

## H. Transit Financial Analysis

The implementation of the University of Tennessee service in 2003 has been an enormous benefit to KAT. The cost of providing the service is approximately \$1.8 million. The effect on the operating budget seems significant but it had a budget neutral impact. A goal of KAT is to find partners in the Knoxville community that can help provide funding to allow KAT to expand services. KAT operates open-public transit service in and around the University of Tennessee campus. The University of Tennessee provides a subsidy to KAT. Thousands of students are riding KAT around the campus and many are now utilizing other KAT routes that stretch throughout the City. This influx in ridership has also provided an increase in funding as ridership is a component in the formula that distributes Federal grant dollars.

Providing public transportation is not cheap and has always been a challenge. Throughout the United States public transit does not pay for itself. It must be highly subsidized, typically through government grants, and this is true of public transit in Knoxville. In the current economic environment, tax revenues that transit uses to help offset the cost of public transit are shrinking at the local, state, and National level. KAT administrators are battle tested in facing budget problems through, resourcefully controlling expenses, fighting for increases in revenues, and striving for efficiencies. Approximately, 80% of operating costs are driver's salaries and benefits. Drivers are the backbone of KAT. The remaining 20% left of the budget is made up of administration, marketing, maintenance, and other capital needs. KAT operates very efficiently and stretches every revenue dollar to provide service. The City of Knoxville has been a fine steward helping KAT offset funding deficits and keeping services at acceptable levels. However, recently the budget has been inundated with increasing costs with what some may call a "perfect storm" of budget crises.

Over the years KAT received Federal Transit Administration (FTA) Job Access and Reverse Commute (JARC) grants. The Tennessee Department of Transportation helped providing matching funds. These grants provided valuable night service, running from around 7:00 p.m. to midnight. It provided fixed route service along major corridors and what was called – Call-A-KAT – a demand response feeder service. Late night service was identified as one of the most important improvements KAT could make to help people with employment. The funding, approximately \$1.0 million, was originally awarded to KAT by FTA on the basis of a competitive grant process. Eventually, Congress began earmarking JARC funding and Knoxville's Representatives were effective in maintaining KAT's funding including slightly increasing the awards. Other Knoxville area transit programs received JARC funding above-and-beyond KAT's totals. In 2007, Congress decided to change the JARC program from earmarks to a formula that divided the funding to all major cities. Plus, the funding was then to be divided further locally to multiple projects based on a competitive selection process. In effect, this decision reduced the availability of JARC funding coming to Knoxville by approximately 80% or to around \$225,000 a year.

Grant funding can be a mixed blessing to transit providers. Grant funding often provides a source of funding to start services that would typically not be able to be implemented. Grant funds have very little risk. Most require a match but usually a very small percentage. Grant funding allows local transit agencies to take a chance on services, assess the success, and determine the long term viability. FTA used to provide a yearly operating grant but the funding was phased out in the mid 1990s. Since then, specialized grants like JARC have been the mechanism through which FTA has distributed sources of operating funding. The downside to grants is that eventually they run out leaving

the locals to decide if services should continue and then trying to determine how to fund them. KAT and the City of Knoxville realized that the night service was valuable to the community and for many a requisite to staying employed. KAT modified the JARC service and the City of Knoxville absorbed the cost into its funding contribution.

The increase cost of fuel, health care, and wages has driven the cost of providing public transit dramatically higher over the last year or two. The volatility of fuel prices have almost made it impossible to set a budget. The same high gas prices that draw riders to transit, increases transit's operating costs. Just as our Country seeks to protect the economy from the affects of an unstable oil market, transit must protect itself from the havoc unstable fuel costs can place on its budget. At this time, KAT is exploring options to purchase fuel but is currently still exposed to the unpredictability of fuel prices. Increases in health care and wages are common issues that all businesses are facing and impact transit as well.

All of these issues have also impacted the cost of providing Americans with Disabilities Act (ADA) demand response paratransit service. Demand response paratransit service is door-to-door service, typically scheduled in advance, and provided with a wheel chair lift equipped van to persons who are disabled. The ADA requires public transit operators to provide comparable paratransit service. An area  $\frac{3}{4}$  of a mile to either side of a fixed route must be served with paratransit service. Comparable service also includes similar operating times. KAT has provided paratransit service that goes above-and-beyond the ADA requirements. KAT has generally been covering the entire City limits with ADA paratransit service. The City limits have expanded through finger annexation of commercial property in the suburbs along the interstates and major roadways. And, as development has continued to spread to the suburbs the demand for trips to serve these distant locations have increase. The cost of providing paratransit service has increased dramatically over the last couple of years. These increased costs and the impact on the paratransit budget will be weighed as KAT must balance a budget and weigh the social implications and the costs of providing service beyond what is required by the ADA.

## **Financial Analysis**

In order to project operating funding needs, a trend analysis was conducted of KAT's past budgets. A ten year window between 1999 and 2008 was examined and a summary is shown in Table 42.

The analysis examined the average percent increase over a ten year period for each funding source. Over the last ten years, several major changes have occurred to KAT's funding, including adding the University of Tennessee service and absorbing the JARC service. These types of influxes have skewed the trend line data. In reviewing historic averages from past Long Range Transportation Plans and other transit development plans and average increase in KAT's total budget of 8.23% is too drastic. At that rate KAT's \$17,234,037 budget would be over \$125 million in 2034.

To resolve these issues the TPO and KAT staff examined past data and studies, including the last Long Range Transportation Plan (2005-2030 Knoxville Regional Long Range Transportation Plan, September 2007 Update) and made adjustments to the trend line data. The same review and consultation process was undertaken during the last Long Range Transportation Plan. It was felt that many of the same adjustments were still valid so many of the same percentages were kept. Farebox revenue and the Other Federal and State funding were reduced slightly further. It was staff's opinion that in dealing with future projections it was better to be more conservative. It was felt that recent surges in ridership which has had a positive impact on farebox revenue would not continue over a 25 year period. Table 43 shows the results of the trend analysis and then shows the adjustments. Justification for adjustments follows after the table.

## **City of Knoxville Revenue**

The City of Knoxville has increased its contribution on average by 7.06% a year over the last ten years. The City has increased its contribution to KAT every year of the ten year period. The City has increased their contribution to help offset rising employee salaries and health care costs. Recently, the last couple of years the City had to make a significant increase in funding to help offset the increased fuel cost and the lost of the JARC grant. While there is still a level of uncertainty over the

**Table 42. KAT Operating Revenues FY1999 and 2008**

Source	1999	2008	Average Annual Change 1999-2008
City of Knoxville	\$3,951,720	\$7,814,850	7.06%
State of Tennessee	\$1,104,320	\$1,971,310	5.97%
Federal, Other State Sources	\$1,270,625	\$3,263,082	9.89%
Fares	\$1,297,031	\$3,657,537	10.92%
Other funding	\$194,374	\$527,258	10.49%
Total	\$7,818,070	\$17,234,037	8.23%

**Table 43. KAT Financial Spreadsheet Assumptions**

Source	2005-2030		
	Trend Analysis Result 1999-2008	Long Range Transportation Plan (2007 Update)	Revised Forecast For Mobility Plan
City of Knoxville (Revenue)	7.06%	3.87%	3.87%
State of Tennessee (Revenue)	5.97%	2.41%	2.41%
Federal, Other State Sources (Revenue)	9.89%	6.70%	5.0%
Fares (Revenue)	10.92%	6.045%	5.0%
Other funding (Revenue)	10.49%	2.5%	2.5%
Operating Expense	8.23%	4.5%	4.5%

next few years due to the economy and fuel cost, it was not reasonable to expect the City to continue to increase their contribution by 7.06% a year for the next twenty-five years. It was felt that the same adjustment to 3.87% made in the Long Range Transportation Plan (2007) would still be appropriate for the Mobility Plan.

### State of Tennessee Revenue

The State of Tennessee has increased its contribution seven of the last ten years for an average of 5.97% a year. While the state has been dedicated to increasing funding for mass transit statewide it was felt it would be unrealistic to assume the state could continue to increase funding by 5.97% for the next 25 years. In fact, with the recent economic downturn the state has struggled with its overall budget. As transit allocations are not a dedicated funding source they have been threatened at times for reduction. When looking at 2000 to 2004, the rate of increase was 2.41% per year. Therefore, it was felt this percentage was a conservative rate to use over a 25 year time frame. It was also the percent used in the last Long Range Transportation Plan (2007).

### Federal and State Other Sources

Federal funding for operations was phased out nationally in the mid 1990s. The federal government still provides

capital dollars and in the late 1990s eased their definition of capital expenses and began allowing transit agencies to bill part of their maintenance labor to this grant. This category includes several Federal and State grants and includes the maintenance labor expenditure. This funding category has seen an annual average increase of 9.89% from 1999 to 2008. This is down from 13.4% calculated (but later adjusted) in the Long Range Transportation Plan (2007) which looked at the time period 1995 to 2004. It was felt that a downward trend would continue so an adjustment to an annual inflation rate of 5.0% was use. This is reduced from the 6.7% adjustment used in the Long Range Transportation Plan 2007.

### Fares

From 1999 to 2008, fare revenue almost tripled from approximately \$1.3 million in 1999 to \$3.7 million in 2008. This is an annual average of 10.92% a year. Much of this increase has come from the increases in services. A major part of the fare revenue increase is the University of Tennessee services. The financial contribution by the University is recorded as fare revenue giving a false impression of the increases. Even subtracting out the UT subsidy, fare revenue has increased on the regular routes. The University

of Tennessee service has had a residual effect on the regular routes as students have crossed over from the University routes to the regular routes. The increase ridership associated with the JARC services has added to the increase in fare revenue. KAT also saw a major ridership increase when gas prices sky-rocketed which increased fare revenue. However, an increase of 10.92% a year for the next twenty-five (25) years is unrealistic. This would increase fares from approximately \$3.7 million in 2008 to close to \$55 million in 2034. An adjustment to an annual increase of 5 percent was used. This is even more conservative than the 6.045% used in the Long Range Transportation Plan (2007).

### **Other Revenues**

This category reflects revenue that is collected through other programs and grants. Some of this is subcontracting special services. Over the study period of 1999 to 2008 the other revenues category increased by an annual rate of 10.5 percent a year. Recent changes in the Federal requirements associated with subcontracting makes predicting revenue difficult. Therefore, a very conservative rate of 2.5 percent a year is used.

### **KAT Operating Expenses**

The annual cost of operating KAT has increased by close to \$10 million from 1999 to 2008. While this seems dramatic, it only represents an 8.23% a year. However, these increases are not all inflation related. During the ten year period, the University of Tennessee services was added and the lost Federal JARC funding was absorbed. In examining the trend data and trying to remove any increases due to grants, contracts, and subsidized services it was felt that an annual increase of 4.5% a year was more realistic. This was the same percentage used in the Long Range Transportation Plan (2007). For this analysis, total revenues and operating expenses are considered the same. KAT is a non-profit organization overseen by the City of Knoxville. As a non-profit, all fiscal year budgets end with a zero balance. Any shortfalls are covered by the City's contribution and conversely and overage is returned to the City's general fund.

### **Transit Financial Forecasts**

KAT's expenses and revenue sources were forecasted over a 25 year time frame. For the year 2009, the adopted

projected budget for KAT is shown. Year 2009 is the base year from which the forecast is made. Table 44 shows a snapshot of the 25-year forecast by showing years 2014, 2024 and 2034. Each year shown is the forecasted of what the budget and revenues would be for that year.

It is projected that KAT's budget would increase from \$17.5 million in 2009 to \$21.7 million in 2014. In 2024 KAT's budget is projected to be \$33.5 million. Finally, in 2034, the last year of the plan, KAT's budget is projected to be \$52.8 million. While this seems extremely unrealistic, many never thought KAT's budget would increase by \$10 million between 1999 and 2008.

The percent difference from KAT's projected expenses and revenues are also calculated. For this analysis, it was felt that if the difference was not greater than 3%, over-or-under, the analysis was acceptable. Forecasting millions of dollars over twenty-five (25) years is not an exact science and it is unreasonable to assume that an analysis of this nature can match expenses and revenues exactly. Based on this analysis, KAT will be able to meet its future expenses.

This analysis assumes a no growth scenario. Because of the recent economic downturn, increases in expenses, and the unreliability of revenues; KAT is currently in a conservative growth mode. KAT is committed to continue to grow and improve. There have been several studies over the last ten years: the Regional Transportation Alternatives Plan, the KAT Action Plan 2010, and the Downtown Knoxville Transportation Linkages Study. All of these studies call for improved and expanded transit services. The City of Knoxville has been very supportive of KAT. If new services are proposed that will result in tangible increases in transit ridership the City will consider providing funding. However, if substantial increases in transit service are going to be made throughout the Knoxville region other funding will be required. Transit operators require a predictable and consistent funding source in order to plan and make commitments. Funding needs to be adequate to meet projected level of services and grow as needed to reflect inflation. Many transit agencies nationwide have a dedicated funding source, typically set by government via a dedicated tax or fee. This does not exist for KAT at this time.

**Table 44. KAT Projected Budget and Revenues**

Category	2009 Budgeted	2014	2024	2034
Projected Annual Budget (Expenses)	\$17,547,151	\$21,866,942	\$33,958,693	\$52,736,812
<b>Revenues</b>				
City	\$7,900,620	\$9,552,385	\$13,964,106	\$20,413,359
State	\$1,991,023	\$2,242,787	\$2,845,848	\$3,611,066
Federal and Other State Funding	\$3,224,173	\$4,114,953	\$6,702,824	\$10,918,194
Fares	\$4,081,335	\$5,208,933	\$8,484,802	\$13,820,849
Other Funding Sources	\$350,000	\$570,113	\$1,512,680	\$4,013,590
<b>Total Revenue</b>	\$17,547,151	\$21,689,121	\$33,519,261	\$52,777,058
Percent Difference Expenses/Revenue	0%	.8%	1.3%	-.1%

As part of the operating financial analysis, a common question is what kind of contingency funding does KAT have in cases a funding source is significantly reduced. Since KAT operates on a “zero balance” year ending budget, they are not able to save any budget overages for emergency purposes. Essentially, each year KAT operates the amount of service it has funding to provide. Under a hypothetical scenario where an existing funding source saw a significant cut, the following options would be considered each with a varying degree of probability of being implemented:

1. A corresponding increase from another existing funding source;
2. Identification of a new public funding source or grant to offset the decrease;
3. Implementation of a tax of fee to fund transit;
4. Identification of a private/public partnership;
5. Subcontracting of services to reduce operating cost;
6. Fare increase, and
7. Service reduction.

### Capital Expenses

Maintaining an up-to-date fleet of vehicles is a must in providing effective transit service. Vehicles are the most visible component of KAT traveling million of miles throughout the City every year. Many passengers will determine satisfaction with their trip based on cleanliness, comfort, and the internal climate of the bus. Paramount to transit’s ultimate success is the ability of buses to stay on time. Any mechanical failure causing a bus to break down leaving passengers stranded is a serious issue. It is impossible to eliminate all mechanical

failures but by maintaining an up-to-date fleet, incidents will be dramatically reduced. Therefore, an equal component in planning for the future is to calculate KAT’s capital needs.

KAT uses essentially four vehicles types. Buses are used for regular fixed route and the University of Tennessee services. Trolleys are used on the downtown circulator. Lift equipped vans are used both on neighborhood fixed routes and in providing ADA paratransit services. Table 45 shows the estimated cost of buses, trolleys, and lift vans (neighborhood service vans) over the period of the plan. The cost of vehicles typically has remained steady over the last few years. Therefore, vehicle costs were inflated 5 percent every five years.

**Table 45. KAT Vehicle Unit Cost**

Years	Bus	Trolley	Lift Van/ Service Van
2009-2013	\$350,000	\$350,000	\$75,000
2014-2018	\$367,500	\$367,500	\$78,750
2019-2023	\$385,875	\$385,875	\$82,688
2024-2028	\$405,169	\$405,169	\$86,822
2029-2034	\$425,427	\$425,427	\$91,163

Table 46 shows the number of vehicles needed to maintain the current level of service over the next 25 years. This is essentially a replacement plan for the existing KAT fleet. To keep the table manageable, the number of vehicles needed is totaled and shown in five year increments (except for 2029-2034 which is six years).

**Table 46. KAT Vehicle Needs**

Years	Bus	Trolley	Lift Van/ Service Van
2009-2013	50	10	25
2014-2018	40	8	25
2019-2023	40	7	25
2024-2028	50	8	25
2029-2034	40	9	30
<b>Total Units</b>	<b>220</b>	<b>42</b>	<b>130</b>

Over the course of the Mobility Plan KAT would need to purchase approximately 220 buses, 130 Lift Vans (Neighborhood Service Vehicles) and 42 Trolleys. The number of buses is a little higher than a normal replacement plan because the current KAT fleet is behind schedule. Therefore, it reflects an aggressive plan to catch KAT up and then to maintain the fleet.

Using the estimated vehicle costs and the capital needs the amount of funding needed and is predicted in Table 47. Once again to keep the table manageable the funding is totaled and presented in five year increments. Also shown, is the associated capital items grant that is

typically used on capital expenditures, such as shelters, maintenance items, and shop equipment.

FTA has a variety of grants that fund capital equipment purchases, including vehicles. Each year, KAT receives a Section 5307 grant that can be used to purchase capital items. Part of the Section 5307 funding is used for the associated capital items but part of the funding can be used to purchase vehicles though not very many at one time. The main source of funding that will be used to buy vehicles is federal dollars either directly granted (or earmarked) to KAT or pass through Federal funding awarded by the State of Tennessee. While the capital forecasts are for a no-growth scenario, diligence will be needed to secure consistent funding. It is estimated that KAT will need to secure approximately \$5,738,088 a year to meet the capital needs. Based on federal capital funding secured over the last few years KAT should be able to meet this need, at least over the next ten years. Forecasting over 25 years is difficult. A dedicated source of funding would be helpful.

**Table 47. KAT Vehicle Needs, 2009-2034**

Years	Buses	Trolleys	Lift Vans/ Service Vans	Associated Capital Items	Total
2009-2013	\$17,500,000	\$3,500,000	\$1,875,000	\$5,152,267	\$28,027,267
2014-2018	\$14,700,000	\$2,940,000	\$1,968,750	\$5,550,455	\$25,159,205
2019-2023	\$15,435,000	\$2,701,125	\$2,067,200	\$5,979,416	\$26,182,741
2024-2028	\$20,258,450	\$3,241,352	\$2,170,550	\$6,441,529	\$32,111,881
2029-2034	\$17,017,080	\$3,828,843	\$2,734,890	\$8,390,302	\$31,971,115
<b>Total Expenses</b>	<b>\$84,910,530</b>	<b>\$16,211,320</b>	<b>\$10,816,390</b>	<b>\$31,513,969</b>	<b>\$143,452,209</b>
Revenues-----					
Federal	\$67,928,424	\$12,969,056	\$8,653,112	\$25,211,175	\$114,761,767
State	\$8,491,053	\$1,621,132	\$1,081,639	\$3,151,396	\$14,345,220
Local	\$8,491,053	\$1,621,132	\$1,081,639	\$3,151,396	\$14,345,220
Average Annual Need	\$3,396,421	\$648,453	\$432,566	\$1,260,559	\$5,738,088