,920,725**	**$ 35,160,063**	**47%**

Source: UTA's general ledger.
[1]Passes purchased by the Department of Health (DOH) for the transportation needs of Medicaid eligible clients.

UTA receives fare revenue from individual passengers who pay daily fares or buy monthly passes. The agency also receives revenue directly from institutions – employers and educational institutions who buy passes for their employees and students. The revenue generated from institutions (Eco and Education Passes) in the above figure almost doubled in the four years from 2006 to 2010 because

UTA focused on decreasing the subsidies granted on these two passes. Each year, UTA increased both the unit price on Eco Passes and the contract amount with educational institutions.

Education Passes Are More Heavily Subsidized than Others. In our 2008 audit report, we found that there were differences in levels of subsidy offered to different types of fare passes. We did not update that analysis in this audit because of a lack of current and complete data.

UTA's consultants tried to do a similar analysis using 2008 data and found that the total fare per boarding was $.81. The consultant reported the average fare was $.30 for the Education Pass, $.64 for the Eco Pass and $1.28 for cash/tokens and $1.29 for passes. However, the consultant acknowledged that there may be discrepancies between the two UTA data sources used that affect these calculations.

Some Transit Services Are Subsidized More than Others

The farebox recovery rate varies by transit service. Figure 4.3 shows the wide variation in farebox recovery for operating costs and total costs. The calculations of these amounts are found in Appendix C.

Figure 4.3 Subsidy Levels by Type of Transit Service. Although the overall farebox recovery ratio is 20 percent of operating costs and 13 percent of total costs, the level varies by type of transit service. (2010)

UTA's various modes are subsidized at different levels, with commuter rail being the most subsidized.

Transit Mode	Per Boarding:		Per Boarding:	Farebox Revenue as % of:	
	Operating Cost	Total Cost[1]	Farebox Revenue	Operating Cost	Total Cost
Bus	$4.89	$5.67	$0.86	18%	15%
Light Rail	$2.09	$4.43	$0.78	37%	18%
Commuter Rail	$14.27	$30.34	$1.49	10%	5%

Source: UTA's 2010 CAFR and the National Transit Database.
[1] Does not include $27 million in multi-modal costs that UTA does not have a basis for allocating to the modes, as shown in Figure 3.2 in the previous chapter.

The farebox recovery ratio per mode is important because it shows the percentage of costs paid by the users of that mode. The revenue per mode is based on UTA's allocation of revenues. We were unable

to audit how UTA distributes the Pass Sales, Eco Pass, and Education Pass revenue to the various modes.

Light Rail and Bus Operating Subsidies Have Improved. The base fare with surcharge for regular adult passengers on the bus systems and light-rail was $2.25 in 2010. Based on UTA's revenue and passenger data, the average revenue generated per boarding was $.86 for bus and $.78 for light rail. There are two major reasons for the difference between the base fare of $2.25 and the average revenue generated per boarding -- discounts received by various types of pass holders and transfers. On an operating cost basis, light-rail fares covered 37 percent of costs in 2010, up from 32 percent of costs in 2006. Bus fares cover a lower percent of operating costs than light rail, 18 percent in 2010, up from 15 percent in 2006.

Commuter Rail Is Highly Subsidized. Commuter rail fares only cover 10 percent of operating costs. Commuter rail fares are distance-based, with a base fare of $2.25 for travel to one station plus $0.50 for each additional station, and a maximum fare of $5.25. Based on UTA's revenue and passenger data, the average revenue generated per boarding was $1.49. The difference between the base fare and the average fare per boarding is attributable to discounts received by pass holders and transfers.

Figure 4.3 shows that even though commuter rail average fares are double those of the other modes, the subsidy for commuter rail remains higher because commuter rail costs more to operate. Commuter rail takes passengers further (26.1 miles on average) per trip than buses (5.9 miles) and light rail (4.2 miles). In other words, commuter rail passengers pay twice as much in average fare yet go four to six times further.

Commuter rail passengers pay twice as much in average fare, yet go four to six times further.

As discussed previously, UTA's goal is to move from 20 to 30 percent farebox recovery by 2020. Figure 4.3 shows that light rail recovery is currently at 37 percent, already over the 30 percent target; however, at 10 percent, commuter rail farebox recovery is much lower than the 30 percent target. Because commuter rail's costs are higher ($14.27 per boarding), it would take a large increase in fares to get commuter rail to a $4.28 per boarding average fare, which would produce a 30 percent farebox revenue rate at current cost and ridership

levels. It is unclear whether passengers will be willing to pay 30 percent of commuter rail operating costs.

Farebox Recovery Rate Based on Total Costs Shows a More Complete Picture of Subsidies. UTA does not have a goal for farebox recovery ratio based on total costs. We think it is an important ratio because of the relatively large depreciation expenses of rail modes that are not included in operating costs. Moreover, as mentioned earlier, statute indicates costs such as depreciation and interest on bonds should be considered. When comparing the farebox recovery ratios based on total costs, we found that bus and light rail ratios are much closer to each other: 15 percent for bus and 18 percent for light rail. However, commuter rail is still the most subsidized with fares only covering 5 percent of total costs.

UTA's Farebox Recovery Is Slightly Lower than That of Some Other Transit Agencies

We compared UTA's farebox recovery ratio to five similar transit agencies and found that it was lower than three transit agencies, similar to one agency, and higher than another as shown in Figure 4.4. The figure shows that other transit agencies have also increased their farebox recovery ratio since 2006.

Figure 4.4 UTA's Farebox Recovery Rate Based on Operating Costs, Compared to Other Transit Agencies (2006 and 2010). The farebox revenue from UTA's passengers, using all types of transit services, is somewhat lower than that of other western transit districts.

Transit Agency	Fare per Boarding 2010	Operating Cost per Boarding 2010	Farebox Recovery per Boarding 2010	Farebox Recovery per Boarding 2006	Change 2006 - 2010
DART (Dallas)	$ 0.89	$ 7.10	13%	12%	1%
Valley Metro (Phoenix)	$ 0.91	$ 4.63	20%	20%	0%
UTA (Salt Lake City)	**$ 0.92**	**$ 4.60**	**20%**	**17%**	**3%**
RTD (Sacramento)	$ 0.96	$ 4.09	24%	18%	6%
Trimet (Portland)	$ 0.92	$ 3.69	25%	23%	2%
RTD (Denver)	$ 1.02	$ 4.03	25%	21%	4%

Source: National Transit Database.

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

Figure 4.4 shows little variation in fares per boarding, but there is a wide variation in costs among comparable transit agencies. To increase the farebox recovery rate requires either an increase in farebox

revenues and/or decreased costs. The next section will show how UTA plans to increase farebox revenues.

Balancing Subsidy and Ridership Will Be a Challenge for UTA

UTA management has plans to fundamentally revamp the fare policy. Plans call for customers to pay for each trip based on the distance they travel and to eliminate unlimited use passes. With these changes UTA plans to achieve a farebox recovery level of 30 percent by 2020. While UTA's planned changes are promising, the ability to implement them remains unclear. According to UTA's consultant, "the recommended fare system will be significantly different from both the current UTA fare structure and those of other U.S. transit agencies."

We are concerned that if UTA changes its programs too much, too quickly, it may affect the system's ridership. In fact, some of the institutional Eco and Education Pass purchasers we spoke with voiced concern about their increasing costs. While those who pay fares will not welcome price increases, it seems appropriate for those who use transit to pay a reasonable portion of its costs. However, it is unclear if the paying public will use transit, if prices continue to increase or if passes are not provided by their employers and educational institutions.

Extent of Transit Users' Willingness to Pay For UTA Services Is Unclear

An important consideration for UTA as it develops services is the extent to which users are willing to pay for them through fares. And, an important consideration for UTA as it sets fares is the extent to which they may discourage ridership. UTA's plan to increase farebox recovery of operating costs to 30 percent would reduce the portion of costs subsidized by taxpayers. However, it remains to be seen if people will be willing to pay higher fares.

The effect of the planned changes on UTA's customers is difficult to gauge. UTA's consultant reported that "while the fare structure will be simpler in that there will be fewer fare products to understand and enforce, it will require customers to have or develop an understanding of their trip lengths and the corresponding per-mile rates." The

consultant recommended that UTA should consider getting feedback from the riding public on this fare structure.

The effect of higher planned farebox recovery rates is also unclear. Obviously, higher fares tend to reduce ridership, but UTA's consultant had difficulty estimating how much. According to the UTA's consultant's report, some of the data used in the analyses conducted for the study were dated or incomplete. When they calculated fare elasticities, the consultants used their professional experience, not specific to UTA's market.

While supporting UTA's plans, the consultant's final report expressed concern with such a major change in policy:

> The concern with increasing farebox revenue is a change from previous years, when UTA's focus was more on increasing ridership, even at the expense of fare revenue. Achieving this target will require re-evaluating those fare products, such as [the Education] Pass, Eco Pass, and others that are structured and priced almost solely to generate ridership.

The next two sections describe some of the changes that have already been made to the Education and Eco Pass programs.

UTA Is Making Major Changes to Education Passes

Since 2006, UTA has increased the amount charged to each educational institution because it found that Education Passes were highly subsidized. According to UTA management, the short-term plan is to migrate all schools to one of two standardized programs (consignment and pay-per-trip) and to reduce the level of discount to no more than 25 percent for students and provide no discount for faculty and staff. Longer term UTA hopes to migrate all schools to pay-per-trip and to reduce or eliminate the discount.

UTA plans to reduce and eventually eliminate the discount for student passes.

UTA has had an Education Pass since the early 1990s, offering annual passes (for unlimited travel) for educational institutions at deep discounts. The original deep discount program required schools to pay a small fee for every student, faculty member, and staff, making it possible to provide deeply discounted passes because non-riders subsidize pass users. According to UTA management, the objective of

the original Education Pass was to fill the buses that were already operating and to build ridership.

The program has been mutually beneficial to UTA and educational institutions because it helped build transit ridership and reduced traffic congestion and parking needs on campuses. However, some institutions we spoke with were concerned about the large price increases in recent years and even larger proposed increases. One educational institution's representative told us that because the institution feels it has no control over future price increases, it is considering adding the cost of parking lots into its long-range plans. As discussed later, better passenger data could help UTA illustrate the value of the Education Pass.

UTA Is Planning Major Changes To the Eco Pass Program

Similar to the Education Pass, UTA has had an Eco Pass program for many years. The Eco Pass is a company-sponsored annual transit pass that employees can use to ride any of UTA's transit modes to work and also for personal transportation. According to UTA management, UTA is planning to eliminate the Eco Pass beginning in 2013.

In recent years, UTA has increased Eco Pass revenue, mostly by making changes to the amount charged to employers. There is a set unit price for the passes based on the amount of transit service provided within one-half mile of the employer's location. The change in the unit price is shown in the following figure.

Figure 4.5 Comparison of Eco Pass Unit Prices Charged in 2006 and 2010. Prior to the launch of FrontRunner, UTA had a Local Eco Pass which allowed travel on buses and TRAX. In 2008, UTA created the Premium Eco Pass which allows travel on all services (buses, TRAX, FrontRunner and express buses.)

Service Level	2006	2010		Change from 2006 - 2010	
	Eco Pass	Local Eco Pass	Premium Eco Pass	Local Eco Pass	Premium Eco Pass
A - Rail	$166	$229	$301	38%	81%
B	130	179	233	38%	79%
C	78	108	144	38%	85%
D	36	51	69	42%	92%

Source: UTA internal documents and rideuta.com.

UTA has increased the cost of Eco Passes each year since 2006.

UTA generated $2.2 million in 2006 and $4.8 million in 2010 from Eco Passes (a 120 percent increase). The largest revenue increase occurred in 2008 when UTA created the Premium Eco Pass that allows users access to premium services, such as the new FrontRunner and express buses. UTA plans to increase the unit cost of each level about 13 percent in 2012.

Given the large increases in the amounts UTA charges for Eco Passes, we reviewed some data to see if program participation was affected. Based on electronic fare collection (EFC) data, it appears that several employers have dropped out of or have reduced participation in the program during the last two years. For example:

- An employer with over 2,700 employees, dropped out of the program in 2010. According to UTA's marketing representative, the company did not have great transit service, had nearby free parking, and few employees used the program.

- A large employer stopped purchasing passes for 7,000 employees in some facilities. Instead, the company purchased about 2,000 passes for employees in two facilities. According to a human resources manager, the cost was too high and their employees were not using the program.

- A large state government department discontinued purchasing passes for almost 1,000 employees beginning in 2012.

According to the finance director, the department no longer participates in the program because of the high cost per employee and because of budget cuts.

These three examples help illustrate the challenges UTA faces as it implements important fare policy changes. UTA has made impressive strides in fare revenue collections and additional increases are expected in UTA's financial plans. However, those who pay the fare revenue will each reevaluate their decisions based on their unique circumstances. We think UTA is moving in the right direction but needs to proceed with care. Therefore, we feel clear policy guidance from the Board of Trustees is essential. As discussed next, technology and data obstacles need to be overcome as well.

We think UTA is moving in the right direction but needs to proceed with care.

Implementing New Fare Structure Also Faces Technical and Data Obstacles

In addition to uncertainty about users' willingness to pay, UTA faces implementation challenges as it makes fundamental changes to its fare policy. First, UTA may not have the technology to make such changes as quickly as initially envisioned. Second, UTA may not have sufficient, reliable data to make good decisions. We recommend UTA continue to develop good passenger data in order to make informed decisions.

UTA Has Been Slow to Implement Electronic Fare Collection Technology

In its response to our 2008 audit, UTA management indicated it was investing in an electronic fare collection (EFC) system, also commonly referred to as "tap-on tap-off" to be implemented in January 2009. According to UTA officials, the newly-developed technology for transit would allow UTA to implement new fares and fare policies such as time of day, distance-based, and type of service. UTA officials also thought the technology would increase the flexibility of UTA's fare policies and fare structure, and allow the agency to increase ridership and increase fare revenue. To date, only Eco and Education Passes have EFC-compatible forms of payment.

The EFC system provides a way for UTA to implement distance-based fares. Since UTA does not use a turnstile or other method to limit entry into its rail services, it needs some method to control use.

The EFC system already provides a way for transit officers to determine whether users with valid passes have tapped on. Eventually, the EFC system could be used to determine how far a passenger traveled by comparing the tap on with the tap off. Then, based on the distance travelled, the fare could be automatically calculated by the EFC system.

The EFC system is not fully implemented.

Although the EFC system seems promising, it is still not fully implemented. It is concerning that the system has not been fully implemented after nearly three years. According to a recently issued UTA consultant's report:

> The EFC is expected to give UTA considerable flexibility in setting fare strategies and policies, but at this time, efforts are on-going to achieve the base functionality of the system, to get all of the pieces of the system working together reliably.

UTA is planning to begin enforcing its tap-on and tap-off requirements. In October 2011, we observed UTA police officers testing new hand-held enforcement devices that are capable of quickly scanning a rider's pass or other form of payment, determining whether the form of payment is valid, and verifying whether or not the rider tapped-on. The technology seems promising; the officers indicated that after the first month of device testing and educating the public on upcoming tap-on enforcement, they are seeing more tap-on compliance.

Distance-based fares are not yet possible given the EFC technology.

The official over the EFC technology section at UTA indicated that the enforcement devices require more testing, but he hopes to be able to start full tap-on tap-off enforcement for Eco and Education Passes soon. Also, he indicated that it may take another year or two to improve the system to the point that distance-based fares will be possible. We are encouraged by UTA's plans to fully implement the EFC system. However, we are concerned about the relatively slow progress made since January 2009 to reach the full potential of this $10 million EFC system.

Good Passenger Data Is Important in Negotiations With Educational Institutions and Employers

Slow implementation and little program enforcement have made it difficult for the EFC system to collect comprehensive and reliable

ridership information that can be used to make important policy decisions. Only some ridership data is available for pass holders, because many do not consistently tap-on or tap-off.

In 2011, UTA staff used data generated from the EFC system in their Education Pass negotiations with institutions. These negotiations were the first time that some schools had seen ridership data generated from the EFC system. UTA believes the ridership data is understated because tap-on compliance is incomplete. However, three of four institutions we spoke with believe UTA's ridership numbers were overstated compared to the ridership estimates they calculate internally. Some educational institutions did not trust UTA's ridership data. It is important for UTA to negotiate with reliable data.

We reviewed some of the EFC data UTA provided to educational institutions during contract negotiations. We found that for two institutions UTA added additional boardings before it gave the numbers to the institutions. UTA officials believe that TRAX rider tap-on compliance is low. For example, UTA's EFC records showed that U of U pass holders made 401,227 TRAX taps and 1.85 million total taps in 2010. To that data, UTA added 2 million more TRAX taps, bringing the total taps to 3.85 million. UTA more than doubled the total number of taps. While it is apparent that many TRAX users have not always tapped on or tapped off, it is concerning that UTA made such a large adjusting entry.

More complete and reliable ridership data would allow UTA to balance fare revenue and ridership by pass type, educational institution and employer. Complete and reliable passenger data is important to balance fare revenue and ridership.

Recommendations

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 rate

2. We recommend that UTA closely monitor the effect on ridership as it makes changes in fare policy including obtaining feedback from transit users.

3. We recommend that UTA continue to develop good passenger data to support informed decisions on fares and fare policy and to share with institutions and employers.

Chapter V
More Complete Ridership Data Is Needed to Fully Assess Transit Use

This chapter reviews transit ridership trends and the accuracy of ridership information. We found that the Utah Transit Authority (UTA) has improved its passenger boarding data since our 2008 audit, although additional improvements are needed. We remain concerned that UTA focuses too narrowly on passenger boardings as the principal measure of transit use. With the growth of rail lines, we believe passengers are increasingly being required to transfer between vehicles to complete a single trip. Thus, UTA needs more reliable information on passenger miles traveled and trips completed. Such data would enable analyses so that UTA could develop a broader understanding of transit use and its market share of travelers.

A broad array of ridership data would provide UTA a more complete understanding of transit use and market share.

As discussed in our prior audit of UTA, transit use can be measured in many ways. Three measures used in our January 2008 audit of UTA and discussed again in this report are:

- **Passenger boardings:** A count of passengers entering a transit vehicle. Passengers who transfer among transit vehicles to reach their final destinations are counted multiple times by this measure.

- **Passenger miles:** The cumulative distance traveled by passengers.

- **Passenger trips:** The number of one-way trips completed by passengers after accounting for transfers.

The three main transit ridership metrics discussed in this chapter are: passenger boardings, passenger miles, and passenger trips.

We believe all three measures are useful and, taken together, provide a good picture of transit use. UTA uses boardings as its primary indicator of ridership. Our concern with this approach is that if more passengers are required to transfer among vehicles to complete their trips, then boarding counts may increase even if the number of people using transit (and UTA's market share) decreases or remains constant. Therefore, we think it is important for UTA to use a broad array of ridership data to fully understand how passengers use transit and to assess changes in use over time.

Figure 5.1 compares UTA ridership data for 2006 and 2010 for each of the three measures discussed above. Only data for bus and rail passengers are included. The FrontRunner commuter rail service that began in 2008 is included in the 2010 data; bus and TRAX service are included in both 2006 and 2010 data. The data does not indicate any increase in transit use during the time period shown, but as will be discussed later, that may be due to changes in data accuracy over time.

Figure 5.1 UTA Ridership Data for 2006 and 2010. Although available data does not indicate a ridership increase since 2006, a number of concerns make interpretation of the data difficult as is discussed in this chapter.

Interpretation of ridership trends over time is difficult due to data concerns addressed in this chapter.

	Bus and Rail Passenger Data Combined		
	Boardings[1]	**Miles**[1]	**Trips**[2]
2006	36,802,052	235,023,678	22,159,000
2010	36,507,282	221,880,786	Data not available

[1] *Data reported by UTA to the National Transit Database (NTD).* Data for 2001 through 2010 is shown in Appendix D.
[2] *Auditor estimate based on a 2006 survey of passengers conducted by UTA. Updated survey information to estimate 2010 trips was not available from UTA.*

During our prior audit in 2008, UTA indicated it was investing in an electronic fare collection (EFC) system, also commonly referred to as tap-on tap-off, that would be implemented in January 2009. UTA has begun using the EFC data this year to assess educational institutions' transit use through passenger trips, as was discussed in Chapter IV. UTA has indicated that the EFC system has the potential to produce reliable boarding, passenger miles, and trip data.

However, slow implementation and little program enforcement have made it difficult for the EFC system to collect comprehensive and reliable ridership information. UTA staff responsible for the EFC system indicated that current ridership data captured by the system is understated as not all passengers have EFC compatible forms of payment or regularly tap on and off while using transit services.

Therefore, at present, UTA continues to rely on other ridership counting methods, discussed in the next two sections of this chapter, that primarily produce boarding and passenger mile data. However, even in the short term, passenger trip data can be obtained through passenger surveys if there is willingness by UTA to do so. The value of passenger surveys to estimate transfer rates and passenger trips is discussed in the last section of this chapter.

UTA's Boarding Data Has Improved, But Some Concerns Need Attention

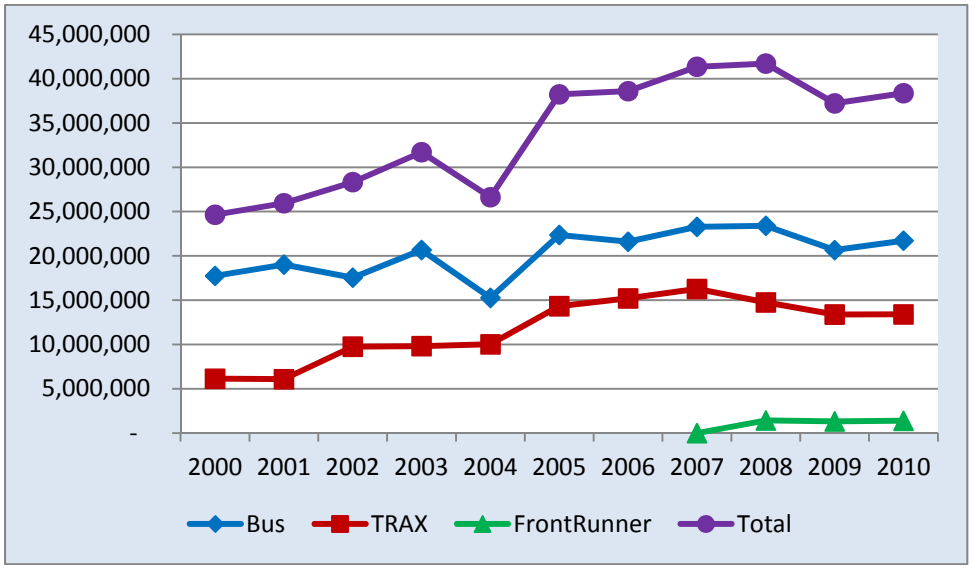
UTA primarily tracks ridership by counts of passenger boardings. The accuracy of UTA's TRAX boarding data appears to have improved since our 2008 audit; however, we have identified a significant flaw in the methodology of bus ridership sampling that has likely resulted in a 6 percent overstatement of 2010 bus boarding totals. We also reviewed the manual boarding count procedure on UTA's newest mode, FrontRunner commuter rail, and found it to be reasonable.

UTA primarily tracks ridership by counts of passenger boardings.

Figure 5.2 shows UTA's reported boarding data for bus and rail modes as well as the combined total. While total boardings appear to have increased over the last decade, the trend is somewhat difficult to interpret because of concerns with the data accuracy over time. For example, our 2008 audit reported that UTA undersampled bus boardings for national reporting in 2004. This is likely the cause of the unusually low annual bus boarding count that year as shown in the following figure. Also, our prior audit indicated that TRAX boardings were likely overstated by as much as 20 percent prior to 2007. Thus, drawing conclusions about ridership from UTA's boarding data over time is questionable.

While UTA's boardings appear to have increased over the last decade, concerns with data accuracy over time make an accurate interpretation difficult.

Figure 5.2 UTA's National Transit Database (NTD) Reported Passenger Boardings over the Past Decade. Transit boardings have increased since 2000, primarily due to TRAX use. However, prior data issues make drawing conclusions from UTA's data difficult.



Source: National Transit Database.

UTA employs a combination of manual sampling and automatic counting technologies to produce boarding and passenger mile estimates.

UTA employs a combination of manual counting on a sample basis and automatic counting technologies to produce boarding and passenger mile estimates. For both buses and FrontRunner, manual counts are taken. On TRAX, automatic passenger counters (APCs) are used.

Some Problems Remain With Bus Boarding Data

For bus boarding data, two independent manual sample counts are taken, the first by bus drivers and the second by system monitors. Bus drivers count all boardings on all bus routes the first Tuesday, Saturday, and Sunday of each month. System monitors are UTA staff who are assigned to count boardings on selected bus routes on a random sample basis. The bus driver counts provide data that UTA uses to track boardings on all its bus routes. The system monitor counts provide estimates of total annual bus boardings that UTA reports to the National Transit Database (NTD).

Our 2008 audit reported significant differences between the bus boarding estimates derived from operator counts and those derived from system monitor counts. One problem was that UTA's sample

size was too small for its NTD boarding estimates. During this audit, we found that UTA reached adequate sampling levels in 2010 (as prescribed by the Federal Transit Administration (FTA)) and that the difference between the system monitor and bus driver counts has decreased from large variations of 30 percent in 2004 and 12 percent in 2007. It should be noted that a smaller percent of variation indicates more reliable data.

Although the difference between boarding counts appears to have improved since the most recent peak in 2007, we found that bus system monitors are instructed to count themselves as passengers during their counts, which likely overstated NTD reported annual boardings by as much as 6 percent in 2010. We believe this is a significant flaw in UTA's bus count methodology. Figure 5.3 shows the variation between bus driver counts and system monitor bus counts as reported by UTA in 2010, which are then contrasted with a similar comparison adjusting system monitor boarding data for the 6 percent overstatement.

UTA's system monitors have been instructed to count themselves during bus ridership sampling resulting in a 6 percent boarding count overstatement in 2010.

Figure 5.3 Variation Between Bus Boarding Count Methods in 2010 Is Greater when Methodology Flaw Is Considered. After adjusting for the 6 percent boarding overstatement by system monitors, the variance between bus driver counts and system monitor counts is greater than original reported data indicates.

2010	Bus Boarding Counts As Reported by UTA	With System Monitor Boarding Count Reduced by 6 Percent
Bus Driver Count	22,270,286	22,270,286
System Monitor Count	21,716,864	20,413,852
Percent Variation	2%	8%

Source: Auditor analysis of UTA's Internal and NTD reported ridership data.

After adjusting for the system monitor count overstatement of 6 percent, it appears that the variance between bus driver counts and system monitor counts was actually 8 percent in 2010. We estimated the 6 percent overstatement by removing one boarding count attributed to the system monitor from each trip sampled throughout 2010 to ensure the counts only reflected actual public use of bus services instead of being biased by on-duty UTA employees riding the buses. Because of this boarding data overstatement reported to the NTD, the reliability of bus boarding data and the actual level of variability between reported counts are questionable.

UTA administrators told us they believe system monitors have been instructed to count themselves during manual bus counts since 2008, which suggests that NTD bus boarding data since that time is likely overstated. We brought this issue to the attention of UTA and recommend that UTA clarify manual ridership counting procedures to prevent system monitors from including themselves in count totals. At the end of the audit, UTA reports it has now stopped this practice of self-counting during manual ridership sampling.

Accuracy of TRAX APC Boarding Data Has Improved

Accuracy of TRAX passenger boarding data has improved.

The reliability of TRAX boarding data captured by APCs appears to have improved substantially since our last review of 2006 data, when UTA was first implementing the technology. In 2010, UTA used manual sampling to validate the APC data as 98.54 percent accurate and earned FTA approval in 2011 to rely completely on APC data for NTD reporting. However, UTA is required to continue manually validating APC data to ensure continued data reliability.

UTA officials attribute the improvement in their TRAX APC data to full implementation of the technology on all TRAX trains in 2010, monitoring for proper APC functionality and data capture, and taking corrective action when data problems are identified.

FrontRunner Boarding Data Appears Reasonable

UTA's newest transit mode, commuter rail, has been operating between Salt Lake City and Weber County since April 2008. As with buses, system monitors are assigned to manually count boardings on randomly selected FrontRunner trips. However, it does not appear that commuter rail system monitors have been instructed to count themselves. Therefore, it seems counts are not biased to overstate FrontRunner boardings. UTA currently conducts ridership samples on four randomly selected roundtrips on each Monday through Saturday of operation.

FrontRunner boarding data appears accurate.

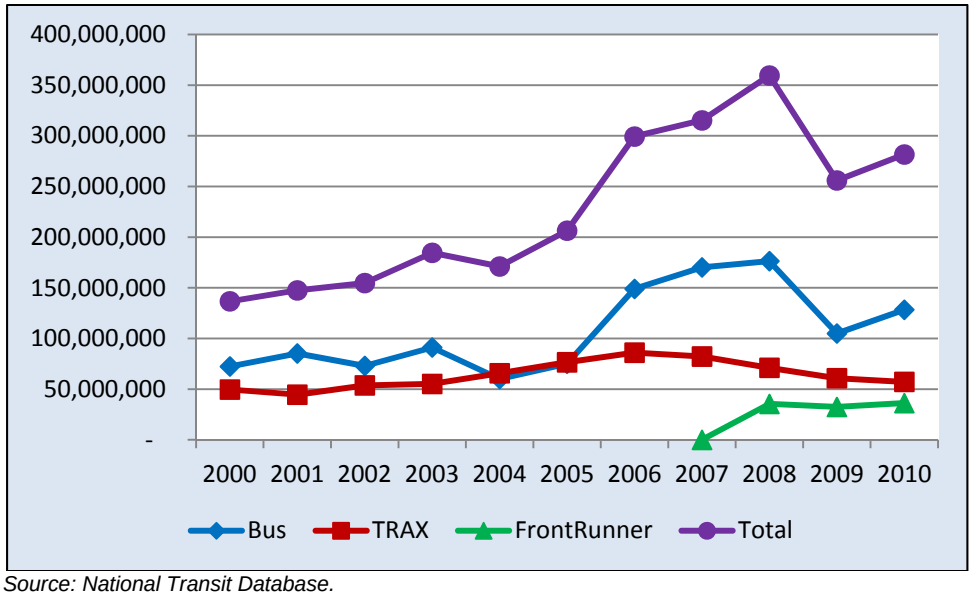
We reviewed the ridership sampling method employed on FrontRunner by riding the train and comparing our boarding counts with system monitor counts and found the counts satisfactorily consistent. We also reviewed the data entry process of fifty sampled

trips and confirmed the boarding counts were accurately input into UTA's database. The database is then processed through statistical software and manual calculations to produce monthly boarding estimates for management use and annual estimates for NTD reporting.

Passenger Mileage Data Needs Improvement

In addition to boardings, UTA annually reports passenger mileage by transit type to the NTD as required by the FTA. Passenger miles are a ridership metric that measure the cumulative distance all passengers are moved. Unlike boardings that only measure when a passenger enters a transit vehicle, passenger miles also consider the distance traveled. Similar to our 2008 audit findings, our review of UTA's passenger mileage data found some problems that need attention. As shown in Figure 5.4, reported passenger miles show large year-to-year fluctuations.

Figure 5.4 UTA's Passenger Miles Reported to the NTD over the Past Decade. The accuracy of passenger mileage data is questionable due to significant year-to-year fluctuations.



Source: National Transit Database.

The accuracy of UTA's passenger miles is questionable due to large year-to-year fluctuations.

Rather than showing actual ridership trends, we think this passenger mileage data, especially for buses, reflects inconsistent information that should not be relied upon. UTA management has acknowledged the large year-to-year fluctuations in bus passenger

mileage data and believes the cause is a flawed NTD random sampling method. In addition, as discussed with passenger boarding data, system monitors counting themselves on buses also reduces the validity of passenger mileage data.

Bus Passenger Mileage Estimates Are Not Reliable

Passenger mileage data is generated by identifying the total number of passengers (also called the passenger load) on a transit vehicle between two stops, then multiplying the load by the distance between those two stops. Then passenger miles generated between all stops on a route are summed to produce a total of passenger miles for the specific trip sampled. Passenger miles and boardings are typically captured during the same sampling event.

The accuracy of bus passenger mileage data shown in Figure 5.4 above is questionable due to significant year-to-year fluctuations. Comparing Figure 5.2's boarding data with Figure 5.4's passenger mileage data also shows that bus boardings remain relatively stable, even as bus passenger miles vary widely. The different pattern of the two measures could indicate changes in trip lengths traveled by bus passengers from year to year, but we think the more likely explanation is that the passenger mileage data is unreliable. We identified two concerns with bus passenger mileage estimates.

UTA's system monitors have been instructed to count themselves during bus ridership sampling resulting in a 13 percent passenger mile overstatement in 2010.

Self-Counting by System Monitors Overstates Bus Passenger Mileage Estimates. Bus passenger mileage estimates, based on data from system monitors, are reported to the NTD. As described earlier in reference to bus boardings, system monitors have been instructed to count themselves when they collect ridership data on buses. The overstatement of passenger mileage as a result of self-counting is even more significant than that of bus boardings because system monitors ride the entire length of the routes they count.

For example, after adjusting for the self-counting error on a route that UTA sampled in 2010, we noted that 19 passengers generated 62 passenger miles for an average of 3 passenger miles per person. However, by counting him- or herself as a passenger for the entire length of the 17-mile bus route, the system monitor likely generated 17 additional passenger miles not actually attributable to public use of UTA services. Thus, when the results of all trips sampled over the

year are extrapolated to an annual estimate, the overstatement of passenger miles caused by system monitors counting themselves is considerable.

We estimate that bus passenger miles in 2010 were overstated by as much as 13 percent due to system monitors being instructed by UTA to count themselves as passengers. This estimate was developed by taking the total passenger miles calculated for each trip sampled and subtracting the mileage traveled by the system monitor from the beginning to end of the bus route. The remaining passenger mileage totals present a more accurate representation of the cumulative distance the public traveled on buses in 2010. We also believe bus passenger mileage totals have likely been overstated since 2008 when system monitors were instructed to count themselves. UTA reports it has now stopped this practice of self-counting.

UTA Still Reports that a Poor Sampling Technique Causes Passenger Mileage Inaccuracy. Since our January 2008 audit, UTA has not resolved concerns with sampling techniques that led to inconsistent passenger mileage estimates. Our prior audit included data through 2006. UTA officials reported that the large increase in reported bus passenger miles in 2006 was the result of inaccurate data prior to that year. In the 2008 report, we concluded that "apparently, the use of poor sampling techniques led UTA to underestimate the actual ridership" in years previous to 2006. Considering the significant drop in estimated passenger miles resulting from the samples during 2009 and 2010, as well as the likely overestimation of totals since 2008, we question UTA's assertion that the higher 2006 mileage data were more accurate than prior years' data.

At present, UTA officials believe the large year-to-year fluctuations are the result of FTA's nonstratified sampling method that does not take into account the large differences in the route lengths of UTA's three main types of bus services: local, fast, and express. In 2010, local bus routes averaged about 5 miles per trip while fast-bus routes averaged 15 miles and inter-county express bus routes averaged about 30 miles per trip. We believe UTA's nonstratified sampling method has resulted in inconsistent annual passenger mile estimates because the proportions of trips sampled do not mirror the proportions of trips scheduled by bus type. Figure 5.5 shows this proportional

The large year-to-year changes in UTA's passenger miles appear to be caused by a nonstratified sampling methodology.

difference of the length of sampled bus routes versus the total route schedule for 2008 to 2010.

Figure 5.5 The Proportion of Different-Length Sampled Bus Routes Compared to the Total Route Schedule for 2008 to 2010. UTA's current method of bus ridership sampling does not ensure that the proportion of different-length routes receive adequate representation. This sampling methodology has resulted in large passenger mileage fluctuations over time.

	2008		2009		2010	
	Proportion of Scheduled Trips	*Proportion of Trips Sampled*	Proportion of Scheduled Trips	*Proportion of Trips Sampled*	Proportion of Scheduled Trips	*Proportion of Trips Sampled*
Local Bus	95.7%	*94.8%*	96.0%	*98.0%*	96.5%	*96.4%*
Fast Bus	1.9%	*2.2%*	1.7%	*1.3%*	1.5%	*1.8%*
Express Bus	2.4%	*3.0%*	2.3%	*0.7%*	2.0%	*1.8%*
Proportion Total	100%	*100%*	100%	*100%*	100%	*100%*

Source: UTA Operations Performance Office.

The proportion of UTA's long-distanced bus routes was overrepresented in the nonstratified ridership sample one year and underrepresented the next two, affecting passenger mile accuracy.

The figure depicts the results of UTA's current nonstratified random sampling methodology. In each year shown, the proportion of bus trips randomly sampled did not match the actual proportion of scheduled routes for buses with different route lengths. For example, the proportion of long-distance express routes was overrepresented in the 2008 passenger mile sample and underrepresented in 2009 and 2010 when compared to the schedule. In addition to calling into question the representativeness of passenger mile data produced from a sample in a given year, a nonstratified sampling methodology presents the possibility of large fluctuations in passenger miles between years, which is what we see in UTA's data between 2008 and 2009.

To illustrate, the 2008 proportion of express bus trips sampled (3.0 percent) was near the proportion of trips scheduled (2.4 percent). However, in 2009, the proportion of express bus trips sampled (0.7 percent) was significantly lower than the proportion of trips scheduled (2.3 percent). Considering the longer mileage of express bus routes, the change in the degree of sample representativeness between years appears to have resulted in the large drop in the annual bus passenger mile estimate between 2008 to 2009 seen in Figure 5.4.

However, the FTA has recently announced the development of a new commuter bus methodology that will, in effect, stratify (separate) the sampling of boardings and passenger mileage for longer bus routes from shorter routes in the future. UTA administrators have indicated they are working on a strategy to implement this FTA recommendation by separating the sampling and reporting of longer bus routes from other, shorter routes. They believe separating the random sampling of their longer and shorter bus routes will improve the reliability of their bus passenger mileage data. We also believe the revised sampling technique should improve the quality of the passenger mileage information available for UTA management decision-making.

Passenger Mile Data for TRAX And FrontRunner Appears Reasonable

TRAX and FrontRunner passenger mileage data appears more reliable than that of buses.

Of the three transit modes shown in Figure 5.4, the data for TRAX and FrontRunner looks more reasonable than that for buses. While reported TRAX passenger miles have declined since 2006, much of the reduction may be due to correcting boarding counts that were overstated by about 20 percent before February 2007.

Although the passenger miles for FrontRunner shown in Figure 5.4 are less than either buses or TRAX, in 2010, FrontRunner passenger miles neared the TRAX total. In contrast, as shown in Figure 5.2, total FrontRunner boardings were much lower than TRAX boardings in 2010. This makes sense because, on average, a passenger riding FrontRunner travels a greater distance than a passenger on a bus or TRAX. Therefore, although FrontRunner boardings are few compared to bus and TRAX, FrontRunner generates a level of passenger miles closer to those modes. Figure 5.6 shows the average trip length of passengers riding each of the three modes in 2010. Comparative information from the time of our prior audit shows bus and TRAX data for 2006.

Figure 5.6 Average Trip Length By Mode. On average, passengers on FrontRunner travel longer distances than passengers on buses and TRAX.

	Average Trip Length In Miles[1]	
Mode	**2006**	**2010**
Bus	6.90	5.91
TRAX	5.66	4.27
FrontRunner	n/a	26.10

[1] Auditor calculation based on UTA's NTD reported annual passenger miles divided by annual boardings per mode.

On average, passengers riding FrontRunner travel about 20 miles more per one way trip than passengers on buses or TRAX.

The FrontRunner North project was not completed until 2008, so data for this mode was not yet available for a comparison with 2006 data. However, ridership data for 2010 shows that FrontRunner passengers on average traveled about 20 miles more per one-way trip than passengers on buses or TRAX.

UTA Could Benefit from a More Thorough Analysis of Ridership

In addition to boardings and passenger miles, information about transfer rates and the number of UTA users would provide a more complete understanding of transit ridership. We were unable to determine the number of people who ride UTA services today compared to past years as requested because UTA does not regularly track and update the necessary information. Although UTA gathers passenger boarding data, passengers are often counted multiple times as they transfer among transit vehicles to reach their final destinations. Furthermore, transfer rates appear to be increasing as more rail service is added and bus route changes are designed to feed the rail system. Thus, boarding data that does not account for transfers provides an incomplete indicator of ridership.

Passenger boarding data does not account for vehicle transfers during a single passenger trip and therefore is an incomplete indicator of ridership.

Because of transfers, the estimated number of trips completed by UTA passengers in 2006 (shown in Figure 5.1) was considerably less than the number of boardings. While that certainly remains true in 2010, UTA does not have current transfer rate information that would allow us to estimate the number of trips completed, which is a better estimate than boardings of the actual number of people who use transit. Given that transfer rates seem to have increased since 2006, we did not want to use old data to produce current transfer rate estimates. Understanding passenger transfer rates would also provide UTA a

more reliable way to assess its new organizational goal of increasing its market share.

UTA's Focus on Boardings Provides Only A Partial Understanding of Transit Use

Boarding data is the main metric used by UTA to measure its ridership. We agree that boardings, a widely used metric throughout the transit industry, provide useful information about ridership. However, in the absence of information about transfer rates, boardings do not provide a comprehensive understanding of ridership trends and service use. Our concern is that if more passengers are required to transfer among vehicles to complete their trips, then boarding counts may increase even if the number of people using transit and UTA's market share decrease or remain the same.

Boarding data is the main metric used by UTA to measure ridership, but it does not provide information about transfer rates.

It is important to recognize that increasing boardings is not necessarily a good thing. In fact, requiring passengers to transfer from one transit vehicle to another may be more of an inconvenience than a service to the public. Following route changes made by UTA in August 2011, some people complained that they were now required to transfer from buses to TRAX to complete a trip that had not previously required any transfers.

For example, currently, a person riding on TRAX from Sandy (Blue Line) to the University of Utah (Red Line) is required to make a transfer between the lines because UTA does not operate direct trains between these two locations. Prior to recent route changes, UTA ran a few direct trains between Sandy and the university. Also, some direct bus routes to Salt Lake City were eliminated or changed and replaced with bus routes connecting to TRAX stations. According to media reports, some members of the public have expressed dissatisfaction that their favored bus routes have been altered and that they must now complete multi-leg trips using both TRAX and bus. The changes have increased their overall commute times and reduced transit convenience. It is suggested that some commuters are returning to personal vehicle use instead of using transit.

Following recent UTA service changes, some members of the public have indicated that new transfer points have made transit use less convenient.

We are not suggesting that UTA should try to eliminate transfers. We understand that some amount of transfers may be unavoidable as UTA expands its service area. However, we think UTA should track transfer rates and more fully understand the impact transfers have on

customers' experiences. We do not feel monitoring boardings is adequate without some understanding of the number of boardings passengers are making to complete a single trip.

UTA Should Monitor Transfer Rates

If UTA monitored transfer rates, it could estimate how many trips passengers complete. We also believe passenger trip data is a more reliable estimate than boardings of the number of people along the Wasatch Front who use transit because it accounts for vehicle transfers. In the future, transfer rate data could be collected through enforcement of UTA's tap-on tap-off program (EFC) as staff have indicated it has the potential to gather passenger trip information. However, as mentioned previously, it appears that slow implementation and little enforcement by UTA of the EFC system has resulted in incomplete transfer data and trip information produced by that technology.

Monitoring transfer rates would allow UTA to better estimate passenger trips, a more reliable estimate of people using transit than boardings.

Until the EFC system is improved, passenger surveys should be used instead to produce transfer rates and estimate passenger trips completed. Although our 2008 audit of UTA recommended that UTA conduct passenger surveys routinely and the agency agreed with our recommendation, UTA has not followed through with conducting regular surveys. This recommendation from our 2008 audit stated:

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

Transfer rates can be estimated from passenger surveys. However, UTA has not updated a passenger survey capable of producing transfer rates since 2006.

Transfer rates and other detailed information about passenger travel patterns and service consumption is typically gathered through onboard passenger surveys. UTA last completed a detailed survey of its passengers capable of producing transfer rates in 2006. UTA is currently updating this survey, but the main motivation for the update appears to be that it is a federal requirement tied to the opening of the new Mid-Jordan and West Valley TRAX lines this past August. Results of the 2011 survey were not completed for our use during this audit.

UTA officials have indicated that since their last passenger survey in 2006, they suspect transfer rates have increased due to the expansion of UTA's rail systems and changes made to the bus system that were aimed at making bus to rail connections. For example, since the opening of commuter rail in 2008, the majority of FrontRunner passengers who travel to the Salt Lake Central inter-modal hub likely transfer either to TRAX or buses to reach their final destinations. As additional rail lines become operational in the next few years, transfer rates may increase even more. If so, the boarding data largely relied on by UTA to monitor ridership will become less and less indicative of the number of passenger trips made and the actual number of people using UTA services.

With the expansion of the rail system, UTA suspects transfer rates have increased over the past few years.

Transfers are an important aspect of the customer experience that UTA should better understand. Instead of so much reliance on boarding data, we believe UTA can benefit by also knowing the number of trips made by passengers and the change in this trend over time.

We believe that an understanding of completed passenger trips can also be used to assess transit market share, which is useful information for external decision makers and other interested parties who may wish to assess the public's preferences toward transit use versus other modes of transportation along the Wasatch Front. As mentioned in Chapter I, UTA has developed a new organizational goal to increase its market share over time. However, it appears UTA management has little confidence in the accuracy of the method currently used to derive a transit market share estimate.

Understanding transfer rates and completed passenger trips will allow UTA to better assess transit market share.

We believe it is important for UTA to be able to produce an accurate market share estimate. UTA officials should develop a reliable methodology that will allow them to regularly track market share over time. Therefore, we recommend UTA conduct regular passenger surveys in order to consistently provide current and reliable estimates of transfer rates, completed passenger trips, and transit market share of travel for internal management and public informational purposes.

Recommendations

1. We recommend that UTA clarify manual ridership counting procedures to prevent system monitors from including themselves in count totals, in order to reduce overstatements of boardings and passenger mileage.

2. We recommend that UTA implement and monitor a stratified sampling methodology between longer and shorter bus routes, as directed by FTA, to improve reliability of passenger mileage data.

3. We recommend that UTA routinely monitor passenger transfer rates, through more frequent passenger surveys or other means, in order to better understand the passenger experience, provide information about the number of passenger trips completed, and estimate transit market share.

Appendices

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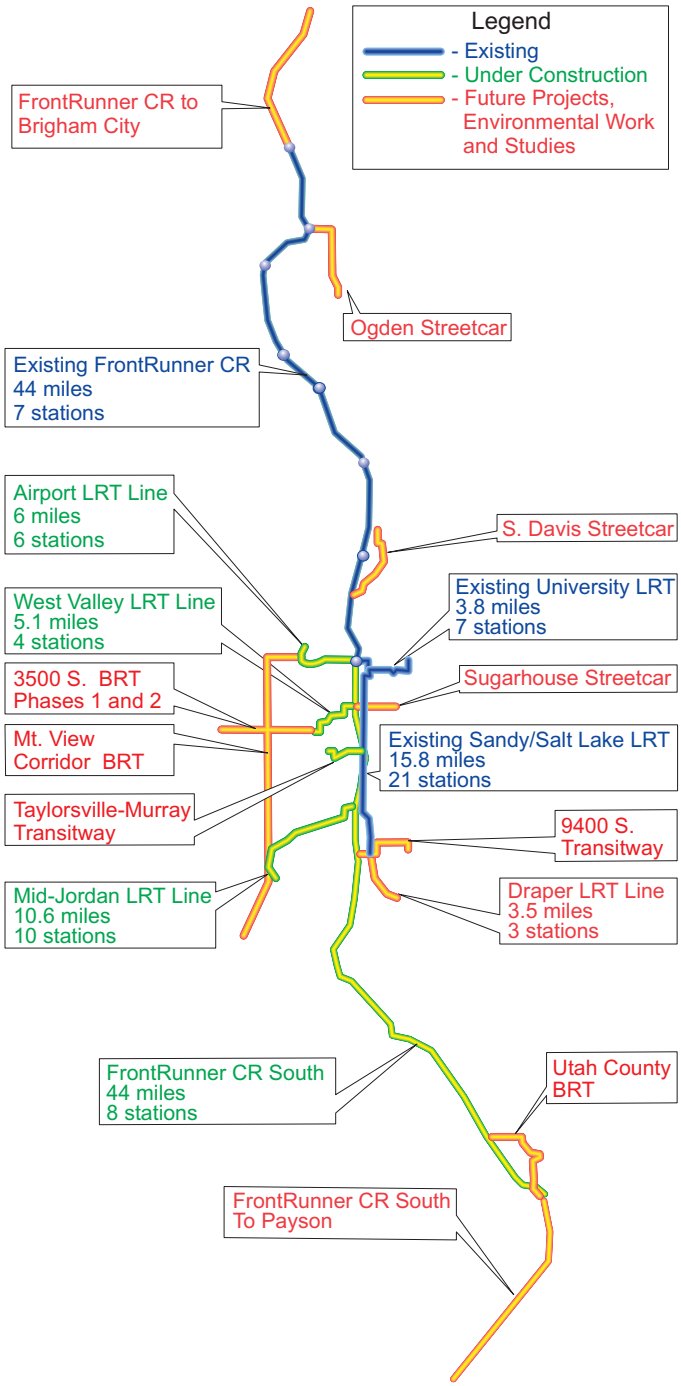
Appendix A:

Expansion Projects

UTA's vision is to have every resident of the Wasatch Front within one mile of a major transit stop by 2030. To help meet this goal, UTA has been actively expanding its transit system.



UTA's largest current project is FrontLines 2015, which is one project that includes four light rail lines and one commuter rail line. The lines include: Mid-Jordan TRAX, West Valley TRAX, Airport TRAX, Draper TRAX and Provo to Salt Lake City FrontRunner. Four of these five lines are currently under construction, and all five will be completed by 2015.

In addition to the FrontLines 2015 project, UTA is currently working on transit studies or environmental work for a variety of other projects including:

- Mountain View Corridor/5600 West – BRT
- Utah County – BRT
- South Davis County – Streetcar
- Sugarhouse – Streetcar
- Ogden – Streetcar
- 3500 South – BRT (Phases 2 and 3)
- Taylorsville/Murray – Transit study
- 9400 South – Transit study
- Brigham City – FrontRunner extension
- Payson – FrontRunner extension

For more information on FrontLines 2015 or other UTA projects, visit www.rideuta.com.

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Appendix B:
Calculation of UTA's Expense per Passenger Boarding and Expense per Passenger Mile (2006 and 2010)

Operating Expenses (2006 and 2010)
Per Boarding and Per Passenger Mile

(Data for these calculations were obtained from data reported by UTA to the National Transit Database.)

2006

	Operating Expenses	Passenger Boardings	Operating Expense per Passenger Boarding	Passenger Miles	Operating Expense per Passenger Mile
Bus	$ 94,016,983	21,598,392	$ 4.35	148,984,636	$ 0.63
Light Rail	23,131,704	15,203,660	1.52	86,039,042	0.27
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	16,355,021	476,039	34.36	5,665,436	2.89
Vanpool	3,320,527	1,316,599	2.52	58,598,969	0.06
Total	$ 136,824,235	38,594,690	$ 3.55	299,288,083	$ 0.46
Subtotal Bus & Rail	$ 117,148,687	36,802,052	$ 3.18	235,023,678	$ 0.50

2010

	Operating Expenses	Passenger Boardings	Operating Expense per Passenger Boarding	Passenger Miles	Operating Expense per Passenger Mile
Bus	$ 106,093,464	21,716,864	$ 4.89	128,375,843	$ 0.83
Light Rail	28,006,025	13,400,546	2.09	57,228,605	0.49
Commuter Rail	19,839,534	1,389,872	14.27	36,276,338	$ 0.55
Paratransit	18,577,110	509,625	36.45	5,294,524	3.51
Vanpool	1,378,362	1,346,949	1.02	54,429,401	0.03
Total	$ 173,894,497	38,363,856	$ 4.53	281,604,711	$ 0.62
Subtotal Bus & Rail	$ 153,939,024	36,507,282	$ 4.22	221,880,786	$ 0.69

Percentage Change Between 2006 and 2010

	Percent Change Operating Expenses	Percent Change Passenger Boardings	Percent Change Operating Expense per Passenger Boarding	Percent Change Passenger Miles	Percent Change Operating Expense per Passenger Mile
Bus	13%	1%	12%	-14%	32%
Light Rail	21%	-12%	38%	-33%	81%
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	14%	7%	6%	-7%	21%
Vanpool	-58%	2%	-60%	-7%	-50%
Total	27%	-1%	28%	-6%	35%
Subtotal Bus & Rail	31%	-1%	33%	-6%	38%

Total Expenses (2006 and 2010)
Per Boarding and Per Passenger

(Total expenses add depreciation, interest, and other expenses related to capital projects to the operating expense data on the previous page.)

2006

	Total Expenses	Passenger Boardings	Total Expense per Passenger Boarding	Passenger Miles	Total Expense per Passenger Mile
Bus	$ 108,272,503	21,598,392	$ 5.01	148,984,636	$ 0.73
Light Rail	$ 50,123,633	15,203,660	3.30	86,039,042	0.58
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	$ 17,331,607	476,039	36.41	5,665,436	3.06
Vanpool	$ 4,644,782	1,316,599	3.53	58,598,969	0.08
Multi-Modal*	$ 20,831,482		-		-
Total	$ 201,204,008	38,594,690	$ 5.21	299,288,083	$ 0.67
Subtotal Bus & Rail	$ 158,396,136	36,802,052	$ 4.30	235,023,678	$ 0.67

2010

	Total Expenses	Passenger Boardings	Total Expense per Passenger Boarding	Passenger Miles	Total Expense per Passenger Mile
Bus	$ 123,183,442	21,716,864	$ 5.67	128,375,843	$ 0.96
Light Rail	59,386,513	13,400,546	4.43	57,228,605	1.04
Commuter Rail	42,165,082	1,389,872	30.34	36,276,338	1.16
Paratransit	20,563,908	509,625	40.35	5,294,524	3.88
Vanpool	3,437,834	1,346,949	2.55	54,429,401	0.06
Multi-Modal*	26,655,270		-		-
Total	$ 275,392,049	38,363,856	$ 7.18	281,604,711	$ 0.98
Subtotal Bus & Rail	$ 224,735,037	36,507,282	$ 6.16	221,880,786	$ 1.01

Percentage Change Between 2006 and 2010

	Percent Change Total Expenses	Percent Change Passenger Boardings	Percent Change Total Expense per Passenger Boarding	Percent Change Passenger Miles	Percent Change Total Expense per Passenger Mile
Bus	14%	1%	13%	-14%	32%
Light Rail	18%	-12%	34%	-33%	79%
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	19%	7%	11%	-7%	27%
Vanpool	-26%	2%	-28%	-7%	-25%
Multi-Modal*	28%				
Total	37%	-1%	38%	-6%	45%
Subtotal Bus & Rail	42%	-1%	43%	-6%	51%

*Expenses for which a basis for allocation to the modes was unavailable.

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Appendix C:
Fare Revenue per Boarding,
And Operating Expense Farebox Recovery and Subsidy Rates
(2006 and 2010)

Farebox Recovery Rate Computation
Based on Operating Expenses

(Data for these calculations were obtained from data reported by UTA to the National Transit Database.)

2006

	Fare Revenue	Passenger Boardings	Fare Revenue per Passenger Boarding	Operating Expense per Passenger Boarding	Farebox Revenue % of Operating Expense per Boarding
Bus	$ 13,938,564	21,598,392	$ 0.65	$ 4.35	15%
Light Rail	7,478,060	15,203,660	0.49	1.52	32%
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	1,322,303	476,039	2.78	34.36	8%
Vanpool	1,182,196	1,316,599	0.90	2.52	36%
Total	$ 23,921,123	38,594,690	$ 0.62	$ 3.55	17%
Subtotal Bus & Rail	$ 21,416,624	36,802,052	$ 0.58	$ 3.18	18%

2010

	Fare Revenue	Passenger Boardings	Fare Revenue per Passenger Boarding	Operating Expense per Passenger Boarding	Farebox Revenue % of Operating Expense per Boarding
Bus	$ 18,768,808	21,716,864	$ 0.86	$ 4.89	18%
Light Rail	10,413,625	13,400,546	0.78	2.09	37%
Commuter Rail	2,076,875	1,389,872	1.49	14.27	10%
Paratransit	1,371,955	509,625	2.69	36.45	7%
Vanpool	2,528,801	1,346,949	1.88	1.02	184%
Total	$ 35,160,064	38,363,856	$ 0.92	$ 4.53	20%
Subtotal Bus & Rail	$ 31,259,308	36,507,282	$ 0.86	$ 4.22	20%

Percentage Change Between 2006 and 2010

	Percent Change Fare Revenue	Percent Change Passenger Boardings	Percent Change Fare Revenue per Passenger Boarding	Percent Change Operating Expense per Passenger Boarding	Percent Change Farebox Revenue % of Operating Expense per Boarding
Bus	35%	1%	32%	12%	18%
Light Rail	39%	-12%	59%	38%	16%
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	4%	7%	-3%	6%	-9%
Vanpool	114%	2%	109%	-60%	416%
Total	47%	-1%	48%	28%	16%
Subtotal Bus & Rail	46%	-1%	48%	33%	12%

Farebox Recovery Rate Computation
Based on Total Expenses

(Data for these calculations were obtained from data reported by UTA to the National Transit Database.)

2006

	Fare Revenue	Passenger Boardings	Fare Revenue per Passenger Boarding	Total Expense per Passenger Boarding	Farebox Revenue % of Total Expense per Boarding
Bus	$ 13,938,564	21,598,392	$ 0.65	$ 5.01	13%
Light Rail	7,478,060	15,203,660	0.49	3.30	15%
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	1,322,303	476,039	2.78	36.41	8%
Vanpool	1,182,196	1,316,599	0.90	3.53	25%
Total	$ 23,921,123	38,594,690	$ 0.62	$ 5.21	12%
Subtotal Bus & Rail	$ 21,416,624	36,802,052	$ 0.58	$ 4.30	13%

2010

	Fare Revenue	Passenger Boardings	Fare Revenue per Passenger Boarding	Total Expense per Passenger Boarding	Farebox Revenue % of Total Expense per Boarding
Bus	$ 18,768,808	21,716,864	$ 0.86	$ 5.67	15%
Light Rail	10,413,625	13,400,546	0.78	4.43	18%
Commuter Rail	2,076,875	1,389,872	1.49	30.34	5%
Paratransit	1,371,955	509,625	2.69	40.35	7%
Vanpool	2,528,801	1,346,949	1.88	2.55	74%
Total	$ 35,160,064	38,363,856	$ 0.92	$ 7.18	13%
Subtotal Bus & Rail	$ 31,259,308	36,507,282	$ 0.86	$ 6.16	14%

Percentage Change Between 2006 and 2010

	Percent Change Fare Revenue	Percent Change Passenger Boardings	Percent Change Fare Revenue per Passenger Boarding	Percent Change Total Expense per Passenger Boarding	Percent Change Farebox Revenue % of Total Expense per Boarding
Bus	35%	1%	32%	13%	17%
Light Rail	39%	-12%	59%	34%	19%
Commuter Rail	n/a	n/a	n/a	n/a	n/a
Paratransit	4%	7%	-3%	11%	-13%
Vanpool	114%	2%	109%	-28%	189%
Total	47%	-1%	48%	38%	8%
Subtotal Bus & Rail	46%	-1%	48%	43%	4%

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UTA Annual Boardings (2001 to 2010)

Sources: National Transit Database (http://www.ntdprogram.gov/ntdprogram/data.htm) and UTA 2010 CAFR

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bus	19,018,591	17,547,836	20,665,353	15,265,982	22,364,690	21,598,392	23,279,164	23,395,624	20,657,019	21,716,864
Light Rail	6,084,314	9,755,050	9,814,098	10,019,863	14,323,780	15,203,660	16,272,468	14,752,512	13,385,148	13,400,546
Commuter Rail	-	-	-	-	-	-	-	1,429,633	1,322,453	1,389,872
Demand Response	538,346	531,665	523,753	504,420	482,969	476,039	492,994	478,242	500,435	509,625
Vanpool	304,943	495,849	701,434	837,030	1,062,961	1,316,599	1,305,076	1,657,697	1,353,922	1,346,949
Total	25,946,194	28,330,400	31,704,638	26,627,295	38,234,400	38,594,690	41,349,702	41,713,708	37,218,977	38,363,856

UTA Annual Passenger Miles (2001 to 2010)

Source: National Transit Database (http://www.ntdprogram.gov/ntdprogram/data.htm)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bus Passenger Miles	85,251,359	73,014,665	91,173,389	60,113,406	75,141,727	148,984,636	170,197,957	176,378,040	104,954,071	128,375,843
Light Rail	44,555,857	53,746,722	55,205,513	65,708,804	76,561,538	86,039,042	82,248,010	71,120,837	60,857,298	57,228,605
Commuter Rail	-	-	-	-	-	-	-	35,451,824	32,458,229	36,276,338
Demand Response	5,014,786	5,989,633	6,186,137	6,353,196	6,386,545	5,665,436	5,474,403	5,203,925	5,596,209	5,294,524
Vanpool	12,649,952	21,962,699	32,004,805	38,917,911	48,322,450	58,598,969	57,321,781	71,371,901	52,087,971	54,429,401
Total	147,471,954	154,713,719	184,569,844	171,093,317	206,412,260	299,288,083	315,242,151	359,526,527	255,953,778	281,604,711

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Agency Response

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UTAH TRANSIT AUTHORITY

UTA

669 West 200 South

Salt Lake City, UT 84101

January 11, 2012

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

Dear Mr. Schaff,

We thank you for the opportunity to respond to the Performance Audit of the Utah Transit Authority (UTA). We would like to acknowledge the expertise, attitude, and cooperation of your team over the last several months. Since 2005, UTA has been certified to ISO 9001, an international management system standard for quality. ISO 9001 requires certified businesses and public agencies to establish policies, objectives, measures and practices to ensure continuous improvement. UTA welcomes objective assessments such as legislative audits because they identify areas for improvement. The analysis related to audit recommendations will be managed within UTA's ISO 9001 management system.

UTA is meeting challenges caused by a poor economy. The state of the economy continues to be a concern amongst us all, and UTA's financial performance warranted the special focus given by your audit team. We appreciate this due attention and are pleased with your findings that UTA Management is doing an exceptional job considering the challenging economic environment of the past few years. UTA has weathered the economic downturn better than most transit agencies across the country. While many transit agencies have significantly reduced service, have substantially raised fares, or canceled construction of new rail lines to meet budget obligations, UTA has avoided those drastic measures.

UTA appreciates the concerns raised regarding our revenue forecasts. UTA utilizes the forecast data provided by the Utah State Revenue Assumption Committee in its short-range plan and in fact makes a more conservative forecast. The long-range forecast is based on the past 30 years of actual performance. We thank the audit team for their suggestion to use sales tax revenue models from other planning entities and will incorporate those in our long-range plan.

UTA has adjusted expenses to compensate for lower revenue. In 2008, when fuel hit record prices and the economy started to falter, UTA's management team responded proactively. We implemented a strategic and balanced approach, including an innovative fuel surcharge program, made budget reductions across the board and balanced the impacts equitably. Approximately two-thirds of budget reductions came from staffing adjustments, employee compensation/benefits, and increased efficiencies; approximately one-third of budget adjustments have come from service or fare changes. UTA's approach to reducing service has focused on low-performing trips and routes, off-peak trips, and redundant service. But despite these service reductions, ridership has continued to increase which demonstrates that the service cuts impacted a minimal number of riders and ultimately increased efficiency.

UTA is able to continue rail construction plans. Further demonstration of UTA's sound financial performance was identified in your audit report regarding the capital rail construction program and management of the associated debt. UTA is currently in the midst of perhaps the most aggressive rail expansion program in the country, building five major rail projects at the same time. When the FrontLines 2015 program is complete, we will have achieved the feat of building 70 miles of rail in less than seven years, and we will have doubled the light rail and commuter rail miles along the Wasatch Front. The FrontLines 2015 program was approved by voters through the Salt Lake Chamber-led ballot initiative in 2006, and UTA has since – continuing the unblemished record – completed two of the five lines (the Mid-Jordan and West Valley TRAX lines) ahead of schedule and under budget.

No other region in the country is doing what the Wasatch Front is doing with public transit. While other communities are cancelling or delaying their projects due to the recession, UTA and our local leaders have been able to keep our program moving forward. Securing Federal funding for transit projects is a highly competitive process, with hundreds of communities trying to achieve what we have accomplished so quickly and successfully.

UTA continues to meet FrontLines 2015 commitment. The audit suggests that UTA is walking a financial tightrope. We appreciate this view and believe it demonstrates UTA's ability to monitor and adjust to changes in the external financial environment while at the same time moving ahead with the projects. Local leaders and the UTA Board of Trustees believe it's in the community's best interest to complete the FrontLines 2015 program as quickly as fiscally possible, and UTA is responding by managing our revenue and debt towards that end. Despite the economic recession, we acknowledge the financial challenges we have assumed as we decided to keep our commitment and complete the projects voters approved in 2006. Furthermore, completing the projects as soon as possible ultimately saves money through lower construction costs and interest rates. Additionally, in excess of 2,500 construction and design jobs have been created by the Frontlines 2015 project and thousands more indirect or supportive jobs, contributing greatly to the Utah economy.

Significant improvements made in subsidy levels and fare revenue. The 2008 audit report identified that UTA's education passes were more heavily subsidized than other passes and programs. It further stated that "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." Taking our direction from the audit report, UTA has since made changes to that program to reduce the greater subsidy and create more equity between the institutions and with our other fares and discount programs. Today, the revenue and farebox recovery rate from education passes are more consistent, equitable, and closer to other methods of fare payment.

UTA manages competing objectives to deliver a well performing regional transportation system. The 2012 report states that UTA has increased its overall farebox recovery rate since 2006 and "UTA has made impressive strides in fare revenue collections," but cautions that UTA faces significant challenges in understanding the extent to which transit users are willing to pay for the service. The audit team highlights the difficulty UTA faces in balancing competing objectives within our fare policy and recognizes the industry-leading methods UTA has developed to measure success. A metric known as Investment Per Rider (IPR) which takes into account operating costs, farebox revenue, and ridership

helps UTA make more informed and balanced policy and management decisions than would using the farebox recovery rate on its own.

By providing a good transportation system, UTA contributes significantly to the local economy. Your report is appreciated and will assist us in assuring that Utah continues to have one of the most successful transit systems in the United States. When comparing us with other metropolitan areas of similar population size and income level, the Wasatch Front has a far more developed, truly multi-modal transit system. An efficient transit system provides tremendous benefits with respect to mobility, quality of life, jobs and economic vitality. In fact, having an excellent transit system has helped attract major companies to locate in our community and to invest in Utah. In addition, new development is building up around UTA's rail lines. Projects such as City Creek, Daybreak, Station Park in Farmington, Adobe in Utah County, and others are helping generate billions of dollars in development and contributing to our State's economic growth and competitiveness.

The UTA Board of Trustees thanks the legislative audit team for its review and appreciates the focus the recommendations provide. The board will direct UTA management to complete a thorough evaluation and prepare detailed work plans to address all of the audit recommendations.

Again, on behalf of UTA, we appreciate the comprehensive work of the Legislative Audit team and value the recommendations they provided. Thank you for the opportunity to respond to the 2012 legislative audit. We look forward to providing additional input to the audit team and the legislature as requested.

Sincerely,

Gregory H. Hughes
Board Chair
UTA Board of Trustees

Michael A. Allegra
General Manager
Utah Transit Authority