

## 7. IMPLEMENTATION OF SERVICE IMPROVEMENTS

This chapter presents the financial approach for the implementation of proposed service improvements for the TSOP update. Specifically, this section discusses the results of the financial analysis that was undertaken by the project team and the Citizen's Financial Committee (FAC). BBC Research & Consulting, (BBC) was retained as a subcontractor by David Evans and Associates (DEA) to assist the Financial Advisory Committee (FAC) and project team in identifying transit funding options for Transfort and COLT and, in collaboration with the FAC, helped to develop a preferred funding plan. The following sections describe the process undertaken by the project team and the FAC for identifying and evaluating funding alternatives and developing a fair and practical funding model. This chapter considers the funding requirements for implementation of the Fort Collins TSOP, based on the shortfall between current revenues and estimated future expenses.

### 7.1. Financial Advisory Committee (FAC)

#### 7.1.1. Funding and Evaluation Process

The FAC was organized by Transfort and COLT staff and consists of an eight-member panel of Fort Collins and Loveland residents. FAC members represent a broad range of community interests, including business, real estate, university, social services and transit advocacy. The FAC held semi-monthly meetings from September 2008 to April 2009. FAC members were presented with a conceptual framework with which to evaluate and recommend a funding strategy to accompany the service upgrades associated with the TSOP update. Over the course of the 6-month education and deliberation period, the group discussed the benefits and deficits of a wide range of broad and targeted funding mechanisms and fund collection institutional governance structures.

The conceptual framework of the TSOP funding model is the concept that the cost of transit improvements should be borne principally by those that benefit from improved transit service and that beneficiaries should participate in rough proportion to their degree of benefit. Early in the planning process, consultants, FAC members and Transfort staff acknowledged that defining a fair and practical funding plan meant balancing many disparate factors. The following **Figure 31** shows a visual representation of the factors that must be in balance to achieve an equitable funding strategy for Transfort.

**Figure 31. Funding Challenge: Finding Balance**



Source: BBC Research & Consulting

Early in the FAC discussions, the above was used to represent the core issues involved in fashioning an appropriate transit funding solution and to demonstrate that the requirement for practicality implied an imperfect balancing of multiple community objectives.

The project team presented several funding mechanisms and supporting institutions (e.g. regional transportation authority, special districts) for FAC evaluation that could be used to generate and collect funds for transit improvement. Following is a list of potential revenue generation tools and administrative institutions that were evaluated by FAC members.

**Revenue Mechanism**

- General Fund
- Property Tax
- Fares
- Negotiated Agreements
- Impact Fees
- Vehicle Registration Fees
- Federal Funding
- Advertising
- Utility Fee
- Dedicated Sales Tax
- Visitor Benefit Tax

**Institutional Structure**

- Metro District
- Urban Renewal Authority
- Special Improvement District
- General Improvement District
- Regional Transportation Authority
- Local Improvement District
- Intergovernmental Agreement
- Regional Service Authority

- Occupational Privilege Fee
- Congestion Fee

The revenue generation tools in the above list were evaluated against a series of criteria. Specific evaluation criteria developed by the FAC included:

- revenue stream certainty;
- revenue stream growth along with community growth;
- placement of funding burden on users;
- ability to have funding flexibility across both municipalities; and
- likelihood of public acceptance.

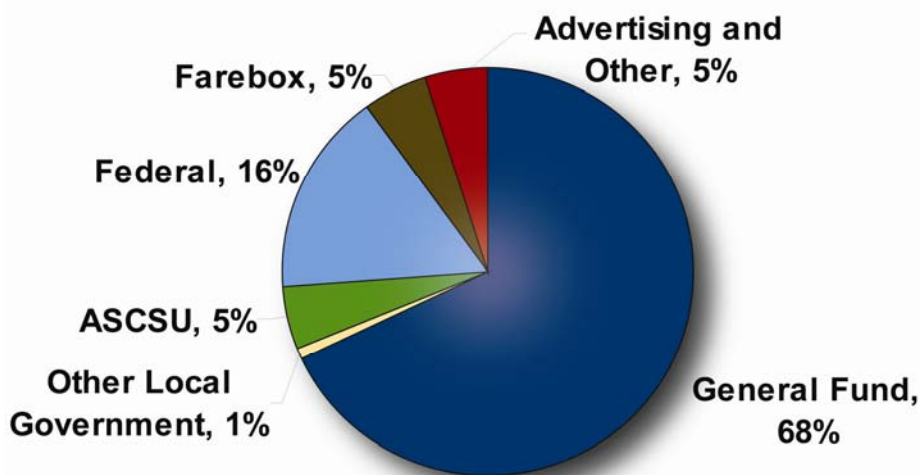
Once an appropriate mix of funding mechanisms was identified, administrative institutions were evaluated based on a set of standards that included ease of formation, administrative requirements, public acceptance and legislative authority to impose the selected taxes, assessments and/or fees.

The FAC selected a mix of funding mechanisms that offer a fair apportionment of costs and reliable revenue production. The selected administrative institution has broad revenue raising power, offers broad flexibility for both Fort Collins and Loveland and provides relative ease to accommodate other municipalities or jurisdictions in the future.

### 7.1.2. Existing Financial Conditions

Transfort currently operates as a service provided by the City of Fort Collins with a total operating budget of about \$8 million (for 2008). **Figure 32** shows current sources of revenue for Transfort.

**Figure 32. Current Revenue Sources – Transfort**



Source: Transfort

Major revenue sources for Transfort include a large general fund transfer (70% of revenue) and revenue from the Federal government (16%). Federal revenues include payments from Medicaid for the provision of paratransit services and ongoing transfers from the Federal Transit Administration. Other Transfort revenue sources include a negotiated agreement with the Associated Students of Colorado State University (ASCSU), farebox revenue, and advertising and other revenues (each contributing 5%). Transfort also receives a small amount of revenue from Larimer County and the City of Loveland for the regional FoxTrot transit services (1%).

All future funding scenarios are based on an assumption that there will be a “maintenance of effort”, where current funding practices, including general fund transfers, negotiated agreements, farebox revenue, federal grants and advertising revenue will continue to be used and grow according to Transfort’s internal projections.

### 7.1.3. Operation and Maintenance Revenue and Planned Expenses

Estimated revenues for Transfort were compared to the estimated operation and maintenance costs of the proposed phased improvements. This established target funding amounts for the overall evaluation process. The comparisons and summary of projected operation and maintenance costs, available revenues and funding shortfalls for each phase of proposed improvements is provided in **Tables 32 through 34**.

**Table 32. Projected Annual Operation and Maintenance Costs and Funding Needs for Phase 1**

Service Area	Estimated O&M	Available Revenues	Funding Shortfall
Transfort Local	\$11,091,900	\$8,396,300	\$2,695,600
Transfort Regional	\$386,300	\$349,850	\$36,450
<b>Total</b>	<b>\$11,478,200</b>	<b>\$8,746,150</b>	<b>\$2,732,050</b>

Source: Transfort and Project Team

**Table 33. Projected Annual Operation and Maintenance Costs and Funding Needs for Phase 2**

Service Area	Estimated O&M	Available Revenues	Funding Shortfall
Transfort Local	\$17,597,600	\$10,340,600	\$7,257,000
Transfort Regional	\$1,231,600	\$599,500	\$632,100
<b>Total</b>	<b>\$18,829,200</b>	<b>\$10,940,100</b>	<b>\$7,889,100</b>

Source: Transfort and Project Team

**Table 34. Projected Annual Operation and Maintenance Costs and Funding Needs for Phase 3**

Service Area	Estimated O&M	Available Revenues	Funding Shortfall
Transfort Local	\$22,180,150	\$10,922,050	\$11,258,100
Transfort Regional	\$3,754,800	\$1,352,500	\$2,402,300
<b>Total</b>	<b>\$25,934,950</b>	<b>\$12,274,550</b>	<b>\$13,660,400</b>

Source: Transfort and Project Team

The project team estimated an annual operating and maintenance funding expense of about \$22.2 million (in inflated dollars) for the build out of Phase 3 Transfort Local services in a seven year horizon. This represents a shortfall of nearly \$11.3 million above current funding methods. Additional funding would be required for regional services, which would likely be implemented as part of a partnership and shared funding arrangement. Total O&M costs of \$25.9 million would be required for local and regional services with a shortfall of approximately \$13.7 million.

**7.1.4. Capital Revenue and Planned Expenses**

Estimated capital costs for vehicle acquisition for Transfort services were also compared to the minimum estimated federal funding sources that would likely be available. This established capital funding targets for the new vehicle requirements. The comparisons and summary of projected capital costs associated with vehicles, potential funding sources and funding shortfalls for each phase of proposed improvements is provided in **Tables 35 through 37** below.

**Table 35. Capital Funding Needs for Phase 1 Vehicles**

Service Area	Estimated Capital	Potential Funding	Funding Shortfall
Transfort Local	\$6,482,550	\$550,000	\$5,932,550
Transfort Regional	\$0	\$0	\$0
<b>Total</b>	<b>\$6,482,550</b>	<b>\$550,000</b>	<b>\$5,932,550</b>

Source: Transfort and Project Team

**Table 36. Capital Funding Needs for Phase 2 Vehicles**

Service Area	Estimated Capital	Potential Funding	Funding Shortfall
Transfort Local	\$7,147,300	\$1,100,000	\$6,047,300
Transfort Regional	\$1,531,550	\$150,000	\$1,381,550
<b>Total</b>	<b>\$8,678,850</b>	<b>\$1,250,000</b>	<b>\$7,428,850</b>

Source: Transfort and Project Team

**Table 37. Capital Funding Needs for Phase 3 Vehicles**

Service Area	Estimated Capital	Potential Funding	Funding Shortfall
Transfort Local	\$4,502,400	\$1,100,000	\$3,402,400
Transfort Regional	\$3,939,600	\$300,000	\$3,639,600
<b>Total</b>	<b>\$8,442,000</b>	<b>\$1,400,000</b>	<b>\$7,042,000</b>

Source: Transfort and Project Team

The project team estimated capital expenses to meet the full expansion requirements of Phase 3 to be approximately \$23.6 million, when adding the cumulative expenses over all three phases. This represents a shortfall of over \$20 million above estimated federal funding sources.

### **7.1.5. Recommended New Operation and Maintenance Funding Mechanisms**

Beneficiaries of transit improvements are those individuals, property owners or businesses that experience increased business volume, travel convenience, time savings or property value enhancement because of transit improvements and more efficient traffic flow. Improved Transfort service provides transit riders and the community at large with the following benefits:

- A safe and reliable alternative to driving
- A method of transportation for those unable to drive
- Reduces vehicle miles traveled (VMT)
- Improved air quality
- Traffic congestion relief
- Opportunities to reduce household transportation expenses
- Helps to build a strong local economy
- Regional connections between residences and employment and entertainment centers
- Municipal savings on road maintenance expenses

The project team focused their efforts on candidate funding mechanisms that allocate costs to reflect these benefits. The following funding mechanisms were chosen because they can be employed in a manner that meets the core criteria expressed above, generates a reliable revenue stream and grows with the community. During the selection process, the project team produced revenue projections for each funding mechanism, demonstrating a wide range of tax and fee rates for the FAC to consider different balances of revenue options. Funding mechanism options investigated for consideration are outlined below.

### **7.1.6. Maintenance of Effort**

Transfort receives municipal general fund revenues, Federal and State support, passenger fares and other revenue to operate transit service. The TSOP update anticipates continuation of that effort and growth in fares commensurate with an increased level of service. Internal Transfort revenue projections for existing revenue sources are included in revenue projections.

### **7.1.7. Dedicated Sales Tax**

A dedicated sales tax is an excise tax on retail goods imposed at the point of sale and dedicated to a specific purpose. The FAC evaluated several tax rates and settled on testing a 0.25-cent tax as the appropriate amount for public acceptance. This tax rate is nearly the same as the dedicated open space tax rate (1/4 cent) in Fort Collins and discussions were held about whether an additional sales tax or a rededication of an existing sales tax would be appropriate with an additional increase of 1/10 cent. The group was undecided about which is more appropriate, but agreed that a dedicated sales tax is necessary for the productivity and reliability of the tax. Virtually all residents of Fort Collins benefit from transit in one form or another and a sales tax is borne by most residents. A sales tax increase or rededication will require passage by voters in a general election.

### **7.1.8. Transit Utility Fee**

A transit utility fee is an additional fee charged on residential and business utility accounts. Fort Collins operates its own electric utilities and would most likely use these municipal enterprises as a means to collect the fee. There are several methodologies for calculating this fee: (1) a flat fee for every electric account; (2) an excise fee based on the amount of the electricity bill; and (3) a fee based on trip generation factors for different land use types (e.g., residential, office, retail, industrial). Ultimately the FAC recommended an \$8.00 flat fee to be assessed on all utility accounts.

### **7.1.9. New Negotiated Agreements**

Currently, the ASCSU pays an annual fee of about \$520,000 to Transfort in exchange for fare-free service for all full-time registered Colorado State University (CSU) students. The agreement is renegotiated every three years and is based on historic student ridership. Transfort is also actively seeking other partners in a similar arrangement. The revenue projections for negotiated agreements include assumptions that 2-3 new agreements are established for the sale of similar discounted passes.

### **7.1.10. Special Assessment**

A special assessment in this context is an annual per household or square foot charge placed on property within a special improvement district. A special assessment may

only be levied against parcels of real estate that have been identified as receiving a direct and unique "benefit" from a public project, which in this case could be the new Mason Corridor MAX BRT line. The special assessment rates considered in this analysis are between \$200 and \$300 per year for residential units and between \$0.05 and \$0.06 per built square foot per year for commercial property. The annual special assessment rates would decline as more residences and commercial establishments are built as this revenue source is targeted to raise about \$1 million at build out. Funds generated by special assessment may only be used for operation of the Mason Corridor.

The funding mechanisms described above are targeted to place the burden of transit funding on the community at large and individual populations that benefit from Transfort services. The FAC concluded that negotiated agreements, continuation of fares and the special assessment target individual transit users and those specially benefited by transit service improvement. The continuance of general fund support, transit utility fee and dedicated sales tax is targeted to the broader community, which also receives benefit from improved transit service. At the end of the evaluation process, the FAC was pleased with the balance of funding they recommended. Recommendations were documented by the FAC in a letter prepared for Fort Collins and Loveland City Councils, City Managers and for the Poudre School District Superintendent on April 4, 2009 and can be seen in **Appendix F**.

### 7.1.11. Revenue Modeling

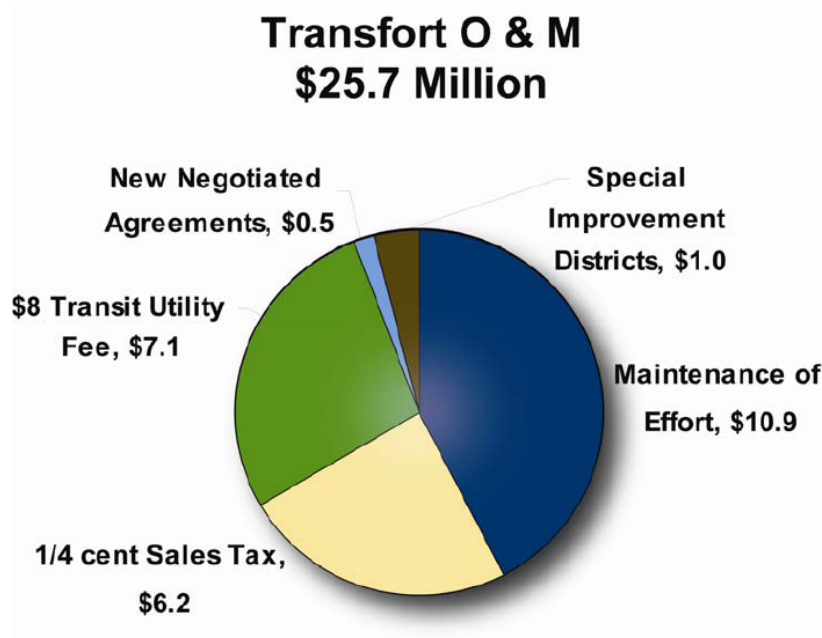
After the appropriate revenue generation strategy and administrative institution were selected, the following assumptions were used to model revenues.

- **Maintenance of Effort.** Internal projections from Transfort were used to model the continuance of general fund support, fare growth, federal support and other current revenue streams.
- **Dedicated Sales Tax.** Current taxable sales data, obtained from the City of Fort Collins, and projected forward with a 2% rate of inflation. A 0.25% dedicated tax rate is applied to future taxable sales.
- **Transit Utility Fee.** Current electric utility revenue data, obtained from the City of Fort Collins electric utility enterprises, are projected forward with a 2% rate of inflation. An \$8.00 utility flat fee rate is applied to future revenue.
- **Negotiated Agreements.** A \$25 annual pass fee is modeled based on current enrollment of all students at CSU and FRCC Larimer Campus. The current CSU contribution of \$520,000 is netted out of the calculation as it is considered a maintenance of effort. The \$25 annual pass is also modeled for PSD students, but for only those students ineligible for school district provided bus service.
- **Special Assessment/Special Improvement District.** The special assessment on a special improvement district along the Mason Corridor is modeled based on residential and commercial land use data and growth projections obtained from the Mason Corridor Economic Analysis commissioned by the City of Fort Collins in

2007. Special assessment rates are between \$200 and \$300 per year for residential units and between \$0.05 and \$0.06 per built square foot per year for commercial property and are targeted to recover a portion of Mason Corridor bus rapid transit operations costs.

**Figure 33** shows revenue projections based on the revenue generation mechanisms and assumptions described above. The mix of funding is demonstrated to meet the projected revenue shortfalls calculated by Transfort staff by build out of the proposed transit improvements. **Table 38** provides a tabular summary of revenue projections compared to the funding required. Some deficit is still shown due to the expected contributions from partners in funding regional services.

**Figure 33. Projected Transfort Operation and Maintenance Revenues from FAC-Recommended Funding Mechanisms**



Source: Transfort and DEA Project Team

**Table 38. Transfort Operation and Maintenance Revenue Projections – Phase 3 Buildout**

Funding Mechanism	Phase 3
	Seven Year Horizon
Maintenance of Effort/Fares	\$10,922,031
Dedicated Sales Tax (0.25%)	\$6,189,161
Transit Utility Fee (\$8 Flat Fee)	\$7,115,283
New Negotiated Agreements	\$500,000
Special Improvement District	\$1,000,000

Funding Mechanism	Phase 3
	Seven Year Horizon
<b>Total</b>	<b>\$25,726,475</b>
Projected Funding Required	\$25,934,950
Net Surplus/Deficit	-\$208,475

Source: Transfort and DEA Project Team

**Appendix G** provides additional detail on the evaluation of funding methods, exhibits and summary materials from the FAC process.

### 7.2. Regional Governance for Transit Services

The municipalities of Loveland and Fort Collins have the power to impose and collect all revenue generation mechanisms described above, however the FAC recommended a subsequent study regarding the formation of a Regional Service Authority (RSA) to serve in the administration, organization and consolidation of transit operations for Fort Collins and Loveland.

An RSA is a form of government designed to provide specified services on a regional basis, in this case public transportation. In order to form an RSA, a majority of countywide voters must approve the RSA’s formation and stated purpose. Just under 70% of the Larimer County population live in either Fort Collins or Loveland, and are within the geographic service area of Transfort and COLT. The FAC chose the RSA because it felt that it met the evaluation criteria of revenue raising authority, inter-jurisdictional flexibility between Ft. Collins and Loveland, ease of formation and public acceptance. Specifically, the RSA can provide:

- A direct and effective means of achieving transit service objectives;
- A consolidating administrative body to leverage Federal and State funds;
- A focus on transit service, which helps avoid confusion with other regional transportation infrastructure efforts;
- An effective structure, where each member jurisdiction provides its own funding and contracts with the RSA to provide an appropriate level of transit service; and
- A framework for additional jurisdictions to join.

The FAC recommended that an RSA dedicated to transit and with no internal funding, be considered as an initial step towards an area-wide transit operation. A major factor in the FAC proposal is that an RSA structure with no internal funding mechanisms will let each member jurisdiction raise its own funds and purchase transportation service from the RSA. For Fort Collins and Loveland, the likely funding mix has been described above, but other jurisdictions will be able to raise funds by any means when they join the RSA.

In addition to the RSA, a special improvement district must be formed around the Mason Corridor, to provide an administrative entity to collect the proposed special assessment. A special improvement district could be formed by either the proposed RSA or the city of Fort Collins, but must be approved by a majority of the property owners within the district. The district's primary purpose is to assess the costs of public improvements to those who are specially "benefited" by the improvements. "Benefit" in this case is defined as any increase in property value or adaptability of the property to a superior or more profitable use by the addition of the MAX BRT line. Costs are generally assessed on an equitable and rational basis of determining benefit, in this case by built square footage and by residential unit. By law, the benefits of Mason Corridor landowners are required to be at least equal to the cost of the special assessment imposed. The funds generated by the special assessment must be spent within the special improvement district.

### 7.3. Implementation Timeline

The TSOP update has been developed based on a potential implementation horizon of five to seven years. A phased approach for the TSOP has been proposed to serve as a framework for implementation priorities, and to allow for the opportunity to scale new improvements and investments to future available funding sources. The ability to secure new or additional funding sources over the next two years will be critical in achieving full build-out of all three proposed phases.

Phase 1 is primarily aimed at adapting the existing Transfort system to the Mason Corridor MAX BRT implementation in a three year horizon. Annual operating costs are estimated to be just over 30 percent higher than existing services. Other than the new vehicles that are currently programmed for the Mason Corridor MAX service, no new vehicles are needed for service improvements proposed in Phase 1.

Phase 2 represents a much more significant investment in Transfort services, with an approximate doubling of annual revenue hours. The transition to a grid system in Phase 2 requires a more significant restructuring of multiple routes that must be implemented at the same time as one another. Phase 2 is targeted for an implementation in a five year horizon. Fourteen new vehicles are needed for the implementation of proposed Phase 2 services, in addition to the six Mason Corridor MAX vehicles that will be procured with other dedicated funding sources.

Phase three represents the full build-out of the TSOP update for Transfort. Annual service hours are over two and a half times the levels in the existing system. Many of the improvements in Phase 3 are enhancements to the hours and frequency of routes defined in Phase 2, with some degree of enhanced service coverage. Therefore, Phase 3 could be scaled back to include more incremental steps of improvements between Phases 2 and 3 if needed. The target year for Phase 3 implementation in a seven year horizon. Twenty four new vehicles are needed over the existing fleet, in addition to the original six MAX vehicles, to support the implementation of proposed improvements in Phase 3.

Successful implementation and meeting the desired timing for phased improvements will require that the funding mechanisms described in the previous sections are in place before the specific target years for implementation. This is necessary to build capital reserves that are needed for the purchase of new vehicles. However, FTA grant funding can potentially be sought to support some of these capital needs. Vehicle procurement may require a time frame of one year or longer irregardless of the specific funding source. The desired vehicle specifications and vendor can also influence the overall procurement time.

Ongoing revenue streams from future revenue sources will then be used to fund annual operating and maintenance costs associated with the daily operation of transit services. Unit costs for operating requirements (e.g. cost per revenue hour) will typically increase on an annual basis. Therefore, the funding requirements identified in the previous sections reflect an annual escalation rate of five percent.

## 7.4. Other Implementation Considerations

The previous 2002 TSOP presented a number of key considerations that require attention as new transit services are considered for implementation. Many of these tasks are routinely addressed when any level of service refinements are undertaken. These common planning steps, operational issues and guidelines for many of these tasks are briefly summarized below.

- **Dates for Start of New Service** – Implementation target dates should consider the necessary steps for Council approval and public process. In addition, vehicle procurement should be carefully coordinated with scheduled implementation. Summer is often a common season to implement substantial route changes in university communities, which allows drivers to become more familiar with services before school sessions and winter weather begin.
- **Ridership and Customer Impacts** – Changes in ridership trends should be monitored to determine issues with system familiarity and the level of benefit realized from new route configurations. Ridership trends after several months provide the best indication of service change results.
- **Further Service Revisions** – Early service refinements could be necessary if new routes are not operating or performing as desired. Schedule times, safety, peak load and demand points, transfers and complaints should be monitored to determine if early route revisions are necessary.
- **FTA Grant Funding for Vehicles** – The potential to secure grant funding for future vehicle purchases should be identified as soon as possible. The timing for the grant application process and vehicle procurement could effect the desired implementation dates for new service.
- **Responsibilities of Transfort Staff** – New staff responsibilities related to service changes include new marketing and informational materials, hiring of new drivers, schedule conformation and runcutting, and development of new bus stops and signage.

### **7.4.1. Fare Change Policy**

Recommendations for changes in the fare are developed by Transfort staff. In formulating the fare recommendation, Transfort conducts a meeting to receive oral and written comment from the public on whether transit fares shall be increased. At least fourteen days notice is provided of this meeting by publication in the City's newspaper of record. The notice includes the time and location of the public meeting; a summary of proposed language; specifies the address where written comments can be mailed; and informs the public of alternative formats available to assist in this public process. The meeting would be scheduled at least thirty days prior to any fare increases being implemented.

The City Council reviews the staff recommendation at a public hearing, after which Council may change the fares through an amendment of the City's fare resolution and hold a public hearing.

When considering changes to the fare, staff and Council will consider the following:

- Inflation rate
- Ridership and revenue trends
- Local economic trends
- Trends in automobile-related costs such as gas
- Service changes
- Economic impact on customers
- Market conditions and opportunities
- The City's financial situation
- The City's goals and objectives

The list of factors to be evaluated is not meant to be exclusive; other factors may need to be considered from year to year.

### **7.4.2. Route Change Policy**

Recommendations for changes to existing routing are developed by Transfort staff. Staff makes a determination whether the changes represent a Small Scale change or a Large Scale change. A Large Scale Change would be determined if over 5 bus stops will be affected because of the change. A Small Scale Change would be determined if one to five bus stops may be affected by the change, and does not include temporary changes that occur due to construction or street closure.

If the route change recommendations are determined to be Large Scale, then Transfort conducts a meeting to receive oral and written comment from the public on whether the route changes shall be implemented. At least fourteen days notice is provided of this meeting by publication in the City's newspaper of record. The notice includes the time and location of the public meeting; a summary of proposed changes; specifies the

address where written comments can be mailed; and informs the public of alternative formats available to assist in this public process. The meeting would be scheduled at least thirty days prior to the proposed implementation date. Following the meeting, Transfort staff will take all comments into consideration and make changes as necessary. The Public will be made aware of the large-scale changes through advertisement through the local media and the Cities Webpage. New transit maps will be distributed to all areas that sell bus passes, City facilities, on the buses, and to businesses and high-density residential complexes located along all transit routes. Upon implementation of route changes drivers and Transit staff help aid transit riders to navigate the new transit system.

If the route change recommendations are determined to be Small Scale, then the public will be given a chance to comment on the proposed change during the initial advertising period. Transfort will advertise their intention to change the route, at the bus stop to be changed and on the bus route that is affected. Transfort will also give notice of their intention to change the route to any businesses, health facilities, public agency buildings, and residences adjacent of the proposed bus stop change. If there are no comments, Transfort will proceed with the change. If there are comments, Transfort will take them into consideration and make a decision based on all the facts that have been gathered. If a change is to proceed, temporary signage will be placed at the bus stop and bus route to be changed informing transit patrons of the imminent change and where the stop will be moved.

## **7.5. Monitoring After Implementation**

This section provides framework considerations for future standardized performance monitoring of Transfort routes and the overall system. An efficient monitoring process can provide significant value for making ongoing service refinements, future operation planning, and can support future budgeting requirements and financial decisions. Samples of performance monitoring programs are also provided from three other transit agencies as examples for future considerations.

### **7.5.1. Standardized Performance Monitoring**

Two types of monitoring are recommended to assure the continued effectiveness and efficiency of transit services for Transfort – trend analysis and peer system comparisons. Trend analysis compares current operating data for with historical data to establish trends in service efficiency and effectiveness. Effective trend analysis requires development of a database of operating and ridership statistics, ideally in monthly format to allow analysis of trends within specific operating seasons. Much of this data is already collected and maintained in some form by Transfort. For trend analysis of system-wide performance, the following statistics are recommended:

- Vehicle hours of service operated
- Vehicle miles of service operated

- Passenger boardings or unlinked trips
- Passenger fares collected to support system costs
- Operating expenses
- Maintenance road calls
- Incidents
- Passenger complaints

The following ratios are recommended for ongoing monitoring on an annual or semi-annual basis at a minimum. Monthly monitoring is also recommended to help assess the distinctions between operating seasons. Once the database is established, the current period should be compared to the same period in the prior year. Annual totals for the measures and ratios should be compared with annual totals for the past five years.

- Boardings per vehicle service hour
- Boardings per vehicle service mile
- Riders per capita
- Operating expense per vehicle service hour (compare increases to the Consumer Price Index (CPI))
- Operating expense per vehicle service mile (compare increases to CPI)
- Operating expense per passenger (compare increases in costs per passenger to CPI)
- Maintenance road calls per vehicle service mile (use to assess reliability of bus fleet)
- Incidents per vehicle service mile (use to identify safety concerns, needs for training)
- Passenger fares or visitor fee collected/operating expense (use to determine if costs are increasing faster than fares/fees)

Peer system analysis can be conducted on an annual basis using statistics from other sister agencies and the National Transit Database (NTD). Ideally, the peer group should be selected based on some common characteristics such as population of the area, system fleet size, annual vehicle hours or annual vehicle miles of service. This type of analysis can also identify regional or national trends that may be affecting or mirroring a particular performance trend. Individual systems should be managed to maintain or improve their performance relative to the peer group of transit systems. The same measures listed above can be used for peer system analysis. In addition, the following measures related to the vehicle fleet are also recommended (all based on annual statistics):

- Average transit speed (vehicle miles divided by vehicle hours)
- Revenue service miles per vehicle in fleet
- Spare vehicle ratio (total vehicles divided by peak vehicles needed for service)

The information above is generally consistent with the types of data collected by the Federal Transit Administration (FTA) to support the NTD. The NTD is the FTA's primary repository for uniform statistics on the transit industry. It includes key financial and operating data that describe public transit system characteristics. Recipients of FTA Urbanized Area Formula Program (§ 5307) and Non-urbanized Area Formula Program (§ 5311) are required by statute to submit information on an annual basis to the NTD. The information is used by the Secretary of Transportation to administer department programs, and also is made available to the public. An internet based reporting system is utilized to facilitate the collection and summary reporting methods as part of this process.

### **7.5.2. Samples of Industry Practices**

Performance standards for three representative transit agencies were reviewed to examine other typical procedures for service monitoring. Representative agencies included the Metropolitan Atlanta Rapid Transit Authority (MARTA) in Atlanta, Georgia, the Regional Transportation District in Denver, Colorado, and Pierce Transit in Tacoma, Washington. Each agency uses similar monitoring tools, statistics and metrics to document their relative route productivity and performance. The methods employed for making decisions on service adjustments or changes differ somewhat among agencies.

#### **Metropolitan Atlanta Rapid Transit Authority (MARTA)**

MARTA employs an assessment process to identify routes that are underperforming based on service standards or declining with a notable trend and need further evaluation. Reports are developed three times a year within 30 days of the end of their reporting period. Resulting recommendations for service modifications or eliminations are required to be presented at a public hearing, and must receive Board approval prior to implementation.

MARTA uses four key criteria to determine if a route is deficient or requires closer monitoring. The criteria include:

- Passengers per Revenue Hour
- Passengers per Revenue Mile
- Cost per Passenger (Operating Subsidy per Trip)
- Farebox Recovery (Revenue Percentage to Operating Cost)

These statistics are computed separately for different classes of routes (e.g. local, feeder, semi-express, small vehicle services, etc.) to provide an average and benchmarks for individual route comparisons. A route is determined to be deficient if, for two consecutive performance periods, it measures 50% or less than the system-wide average for three of the four criteria. For example, the following metrics are used to assess performance under each criterion.

- Service Average
- Service Benchmark (50% of Service Average)

- A route is then categorized based on the following measures:
  - “Pass” = Value greater than Service Benchmark
  - “Watch List” = Value between Service Benchmark and Service Average for one period
  - “Fail” = Value below Service Benchmark for two consecutive periods

MARTA will then use these results to take action or determine the appropriate disposition for a given route.

**Pierce Transit**

Pierce Transit has employed a method to monitor service performance measures to assure optimal productivity levels for public transportation services. They have established separate performance standards for each type of route being operated (e.g. local, express, demand-responsive, etc.). Measures have been established to determine if a route is operating at an “E” (Exceeds), “S” (Satisfactory), “M” (Marginal) and “U” (Unsatisfactory) level of performance. The following actions are taken based on the level of performance findings:

- E = Consider headway improvements
- S = No change
- M or U = headway reductions, operation at policy headways, redesign or elimination

Local routes are evaluated based on the number of total passengers carried per vehicle platform hour, total passengers per revenue mile and the percentage of the route operating costs covered by passenger revenues. Local routes are organized into four subcategories and respective performance standards are summarized in **Table 39** below.

**Table 39. Pierce Transit Performance Standards for Local Routes**

	Pass./Hour	Pass./Mile	Pass. Revenue/ Route Cost
<b>Trunk Routes</b>			
Exceeds	>35	>4.0	>.25%
Satisfactory	25-35	2.1-3.9	18-25%
Marginal	20-25	1.7-2.0	14-18%
Unsatisfactory	<20	<1.7	<14%
<b>Urban Routes</b>			
Exceeds	>30	>2.5	>22%
Satisfactory	20-30	1.7-2.4	14-22%
Marginal	15-20	1.3-1.6	11-14%
Unsatisfactory	<15	<1.7	<11%

	Pass./Hour	Pass./Mile	Pass. Revenue/ Route Cost
<b>Suburban Routes</b>			
Exceeds	>30	>2.5	>22%
Satisfactory	15-30	1.3-2.5	11 - 22%
Marginal	10-15	0.7-1.3	7 - 11%
Unsatisfactory	<10	<0.7	<7%
<b>Transit Center Connectors</b>			
Exceeds	>30	>2.5	>22%
Satisfactory	20-30	1.7-2.4	14 - 22%
Marginal	15-20	1.3-1.6	11 - 14%
Unsatisfactory	<15	<1.3	<11%

Source: Pierce Transit

Commuter and regional express routes are evaluated based on the number of total passengers carried per vehicle platform hour, average passengers carried per trip and the percentage of route operating costs that are recovered from passenger revenues. The performance standards for express services are summarized in **Table 40**.

Thresholds for each service type were developed based on historical performance and expectations that have been established for Pierce County routes, and therefore cannot be applied directly to another agency. However, this serves as an example of how relative metrics are used to developed a grading system for performance measures, and use of those grades for decisions on service changes.

**Table 40. Pierce Transit Performance Standards for Express Routes**

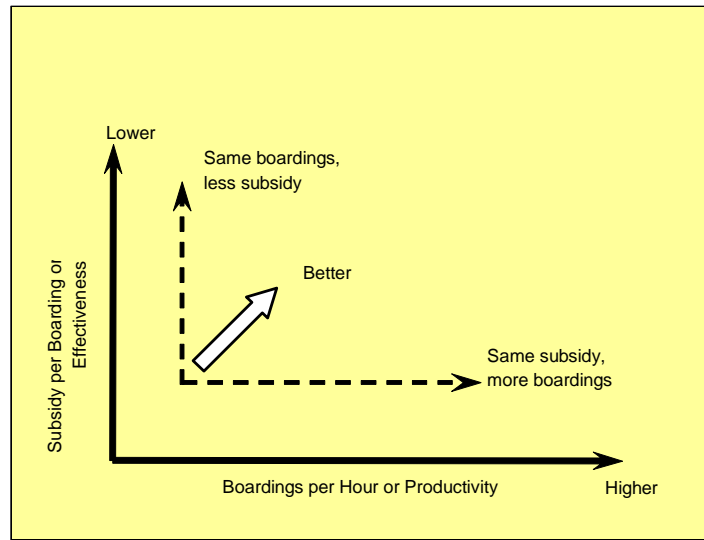
	Pass./Hour	Pass./Trip	Pass. Revenue/ Route Cost
<b>Regional Express Routes</b>			
Exceeds	>30	>30	>30%
Satisfactory	20-30	25-30	25-30%
Marginal	15-20	20-25	15-25%
Unsatisfactory	<15	<20	<15%

Source: Pierce Transit

**Regional Transportation District**

Part of RTD’s mission is to provide cost-effective service throughout the District. Therefore, the term performance is used interchangeably with effectiveness and efficiency. RTD works with the objective of maximizing ridership within a given budget. Subsidy per boarding (effectiveness) is routinely tracked along with boardings per hour (productivity) to evaluate absolute and relative performance (see **Figure 34**).

**Figure 34. RTD Effectiveness – Productivity Chart**

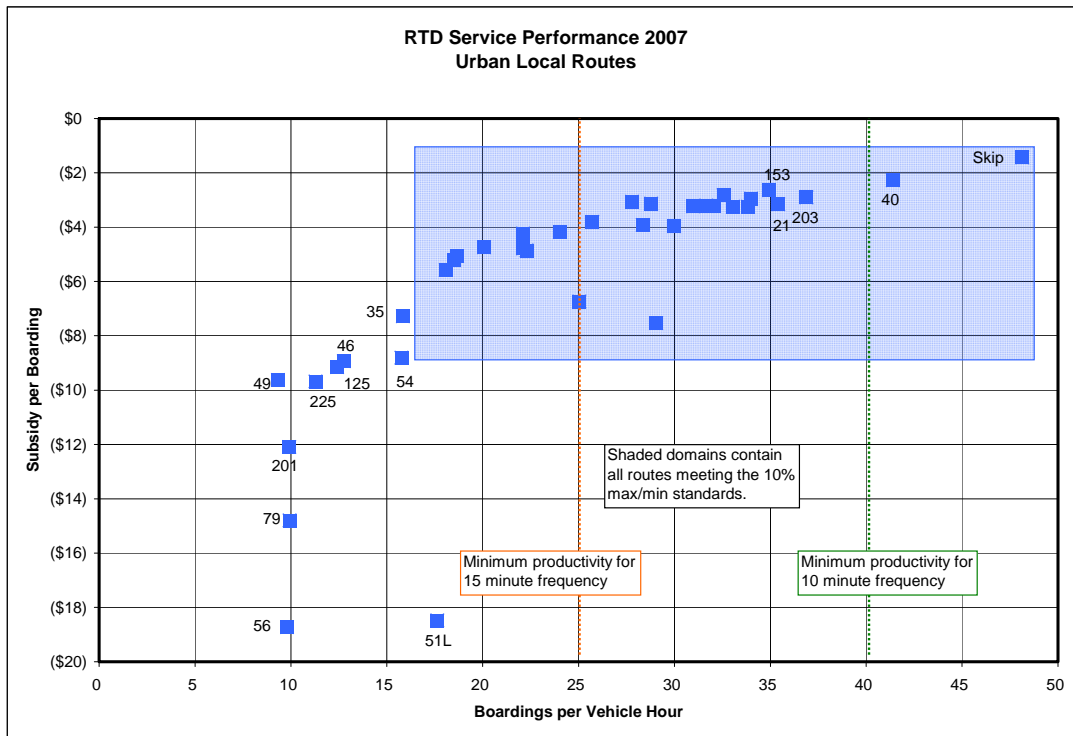


Source: Regional Transportation District

RTD has established guidelines that utilize the measures of subsidy per boarding and boardings per hour to identify the least productive services for further disposition. For example, a route will be evaluated for change if it falls within the least productive 10 percent of routes based on either subsidy per boarding and boardings per hour, or if the route falls below 25% for both measures. The route will specifically be evaluated for marketing, service revision or elimination. The calculation of the 10 percent and 25 percent standards are made for each service class (e.g. Urban Local, Suburban Local, Express, Regional, etc.). The calculations are made from annual, un-weighted data, assuming the data have a normal distribution using appropriate formulas for standard deviation and confidence intervals.

RTD uses tables and charts to depict these service standards to help make judgments about performance. **Figure 35** uses a shaded box to show the area where Urban Local routes meet or exceed minimum performance requirements. With this type of illustration, RTD can address issues with routes that fall “outside the box”. In addition, the chart uses vertical lines to represent productivity levels that guide target frequency levels during the peak and off-peak periods.

**Figure 35. RTD Service Performance 2007**



Source: Regional Transportation District

RTD’s Service Standards provide a more detailed description of how these measures are applied, and the disposition taken when routes fall into lower or minimum ranges of performance and productivity.

The case studies provide a good range of techniques for grading route performance and categorizing routes based on relative levels of efficiency and cost-effectiveness. Transfort may choose to incorporate some of these specific performance indicators and monitoring systems, or tailor these measures specifically to their current goals and objectives for system performance.

## 7.6. Future Action Items

A set of action items have been developed to guide the key steps for future phased service implementation. These items listed below will include responsibilities among Transfort, the City of Fort Collins and future transit service partners.

- Confirm the feasibility of route changes and new facilities based on physical opportunities and constraints. This includes all street configurations used for new transit routes, the University Avenue transitway on the CSU campus and the new PVH Harmony Campus Transit Center.
- Develop transit service standards or guidelines for remaining Enhanced Travel Corridors.

- Undertake a feasibility study regarding the establishment of a regional transit provider that could provide services for two or more jurisdictions in the North Front Range with a completion date by December 31, 2010 if resources are available.
- Identify potential future funding sources that will be sought for plan implementation.
- Initiate discussions with potential downtown Fort Collins partners to implement recommended circulator route.
- Undertake discussions with the Poudre School District regarding a negotiated agreement for a transit service partnership.
- Initiate discussions with potential partner jurisdictions for the implementation of new regional services.
- Develop new performance standards and a formalized transit system performance monitoring program.
- Initiate federal funding applications for future transit system capital requirements.