

CAT PERFORMANCE REVIEW REPORT

MARCH 31, 2010



Capital Area Transit
Harrisburg, Pennsylvania

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EXECUTIVE SUMMARY

In July 2007 the Pennsylvania Legislature passed Act 44, establishing a framework for a performance review process. The purpose of the review is to assess performance and make transit systems aware of improvement opportunities. The transit review process is an intense, short-duration effort intended to assess a transit system for efficiency, effectiveness and best practices. The review is conducted in a manner designed to minimize impacts on the day-to-day transit operations.

This, the first of the Act 44 mandated transit system performance reviews, is initiated as a Pilot Study. The Pilot Study provides an appropriate vehicle to:

- Test data availability.
- Evaluate computational methodologies.
- Build a “review template”.
- Establish evaluation procedures that will be further refined in subsequent reviews.

The Cumberland-Dauphin-Harrisburg Transit Authority (a.k.a. Capital Area Transit, CAT) is the first transit system to undergo the performance review process and is a prototype for other reviews in the Commonwealth. The responsiveness, cooperation, and candor of CAT’s management team were instrumental in the success of the pilot effort.

CAT was formed in 1973 after the dissolution of the Harrisburg Railways Company. When that company ceased operations, the local municipalities, in order to continue to provide mass transit, formed the Authority under the Commonwealth of Pennsylvania’s Municipal Authorities Act of 1945, as amended. Formed by the Cumberland County and Dauphin County Commissioners and the City of Harrisburg, CAT was designated as the public transportation provider in the greater Harrisburg area.

The review process begins with an assessment of available data and requests for what should be “off-the-shelf” data that may not be publicly available. CAT’s fixed route system consists of 30 bus routes operating on a 30 minute average headway. Additionally, there are 18 designated park-and-ride lots and 5 designated transit centers.

CAT’s goal is to be recognized by the community as a leader in the delivery of “highest quality” seamless regional public transportation services. CAT’s mission is to provide and promote excellence in integrated multi-modal public transportation solutions in a safe, reliable and responsible manner by courteous, professional and dedicated employees that encourages ridership and supports economic and social growth of the Capitol Region.

Available documentation and Act 44 metrics were reviewed to identify where CAT stands with respect to a set of peers. Peers were selected through an analytical process and interagency coordination between PennDOT and CAT. Analyses were conducted of 2008 performance (most recent year available) and for the five year period ending in 2008.

An analysis of the four key metrics mandated by Act 44 was conducted and it was determined that CAT's performance satisfies the requirements of the Act. The peer comparison process as applied to Act 44 metrics (below, in bold typeface), revealed that:

- CAT's 2008 **passengers per revenue hour** metric ranks 7th out of the 12 transit agencies in the peer group (below the average). However, this trend line is climbing at a steeper rate than the peer group, so CAT is on the path to "catching up" on this metric if the trend continues.
- CAT's 2008 **operating cost per revenue vehicle hour** is very close to the group average both in 2008 and in trend. CAT's trend is slightly above that of its peers, so attention to this metric may be warranted should the trend continue or become more pronounced.
- CAT's 2008 **operating revenue per revenue vehicle hour** is in the top 25% of the peer group, with an overall ranking of 3rd. While CAT's rate of change is somewhat lower than the peer group trend, CAT's starting position is well above the group. This is a case where the peer group is playing "catch up" to CAT.
- CAT ranks 10th in the group of 12 peers based on 2008 **operating cost per passenger**. The slope of CAT's trend is slightly better than the group of peers, while the absolute value is relatively high. Given that CAT's operating cost per revenue vehicle hour is about average (both in single year number and trend), the slope of the curve seems to be a function of increasing passengers.
- If CAT can continue to find ways to increase passengers per revenue mile and maintain the same relative cost structure, it should catch up to or exceed the performance average of the peer group for all of Act 44 prescribed measures.

To satisfy the additional requirements of Act 44, a functional evaluation of the system was performed. The performance evaluation consisted of additional document reviews, an on-site review, and interviews with key staff in 15 subject areas. Approximately 100 performance sub-areas, indicators and trends have been summarized in this document across the 15 subject areas. Consistent with the requirements of the Act, findings of the functional reviews are classified as "best practice" or "opportunities for improvement."

Best practices are those findings that have the potential to improve efficiency, effectiveness and quality of services provided. Five practices at CAT have been identified as examples of "best practice" that have the potential to transfer to other Commonwealth transit agencies:

- **Insurance Cost Savings** - CAT management have reported a 25% savings in employee medical insurance benefit costs due to an innovative set of programs implemented with little to no resistance from employees or management staff.

- **Operator Improvement Program** - CAT operates a state-of the-art simulator for driver training. Simulations are tailored to find individual driver weaknesses and strengths, and potentially trends, across the driver pool.
- **Coordination of Operator Training Resources** - CAT has plans to share its driver training simulator with nearby transit agencies, thereby benefiting other agencies in the region, increasing safety and maximizing return-on-investment for CAT and the Commonwealth.
- **Operator Outreach** - CAT's Assistant Director of Operations has developed a daily outreach program to proactively solicit input from bus drivers by spending time almost every day in the driver's break room to identify issues and concerns.
- **Service Coordination Outreach** - CAT's Transportation Service Coordinator has a process where he proactively speaks with staff in all agency departments to identify potential service improvements. This identifies opportunities and constraints regarding pending and proposed service changes.

While CAT is operating reasonably well and within the boundaries of the Act 44 metrics, **Opportunities for Improvement** have been identified that, if implemented, have the potential to improve the efficiency, effectiveness and quality of services provided by CAT. Some opportunities are under CAT's control while others will require proactive action by others.

- **Establish Metrics and Quality Control Procedures/Protocols for Key Agency Functions** - Several key functions of CAT do not include well-documented quality control metrics, procedures and reporting mechanisms commonly found at similar agencies as an accepted or good practice.
 - **Customer Service** - Tracking individual complaints and compliments and response time, and compiling a monthly summary report would provide good measures of how well service is being delivered and perceived. Regularly conducting customer satisfaction surveys and tracking trends are also useful tools in assessing customer service.
 - **Human Resources** - Handbooks and procedural guides for all agency functional staff types clarify roles, responsibilities and expectations, and enhance the likelihood of successful succession planning. Conducting annual employee performance reviews (non-represented personnel) further clarifies performance expectations and provides a valuable vehicle for communication between staff and management.
 - **Federal & State Reporting and Grants Management** - CAT has experienced difficulties with meeting grants management and federal documentation requirements. This has been exacerbated by a lack of written procedures, incomplete documentation in files, and insufficient quality control procedures. Procedure manuals are needed in each of these areas, and the manuals will need to be continually updated to reflect changes to federal and state requirements. Implementing rigorous quality control and follow-through processes to ensure documentation and paperwork are filed correctly in a timely manner and that full and accurate CAT records are maintained will reduce the amount of rework necessary to meet federal and state requirements

- **Inventory Management and Control** - The Transportation Research Board's (TRB) publication "*Inventory Management in a Maintenance Environment*" provides guidance on performance metrics for inventory control. A set of metrics that follow this guidance and are tailored to CAT's needs can reduce parts storage space requirements and improve cash flow for the agency.
- **Scheduling** - Metrics such as pay/platform ratio and Extra Board size measure the effectiveness of various scheduling alternatives, and are used to improve efficiency in operations, the largest single operating expense category.
- **Schedule Adherence** - Tracking schedule adherence to an adopted standard (i.e., 95% of trips operate within the parameters of 0 minutes early and 5 minutes late) provides data that is used to support customer satisfaction, reduced driver frustration levels, safety, and schedule refinement and creation actions.
- **Marketing** - With limited resources and a changing marketplace, it is important to set forth performance metrics for marketing efforts. Questions such as how well CAT serves current markets, what other markets might be emerging and what are the most effective means to reach those markets should be quantified on a regular basis, and the results shared across marketing, customer relations, planning and operations and maintenance departments.
- **Service Planning** - While CAT is focused and performs well on short term service planning, it is not guided by adopted performance standards and other criteria.

Service planning benefits from a clear set of goals and objectives for the new services and the fixed route services in aggregate. Clear and objective performance criteria, used in both the service planning and evaluation processes, would enable CAT to increase the objective and subjective data regarding each potential change. The nature and extent of the information would assist the Board and public in assessing the proposed service changes.

- **Develop and Implement Documented (Written) Medium and Long-Range (Strategic) Plans for Specific Agency Functions** - Many of CAT's staff members have experience with other agencies and recognize the importance of well-coordinated plans and strategies to advance CAT's service and sustained ability to deliver services. Strategic plans should address the following:
 - **Medium Term Service Planning** – An analytical framework for identifying, analyzing and planning service changes within a 5 year horizon would better allow CAT to plan for and implement service changes and improvements that continually adapt to the evolving environment in which it operates. This process is referred to as the *Transit Development Plan (TDP)*. CAT, in combination with HATS, has taken some steps in this regard with the Draft *CAT Service Study*, but this constitutes the beginning steps of a full TDP. A TDP is generally conducted on 5-10 year intervals.
 - **Capital Facilities** - Changes in vehicle fleet size, composition and technology introduces the need to make sure capital facilities can accommodate and support the new fleet. CAT staff members have noted several deficiencies in the Market Square Transfer Center (HTC) at 2nd and Market Streets and the 90 year

old Cameron Street maintenance/storage/administrative facility. Several needs likely need met prior to the arrival of buses now on-order. These types of facilities are costly and have a very long life. Planning for their ongoing maintenance, any necessary upgrade or rehabilitation, and eventual replacement should be incorporated into a strategic plan that considers needs, opportunities, constraints and community impacts of various alternatives.

- **Communications Systems** - CAT currently has multiple areas outside the current reach of the radio system. A plan to improve and maintain an upgraded or new communications system is necessary, as is its potential integration with other technologies and systems- in particular farebox; automated passenger counters (APC); and automated vehicle location (AVL) systems.
- **Information Technology** - In-vehicle and information technology is evolving. All the agency's systems need to work together to provide for an efficient delivery of information that supports system efficiency, effectiveness, and high-quality customer service. An inventory and assessment of all key systems, their deficiencies and strengths, ways to integrate systems and port information among systems would be addressed in this plan.
- **Data Management** - Many performance review functions rely on data available to CAT. Almost every department (including management) would benefit from information available in others. A data management plan would address what data are available in each section, how those data might be integrated for decision making or customer service purposes, and identify any critical gaps that can be filled as part of other strategic planning efforts.
- **Marketing** - Like Information Technology, the conduct of effective marketing efforts is rapidly changing and will continue to change. As the citizens of the region become more technology savvy, the most effective ways to reach and communicate with current and prospective users are changing. Changing demographics and land uses introduce opportunities for new markets that should be evaluated as part of a strategic marketing plan.
- **Scheduling** – Fully documenting the entire existing (manual) scheduling processes, now vested in essentially one individual, is necessary to ensure continuity and provide a basis for examining alternate methods. Automation would provide additional management tools and potentially reduce costs.
- **Fill All Governing Board Seats and Maintain Full Board** - While CAT has little direct control over Board appointments, maintaining complete representation is important to CAT's direction, standing in the community and local funding opportunities.
- **Complete Inter-local Funding Agreements** - CAT's local inter-governmental funding agreements are due to expire at the end of 2011. Completing these negotiations quickly will help remove uncertainties associated with local funding commitments.
- **Develop a Succession Plan for All Key Staff Positions** - CAT has been challenged by the retirement of staff performing key functions. That challenge will continue as staff members leave the agency for a variety of reasons and new staff are introduced, for whom well-documented procedures or guidance on how to successfully complete a task is in process or does not currently exist. This is further complicated when recruitment

begins only after a position has been vacated. When this occurs, there is no opportunity to train new staff in the nuances of a position's requirements.

- **Implement Staff Training Programs and Process Manuals for all Functional Areas** - Well-trained staff versed on the latest trends and practices in areas under their responsibility can avert rework and advance their area of responsibility to “best practice.” Staff training may be informal (such as attending conferences) or formal (NTD reporting courses) depending on particular needs. This is linked to the below recommendations regarding procedures documentation.
- **Automate Key Functions** - Automation of key functions can realize long-term cost savings and provides a mechanism to establish standardized processes, enhance quality control, monitor performance and to “fine tune” service delivery over time. Areas where automation could improve CAT's efficiency include:
 - **Timesheet and Payroll Management** - Currently this is a manual process for bus drivers and other employees. Automation would increase accuracy and free finance personnel for other activities.
 - **Scheduling and Block/Run Cutting** - This process is currently managed by one key staff person and is a time consuming and laborious manual effort. Identifying an automated method that best meets CAT's needs will increase efficiency in operations, and allow rapid and objective evaluation of alternative scheduling schemes and work rules and policies. Finally, automation allows multiple personnel to learn and efficiently use the system, providing enhanced continuity in this function.
 - **Fuel and Oil Dispensing Systems** - Currently this is a manual process that consumes staff time and may not accurately track consumption by vehicle. Automation provides a direct link to performance-related reports that would be expected to reduce maintenance costs and better account for valuable consumables.
 - **Customer Information/Vehicle Tracking** - Web-based customer information systems that provide real-time vehicle location and schedule information would save substantial time and effort spent by dispatch personnel answering questions, and improve perceived and likely the actual quality of service. It would also allow for more accurate run-time estimates for schedule optimization purposes, and provision of real-time information to the public via signage, text messages, and automated telephone information. The systems that would be appropriate, timing of integration, and reasoning for decisions should be identified as part of a master IT plan development process.
 - **Inventory Control**- Parts management and record keeping relies heavily on manual processes. Automated processes would reduce staff time requirements, better secure the parts inventory, enhance performance monitoring, reduce cash flow needs, and provide management with better information to evaluate future parts expenditures.

INTRODUCTION

PURPOSE

The purpose of the review process is to assess transit system performance and to make transit systems aware of opportunities for improvement. In addition to meeting this requirement, other important goals of the review process and this document include:

- Find, document and publicize best practices that contribute to efficient, high-quality public transit service delivery so that other Commonwealth transit agencies can benefit.
- Provide guidance to transit agencies on reasonable ways to improve efficiency, effectiveness and quality of service provided.
- Identify opportunities for interagency coordination, where PennDOT staff can provide appropriate technical assistance to local transit service providers.
- Identify and document legal, institutional or other barriers beyond the control of the transit agency that may impede efficient service delivery.

This, the first of the Act 44 mandated transit system performance reviews, is initiated as a Pilot Study. The Pilot Study is intended to test data availability, computational methodologies, and to establish a “review template” and process that can be refined in subsequent reviews. The performance review focuses on fixed route services only. The responsiveness, cooperation, and candor of CAT’s management team were instrumental in the success of the pilot effort.

PERFORMANCE REVIEW PROCESS

The transit review process is an intense, short-duration effort intended to minimize the impact on the day-to-day operations of a transit agency. It begins with an assessment of available data and requests for what should be “off-the-shelf” data that may not be publicly available. Documentation and core Act 44 metrics are reviewed to identify where an agency stands with respect to a set of peers. Peers are selected through an analytical process and interagency coordination between PennDOT staff and the subject transit agency.

From the initial review of available documentation, a custom interview template consisting largely of open-ended questions is crafted. PennDOT and its representatives conduct a 1 to 3 day on-site review to inspect operations and to interview the agency’s governing board and management team regarding a group of major functional area topics. The process is dynamic and scalable, and intended to reveal best practices, opportunities for improvement and barriers to the delivery of efficient and effective public transit services. Topics covered include:

- Background Information
- Governance & Advisory Committees
- Management
- Finance (Operating)
- Procurement
- Human Resources/Labor Relations
- Safety and Security

AGENCY DESCRIPTION

“The Cumberland-Dauphin-Harrisburg Transit Authority (a.k.a. Capital Area Transit, or CAT) was formed in 1973 after the dissolution of the Harrisburg Railways Company. When that company ceased operations, the local municipalities, in order to continue to provide mass transit, formed the Authority under the Commonwealth of Pennsylvania’s Municipal Authorities Act of 1945, as amended. Formed by the Cumberland County and Dauphin County Commissioners and the City of Harrisburg, CAT was designated as the public transportation provider in the greater Harrisburg area.

The Authority is governed by a Board of Directors whose members are appointed by the three municipalities, and who each serve a term of five years (at which time they may be reappointed by their respective municipalities). The Board meets each month on the last Thursday to set policy and provide guidance to the staff. Committees of the Board meet on an ad hoc basis dependent upon the activity occurring within the Authority.

Being a public transit agency, CAT is a not-for-profit entity. CAT receives about 35% total operating costs from the farebox; that is fares that passengers pay to ride CAT. The remainder of the operational funds to provide service as well as capital funds comes from Cumberland and Dauphin Counties and the City of Harrisburg and the Pennsylvania Department of Transportation. Additional funding for capital expenditures is received from the Federal Transit Administration.

CAT currently has two divisions -- a Fixed Route Bus Division and a Shared Ride/Paratransit Division. There are approximately 195 employees in two locations: the majority of which are housed at 901 North Cameron Street, Harrisburg; there is a small Shared Ride Division office in Elizabethville, in northern Dauphin County.”¹

CAT’s fixed route system, shown in **Exhibit 1**, is comprised of 30 bus routes serving Cumberland County, Dauphin County and the City of Harrisburg operating on a 30 minute average headway. Additionally, there are 18 designated park-and-ride lots as well as 5 designated transit centers.

Exhibit 2 presents CAT’s number of vehicles and employees between 2004 and 2008. It shows CAT has been adding staff and peak period vehicles steadily over this period. As shown in **Exhibit 3**, total operating revenues have been growing steadily as well, though the contribution from local, state and federal sources seems to vary substantially year-to-year. This is likely due to various grants and funds availability from state and federal sources. Capital expenditures are expected to be uneven, as major assets expenditures are not on an annual or even cycle. The data reflects major capital purchases in 2005 and 2008.

Exhibit 4 shows that operating cost has grown steadily as well. Maintenance costs for vehicles spiked in 2007 as the introduction of new buses reduced the cost of maintaining an older fleet. Non-vehicle maintenance expenditures, i.e., for facilities and other non-vehicle assets, were essentially stable over the 5 year period examined.

¹ Agency description is quoted from Capital Area Transit’s webpage (February 11, 2010)

Exhibit 1. CAT System Map

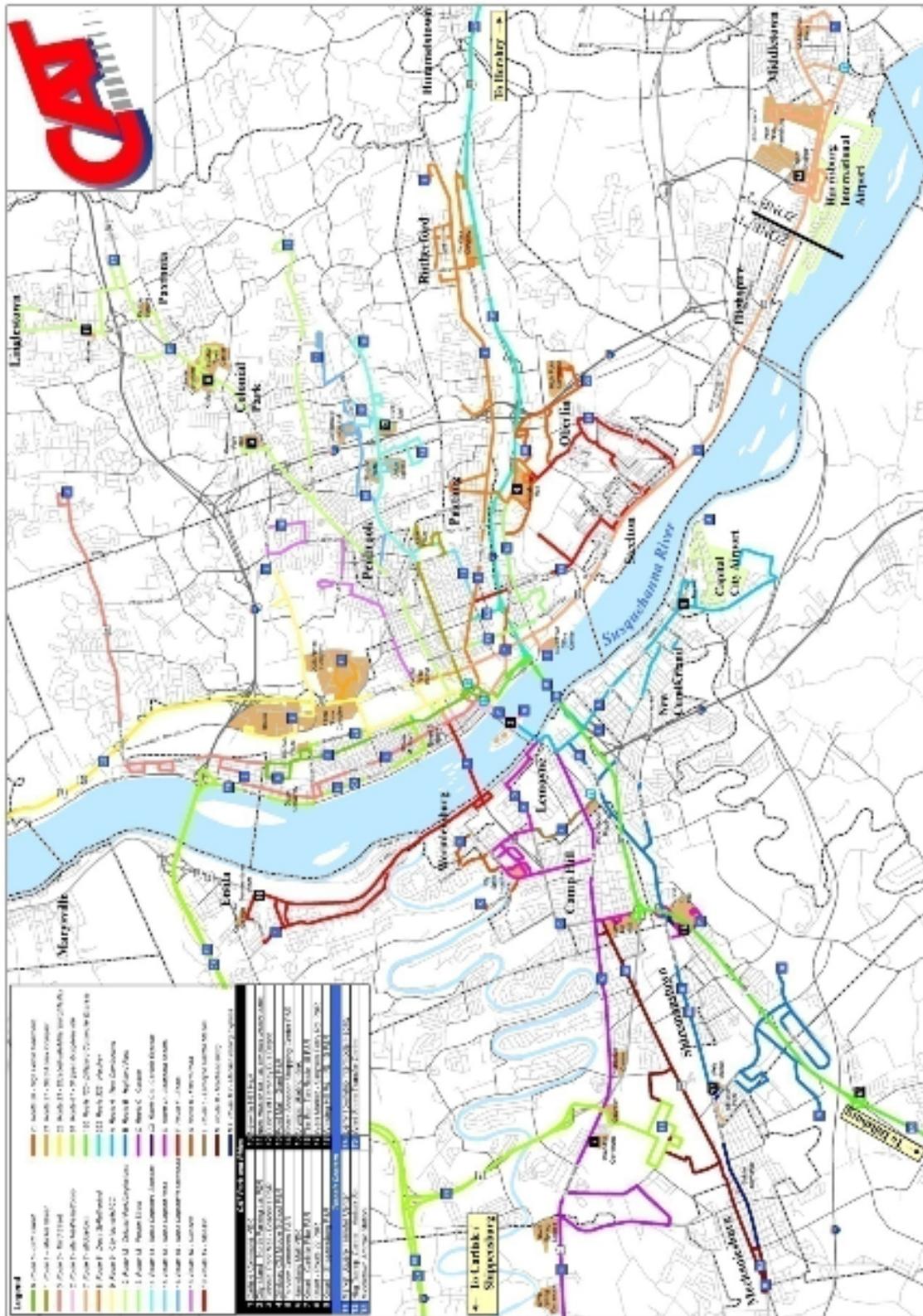
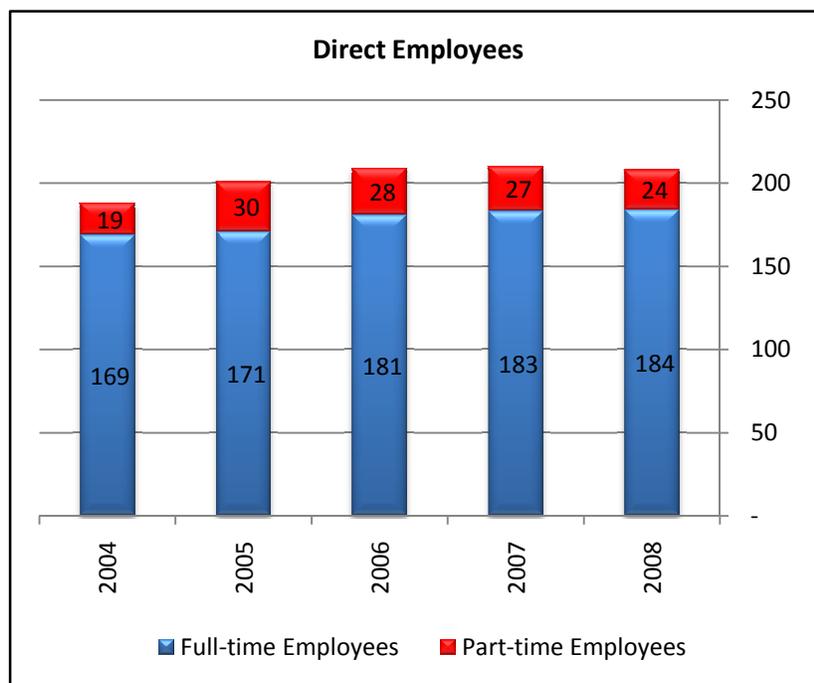
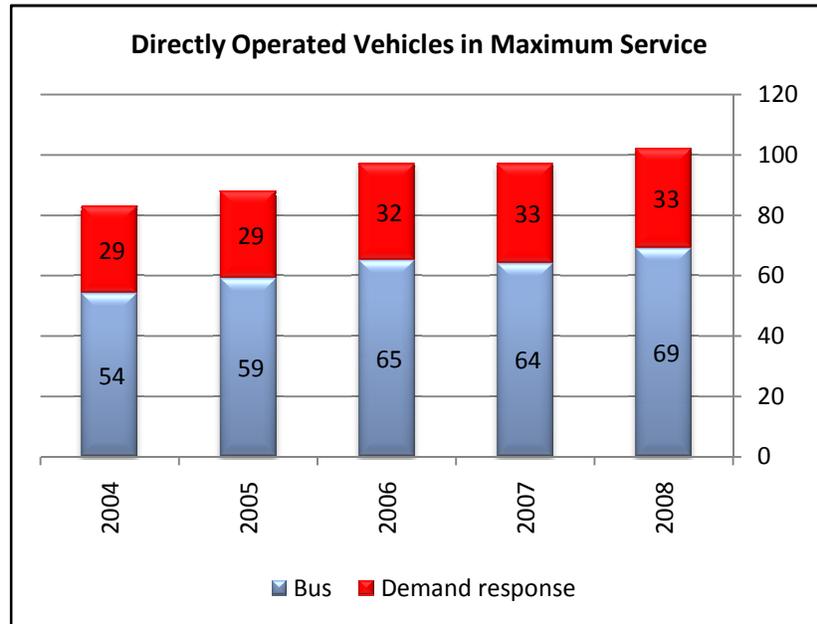
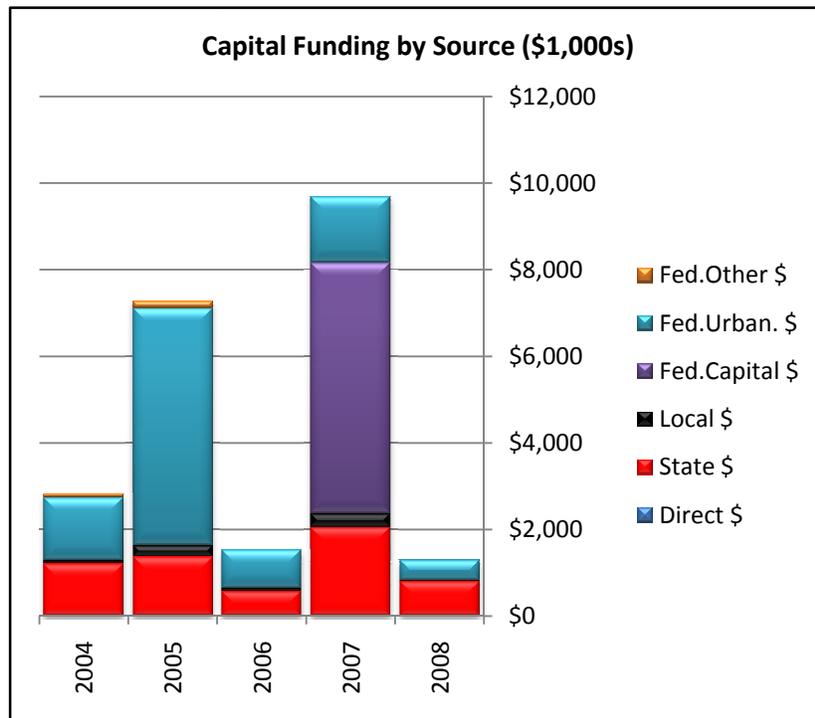
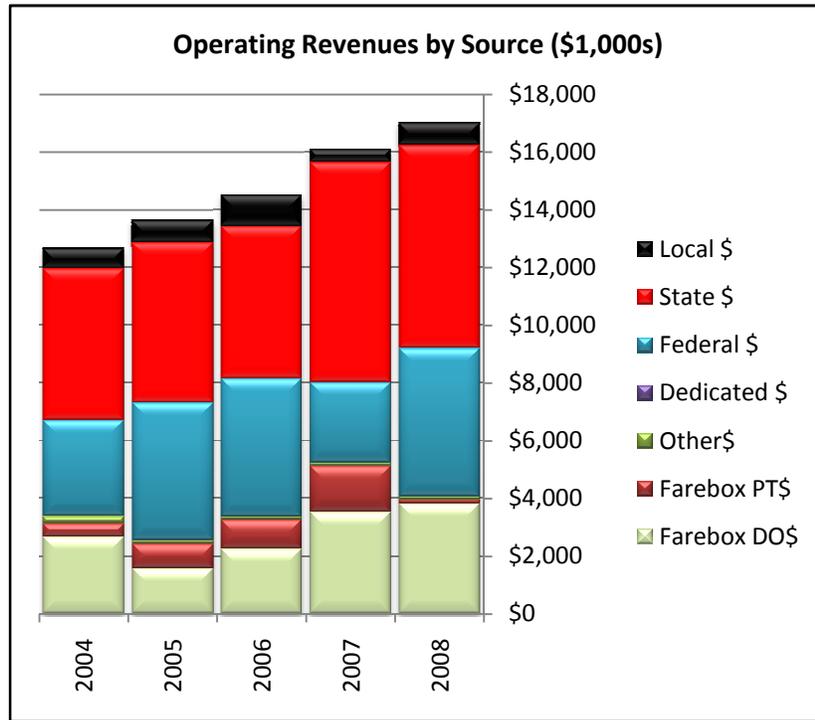


Exhibit 2. CAT Operating Characteristics



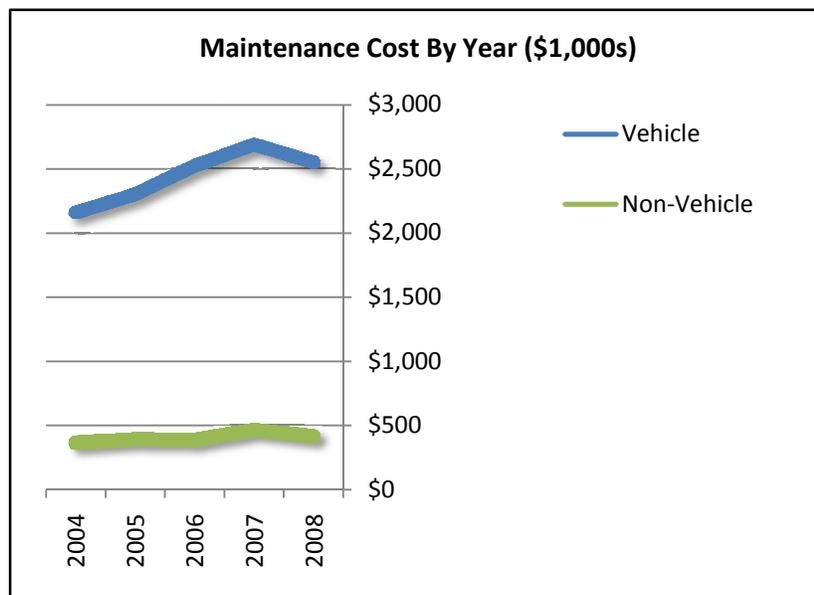
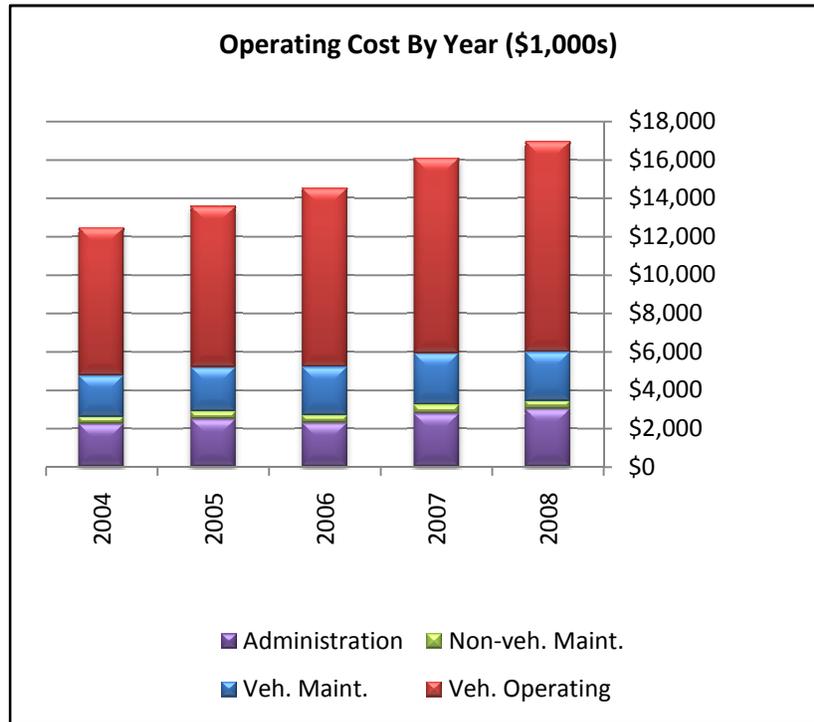
Source: National Transit Database, 2004-2008

Exhibit 3. CAT Operating and Capital Funding by Source



Source: National Transit Database, 2004-2008

Exhibit 4. CAT Operating and Maintenance Cost by Category



Source: National Transit Database, 2004-2008

SERVICE AREA TRANSPORTATION GOALS

CAT's Vision, as stated on its website, is:

*"To be recognized by the community as a leader in the delivery of "highest quality" seamless regional public transportation services. Its mission is to provide and promote excellence in integrated multi-modal public transportation solutions in a safe, reliable and responsible manner by courteous, professional and dedicated employees that encourages ridership and supports economic and social growth of the Capitol Region."*²

To achieve its goals, CAT has set forth a set of value statements which are intended to serve as guiding principles for the organization:

- CAT will show respect for and treat with dignity all employees, customers and other people we interact with everyday.
- CAT will be good stewards of all resources entrusted to us from the public.
- CAT will promote a safe riding and working environment for our customers and employees.
- CAT will strive to be responsive to the needs of our customers and employees and the communities we serve.

² Ibid.

ACT 44 PERFORMANCE ASSESSMENT

In July 2007 the Pennsylvania Legislature passed Act 44. The Act established the framework for a performance review process to be used for the assessment of recipients of state transit financial assistance.

“The Department [Pennsylvania Department of Transportation] may conduct performance reviews of an award recipient under this section to determine the effectiveness of the financial assistance. Reviews shall be conducted at regular intervals as established by the Department in consultation with the management of the award recipient. After completion of a review, the department shall issue a report that:

- *Highlights exceptional performance and identifies any problems that need to be resolved;*
- *Assesses performance, efficiency and effectiveness of the use of the financial assistance;*
- *Makes recommendations on follow-up actions required to remedy any problem identified; and,*
- *Provides an action plan documenting who should perform the recommended actions and a time frame within which they should be performed.”³*

The law sets forth performance criteria to be used to satisfy its objectives:

- Passengers per revenue vehicle hour.
- Operating cost per revenue vehicle hour.
- Operating revenue per revenue vehicle hour.
- Operating cost per passenger.
- Other items as the Department may establish.

Performance criteria are to be compared for both the system being reviewed and for a group of five or more peers by mode determined by considering:

- Revenue vehicle hours (car hours for rail and fixed guideway).
- Revenue vehicle miles (car miles for rail and fixed guideway).
- Number of peak vehicles.
- Service area population.

The law further instructs the Department to prepare a 5-year trend analysis for the local transportation organization under review and the peer systems by performance criteria and by mode and make a determination of “Compliance” or “At Risk” status based on findings⁴.

³ 67 Pa C.S. § 427.12

⁴ *ibid.*

PEER SYSTEM SELECTION PROCESS

The process of selecting Peer Systems for CAT considered the four legislatively mandated criteria and developed a “long list” of over 40 candidate peers selected strictly upon percent deviation from CAT based on 2008 NTD reported statistics⁵. A “short list” of 12 systems was developed by excluding systems from the “long list” where a fundamentally different customer base (i.e. large student population, long-distance commuter service only, etc.), legislative environment (differences in tax support, legal mandates, etc.), climate or significant event would make a comparison potentially invalid.

The potential “short-list” was submitted to CAT management for review and comment. CAT management suggested that one of the 12 peers would likely not be comparable to CAT. As a result of the interagency consultation with CAT management, one of the peer systems was removed from the shortlist leaving 11 systems, in addition to CAT⁶, for peer comparison purposes:

- Berks Area Regional Transportation Authority (BARTA), Reading PA
- Erie Metropolitan Transit Authority (EMTA), Erie PA
- Worcester Regional Transit Authority (WRTA), Worcester MA
- Merrimack Valley Regional Transit Authority (MVRTA), Haverhill MA
- Wichita Transit, Wichita KS
- Greater Peoria Mass Transit District (CityLink), Peoria IL
- Whatcom Transportation Authority (WTA), Bellingham WA
- Metropolitan Tulsa Transit Authority (Tulsa Transit), Tulsa OK
- Salem Area Mass Transit District (Cherriots), Salem OR
- Chattanooga Area Regional Transportation Authority (CARTA), Chattanooga TN
- Rock Island County Metropolitan Mass Transit District (MetroLink), Moline IL

The calculations and reasoning behind the specific inclusion or exclusion for the entire “long-list” of peers considered is presented in **Appendix A**.

⁵ The Federal Transit Administration’s 2008 National Transit Database (NTD).

⁶ 67 PA Code §427.12 includes the candidate agency in the peer group for analytical purposes.

ACT 44 COMPARISONS AND FINDINGS

Comparison of CAT with the selected peer systems was completed using NTD-reported data and statistics. NTD data were selected as the source to use in the calculation of the following Act 44 metrics due to their consistency and availability⁷ for comparable systems for the five year trend analysis window:

- Passengers per revenue vehicle hour.
- Operating cost per revenue vehicle hour.
- Operating revenue per revenue vehicle hour.
- Operating cost per passenger.

The definition of the variables used in the calculations is as follows⁸:

- Passengers: Annual unlinked passenger boardings by mode for both directly operated and purchased transportation.
- Operating Costs: Annual operating cost of services provided (excluding capital costs) by mode for both directly operated and purchased transportation.
- Operating Revenue: Total annual operating revenue generated from farebox, local contributions and other non-state, non-federal sources by mode for both directly operated and purchased transportation.
- Revenue Vehicle Hours: The total annual number of “in-service” hours of service provided by mode for both directly operated and purchased transportation.
- Average: Un-weighted linear average of all values being measured across all peer transit agencies including CAT.
- Standard Deviation: Standard deviation of all values being measured across all peer transit agencies, including CAT.

The metrics and the NTD data were analyzed for CAT and the 11 peer systems as a group.

Results are presented in **Exhibit 5** and are as follows:

- For all metrics for the single year and five year trend analysis, CAT is within one standard deviation of its peers.
- For three of the metrics, CAT is below its peers for the single year analysis.
- For two of the metrics, CAT is better than its peers for the five year trend analysis.
- “Passengers per” metrics are below average in the 2008 analysis but improving in trend.
- “Operating cost per” metrics exceed the average for the single year and five year trend.

⁷ NTD data are available for almost every urbanized area transit system in the United States. The latest data available at the time of this review was for 2008.

⁸ In 2003 and in prior years, CAT provided service to the Farm Show complex. This service was discontinued in 2003 due to the loss of the contract to provide such service. As a result, the 2004 and subsequent NTD reporting does not reflect this ridership (approximately 20% of CAT’s 2003 NTD reported ridership). Consistent with state regulations, the Farm Show service statistics therefore have been excluded from the 2003 NTD statistics to establish the “2003 baseline” for purposes of trend analyses.

Exhibit 5. Act 44 Measures Findings Summary Table

Act 44 Metric	Single Year (2008) Analysis		Five Year Trend Analysis	
	Within Std. Dev.	Peer Ranking ⁹ ? (out of 12)	Within Std. Dev.?	Compared to Peer Avg.
Passengers per Revenue Vehicle Hour	YES	7 th	YES	Better
Operating Cost per Vehicle Hour	YES	7 th	YES	Worse
Operating Revenue per Vehicle Hour	YES	3 rd	YES	Worse
Operating Cost per Passenger	YES	10 th	YES	Better

⁹ 1st Place Ranking is Best Amongst Peer Group, 12th Place is Worst

FIXED-ROUTE BUS PERFORMANCE COMPARISONS

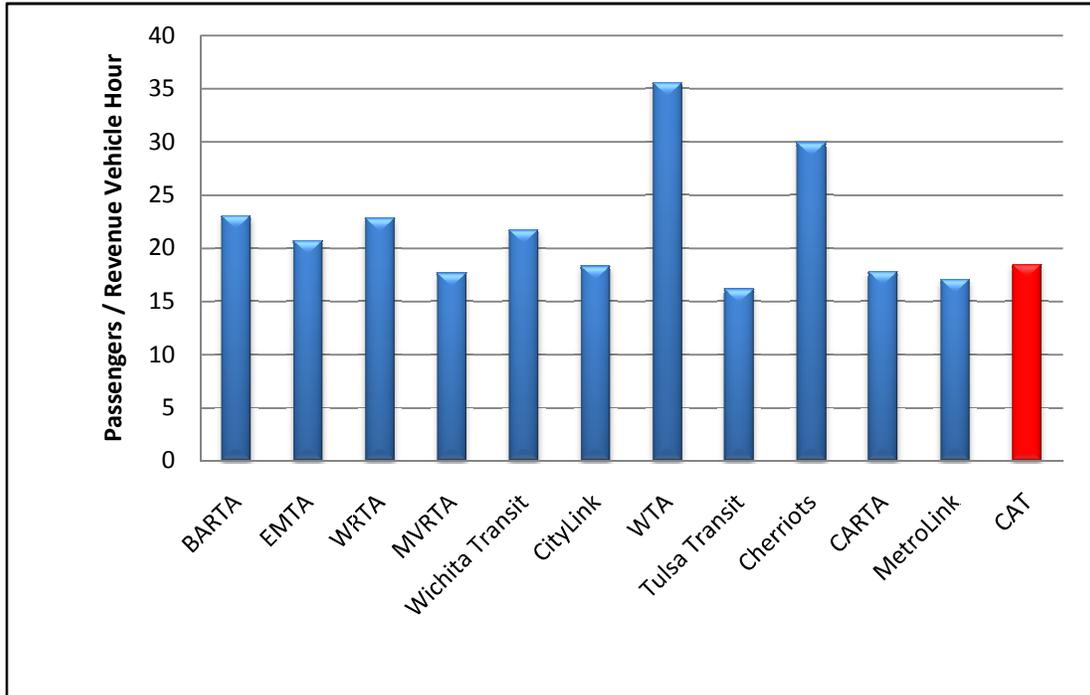
For the 11 peer systems plus CAT, NTD data were extracted and summarized for each of the required Act 44 metrics. Measures were put into histograms and tables for visual inspection, statistical analyses, and ordinal ranking purposes. The single-year results of these analyses are presented in **Exhibit 6**, **Exhibit 7**, **Exhibit 8** and **Exhibit 9**. Five year trend analyses are presented in **Exhibit 10**, **Exhibit 11**, **Exhibit 12** and **Exhibit 13**.

For measures relating to passengers or operating revenue, ordinal rankings are based on a highest-to-lowest system. For measures relating to operating cost, ordinal rankings are based on a lowest-to-highest system. As a result, a ranking of “1st” implies the agency scores best amongst its peers and a “12th” place ranking implies it performs the poorest on any given metric.

Several conclusions can be reached based on findings presented in the exhibits.

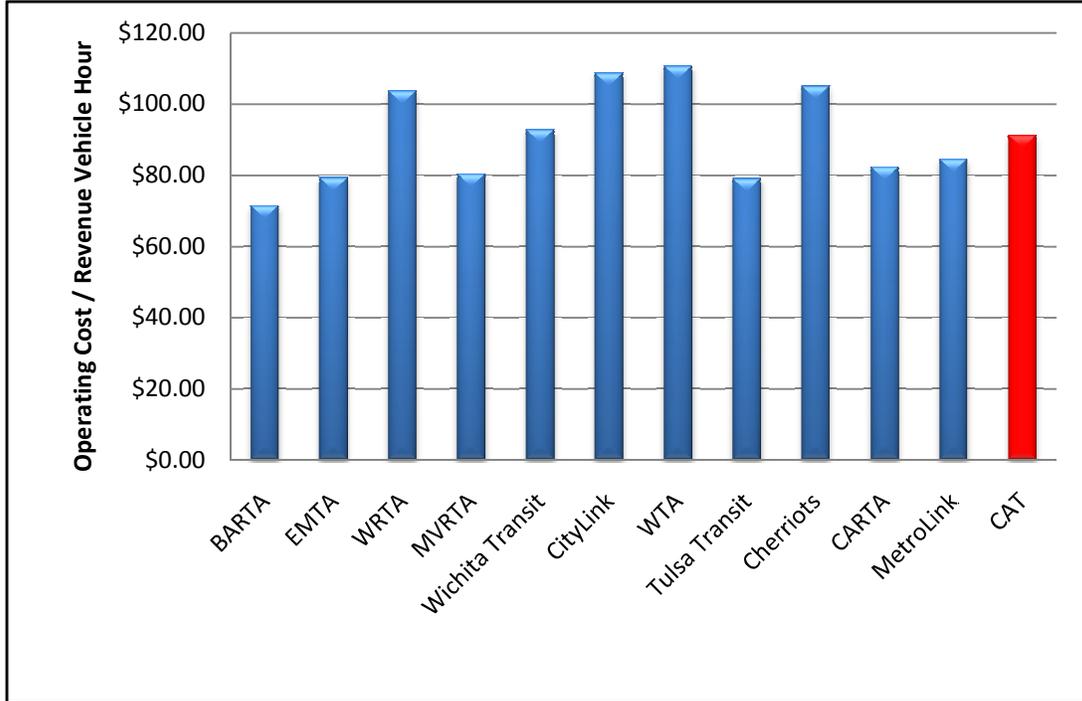
- CAT’s 2008 **passengers per revenue hour metric ranks 7th** out of the 12 transit agencies in the peer group (below the average). However, this trend line is climbing at a steeper rate than the peer group, so CAT is on the path to “catching up” on this metric if the trend continues.
- CAT’s 2008 **operating cost per revenue vehicle hour** is very close to the group average, both in 2008 and in trend. CAT’s trend is slightly above the group average, so attention to this metric may be warranted should the trend continue or become more pronounced.
- CAT’s 2008 **operating revenue per revenue vehicle hour** is in the top 25% of the peer group, with an overall ranking of 3rd. While CAT’s rate of change is somewhat lower than the peer group trend, CAT’s starting position is well above the group. This is a case where the peer group is playing “catch up” to CAT.
- CAT ranks 10th in the group of 12 peers based on 2008 **operating cost per passenger**. The slope of CAT’s trend is slightly better than the group of peers, while the absolute value is relatively high. Given that CAT’s operating cost per revenue vehicle hour is about average (both in single year number and trend), the slope of the curve seems to be a function of increasing passengers.
- If CAT can continue to find ways to increase passengers per revenue mile and maintain the same relative cost structure, it should catch up to or exceed the performance average of the peer group for all of Act 44 prescribed measures.

Exhibit 6. 2008 Passengers per Revenue Vehicle Hour (Bus)



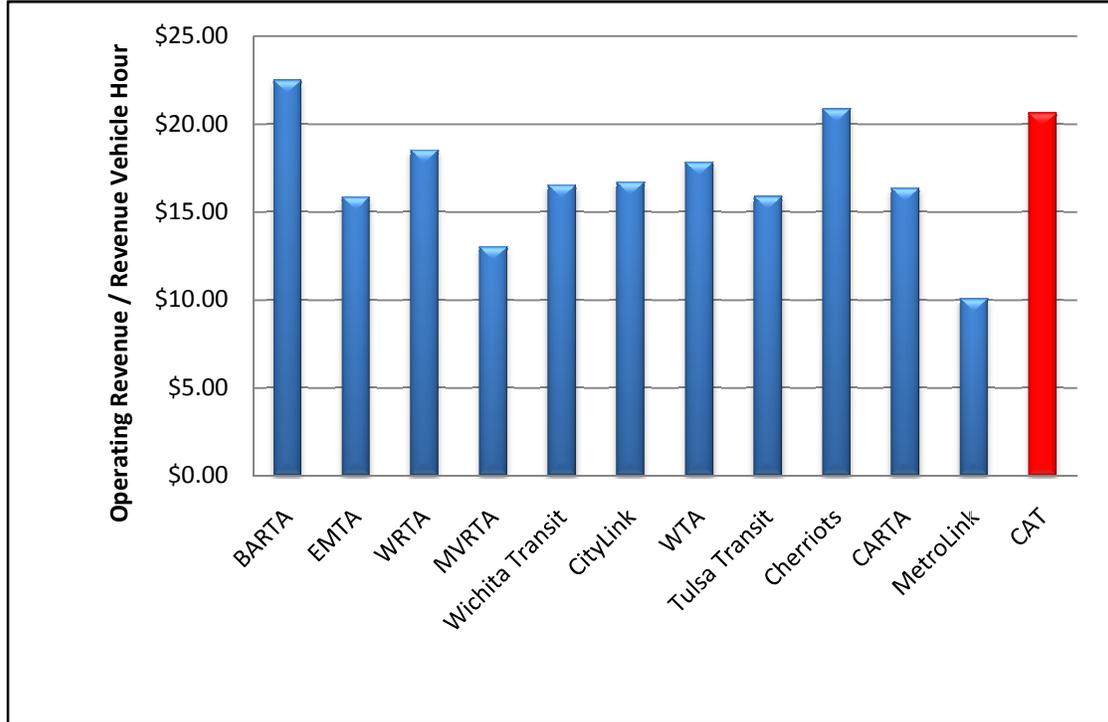
2008 Passengers (Bus) / Revenue Vehicle Hour (Bus)		
Peer Group Findings	Value	Rank
Berks Area Reading Transportation Authority (BARTA)	23.04	3
Erie Metropolitan Transit Authority (EMTA)	20.68	6
Worcester Regional Transit Authority (WRTA)	22.82	4
Merrimack Valley Regional Transit Authority (MVRTA)	17.64	10
Wichita Transit (Wichita Transit)	21.68	5
Greater Peoria Mass Transit District (CityLink)	18.28	8
Whatcom Transportation Authority (WTA)	35.54	1
Metropolitan Tulsa Transit Authority (Tulsa Transit)	16.15	12
Salem Area Mass Transit District (Cherrlots)	29.91	2
Chattanooga Area Regional Transportation Authority (CARTA)	17.79	9
Rock Island County Metropolitan Mass Transit District (MetroLink)	17.05	11
<i>Average</i>	21.59	
<i>Standard Deviation</i>	5.79	
<i>Average – 1 Standard Deviation</i>	15.80	
<i>Average + 1 Standard Deviation</i>	27.38	
Capital Area Transit (CAT)	18.48	7
Within Standard Deviation	Yes	
Better or Worse Than Peer Group Average	Worse	

Exhibit 7. 2008 Operating Cost per Revenue Vehicle Hour (Bus)



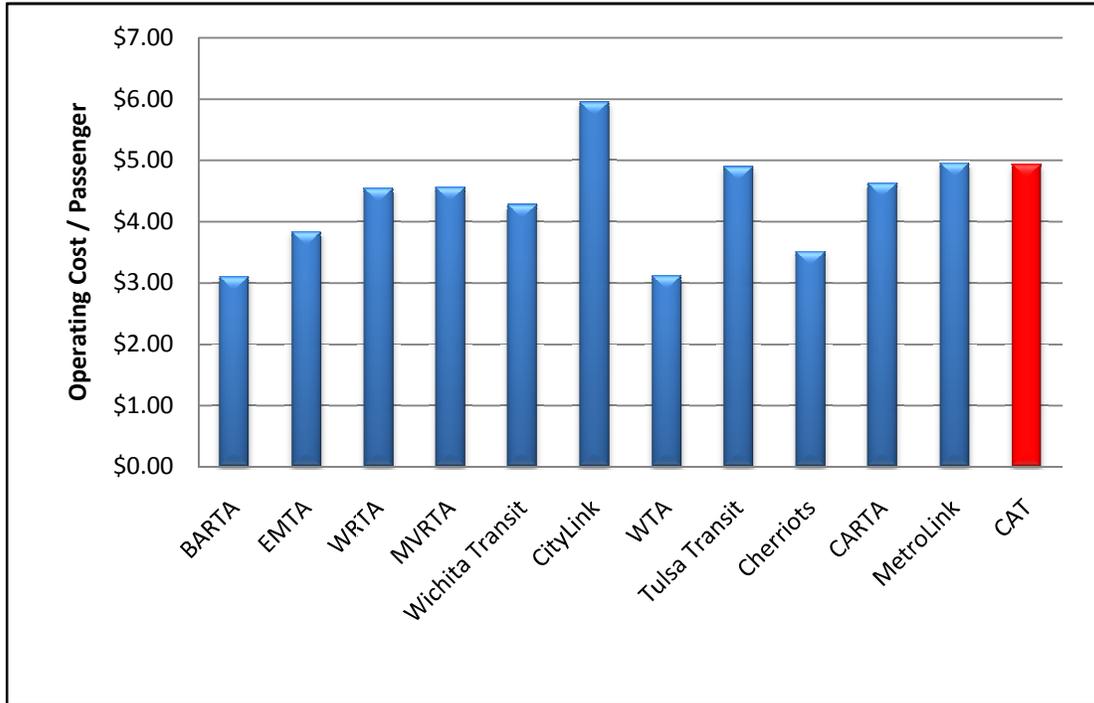
2008 Operating Cost / Revenue Vehicle Hour (Bus)		
Peer Group Findings	Value	Rank
Berks Area Reading Transportation Authority (BARTA)	\$71.36	1
Erie Metropolitan Transit Authority (EMTA)	\$79.23	3
Worcester Regional Transit Authority (WRTA)	\$103.63	9
Merrimack Valley Regional Transit Authority (MVRTA)	\$80.36	4
Wichita Transit (Wichita Transit)	\$92.71	8
Greater Peoria Mass Transit District (CityLink)	\$108.66	11
Whatcom Transportation Authority (WTA)	\$110.65	12
Metropolitan Tulsa Transit Authority (Tulsa Transit)	\$78.99	2
Salem Area Mass Transit District (Cherriots)	\$104.94	10
Chattanooga Area Regional Transportation Authority (CARTA)	\$82.25	5
Rock Island County Metropolitan Mass Transit District (MetroLink)	\$84.44	6
<i>Average</i>	<i>\$90.70</i>	
<i>Standard Deviation</i>	<i>\$13.33</i>	
<i>Average – 1 Standard Deviation</i>	<i>\$77.37</i>	
<i>Average + 1 Standard Deviation</i>	<i>\$104.03</i>	
Capital Area Transit (CAT)	\$91.19	7
Within Standard Deviation	Yes	
Better or Worse Than Peer Group Average	Worse	

Exhibit 8. 2008 Operating Revenue per Revenue Vehicle Hour (Bus)



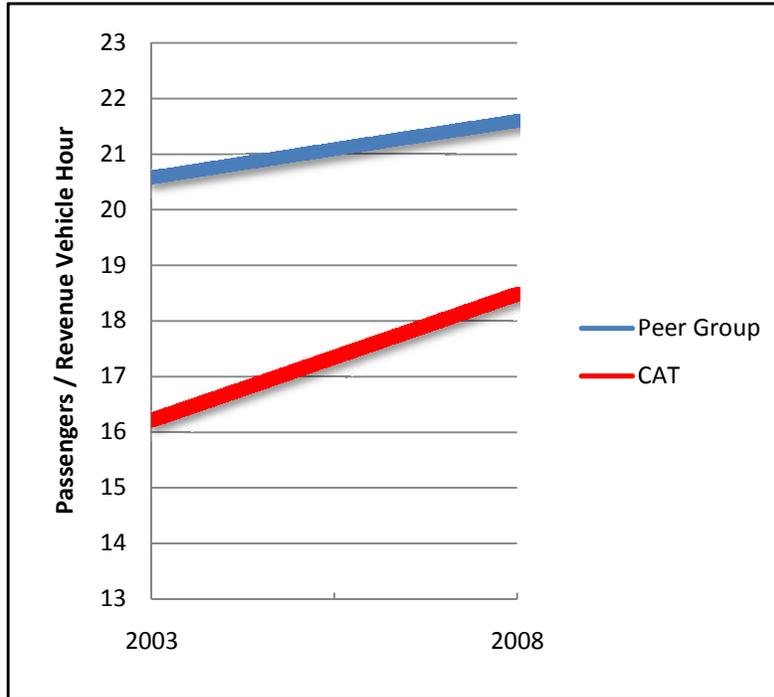
2008 Operating Revenue / Revenue Vehicle Hour (Bus)		
Peer Group Findings	Value	Rank
Berks Area Reading Transportation Authority (BARTA)	\$22.47	1
Erie Metropolitan Transit Authority (EMTA)	\$15.83	10
Worcester Regional Transit Authority (WRTA)	\$18.51	4
Merrimack Valley Regional Transit Authority (MVRTA)	\$12.99	11
Wichita Transit (Wichita Transit)	\$16.51	7
Greater Peoria Mass Transit District (CityLink)	\$16.68	6
Whatcom Transportation Authority (WTA)	\$17.81	5
Metropolitan Tulsa Transit Authority (Tulsa Transit)	\$15.86	9
Salem Area Mass Transit District (Cherriots)	\$20.84	2
Chattanooga Area Regional Transportation Authority (CARTA)	\$16.33	8
Rock Island County Metropolitan Mass Transit District (MetroLink)	\$10.05	12
<i>Average</i>	\$17.04	
<i>Standard Deviation</i>	\$3.42	
<i>Average – 1 Standard Deviation</i>	\$13.62	
<i>Average + 1 Standard Deviation</i>	\$20.46	
Capital Area Transit (CAT)	\$20.60	3
Within Standard Deviation	Yes	
Better or Worse Than Peer Group Average	Better	

Exhibit 9. 2008 Operating Cost per Passenger (Bus)



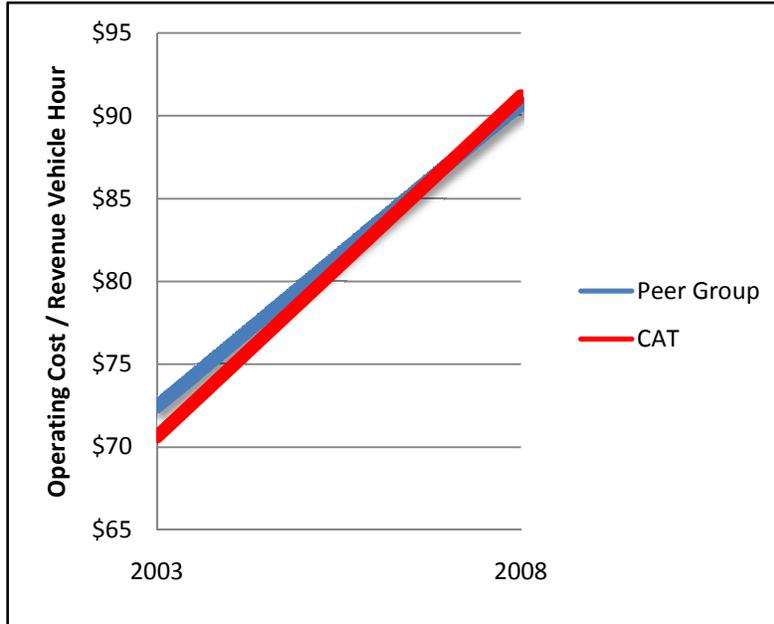
2008 Operating Cost / Passenger (Bus)		
Peer Group Findings	Value	Rank
Berks Area Reading Transportation Authority (BARTA)	\$3.10	1
Erie Metropolitan Transit Authority (EMTA)	\$3.83	4
Worcester Regional Transit Authority (WRTA)	\$4.54	6
Merrimack Valley Regional Transit Authority (MVRTA)	\$4.56	7
Wichita Transit (Wichita Transit)	\$4.28	5
Greater Peoria Mass Transit District (CityLink)	\$5.95	12
Whatcom Transportation Authority (WTA)	\$3.11	2
Metropolitan Tulsa Transit Authority (Tulsa Transit)	\$4.89	9
Salem Area Mass Transit District (Cherriots)	\$3.51	3
Chattanooga Area Regional Transportation Authority (CARTA)	\$4.62	8
Rock Island County Metropolitan Mass Transit District (MetroLink)	\$4.95	11
<i>Average</i>	\$4.36	
<i>Standard Deviation</i>	\$0.84	
<i>Average – 1 Standard Deviation</i>	\$3.52	
<i>Average + 1 Standard Deviation</i>	\$5.20	
Capital Area Transit (CAT)	\$4.93	10
Within Standard Deviation	Yes	
Better or Worse Than Peer Group Average	Worse	

Exhibit 10. Five Year Trend (2003-2008) Passengers per Revenue Vehicle Hour



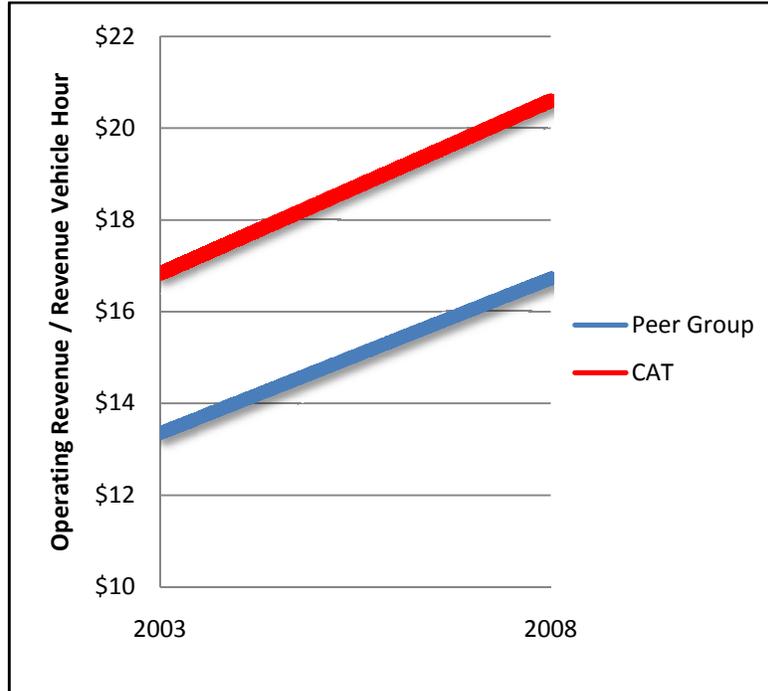
Passengers (Bus) / Revenue Vehicle Hour (Bus) 5 yr. Average Annual Compounded Rate of Change	
Peer Group Findings	Value
Berks Area Reading Transportation Authority (BARTA)	0.8%
Erie Metropolitan Transit Authority (EMTA)	-0.6%
Worcester Regional Transit Authority (WRTA)	-1.8%
Merrimack Valley Regional Transit Authority (MVRTA)	4.4%
Wichita Transit (Wichita Transit)	1.0%
Greater Peoria Mass Transit District (CityLink)	0.5%
Whatcom Transportation Authority (WTA)	1.0%
Metropolitan Tulsa Transit Authority (Tulsa Transit)	1.5%
Salem Area Mass Transit District (Cherriots)	-1.2%
Chattanooga Area Regional Transportation Authority (CARTA)	2.8%
Rock Island County Metropolitan Mass Transit District (MetroLink)	5.0%
<i>Average</i>	<i>1.34%</i>
<i>Standard Deviation</i>	<i>2.09%</i>
<i>Average – 1 Standard Deviation</i>	<i>-0.75%</i>
<i>Average + 1 Standard Deviation</i>	<i>3.43%</i>
Capital Area Transit (CAT)	2.7%
Within Standard Deviation	Yes
Better or Worse Than Peer Group Average	Better

Exhibit 11. Five Year Trend (2003-2008) Operating Cost per Revenue Vehicle Hour



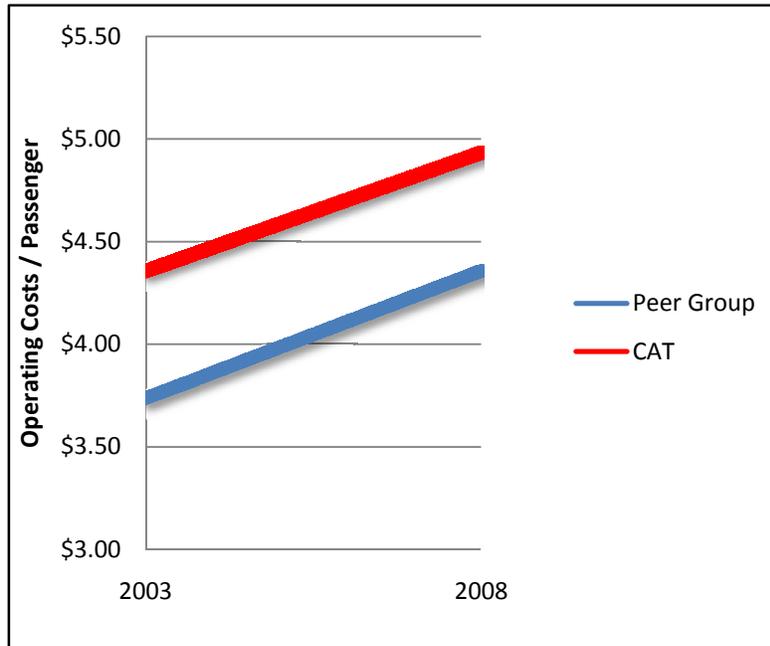
Operating Cost / Revenue Vehicle Hour 5 yr. Average Annual Compounded Rate of Change	
Peer Group Findings	Value
Berks Area Reading Transportation Authority (BARTA)	5.00%
Erie Metropolitan Transit Authority (EMTA)	5.40%
Worcester Regional Transit Authority (WRTA)	5.10%
Merrimack Valley Regional Transit Authority (MVRTA)	2.60%
Wichita Transit (Wichita Transit)	9.90%
Greater Peoria Mass Transit District (CityLink)	3.60%
Whatcom Transportation Authority (WTA)	2.50%
Metropolitan Tulsa Transit Authority (Tulsa Transit)	5.50%
Salem Area Mass Transit District (Cherriots)	3.30%
Chattanooga Area Regional Transportation Authority (CARTA)	2.90%
Rock Island County Metropolitan Mass Transit District (MetroLink)	6.50%
<i>Average</i>	<i>4.80%</i>
<i>Standard Deviation</i>	<i>2.08%</i>
<i>Average – 1 Standard Deviation</i>	<i>2.72%</i>
<i>Average + 1 Standard Deviation</i>	<i>6.88%</i>
Capital Area Transit (CAT)	5.30%
Within Standard Deviation	Yes
Better or Worse Than Peer Group Average	Worse

Exhibit 12. Five Year Trend (2003-2008) Operating Revenue per Revenue Vehicle Hour



Operating Revenue / Revenue Vehicle Hour 5 yr. Average Annual Compounded Rate of Change	
Peer Group Findings	Value
Berks Area Reading Transportation Authority (BARTA)	6.1%
Erie Metropolitan Transit Authority (EMTA)	-1.8%
Worcester Regional Transit Authority (WRTA)	0.6%
Merrimack Valley Regional Transit Authority (MVRTA)	0.0%
Wichita Transit (Wichita Transit)	11.2%
Greater Peoria Mass Transit District (CityLink)	8.8%
Whatcom Transportation Authority (WTA)	1.7%
Metropolitan Tulsa Transit Authority (Tulsa Transit)	9.3%
Salem Area Mass Transit District (Cherriots)	11.0%
Chattanooga Area Regional Transportation Authority (CARTA)	2.8%
Rock Island County Metropolitan Mass Transit District (MetroLink)	4.5%
<i>Average</i>	4.86%
<i>Standard Deviation</i>	4.43%
<i>Average – 1 Standard Deviation</i>	0.43%
<i>Average + 1 Standard Deviation</i>	9.29%
Capital Area Transit (CAT)	4.1%
Within Standard Deviation	Yes
Better or Worse Than Peer Group Average	Worse

Exhibit 13. Five Year Trend (2003-2008) Operating Costs per Passenger



Operating Cost / Passenger (Bus)	
5 yr. Average Annual Compounded Rate of Change	
Peer Group Findings	Value
Berks Area Reading Transportation Authority (BARTA)	4.1%
Erie Metropolitan Transit Authority (EMTA)	6.1%
Worcester Regional Transit Authority (WRTA)	7.0%
Merrimack Valley Regional Transit Authority (MVRTA)	-1.7%
Wichita Transit (Wichita Transit)	8.8%
Greater Peoria Mass Transit District (CityLink)	3.1%
Whatcom Transportation Authority (WTA)	1.5%
Metropolitan Tulsa Transit Authority (Tulsa Transit)	4.0%
Salem Area Mass Transit District (Cherriots)	4.5%
Chattanooga Area Regional Transportation Authority (CARTA)	0.0%
Rock Island County Metropolitan Mass Transit District (MetroLink)	1.4%
<i>Average</i>	<i>3.44%</i>
<i>Standard Deviation</i>	<i>2.98%</i>
<i>Average – 1 Standard Deviation</i>	<i>0.46%</i>
<i>Average + 1 Standard Deviation</i>	<i>6.42%</i>
Capital Area Transit (CAT)	2.5%
Within Standard Deviation	Yes
Better or Worse Than Peer Group Average	Better

FUNCTIONAL REVIEWS

Functional reviews are used to evaluate the numerical data in the Act 44 comparisons, find “best practices” to share with other transit agencies, and identify opportunities of improvement. Data from the National Transit Database (NTD) was used to calculate various indicators and metrics, and was combined with subjective information from interviews and examination of records to complete the functional reviews. Detailed functional reviews have been organized into broad categories:

- Governance.
- Management and Administration.
- Service Delivery.
- Infrastructure.
- Service Enhancement.

Governance is comprised of the oversight board and advisory committees. In general, governance sets policies, goals and objectives for an agency. These reflect local community values and provide oversight to ensure goals and objectives are met. Responsibilities of the governing board include management oversight, recruiting and retaining top management personnel and advocacy for the agency’s needs and positions with their constituents. Advisory boards typically provide review and input to the board and agency staff in specific topic areas ranging from a public perspective to technical reviews.

Management and administration provides the to the day-to-day administration and oversight functions of an agency. Some of the key issues for management are recruitment and retention, human resources, finance and procurement. Guided by the policies, goals and objectives set by governance, management’s primary function is to provide oversight to ensure the agency runs smoothly, customer needs are met and that the various departments in the agency satisfactorily meet the complex and changing requirements set forth by state and federal laws, regulations and procedures.

Service delivery captures all of the elements that relate directly to “putting a high quality service on the road.” Topic areas within service delivery include core functions of operations; maintenance; scheduling; safety; customer service; and information technology. This represents the management of the largest group of a typical transit system’s employees (i.e. drivers and mechanics).

Infrastructure includes the physical facilities, information technology systems, rolling stock and other assets necessary to provide transit services. Topics include asset use, sustainability, suitability for existing and known future uses, and plans for upgrades, rehabilitation or replacement.

Service enhancements are the proactive processes used to improve the perception of the agency, balance current transit supply and with passenger demand, adjust service to meet present and future needs, and plan for capital improvements and replacements. Topic areas covered under service enhancement include marketing and public relations, capital programming and planning.

FUNCTIONAL REVIEW ORGANIZATION

Functional review sections are organized by a brief description of the topic area, and a tabular *Summary* of findings followed by explanations for findings within specific subject areas. Metrics associated with each topic are categorized as *Findings* with the following notation:

+	Above Average	The agency's actions/conditions are notably more/better than those observed in similar agencies.
✓	Average	The agency's actions/conditions are comparable to those observed in similar agencies.
✘	Below Average	The agency's actions/conditions are notably less/worse than those observed in similar agencies.

In an attempt to recognize where commitments or actions are already underway to change the current state of a particular metric a column has been added to the *Summary* sections labeled *Trends*. *Trends* are categorized as follows:

↗	Improving	A commitment or actionable plan is underway to improve upon the current practice/conditions.
→	Little net change	No commitment or actionable plan has been made to improve upon the current practice/conditions.
↘	Worsening	No commitment or plan has been made to improve upon the current practice/conditions <i>and</i> conditions are expected to degrade unless the topic is addressed.

Taken together, the *Finding* and *Trend* are intended to identify best practices and help prioritize the areas where addressing a finding can help improve the efficiency, effectiveness and/or quality of service provided:

Finding	Trend	Action/Interpretation
+	↗	Continue current actions and policies. Potential best practice.
+	→	Continue current actions and policies.
+	↘	Corrective action may be desirable.
✓	↗	Continue current actions and policies.
✓	→	Continue current actions and policies.
✓	↘	Corrective action recommended.
✘	↗	Continue current actions but closely monitor progress.
✘	→	Corrective action necessary.
✘	↘	Corrective action necessary.

Each section concludes by recognizing the agency's challenges and opportunities, and by providing a succinct set of recommendations for consideration.

GOVERNANCE

Governance sets agency policies, goals and objectives that reflect local community values as well as provides oversight to ensure goals and objectives are met. Responsibilities of governance include strategic direction, management oversight, recruiting and retaining top management personnel and advocacy for the agency's needs and positions with their constituents.

CAT's articles of incorporation under the Pennsylvania Municipality Act of 1945 provides for a Board of Directors comprised of seven individuals. Additionally, a Citizen's Advisory Committee provides input regarding an array of service-related issues.



GOVERNING BODY

The governing body of a public transit authority is primarily responsible for:

- Establishing policy and the strategic direction of the transit system.
- Monitoring agency management to ensure that the agency's mission is being accomplished.
- Creating and communicating a clear understanding of the distinction between the roles, responsibilities and oversight required to govern.
- Retaining and directing senior management personnel.
- Promoting transit in the community.

Summary of Findings

Metric #	Description	Finding	Trend
1	Governance and structure meet changing needs and equitably represents its customers.	✓	→
2	Meets community public transit needs.	✓	→
3	Full governing board membership.	✘	↗
4	Achieves strategic goals.	✘	→
5	Working relationship among Board members.	+	→
6	Public opinion of Board and transit system.	✓	↗
7	Working relationship with Executive Director and other agency staff.	+	→

Legend:

- | | | | |
|---|---------------|---|-------------------|
| + | Above Average | ↗ | Improving |
| ✓ | Average | → | Little net change |
| ✘ | Below Average | ↘ | Worsening |

Structure

The Cumberland-Dauphin-Harrisburg Transit Authority ("Capitol Area Transit" and "CAT" are approved for use in the By-Laws) was founded in April 1973 under the Municipal Authorities Act of 1945. The Articles of Incorporation and By-Laws provide for the following (**Metric 1 & 2**):

- A seven member Board of Governors: two from Cumberland County, three from Dauphin County, and two from the City of Harrisburg. Board members are appointed for 5 year terms by their respective jurisdictions.
- A majority of Directors constitutes a quorum.
- Officers are to include: Chairman, First Vice Chairman, Second Vice Chairman, Secretary, Treasurer, Assistant Secretary and Assistant Treasurer. The duties of each are provided in the By-Laws.
- Initial financial contributions for each of the member jurisdictions, which is to be evaluated annually in conjunction with the operating and capital budgets, and "primarily on the basis of seat miles of motor bus operation."

- Do not limit the provision of transit service to member jurisdictions, in accordance with the law and in the judgment of the Authority.
- Officers to be elected annually via voting of the Board members.

As shown in **Exhibit 14**, there is currently one vacancy on the Board (**Metric 3**). This seat represents the City of Harrisburg and was vacated due to the death of the member. The City of Harrisburg was notified by CAT of its one vacant Board seat in October 2007. The Mayor declined to appoint a new representative, citing litigation. A change of City administration occurred in January 2010, and the new Mayor has been notified of the vacancy, and was requested to ensure its Board seats are filled. Additionally, the term of one of the City of Harrisburg's Board members expired December 31, 2009. The Board member has volunteered to continue serving pending action by the the City of Harrisburg.

The CAT Board of Directors meets regularly on the last Thursday of each month at CAT's facility in Harrisburg. Eleven Board meetings were held in 2009 (all months except November). A review of 2009 meeting notes indicates that Board members attend most meetings, and that a quorum existed. Meeting notes are taken and are available to the public.

Financial, policy, specific service issues, studies, and reports are addressed by the Board. Ridership data and certain performance metrics are provided to the Board by CAT management prior to each Board meeting. Fixed route ridership data includes ridership by:

- Passengers by month, weekdays, Saturdays
- Fiscal year to date passenger totals, by type
- Monthly passenger totals for present and past four years (weekday, Saturday).
- Passengers by route by type.
- Passenger type.
- Fixed route (average daily, total) for present month.
- Year to date.
- Data for the comparable period in the previous year.
- Percent change from prior year/month.

Fixed route performance metrics reported to the Board monthly include:

- Passengers per revenue vehicle hour.
- Expense per revenue vehicle hour.
- Revenue per revenue vehicle hour.
- Expense per passenger mile and per passenger hour.
- Revenue per passenger mile and per passenger hour.
- Subsidy per passenger mile and passenger hour.
- Miles per road call.
- Accidents per 100,000 miles.
- Revenue per mile.
- Operating cost per mile.

 Exhibit 14. CAT Board of Governors (effective January 2010)

Name	Board Position	Appointed by	Term Expiration Date
Frank A. Pinto	Chairman	Dauphin Co.	12/31/2013
Todd Pagliarulo	First Vice Chairman	Dauphin Co.	12/31/2014
Eric Bugaile	Secretary	Dauphin Co.	12/31/2010
David Morrison	Treasurer	City of Harrisburg	12/31/2009 ¹⁰
Ken Groff	Assistant Secretary	Cumberland Co.	12/31/2010
Don Geistwhite, Jr.	Assistant Treasurer	Cumberland Co.	12/31/2014
(vacant) ¹¹		City of Harrisburg	12/31/2008

¹⁰ Member has continued to serve pending action by the Mayor of Harrisburg.

¹¹ Appointee deceased 9/08/2007.

- Ratio of operating revenue to operating expense
- Total miles and hours incurred.
- Fuel and fluids consumption.
- Information calls (count).
- Staffing numbers.

Other fixed route data routinely reported includes:

- Budget variance report by major line item.
- Pass sales present month and YTD v. prior year.
- Explanation of unusual and seasonal expense changes.
- Operating statistics (total and revenue miles, hours, passengers, etc.)
- Operating days in month v. same month in prior year.
- Press articles.
- Information regarding TIP activities, grants, and correspondence.

Similar data for paratransit activities is reported, including graphics.

The By-Laws call for four standing committees: Financial, Development, Community Service, and Public Relations. Others may be determined by the Chairman. Interviews indicate that the Board largely functions as a committee of the whole, with committees convened on an as-needed basis.

The Board is currently in the process of refining the agency's mission statement (**Metric 4**).

CAT has modernized its fleet and instituted several fixed route bus service expansions in recent years. It has also initiated studies of other potential service additions and enhancements.

The Board appears to function well and appears to have a positive relationship with the Tri-County Regional Planning Commission (TCRPC) and the Harrisburg Area Transportation Study (HATS), the Metropolitan Planning Commission for Cumberland and Dauphin Counties (including the City of Harrisburg), and Perry County. One CAT Board member also serves on the HATS Coordinating Committee (**Metric 5**).

A review of media articles indicates that CAT and its governing board are viewed positively by the public (**Metric 6**).

Oversight Procedures and Mechanisms

The Board meets monthly and has ongoing contact with CAT senior management (**Metric 7**). Existing mechanisms for monitoring performance include the monthly Board meeting, Committee efforts, and review of data provided by CAT management. The Board annually reviews the performance of senior management and approves changes in compensation for employees not represented by a collective bargaining unit.

Management and Succession Planning

The Board is responsible for retaining the CAT Executive Director. No formal succession plans for senior management staff were available for review.

Challenges

- Fill the vacant Board seat (City of Harrisburg) and take action regarding the position for which the term has expired (City of Harrisburg).
- Ongoing education of Board members as CAT faces present and future challenges.
- Finalize a Mission Statement for CAT.
- Increase ridership on existing services.
- Identify and capture additional local revenues from traditional and non-traditional sources.
- Continually increase support for available transit service in the region.

Opportunities

- Secure renewal or renegotiation of funding agreement among member jurisdictions (current agreement expires Dec. 2011).
- Create a long term plan for CAT services and necessary supporting facilities and finances.
- Obtain ongoing input from riders of the fixed route services.
- The growing population provides opportunities to increase transit ridership.

Recommended Actions

- Accelerate management actions to resolve outstanding administrative issues and ensure ongoing and timely compliance with state and federal requirements.
- Authority members need to fill vacant Board seats, make appointments for expired Board terms, and maintain full Board membership.
- Provide/update Mission and Vision Statements for CAT, with commensurate goals and objectives.
- Refine existing, and adopt additional performance standards and associated metrics for key functional areas of CAT. Proactively monitor metrics on a periodic basis.
- Provide additional strategic direction to CAT management.

ADVISORY COMMITTEES

The Authority has one advisory committee, the Citizens Advisory Committee (CAC), which provides input to the Authority on the full range of citizen interests.

Summary of Findings

Metric #	Description	Finding	Trend
1	The number and types of advisory boards are appropriate for an agency of this size.	✓	→
2	Advisory committees provide opportunity for citizen input.	✓	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✗	Below Average	↘	Worsening

Structure and Overview

Consistent with similarly-sized transit agencies, CAT has one advisory committee, the CAC (**Metric 1**). The CAC is currently comprised of 15 members recruited from the community at large. Membership on the committee is open to any member of the public in CAT's service area. The group operates by consensus and has no formal officers or structure. The committee meets quarterly with CAT management to identify and discuss issues. A standing agenda, modified per input from members, is used.

Recent topics include service quality and cost issues (**Metric 2**). The CAC currently appears to be focused on demand response related services (i.e., ADA complementary paratransit, Medical Assistance Transportation Program [MATP]). The one committee member interviewed indicated that there have been substantial improvements in recent years regarding demand response services in general, costs for the MATP program, progress in organizing administrative and service delivery aspects, and service delivery innovations for social service agency clients.

CAT has endeavored to broaden the purview of the committee to include general fixed route services and all demand response services offered to the public. The Assistant Executive Director for Bus Operations and the Manager for Shared Ride Services attend most meetings.

Challenges

- Ongoing education of Advisory Board members as CAT faces evolving challenges.
- Increase ridership on existing services.
- Continually increase support for bus and demand response transit services in the region.

Opportunities

- Obtain ongoing input from riders of the fixed route services.
- The growing population provides opportunities to increase transit ridership.

Recommended Actions

- Continue to broaden Citizen Advisory Committee to proactively address fixed route services in addition to providing input on demand response services.

MANAGEMENT AND ADMINISTRATION

Management and administration relates to the day-to-day administration and oversight functions of an agency, as well as agency stewardship to meet strategic goals and objectives set forth by the governing board. Key issues for management are recruitment and retention, human resources, finance, and procurement. Guided by the policies, goals and objectives set by governance, management's primary function is to ensure the agency meets the oversight board's goals, runs smoothly, and meets the requirements set forth by state and federal laws, rules and regulations.



GENERAL MANAGEMENT

The management of a public transit authority has many responsibilities, including:

- Provision of safe, efficient and effective transit services.
- Manage, monitor, direct and plan for the future regarding all functional areas (i.e., service delivery, maintenance, support services, infrastructure, and service enhancements).
- Provide support services (e.g., human resources, finance, and procurement).
- Meet Federal and State requirements.
- Ensure sustainability of key administrative and management functions.
- Inform and report to the Board.
- Implement Board direction.

Summary of Findings

Metric #	Description	Finding	Trend
1	Organizational structure appropriate for size of agency.	✓	→
2	All key management positions currently filled.	✓	→
3	Relationship with Governing Body.	✓	→
4	Provides regular performance reporting to oversight board.	✓	→
5	Employs strategic policies, goals and objectives.	✗	→
6	Employs, monitors, and uses written performance standards for all major agency functions.	✗	→
7	Actively promotes and achieves interagency coordination.	✓	→
8	Timely satisfaction of all federal and state reporting requirements.	✗	→
9	Has and follows a written quality control plan for key functions.	✗	→
10	Has a succession plan in place for all key positions.	✗	↗
11	Has cross-training and responsibility practices to assure functions can operate smoothly in the event of absenteeism, retirement, etc.	✗	↗

Legend:

- | | | | |
|---|---------------|---|-------------------|
| + | Above Average | ↗ | Improving |
| ✓ | Average | → | Little net change |
| ✗ | Below Average | ↘ | Worsening |

Management Structure

Management is organized in typical structure for a transit authority of its size, with administrative functions under the Assistant Executive Director for Administration, and transportation functions under the Assistance Executive Director for Bus Operations (**Metric #1**). All key management positions are filled and have been for at least two (2) years (**Metric 2**). Bus operations include separate sub-units for fixed route motor bus and shared ride services, vehicle and facility maintenance, marketing & business development, and capital projects. This structure, utilizing two assistant executive directors, has been implemented in the past three years. Several key personnel, including the two present assistant executive directors and the

manager of shared ride service, were hired by CAT in the past three years. An abbreviated organizational chart is presented as **Exhibit 15**.

Discussions with management and governing board members indicates a positive relationship (**Metric 3**) and management provides performance reports to the board (**Metric 4**) via the monthly board package.

Strategic Goals and Objectives

No written strategic goals and objectives remain from the April 2005 Strategic Planning Mini-Retreat (**Metric 5**). All goals and objectives were fulfilled by December 2008. CAT currently uses the transportation improvement plan (TIP) and regional transportation plan (RTP) as its primary methods of identifying short (TIP) and long (LRP) range capital needs. This is insufficient, as the TIP and LRP do not reflect CAT's full array of future service plan and other capital and operating needs, and associated costs and schedule. A periodic Transportation Development Plan (see description and function in Planning section of this report) and a periodic ongoing capital plan would provide the basis for planning new and revised services, other operating activities, and capital costs, with a 3-10 year horizon, and identify estimated costs, revenues and shortfalls or surplus funds. Special studies augment the TIP and LRP documents. Recent special studies include the CAT Service Study Alternatives (draft), drafted by TCRPC and the CAT Facilities Requirements Analysis (draft), sponsored by the Pennsylvania Department of Transportation. No unconstrained, prioritized needs assessments were found for capital or other planning purposes.

Some performance standards exist but their active use to review and improve agency performance were not documented or used effectively (**Metric 6**).

Interagency Coordination

CAT has an ongoing positive relationship with the Tri-County Regional Planning Commission (TCRPC) and HATS, with which it has conducted several studies and endeavors (**Metric 7**). Coordination is also evident with the Authority's member jurisdictions and many of the municipalities in Cumberland and Dauphin Counties.

CAT participates in the Susquehanna Valley Transportation Partnership (SVTP), which provides regional rideshare (Adams, Berks, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Perry, and York Counties via the MPOs, RPOs, transit agencies and chambers of commerce in these counties), vanpool, transit, emergency ride home, and related services. SVTP markets a Commuter Choice program for CAT. CAT accesses the TransitCheks[®] services administered by the Delaware Valley Regional Planning Commission (DVRPC) in Philadelphia.

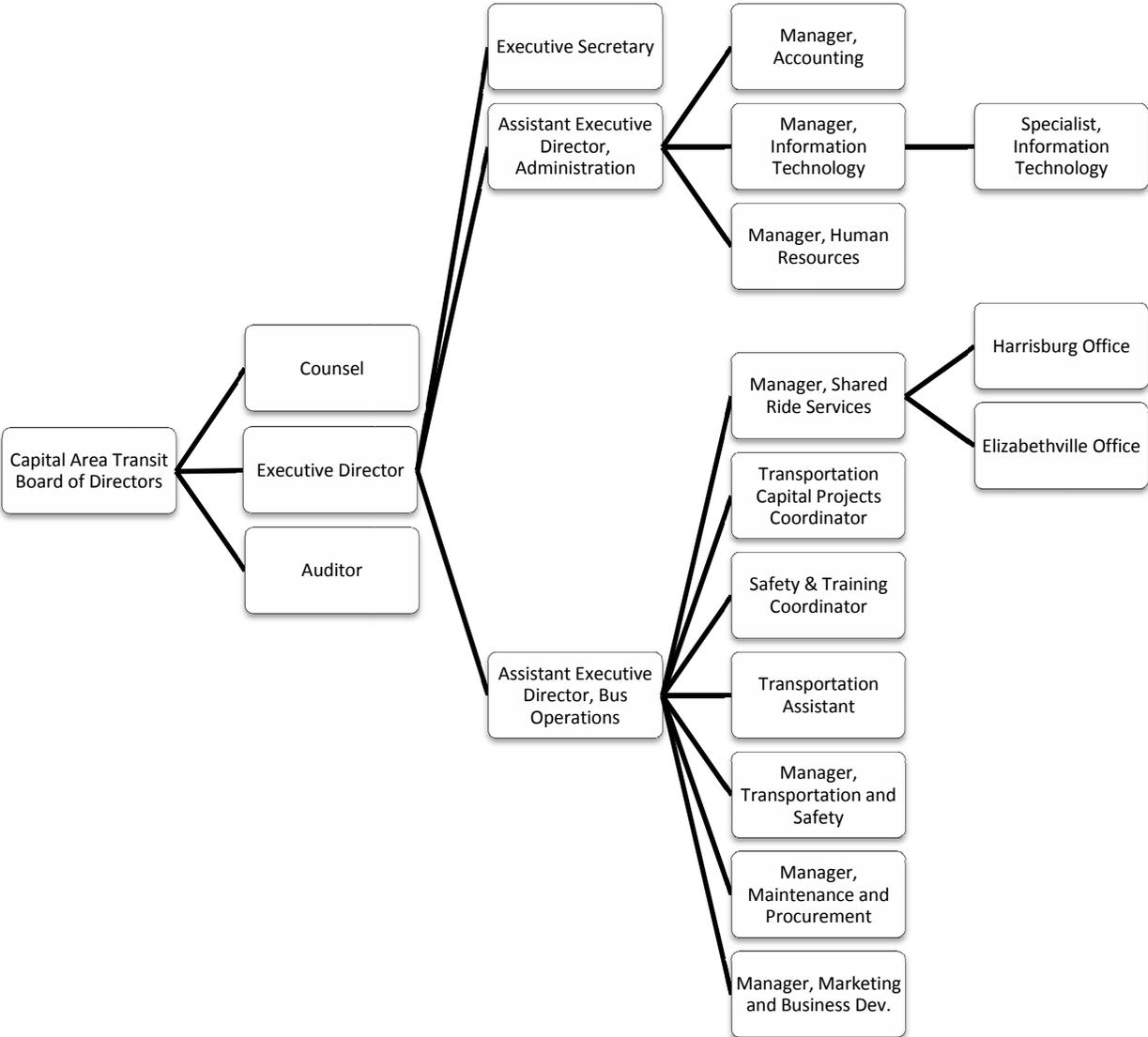
CAT is currently investigating the potential for services between Lebanon County and Harrisburg with the County of Lebanon Transit Authority (COLT).

Compliance with Local, State and Federal Requirements

CAT has been, for approximately 2 years, in the process of reaching full compliance with federal requirements, per deficiencies identified in the Federal Transit Administration's Financial

Management Oversight Review (commenced October 2007, closed May 12, 2009) and Triennial Review (commenced 3rd quarter of 2009). There were unresolved issues from the Triennial Review as of mid-January 2010 (**Metric 8**).

Exhibit 15. CAT Organizational Chart



Effective: April 2009

CAT has experienced ongoing difficulties complying with PennDOT grant and submittal requirements for approximately 3 years, with several issues outstanding as of mid-January 2010. These challenges apparently date to the unexpected retirement of the prior Finance Director in April 2007. The present Assistant Executive Director for Administration joined CAT in May 2007. CAT has experienced a challenge in overcoming multiple deficiencies, and continues to work on the outstanding items.

Quality Control Procedures and Mechanisms

Financial affairs and bookkeeping are subject to an annual audit by an independent auditor. Quality control of management functions (including budgets, budget categories and charges against various grants) and documents appears to primarily consist of reviews by another management staff, including the Executive Director. A written quality control plan for key functions (i.e., grants, procurement, human resources, etc.) was not provided (**Metric 9**). See accompanying Finance section for additional information.

Succession Planning

A written succession plan was not provided by CAT (**Metric 10**). The restructuring of the management staff to include Assistant Executive Directors and the addition of staff in several functional areas is apparently to provide for adequate professional staff capability to cover a key staff member's extended absence or departure. The restructuring begins to address the need for a succession plan for all key management positions. The inclusion of a formal cross-training program for all key functions can help insure unexpected absences have less of an impact on CAT's necessary management functions (**Metric 11**).

Challenges

- Provide for continuity among present staff and functions and for future personnel changes.
- Insufficient quality control approaches for functional areas, specifically including financial and administrative items.
- Lack of strategic plans for many major functional areas.
- Lack of performance standards, associated reporting and active use of these for most functional areas.
- Executive Director directly performing many responsibilities.
- Key management personnel soon eligible for retirement.

Opportunities

- Strong interagency relationships with nearby transit systems and the MPO. These can be used to leverage resources and accomplish strategic planning and to identify and implement service improvements.
- A strong understanding and implementation of short term operational issues. This can be used to prioritize medium and long-term strategic needs.
- The current General Manager has a long history with the agency and has a "hands on" understanding of almost all functional areas.

- Recently hired Assistant Executive Directors have experience with similar transit and governmental agencies and challenges confronting CAT.
- Conscientious personnel dedicated to the agency.

Recommended Actions

- Provide ongoing training and cross-training among management personnel to help ensure continuity for short or long term absences, and personnel departures.
- Draft a strategic plan for Board review and adoption, with commensurate goals and objectives; implement with appropriate performance metrics, which will be reviewed by management and the Board on a monthly or quarterly basis as appropriate.
- Obtain assistance to resolve outstanding federal and state compliance and grant accounting issues.
- Create and implement internal management procedures and systems that monitor all federal and state requirements, required revisions to existing items, new requirements, submittal dates, and other relevant factors and implement a quality control system to ensure ongoing compliance.
- Create and actively use performance metrics for all major management functions. Monitor and report periodically to staff and Board.

HUMAN RESOURCES

This section provides a review of the human resources and labor relations functions at CAT. This includes a review of organization and staffing, employee retention, employee recruitment, training, performance reviews, grievance procedures, employee benefits, and labor relations.

Summary of Findings

Metric #	Description	Finding	Trend
1	Retain stable work force.	✓	→
2	Recruit qualified employees promptly as vacancies occur.	✘	→
3	Provide training focused on job performance.	✓	→
4	Manage the cost of employee benefits.	+	↗
5	Manage labor relations effectively.	✓	↗

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✘	Below Average	↘	Worsening

Organization and Staffing

At the time of the review CAT did not have a human resources Director. These functions were the responsibilities of: 1) the Assistant Executive Director for Bus Operations for maintenance and transportation employees, and 2) the Assistant Executive Director for administration employees. The administration of employee benefits were handled by an accounting assistant in Administration. This position also handled the payroll for fixed route bus operations and administrative personnel. A Human Resources Manager began employment with CAT on May 6, 2010.

CAT management is concerned that the present approach to human resource management needs improvement to provide consistency in the management of employees and to provide in-house expertise in human resources management. Therefore, CAT is in the process of recruiting a human resources manager who will be responsible for all human resources functions within CAT. This new position will report to the Assistant Executive Director for Administration.

CAT does not have a labor relations manager, though this is common for systems of CAT's size. The Amalgamated Transit Union (ATU) Local 1436 represents CAT's bus operators and mechanics. Until recently, the Executive Director has managed labor relations with the ATU. Recently, the Executive Director has started to transfer more of this responsibility to the Assistant Executive Director for Bus Operations.

The management of grievances is the responsibility of the Assistant Executive Director for Bus Operations. Grievances start at the immediate supervisor level and then proceed through either the transportation or maintenance chains-of-command.

Employee Retention

As shown in **Exhibit 16**, the overall annual turnover rate at CAT is 15.9 percent — a high rate among most transit systems. However, most of this turnover occurs among paratransit operators. When the paratransit operators are excluded, the turnover rate is a much lower 6.2%. This turnover rate provides a stable work force among non-paratransit employees (**Metric 1**).

In terms of key senior managers, there have been significant changes in the past three years: the Assistant Directors for Bus Operations and Administration, and the Manager of Shared Ride Services are new to CAT and were hired from outside transit agencies.

Employee Recruitment

The recruitment policy at CAT is to first offer open positions to current employees. If no qualified CAT employees apply, then CAT advertises and recruits from outside the agency.

CAT managers feel that this system is satisfactory except for the hiring of mechanics. Often, mechanics from the outside can only be hired for the entry-level position as a service worker because internal employees have the minimal qualifications for more senior positions. This may mean that CAT does not hire exceptionally-qualified mechanics from outside of the agency because these individuals may have other options that are more appealing than starting as a service worker. However, CAT managers reported that there have been no problems hiring qualified, but maybe not exceptional, mechanics at the entry-level service worker position.

Training

CAT does not have a formal orientation program for new hires, except for new bus operators who receive this as a part of their four-week training program which includes the driver simulator. The managers of the other employee categories provide an informal overview of the employee's responsibilities and CAT administrative requirements (**Metric 3**).

Administrative employees are given an Administrative Employee Handbook when they begin work at CAT. This handbook covers the essential topics for a new employee including CAT's mission and values, appropriate work conduct, attendance policies, working hours, and use of paid leave, benefits, military leave, and resignation.

The operating employees — operators and mechanics — do not have a similar handbook. At many other transit systems, maintenance employees are given an employee handbook similar to the Administrative Employee Handbook, and operators are issued an Operations Manual at the completion of training. While its main purpose is to outline the proper operating procedures that the driver should follow, it typically includes other job related information. CAT's drivers do receive training program handouts and various topical information based on labor agreements.

Exhibit 16. CAT 2009 Employee Turnover Rates

Employee Function	Employees		Annual Turnover
	Total	Left in 2009	
Administration	49	3	6.1%
Maintenance	29	1	3.4%
Bus Operators	99	7	7.1%
Subtotal	177	11	6.2%
Paratransit Operators	49	25	51.0%
Total	226	36	15.9%

There is limited training for existing employees. Operators involved in accidents and who have been issued training points by the Accident Review Panel are required to undergo specific retraining. When new vehicles are purchased, all operators are given familiarization training on them. Mechanics are provided training when new vehicles or new systems (e.g., fareboxes) are purchased. Similarly, administrative employees receive training from the vendors of new computer systems.

Performance Reviews

CAT has an organized approach for conducting annual performance reviews for non-represented employees. The reviews are completed by April and are the basis for salary adjustments for the beginning of the next fiscal year, starting in July.

CAT has not conducted the performance reviews since December 2007 because budgeted salary increases were too small to warrant the effort. The Board authorized a small across the board wage adjustment effective January 2009. This adjustment also changed the annual performance review period to April 1 through March 31. CAT has advised us that performance reviews for the April 2009 through March 2010 period were completed in February 2010.

Grievance Procedures

CAT has an organized, three-step process for grievances that involves:

- Step 1: Discussion with first-line supervisor.
- Step 2: Review by Manager of Transportation and Safety (operators) or Manager of Maintenance and Procurement (maintenance personnel).
- Step 3: Final review by Assistant Executive Director of Bus Operations.

If these three steps fail to resolve the issue to the satisfaction of the parties, it then goes to arbitration. CAT grievances rarely reach arbitration. It was reported that only six grievances have gone to arbitration in the past five years.

Employee Benefits

The benefits offered CAT employees are comparable to those offered employees at other transit systems. The key benefits are nine holidays, four personal days, seven sick days, and vacation ranging from 1 week (first year) to 25 days (17+ years of service).

CAT offers health benefits that are different from those offered at many other transit systems. CAT provides its employees a health savings account (HSA) that is combined with a high deductible health plan. Unlike a flexible spending account, funds roll over and accumulate year to year if not spent. The objective of this approach is to encourage employees to save for future health care expenses, allow the employee to receive needed care without a gate keeper to determine what benefits are allowed, and make them more responsible for their own health care choices.

CAT switched to the HSA in 2005. According to CAT management, the HSA produced savings with little resistance from its employees. Management estimates that it reduced costs by 24.7 percent compared to the continuation of the former plan between 2005 and 2008. This produced an estimated savings of \$1.8 million in that period (**Metric 4**).

Labor Relations

Until recently, the Executive Director managed labor relations with the ATU operators and mechanics union. The Executive Director has recently started to transfer more of this responsibility to the Assistant Executive Director for Bus Operations.

The Assistant Director intends to implement a more proactive relationship with the union. He has started to have monthly meetings with union leadership to discuss issues and concerns before they become serious problems. In addition, he spends 30 to 45 minutes every morning in the drivers' lounge to provide operators a chance to air concerns or ideas.

Interviews with management suggested that labor relations are generally good and suggest that past management has been successful in maintaining positive labor relations (**Metric 5**).

However, several managers expressed discomfort with the CAT permitted practice of "mark-offs." This practice allows an employee, at his or her discretion, to take off work with no pay and only an hour's notice. The employee can decide to not work just before his work assignment starts giving management little time to adjust the schedules of other drivers to deliver all scheduled service.. This is an unusual practice that is not common at similar systems.

Operators generally are the employees who "mark-off." Based on data provided for the last twelve months, it is estimated that CAT must employ one full-time operator to compensate for this policy. This is an unusual expense that is not borne by other transit systems.

Challenges

- Historical absence of human resources (HR) professionals (HR manager began employment May 6, 2010).
- Lack of written Operations Manual for operators and Handbook for maintenance employees. While various individual documents are provided during the training period and the labor agreement documents some procedures/requirements, the lack of a comprehensive written manual remains a challenge.
- Labor practice of mark-offs.

Opportunities

- Stable fixed route and maintenance work force with minimal turnover.
- Imminent hiring of a human resources manager.
- Documented performance review process.
- Success in addressing grievances.
- Innovative HSA health program.
- Proactive approach to labor relations.

Recommended Actions

- Support quick establishment of a human resources function managed by a professional. NOTE: Implemented through the hiring of an HR professional who began work on May 6, 2010.
- Reinstigate performance reviews for non-union personnel regardless of budgeted salary increases. NOTE: Reinstigated in February 2010 with April 2009 through March 2010 reviews completed.
- Develop an Operations Manual for bus operators and Handbook for maintenance employees.
- Address the issue of mark-offs and continue the more proactive approach to labor relations.
- Consider addressing the issue of hiring protocols in the maintenance department.

FINANCE

This section addresses five major financial functions of CAT:

- Budgeting.
- Accounting.
- Cash Flow Management.
- Revenue handling.
- Insurance.

Summary of Findings

Metric #	Description	Finding	Trend
1	Provides realistic annual budgets.	✓	→
2	Accurately records and reports financial transactions.	✓	→
3	Manages state/federal grants efficiently to meet government requirements.	✘	↗
4	Analyzes and manages cash flow.	✓	↗
5	Uses reasonable approach for handling passenger revenues.	✓	→

Legend:

- | | | | |
|---|---------------|---|-------------------|
| + | Above Average | ↗ | Improving |
| ✓ | Average | → | Little net change |
| ✘ | Below Average | ↘ | Worsening |

Organization and Staffing

The Assistant Executive Director for Administration is organizationally responsible for the financial activities at CAT. The current Assistant Executive Director was hired by CAT in May 2007 due to the unexpected departure of the previous Director, who had been in the position for over 20 years. The transition was difficult because many of the accounting and grant procedures were not documented nor were they shared with other CAT financial staff. The incumbent Assistant Executive Director for Administration is a CPA with solid experience in municipal government accounting in Pennsylvania.

The Assistant Executive Director is supported by an Accounting Manager and five Accounting Assistants. The Accounting Manager has been with CAT since May 2008. His prior accounting experience was in the private sector. The five Accounting Assistants vary in tenure with CAT; three Assistants have less than four years of experience at CAT. The Assistants each have functional assignments, such as accounts payable and receivable, fixed-route payroll, paratransit payroll and billing, and general ledger. Automation would likely allow better use of the assistant's time and potentially result in cost savings.

The Executive Director leads the development of the annual budget with support of the Accounting Manager. The Procurement and Risk Division of the Finance Department manages major procurement efforts, but technical input is provided by CAT's Assistant Executive Director for Administration.

Budgeting

CAT operates on a July 1st through June 30th fiscal year. The budgeting process begins midyear and is led by the Executive Director. He prepares the CAT budget based on inputs received from department heads, a review of the expenditures for the two prior fiscal years, and the budget and actual expenditures for the current year. The Executive Director examines the expenditures by budget line item, and based on trends and other known cost increases. Generally, it is assumed that service levels will remain constant unless specific service changes have been approved by the CAT Board of Directors.

Fare revenues are estimated based on current fares and ridership, and any projected changes. The estimates of federal and state funding are based on current allocations or new information received on allocations for the fiscal year (**Metric 1**). A fare study was recently conducted.

The Executive Director submits the CAT budget to the Board of Directors in the spring for review and approval. As necessary, the CAT budget is revised based on Board comments. The budget may be revised subsequent to the Board adoption if significant changes in revenues or expenditures are expected.

The Executive Director has retained the lead in budget development because of current accounting demands on the Assistant Director. The Executive Director expressed interest in assigning this responsibility to the Assistant Director when the accounting demands decrease.

Accounting

CAT is a public authority formed by the City of Harrisburg, and Dauphin and Cumberland Counties. Its accounting system and resulting financial statements cover CAT's total operations.

CAT uses the Open Systems accounting software. It tried to migrate to Fleet-Net[®] software to be integrated with the modules used by CAT for maintenance. However, the effort was not successful. CAT abandoned the change and returned to Open Systems.

CAT produces an annual financial report that is audited by an independent auditor. Reinsel Kuntz Leshner conducted the audit of the fiscal year ending June 30, 2009 following *Government Auditing Standards*. It found that CAT's financial statements conformed to generally accepted accounting principles (**Metric 2**).

The 2009 performance was an improvement over fiscal years 2007 and 2008. The auditors and subsequently FTA, through its Triennial Review, identified the following deficiencies:

- Bank reconciliations were not appropriately reviewed.
- Various General Ledger Accounts were not reconciled to subsidiary ledgers on a periodic basis.
- Inadequate journal entry review and supporting documentation.
- Preparation of financial statements under Generally Accepted Accounting Principles (GAAP).
- Single Audit Report not filed on time.
- Quarterly reports not submitted on time.

CAT addressed these deficiencies and produced documentation that FTA found the corrective actions acceptable. CAT took two basic actions: 1) It documented key accounting and grants management procedures; and 2) It hired the Accounting Manager to provide proper oversight and review.

While CAT has successfully addressed deficiencies with respect to accounting and management of federal grants, it still has problems with the management of state grants. There are discrepancies related to expenses incurred on grants awarded prior to 2007. During the onsite interviews, the Assistant Executive Director and a PennDOT grant manager both acknowledged that differences exist and that limited progress has been made to resolve these in the previous 18 months (**Metric 3**). It is also unclear if CAT took full advantage of all grants available, including those for rural portions of the CAT service area.

The Assistant Executive Director prepares the monthly and annual National Transit Database (NTD) reports. All necessary financial information is extracted from CAT's accounting and payroll modules.

CAT uses the sampling approach outlined in *FTA Circular 2710.1A* to estimate the passenger miles traveled reported on *NTD Form S-10*. This approach was developed for systems that do not have a 100 percent count of boarding passengers. It requires the sampling of about 550 annual vehicle trips every three years. However, systems like CAT that have 100 percent passenger counts through the use of registering fareboxes have developed alternative sampling plans that only require 200 to 300 annual vehicle trips to be sampled.

Cash Flow Management

CAT prepares monthly cash flow statements and projections of receipts and revenues for the coming month. Based on these projections, CAT develops its financial strategy for the coming month, which may include encouraging early payments and delaying payments, as appropriate, to vendors.

Sometimes this strategy involves the use of a revolving loan with a bank to cover cash flow shortfalls. The loan is unusual in that the line of credit does not increase when CAT makes repayments. Therefore, CAT must use this instrument carefully throughout the year. CAT now is taking steps toward obtaining a more conventional, short-term loan arrangement (**Metric 4**).

Revenue Handling

CAT operates an exact fare system. Passengers may pay their fares in several ways:

- Exact cash fare.
- Transfers issued from another route.
- Tickets purchased in either books of 11, 20, or 25 rides.
- Monthly pass.

Fixed route buses are equipped with registering fare boxes made by GFI. The bus operators count all passengers who board regardless of fare payment. A fare study was recently completed.

The farebox revenues are emptied from the bus vaults by a dispatcher as part of the evening bus pull-ins. The dispatcher empties the bus vault into a safe that is built into the wall of the dispatcher's office. At the same time, the farebox data are electronically probed.

The following morning, a dispatcher and one of the Accounting Assistants open the safe and put the receipts into cash bags. This is done in the operators' day room; while not ideal, facility constraints appear to limit viable options for this activity's location. CAT contracts with Brinks, Incorporated to pick up the bags, count the receipts and deposit the proceeds into CAT's bank account.

Another Accounting Assistant, who is the General Ledger manager and is not involved in the bagging duties, performs the reconciliation process. The bank deposit is compared to the electronic probe data. A variance in excess of 3.0 percent triggers further investigation (**Metric 5**).

Insurance

Liability insurance is managed by the Manager of Transportation and Safety. CAT purchases private insurance through the broker Murray Insurance Associates which is located in Lancaster, Pennsylvania and the current carrier is HARIE. The general liability coverage includes the following features:

- Self Insured Retention — \$25,000.
- Individual — \$500,000.
- Maximum — \$2 Million per Occurrence.

HARIE also provides claims handling services for the insurance policy. The Manager of Transportation monitors the loss runs (projected costs of incidents) and reports cooperation with the claims handlers to ensure that settlements made are in the best interest of CAT.

Challenges

- Executive Director (not the Assistant Executive Director of Administration) is involved in the detailed preparation of the annual budget.
- Expenditures involving PennDOT grants are not consistent with PennDOT records.
- Better integration between the Open Systems accounting system and the Fleet-Net® maintenance system.
- Daily revenue bagging is handled in the operators' day room.

Opportunities

- New financial management dedicated to documenting accounting and grant management procedures.
- NTD sampling requirements could be reduced through the use of existing farebox data.

- Reduced cost of short-term borrowing by obtaining better terms for revolving credit.
- Possible cost reductions or increases in efficiency with automation.

Recommended Actions

- Reassign the primary responsibility for developing the annual budget to the Assistant Executive Director of Administration.
- Develop an action plan with PennDOT to resolve the grant administration problems with older PennDOT grants. Outside assistance should be considered to expedite resolution.
- Conduct a systems integration study to determine the best way to integrate accounting and financial management software with other systems in CAT.
- Hire a qualified statistician (required by NTD) to develop a sampling plan for estimating passenger mile data for NTD reporting using farebox data.
- Continue efforts to obtain better terms for short-term cash loans.

PROCUREMENT

This function includes procurement for vehicle parts and other operations-related items. Effective procurement and inventory management can facilitate the proper and cost effective maintenance of the vehicle fleet and help ensure funds are not tied up in unnecessary or excessive stock. Procurement policies are also regulated to some degree by city, state and federal law. This section provides a review of the procurement and inventory control functions at CAT.

Summary of Findings

Metric #	Description	Finding	Trend
1	Use of computerized parts management system.	✓	↗
2	Automated analysis and identification of procurement needs.	✗	→
3	Use of technology in parts inventory control.	✓	↗
4	Established procedures for verifying inventory figures.	✓	↗
5	Record and measure inventory function performance.	✗	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✗	Below Average	↘	Worsening

Organization and Staffing

The most significant task within the Procurement function is the purchasing and management of the vehicle parts inventory. The Manager of Maintenance & Procurement is responsible for this aspect of the function. Reporting to the Manager of Maintenance & Procurement is one full-time Maintenance Clerk, who is responsible for maintaining the parts inventory and identifying parts procurement needs. In addition to parts, the Manager of Maintenance and Procurement is also responsible for the procurement process related to vendor maintenance contracts. Other procurement activities, such as the purchase of capital items or professional services, are addressed by the Executive Director and the Assistant Executive Director for Bus Operations. Office supply purchasing is the responsibility of the Executive Secretary.

Parts Inventory Control

CAT uses Fleet-Net® software to track its parts inventory (**Metric 1**). Minimum and maximum inventory values are established for each inventory item and recorded in the Fleet-Net® database. Minimum and maximum values are manually determined by the Maintenance Clerk based on lead times to order and receive parts into inventory and typical usage rates of the part. Staff members report that Fleet-Net® is limited in its capabilities for automated determination of minimum and maximum levels (**Metric 2**).

The parts room is located off of the vehicle maintenance shop. The parts room is not locked and all employees can enter. Mechanics retrieve their own parts based on their assigned work orders. Within the parts inventory room all parts are assigned a bar code and a bar code reader is available in the parts room (**Metric 3**). In addition, each work order has a bar code.

Mechanics enter the parts room, scan their work order with the bar code reader then scan the bar code for each part removed from inventory. In cases where parts are taken for work not associated with a work order (e.g., minor repair such as a light bulb replacement), mechanics take the part out of inventory and enter the part onto a written log in the parts room. At the beginning of each day, the Maintenance Clerk downloads the information stored in the bar code reader, which automatically updates the parts inventory in Fleet-Net®. The Clerk must also manually enter the items listed on the handwritten log. Fleet-Net® automatically assigns the cost of the part to the applicable vehicle. There is no automated reconciliation to determine if all of the parts listed on work orders have actually been scanned out of the inventory. The only current procedure to determine if a mechanic has remembered to scan out all parts is through a manual review of completed work orders (**Metric 4**).

To facilitate the parts process, CAT assembles certain parts kits for specific jobs. This allows the mechanic to scan one single kit item which then accounts for all of the parts in that kit.

The Maintenance Clerk conducts a complete cycle count approximately once every four months.

Procurement

The Maintenance Clerk uses Fleet-Net® to identify parts which need to be re-ordered. This is provided to the Manager of Maintenance & Procurement. The thresholds for purchasing parts and other items are: under \$3,000 represents a micro purchase, between \$3,000 and \$10,000 requires price quotes (a minimum of two is required and at least three are preferred). Purchases above \$10,000 require a bid process. The latter threshold is much lower than the State and Federal procurement thresholds for requiring bids. CAT staff members have requested that the Board raise this threshold to a higher value more in line with the State practices. Diesel fuel is currently purchased through price quotes as fuel tanks need replenishing. Policy decisions regarding fuel purchases (i.e., longer term contracts vs. one-time purchases) are made by the Executive Director.

Procurement of capital items and non-maintenance related items are addressed by the Executive Director and the Assistant Executive Director for Bus Operations. Procurements addressed by executive staff are typically bid processes.

CAT establishes an annual Disadvantaged Business Enterprise (DBE) goal for procurement and a DBE goal is established for each bid process.

Parts and Procurement Performance

Currently, CAT does not use any metrics to assess the performance of the parts inventory function (**Metric 5**). Common performance measures used in the industry include inventory turnover ratios, parts cost per vehicle mile, parts cost per vehicle, and vehicle days lost to vehicles awaiting parts.

Challenges

- Limited reporting and analysis capabilities of part inventory information system.
- Reliance on manual analysis and knowledge of specific individuals to determine minimum and maximum inventory levels.
- Reliance on manual verification that mechanics have scanned parts removed from inventory.
- Lack of procedures to generate data needed to evaluate the performance of the function and lack of established parameters to determine adequacy.
- Low dollar amount threshold for requiring a bid process.

Opportunities

- Computerized recordkeeping has been incorporated in the parts inventory function.
- Good advances in automation through bar coding of inventory.
- Established verification procedures.
- Minimum and maximum inventory levels established through analysis of lead times and usage rates.

Recommended Actions

- Despite the use of parts recordkeeping software, the parts inventory function still relies heavily on manual analysis and the knowledge of specific employees. CAT should investigate the report generation capabilities of Fleet-Net® to determine if more automated analyses could be performed.
- Pursue more automated procedures for determining if mechanics have scanned parts out of inventory.
- Establish performance metrics for the parts inventory function and develop procedures for collecting and reporting the data needed to determine performance. CAT can refer to the Transportation Research Board's publication *Inventory Management in a Maintenance Environment* for guidance on applicable metrics and methodologies for determining performance.
- Increase the threshold at which a bid process is required to the maximum allowed under state and federal regulations.

SERVICE DELIVERY

Service delivery is concerned primarily with delivering service to the public and covers the bulk of employees (drivers, service personnel and mechanics). This category includes operations, maintenance, scheduling, safety, customer services and information technology. The operations function directs the deployment of drivers and assignment of vehicles along with the necessary supervision of service on the street. It controls all bus service from the first morning pull-out to the last pull-in that evening. Service should be operated in accordance with the public timetables in terms of trips operated and schedule adherence. Maintenance assures that the fleet is maintained in a state of good repair and sufficient vehicles are available to meet daily service requirements. Scheduling is directed to assigning drivers to specific assignments and assuring a sufficient pool of operators to cover absences. Safety is focused on daily concerns related to vehicle and passenger safety in the fixed route bus system, with attention also given to emergency preparedness. Customer service assures that current and prospective riders understand how to use the system and mechanisms to track both complaints and kudos. Information technologies are those support functions that provide information services within the agency and to the public.



OPERATIONS

This section provides a review of the transit operations function at CAT. This includes an analysis of staffing levels, management of daily operations, on-street supervision and control, as well as payroll processing. The effective management of this function is vital to the quality of service provided to the public and the cost effectiveness of the overall operation.

Summary of Findings

Metric #	Description	Finding	Trend
1	Service is operated in accordance with published schedules.	+	→
2	Revenue hours per transportation employee.	×	→
3	Track key cost drivers such as unscheduled overtime pay and other premium pay categories.	✓	→
4	Track and report on-time performance vs. standard.	×	→
5	Track and analyze service related customer feedback by category.	×	→

Legend:

+

Above Average

✓

Average

×

Below Average

↗

Improving

→

Little net change

↘

Worsening

Organization and Staffing

CAT's Operations function is administered by a full time Manager of Transportation & Safety who reports to the Assistant Executive Director for Bus Operations. The Operations Department also includes one full-time Assistant Manager of Transportation & Safety who reports to the Manager. Reporting to the Assistant Manager is a staff of six Transportation Supervisors who address the service supervision and control functions. CAT employs 91 full-time and eight part-time fixed route bus operators. CAT's labor contract limits the number of part-time operators to a total of 15% of the number of full time operators.

Management of Daily Operations

A primary function of the Operations Department is to ensure that all scheduled fixed route CAT service is operated in accordance with posted public schedules. This entails identifying bus operators to operate shifts or services that are not covered due to known and unknown Bus Operator absences. Known absences are caused by bus operator vacations, long and short term sicknesses that CAT is made aware of on at least the day prior to service, and bus operators out for disability or other leave purposes. Unknown absences occur when a driver reports off sick on the day of service, does not show up for their assigned run or chooses to "mark-off" (a practice under which a CAT employee can choose to be absent without pay). CAT's schedules include 39 trippers which are short pieces of work that are not assigned to a picked driver run. These trippers are typically 2 to 3 ½ hours long, 21 of which occur during the AM peak hours and 18 during the PM peak.

To cover the work due to known absences, CAT primarily makes use of the Extra Board. CAT's schedule run cut includes 23 full-time Extra Board assignments which are available for selection during the driver pick. In addition, all eight part-time Operators are assigned to the Extra Board. During the day prior to service, one of the Supervisors schedules the Extra Board and assigns uncovered work and trippers to the Extra Board drivers. This schedule is posted by 3:00 PM on the day prior to service. Extra Board drivers check the posted schedule to find out their assignment for the following day. If the Extra Board is not sufficient to cover open assignments, they are offered to Bus Operators who have a day off on that day for overtime pay.

To cover work resulting from unknown absences, the Supervisor responsible for covering work for that shift will first determine if there are Extra Board operators available. CAT's Extra Board assignments include "Protection" shifts. These Operators must report to work at a particular time. On weekdays, they must wait three hours to be assigned a shift. If they are not assigned a shift within three hours, they may leave and are paid for 8 hours. On weekends, Protection Drivers must wait five hours to be assigned a shift. If they are assigned a shift, they are paid the number of hours associated with the shift as well as for the time they waited to be assigned. The time paid waiting is tracked as "Protection Pay". There are three different Protection shifts throughout the day on weekdays. If no regular Extra Board or protection shift drivers are available to operate work uncovered due to unknown absences, the work is first offered to Operators on their day off for overtime pay, then to Operators returning from scheduled shifts.

When service is interrupted and trips are not operated, the Supervisor assigned to Dispatch will update the Service Alerts function on the CAT website. This also alerts the Customer Service staff and sends out an automatic text message to passengers who have subscribed to the notification service. Missed trips are tracked and all instances are reported to the Executive Director with an explanation of cause (**Metric 1**).

Various measures can be used to determine the effectiveness of transportation staff utilization. One of the most important is annual revenue hours operated per transportation employee. CAT's 2008 performance of 1,500 ranks it 8th of the 11 systems included in the peer group (**Metric 2**). Also, the five year trend shows that, with the exception of 2006, CAT's performance in the measure has remained essentially static. Other ways to measure the effectiveness of transportation staff utilization are the level of unscheduled overtime pay, guarantee pay, protection pay and Extra Board spread time pay. Operations management tracks these figures on a daily basis (**Metric 3**). These figures are summed monthly and reported to the Executive Director. Operations management also compares the totals for each category to similar periods in previous years to determine if the totals are out of ordinary. There are no established targets for any of the pay premium categories. Additionally, data may be more useful if also reported as relative metrics (i.e., unscheduled OT pay as a proportion of ST pay). Staff reports that unscheduled overtime increases during summer months when CAT operates additional service for Hershey Park employees. In the past, additional part-time Operators have not been hired for the summer due to the 15% maximum cap of runs allowed to be covered by part time operators, per the collective bargaining agreement.

Service Supervision and Control

The staff of six Transportation Supervisors is scheduled in a way so that two Supervisors are stationed at the garage to perform the central dispatch and clerk functions throughout most of the day. During peak periods, another two Supervisors will be on duty, assigned to road duty. Throughout other periods of the day, one Supervisor will be assigned to road duty. On a daily basis, the Manager or Assistant Manager of Transportation & Safety will provide the road duty Supervisors with specific assignments, such as complaint follow up, on-time performance checks, passenger load checks, etc. In addition, the Manager and Assistant Manager often personally follow up on issues needing on-street confirmation.

Supervisors have the ability to make line management adjustments to respond to service disruptions. They also have the authority to write up Bus Operators for disciplinary infractions. Currently there is not a line management Procedures Manual for supervisors nor an Operations Manual for operators.

Supervisors are non-represented employees. Bus operators who become Supervisors lose their seniority as an operator and cannot return to being an operator with their seniority after a specific period. Operations management reports that this has not been an issue in recruiting. However, Supervisor pay has discouraged some candidates from applying for open positions.

Supervisors receive three months of training, during which they are cross-trained on all Supervisor functions and on all Supervisor shifts. Supervisors also attend industry seminars, drug & alcohol training, and PPTA's Supervisor Training program. They are evaluated annually based on 15 performance criteria. Operations management also conducts Supervisor meetings when there are issues to discuss or to conduct post-incident reviews.

In terms of service control, staff also reported that there are certain "dead spots" for the current radio system in the CAT service area.

The most useful metrics for judging the performance of the street supervision and control function is the overall level of on-time performance and tracking customer service complaints/commendations by category. Currently, operations management collects on-time performance data through manual Supervisor checks, but the information is not tabulated and reported against any established performance metrics/goals (**Metric 4**). Operations management also receives copies of all customer service correspondence, but there is no tabulation for trend analysis purposes (**Metric 5**).

Payroll Processing

On a daily basis, the third shift Supervisor prepares the daily payroll. An Excel spreadsheet is used in which the pay hours for all of the shifts is already entered and computed. The Supervisor must remove the operator number of operators who did not work their assigned shift and replace it with the operator number who did operate the shift. In addition, the Supervisor must manually compute and enter the amount of spread time and protection time to be paid to Extra Board operators. This sheet is forwarded electronically to Finance on a daily

basis. The Payroll information is checked by a morning Supervisor the following day as well as by Finance. The process requires approximately 2 to 2 ½ hours each day.

Challenges

- Limited use of technology in the Operations function.
- Absent without pay “mark-off” policy creates need for larger Extra Board.
- Lack of a written Operations Manual and Line Management Procedures Manual. Staff reports that these items are currently in production.
- Limited ability in attracting the most desirable candidate for Supervisor positions.
- Payroll processing which requires manual calculation of pay categories.
- Collection of data but no reporting on key Operations performance statistics (i.e., on-time performance).

Opportunities

- Function appears to be well managed, with the key factor of operating scheduled service addressed on a daily basis.
- Conscientious management dedicated to delivering quality service.
- Established procedures for tracking and reporting missed service.
- Established procedures to inform Customer Service and customers about service disruptions.
- Effectively addressing succession of management in this vital function.

Recommended Actions

- Pursue greater use of technology in the Operations function to automate tasks such as daily manpower management and payroll.
- Pursue automated data collection and incorporate data into Operations decision making (e.g., Supervisor staffing and assignments, schedules, line management, etc.).
- Establish targets and proportional metrics for key cost drivers, such as unscheduled overtime pay, and develop response strategies for when performance is outside of acceptable parameters.
- Complete and adopt the “*Operating Procedures Manual*”.
- Tabulate service-related customer service feedback by category to measure performance trends.
- Pursue labor contract terms to address the absent without pay policy.
- Investigate and develop strategies to improve performance in terms of annual revenue hours per transportation employee.
- In subsequent labor negotiations, pursue a provision to allow more Operators to take vacation during the summer months in exchange for the ability to hire more part-time seasonal Operators to address Hershey Park service and vacation peaks.
- Conduct a cost/benefit analysis of supervisor compensation to attract the most qualified candidates.
- Address the “dead spots” issue with the radio system (also see IT section).
- Establish standards consistent with industry practice for on-time performance.

MAINTENANCE

Safe and reliable service depends upon effective vehicle and facility maintenance. This section provides a review of the vehicle and non-vehicle maintenance function at CAT and includes analysis of staffing levels, facilities, fleet condition, the preventive maintenance inspection program, running repair performance, vehicle servicing and other maintenance related work.

Summary of Findings

Metric #	Description	Finding	Trend
1	Adequacy of maintenance facilities.	✘	↘
2	Use of computerized fleet maintenance recordkeeping.	✓	↗
3	Automated analysis and identification of trends, performance and maintenance issues.	✘	↗
4	Adopted vehicle maintenance plan and preventive maintenance schedules/checklists.	✓	↗
5	Preventive maintenance on-time performance.	✓	→
6	Maintenance performance in terms of miles per major road call.	✓	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✘	Below Average	↘	Worsening

Organization and Staffing

CAT's Maintenance function is administered by a full time Maintenance Manager who reports to the Assistant Executive Director for Bus Operations. The Maintenance Department also includes one full-time Maintenance Clerk who is responsible for the Parts Inventory and Parts Procurement functions. The Clerk reports to the Maintenance Manger. Also reporting to the Maintenance Manager are a Maintenance Superintendent and a Shop Supervisor, who perform the Maintenance Foremen functions during different shifts. Reporting to the Superintendent and Supervisor is CAT's staff of 21½ full-time mechanics (including 3 ½ mechanics assigned to the Paint and Body Shop) that is responsible for the maintenance of both the fixed route and paratransit fleets. In addition, the Maintenance Department includes one mechanic who is assigned half-time to the Paint and Body Shop and half-time to buildings and grounds maintenance. There are seven full-time Maintenance personnel assigned to the servicing function for the fixed route and paratransit fleets. Six are assigned to the service line function while another full time employee is assigned to detailed interior cleanings of the fixed route vehicles.

Between fixed route and paratransit services, CAT vehicles operate approximately 2,725,000 miles annually. This represents a miles per mechanic ratio of 126,750 miles. Typically, transit agencies will display a ratio of between 100,000 and 125,000 miles per mechanic. CAT is slightly higher than that figure. Maintenance staffing level decisions are made through a manual review of preventive maintenance on-time performance as well as response time to

running repairs. If it is determined that work is being delayed due to insufficient staff, additional mechanics may be hired.

Facilities and Equipment

CAT's facility is equipped with 11 repair bays and 2 specialty bays. A total of 11 bays are equipped with lifts and one bay is equipped with a pit. The formula of 2.34 bays per million miles operated annually plus 3.79 bays was presented in the *Transit Cooperative Research Program (TCRP) Synthesis 7 – Regulatory Impacts on Design and Retrofit of Bus Maintenance Facilities*. This would suggest the need for approximately 11 repair bays based on the number of miles operated by CAT for fixed route and paratransit service. Other major equipment in the facility include two fueling stations, two portable lifts, one brake lathe, one bus washer, one sweeper and one paint booth. The facility can store the current fixed route fleet indoors, but with some difficulty. It should be noted that the decision to purchase longer vehicles will further complicate the ability to accommodate the entire fleet indoors. There is currently no plan for how to accommodate the fleet parking requirement upon the arrival of longer buses, which will replace older, shorter buses in the current fleet (**Metric 1**).

Various measures would suggest that the CAT facility is adequately sized in terms of repair bays and storage of the current fleet. However, the facility leaves little flexibility for service expansion or changes to the fleet mix. There are additional issues of concern beyond the overall size of the facility.

- The CAT facility is a converted circa 1904 trolley barn, which has undergone several modifications, but the facility is outmoded and poses challenges to maintain safety and for facility maintenance.
- Many of the storage bay lanes, as well as the service lane, still have support walls separating the various lanes. This requires precise movement of buses into these lanes, especially for the 102" wide vehicles, to avoid accidents, including mirror breakage against walls or adjacent vehicles.
- Movement of buses and personnel around and through the facility is awkward, consumes unnecessary time, and forces maintenance personnel and bus operators to traverse significant stretches of the yard or travel across active service and parking lanes in the storage areas.
- The layout of the property results in vehicles backing up within the property and onto the adjoining street during the peak vehicle servicing hours.
- The location of staff and visitor parking requires pedestrians and cars to cross in front of bus travel lanes.
- Pedestrian flows for employees report to or departing from work shifts requires them to walk across the path of buses being serviced or being placed into service.
- Parking for employees, particularly bus operators, is limited and results in operators parking on streets adjacent to the facility.

Revenue Fleet

CAT has a total fixed route fleet of 75 fixed route vehicles and a peak vehicle need of 63. This represents a spare ratio of 19%. This complies with the Federal Transit Administration guidelines of 20%.

The Federal Transit Administration suggests that the average age of a vehicle fleet should be less than one-half the average useful life of the fleet. For CAT's fixed route fleet, this should be approximately 6.0 years. At an average of 5.1 years, CAT has a relatively young fixed route fleet. One noteworthy point about CAT's fixed route fleet is that within a fleet of 75 vehicles, there are 6 to 7 different makes and models. A highly heterogeneous fleet can increase maintenance training needs as well as costs associated with parts.

A visual inspection of the fleet found the vehicles to be in excellent condition.

Maintenance Recordkeeping and Reporting

CAT employs computerized maintenance recordkeeping using Fleet-Net[®] software (**Metric 2**). All vehicle maintenance histories are stored within the Fleet-Net[®] database. Fleet-Net[®] is also programmed with the schedules for preventive maintenance for each vehicle make in the fleet. Warranty information has not been entered into Fleet-Net[®] and Fleet-Net[®] is not used to identify warranty work.

Fleet-Net[®] is used to generate and track mechanic work orders including the parts used to complete assigned work. Fleet-Net[®] then assigns applicable maintenance costs to each vehicle in the fleet.

Currently, all data entry for vehicle maintenance is performed by the Maintenance Manager, Maintenance Supervisor and Maintenance Superintendent. While Fleet-Net[®] has been incorporated into many maintenance functions; staff reports limited capabilities for Fleet-Net[®] in terms of reporting and analysis (**Metric 3**).

Preventive Maintenance (PM) Program

CAT has an adopted Vehicle Maintenance Plan which identifies the mileage intervals for various levels of PM inspections by vehicle make and model (**Metric 4**). This information has been entered into Fleet-Net[®]. Each day, service line employees manually record hubometer readings which are entered into Fleet-Net[®] by the Maintenance Supervisor or Superintendent. Fleet-Net[®] is then used to produce a report indicating upcoming needed inspections. As inspections are scheduled, Fleet-Net[®] produces the inspection work order along with the checklist of items to be performed as part of the particular inspection type.

The Maintenance Manager tracks preventive maintenance on-time performance and reports the rate on a monthly basis to the Executive Director. CAT has an established target of 80% on time performance and defines on time as +/- 10% of the prescribed interval (**Metric 5**). The on-time performance rate is calculated through a manual review of the completed PM inspection work orders, which list the mileage interval from the previous inspection. Staff reports that the Fleet-Net[®] software does not provide an automated PM on-time performance report.

There is also a defined preventive maintenance program for major shop equipment. CAT is in the process of developing a preventive maintenance program for buildings and grounds.

Running Repair

Running repairs for revenue vehicles are identified through drivers reporting problems before pull-out, driver defect cards left on-board the bus by bus operators, service line employees or mechanics while performing other maintenance work.

For very minor repairs, such as light bulb replacements, service line employees or mechanics will correct the defect and no work order will be generated. For more significant repairs, the defect is entered into Fleet-Net® and a work order is generated.

CAT's 2008 National Transit Database report indicates that CAT's performance in terms of miles per major vehicle road call was 6,200 miles, which is within the typical range of observed rates (**Metric 6**).

Vehicle Servicing

CAT has defined vehicle servicing procedures for its fixed route and paratransit fleet. Six maintenance employees are assigned to the service line function for the two fleets. For the fixed route fleet, daily servicing entails fueling the bus and replenishing fluids, interior vacuuming (daily) and mopping (when needed), exterior wash and visual inspection. Service line employees then park vehicles on the property according to the vehicle's status for the next day of service.

Currently, the fuel and fluids consumed by each vehicle are manually recorded by the service line employee. This list is then provided to the Superintendent who enters the information into Fleet-Net®. While Fleet-Net® provides an alert if the vehicle fuel mileage falls outside of a prescribed window, staff reports that the information system does not provide an exceptions report of vehicles with fuel and fluids consumption rates outside of acceptable levels. CAT relies on manual identification of trends in this regard.

The layout of the CAT property poses some issues with the servicing function in that vehicles will get backed up at two different locations on the property, one of which results in vehicles backing up in line off of the property.

CAT also employs one full-time employee responsible for performing interior detail cleanings of the fixed route buses. Based on the amount of time needed to perform the cleaning, each vehicle receives a detailed interior cleaning approximately every 120 days.

Maintenance Staff Development

The majority of CAT's maintenance staff enters the department as a service line employee. Employees can then pursue the necessary training to move into mechanic positions. Staff identified this practice as a tradition rather than a policy. CAT does have the ability to hire an outside person directly into a higher level maintenance position if no internal candidates meet the qualifications.

CAT currently relies heavily on the PPTA maintenance training programs for maintenance staff development. Maintenance department management reports that the greatest training need concerns technology with the increasing complexity and computerization of transit vehicles.

Challenges

- Limited reporting and analysis capabilities of vehicle maintenance information system.
- Diverse fleet mix given size of fleet.
- Continued reliance on manual processes for various functions.
- Reliance on manual analysis and knowledge of specific individuals to identify maintenance trends, performance, and vital information such as warranty terms.
- Limited number of staff using Fleet-Net®.
- Maintenance performance has remained flat over the past five years in terms of miles per major road call even as the age of the fleet has become younger.
- Physical limitations of the Cameron St. facility.

Opportunities

- Computerized fleet maintenance recordkeeping has been incorporated in the management of the maintenance function.
- Maintenance management open to technology improvements.
- Adopted Vehicle Maintenance Plan and PM inspection schedules and checklists.
- Established target rates for PM inspection on-time performance and a definition for on-time.
- Established procedures for collecting and tracking key maintenance performance data.

Recommended Actions

- Continue to monitor staff training needs and work with PPTA and local technical colleges to develop necessary courses and curricula.
- Pursue greater use of technology in the maintenance function to automate such tasks as the recording of fuel and fluids consumption data.
- Pursue procedures for direct use of Fleet-Net® by mechanics and service line employees.
- Investigate the report generation capabilities of Fleet-Net® to determine if more automated analyses could be performed. Despite the use of maintenance recordkeeping software, the maintenance function still relies heavily on manual analysis and the knowledge of long term employees.
- Enter warranty information into Fleet-Net® and pursue automated notifications. CAT currently relies on Maintenance management to identify warranty eligible maintenance work.
- Adopt updated target rates for miles per major road call and make more extensive use of trend analyses to identify strategies to improve performance.
- Develop a Master Plan for the maintenance facility to meet the current and future needs of the system.

SCHEDULING

Transit is a labor intensive industry in which drivers' wages and fringe benefits account for more than half of all bus operating costs. Because of this, scheduling has a significant influence on transit expenditures and the resulting efficiency and effectiveness of CAT. The scheduling process can maximize the use of drivers while attempting to minimize operating costs related to driver compensation. Another beneficial attribute of the scheduling function is to provide input to the negotiating process of the collective bargaining agreement to understand the cost consequences of various current and potential future contract provisions. The CAT scheduling process does not assign all service to scheduled drivers' runs. Some service is designated "open" with the actual assignment made by the dispatcher each day. Accordingly, the scheduling function should provide for coordination and dialogue with operations managers.

Summary of Findings

Metric #	Description	Finding	Trend
1	Understanding of scheduling process.	+	→
2	Depth of staff to conduct scheduling function.	×	↗
3	Production of vehicle and driver assignments in a timely manner.	+	↗
4	Data base to support scheduling function.	×	→
5	Input from operating personnel.	+	↗
6	Performance measures to gauge output of schedule process.	×	→
7	Scheduling as an analytical tool.	×	→
8	Utilization of computers.	×	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
×	Below Average	↘	Worsening

Organization and Staffing

Prior to Tom Collins joining CAT, CAT's Manager of Transportation and Safety performed the scheduling function. At this time, CAT's Transportation Service Coordinator is assigned to the scheduling function and this individual also has responsibility for short range planning (**Metric 1**). This is consistent with most agencies similar in size to CAT. CAT has two staff members, the Manager of Transportation and Safety and the Transportation Service Coordinator, who are capable of performing the scheduling function. It is common in the transit industry, to have only one staff member capable of scheduling (**Metric 3**). In the case of CAT, there is recognition of the need for succession planning and depth of resources for scheduling. Another feature of the CAT organization is that coordination is readily achieved between the scheduling function, planning and operations.

Data Inputs

The scheduling process mandates recent, reliable and comprehensive information on ridership levels (i.e., maximum load point volumes and running times). As noted with planning, data collection is limited and oriented to problems as they arise and complying with gathering ridership information for the National Transit Database submission. The limited information that is gathered is obtained manually (**Metric 4**), with the field personnel consisting of a part-time checker, drivers on light duty and on frequent occasions the Transportation Service Coordinator (**Metric 5**). Reliance on automated data collection equipment and technology, such as Automatic Vehicle Locator (AVL) and Automatic Passenger Counters (APC) systems, would provide the rich data base necessary to support a robust scheduling function.

Service Standards

Also related to planning is the need for a service standards policy which guides the assessment of current service and operations (**Metric 6**). Typical service standard elements that can be used by the schedule maker are acceptable load factor, policy headways and spans, and on-time performance. With the exception of load factor (i.e., passengers on board the bus divided by seats), CAT does not have a service standard policy. One concern with the values used for load factor is that they reflect the bus manufacturer's view of how many standees could be accommodated. This relates more to physical dimensions and may result in "crush loads", rather than what most people would view as acceptable (which should be 1.15 to 1.25 times the number of seats).

In many cases, load factor is not a concern since there are not standing loads. The focus is instead on underutilization of bus capacity on some routes or trips. In these cases, policy headways (i.e., minimum of 30 minute frequencies in peak periods and 60 minutes (which are generally based on the physical space available and result in a "crush load"). The first four steps in the process are performed by the Transportation Service Coordinator. Rostering is performed by the Manager of Transportation & Safety, in coordination with the schedule maker. A key aspect of this last step is establishing the number of Extra Board drivers to cover absences and perform open work. Extra Board staff needs are based on a review of historical information on unscheduled overtime and paid guarantee time. Current practice at CAT is to not have "road relief," in that all assignments start and end at the garage. This results in somewhat higher vehicle miles and additional fleet requirements; however, the wage implications are likely minimal because of the proximity of the garage to the downtown Harrisburg relief points.

Scheduling Assessment

One analysis feature not part of the current CAT scheduling process is a quantitative review of the scheduling process (**Metric 7**). Typically, the ratio of pay hours to platform hour (PPR) (i.e., vehicle hours) is used to assess how economical a schedule iteration is in efficiently using drivers. Because of the reliance on manual techniques with no use of either spreadsheets or scheduling software, the PPR value or other measures (e.g., overtime or paid guarantee) are not computed or reported. Utilizing information from CAT driver assignments, PPR values were

computed with values of 1.15 and 1.07 for weekdays and Saturdays, respectively. Each value is well within acceptable ranges for systems similar to CAT.

The level of reporting of routine statistics is also limited in comparison to information generated with computer scheduling software. This lack of automation prevents the schedule maker from “what if” exercises that could test different approaches to scheduling and the consequences of different labor provisions proposed in the collective bargaining process.

Computerization

CAT staff utilizes manual techniques to perform the scheduling process (**Metric 8**). There is no use of available scheduling software packages or spreadsheet programs to perform various calculations and display information. There are typically three levels of computerization that an agency like CAT should consider. The first would be to record information on a spreadsheet, such as Excel, which allows information to be manipulated and printed to generate different types of forms. Another possibility would be to purchase software such as TransSched® and Schedule Master from vendors which have created a niche with relatively small transit systems. The most comprehensive scheduling software packages are offered in Trapeze™ and Hastus, which are the most common scheduling software in the United States. These packages provide for consideration of collective bargaining agreement rules, agency practices and standards, and generation of statistics to gauge the efficiency of various operator scheduling options.

Labor Agreement

A collective bargaining agreement exists between CAT and Division 1436 of the Amalgamated Transit Union (ATU). It covers work rules, pay provisions along with wages and fringe benefits. The contract terms include common provisions, such as guarantee of eight hours per day, report time and allowable spread time. The contract does permit the use of part-time operators, whose number cannot exceed 15 percent of the operators. The actual use of part time bus operators is less than would be expected, since the order of assigning open work, such as morning and afternoon trippers is the Extra Board, part time operators, and then regular drivers on their day off.

Challenges

- Insufficient ridership and running time data to support scheduling function.
- No set of service standards to guide the schedule building process.
- Lack of information generated by the scheduling process and metrics to assess the output in terms of driver utilization and compensation.
- Lack of automated techniques and procedures does not permit different scheduling scenarios to be tested and evaluated.
- Succession and cross training for scheduling position.

Opportunities

- Schedule building process that has worked well and in a timely manner during the past several years.

- Well established process and steps from preparation of a service plan through scheduling to service on the street.
- Current practice to manually gather and use data which is an implicit part of the current scheduling process.
- Knowledge, experience and expertise of the Transportation Service Coordinator to train an operations supervisor/dispatcher in the “art and science” of scheduling.
- Close working relationship between operations staff and schedule maker.

Recommended Actions

- Continue efforts to train another individual in scheduling.
- In conjunction with planning, develop a data management plan that utilizes technology (i.e., APC and AVL) to obtain ridership and running time information.
- Automate the schedule process, with near term action being use of spreadsheets to manipulate and summarize scheduling data and output, with a subsequent purchase of schedule software.
- Specify metrics, such as Pay/Platform Ratio to gauge the adequacy and success of the scheduling process.
- Utilize spreadsheet or specific transit scheduling software to evaluate different scheduling strategies (e.g., use of part-time operators and extent of open work) and terms of the collective bargaining agreement with a “what if” approach.
- Involve scheduler in labor negotiations so his or her perspective can inform process.
- Continue role of schedule maker in establishing the Extra Board size, with greater reliance on a statistical approach that balances paid guarantee and unscheduled overtime to minimize costs associated with drivers’ compensation.

SAFETY & SECURITY

This section provides a review of the safety and security functions at CAT. This section is focused on daily concerns related to vehicle and passenger safety in the fixed route bus system. Specific attention is also given to emergency preparedness.

Summary of Findings

Metric #	Description	Finding	Trend
1	Track and report accidents by type.	✓	→
2	Require operators to use consistent and comprehensive procedures for reporting accidents/incidents.	+	→
3	Provide comprehensive new operator and refresher training.	✓	↗
4	Develop and maintain System Security and Emergency Preparedness Plans.	✓	↗

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✗	Below Average	↘	Worsening

Organization and Staffing

Safety and security issues are handled by the CAT Manager of Transportation and Safety. The incumbent manager has more than 35 years of transit experience and has worked in all operating positions including operator, supervisor, and dispatcher.

The Manager is assisted by the Safety and Training Coordinator. The Coordinator conducts all operator training. The current Coordinator has ten years of transit experience, with prior experience in law enforcement.

Reportable Incidents

CAT reports major incidents to the National Transit Database for incidents that meet one of the following criteria (**Metric 1**):

- A fatality other than suicide.
- An injury requiring immediate medical attention away from the scene for one person.
- Property damage of \$25,000 or more.

As shown in **Exhibit 17**, in the past six calendar years (2003-2009), CAT reported 11 major incidents that involved ten personal injuries requiring immediate medical attention away from the scene. Five of the eleven incidents involved no personal injuries and were reported because total property damage to the buses and other vehicles involved exceeded \$25,000. One incident in 2006 involved both injuries and total damage exceeding \$25,000. In 2003 and 2007, there were no reported major incidents.

Exhibit 17. CAT NTD Reportable Incident History (2003-2009)

Calendar Year	Incidents	Injuries	Damage > \$25,000
2003	0	0	0
2004	2	2	0
2005	2	6	0
2006	1	0	1
2007	0	0	0
2008	5	2	4
2009	1	0	1
Total	11	10	6

The National Transit Database also requires the reporting of passenger slips and falls that required immediate medical attention away from the scene for one person, but were not caused by a vehicle incident. CAT did not report any of these in the period 2003 through 2009.

CAT tracks accidents defined much more broadly than the NTD definition and includes any event that involves passenger injury or vehicle damage. The rationale for this approach is twofold: 1) to identify all potential exposures of CAT to outside claims, and 2) to identify safety issues that should be addressed.

When this broader approach is used, a more realistic picture is provided of CAT safety. In calendar year 2009, CAT was involved in 127 incidents (**Exhibit 18**). As might be expected, most of the incidents involved passenger slips and falls (34.6 percent) and vehicle collisions (39.4 percent).

However, over 20 percent of the incidents involved mirrors and garage pull in/outs. These incidents are believed attributable to the antiquated design of the CAT operating facility.

Each CAT bus is equipped with a Driver's Accident/Incident Reporting Kit (**Metric 2**). The kit contains:

- Detailed procedures that the operator should follow in case of an accident/incident.
- Courtesy cards that can be distributed to witnesses.
- Driver's exoneration form that a person involved in an accident may sign.
- Passenger information cards that can be distributed to passengers involved in an accident.
- Accident report that collects information on vehicle collisions.
- Non-collision incident form for incidents like slips, falls, fights, and falling objects.
- Accident notification card that can be used to request assistance from passing motorists.

The driver is required to call the dispatcher in the event of an accident. The dispatcher determines the appropriate handling of the situation, including the need to send the Safety and Training Coordinator (or street supervisors) to the scene. These personnel have all been trained in accident investigation.

The investigation and processing of claims is directly handled by CAT's insurance company. The Manager of Transportation and Safety works with the insurance company to resolve the claims.

Each accident is reviewed by a CAT Accident Review Panel to determine if it was preventable or non-preventable. The committee consists of two management representatives, two union representatives, and the Safety and Training Coordinator. Preventable accidents or associated moving violations can result in disciplinary action as described in the next subsection on training.

CAT uses a point system to handle discipline related to safety issues. Points are issued (minor = 2 to major = 7) that reflect the severity and preventability of the accident.

Exhibit 18. CAT 2009 Safety-Related Incidents

Incident Type	Number	Percentage
Collision	50	39.4%
Mirror	14	11.0%
Passenger Injury	44	34.6%
Vandalism	6	4.7%
Garage Pull In/Out	13	10.2%
Total	127	100.0%

The amount of retraining is based on the accumulation of points over the past twelve months. The retraining can range from one block of training (1-3 hours) to one continuous day of training. An accumulation of 16 points within 12 months can result in operator termination.

Training

The training of new operators consists of two weeks of classroom instruction and two weeks of field instruction on the CAT bus routes (**Metric 3**). The two weeks of classroom instruction is based on the program developed by the USDOT Transportation Safety Institute. It is supplemented by one day of testing and training on the CAT driver training simulator.

The content of the training program is provided in a student notebook, which includes proper driving and operator procedures. At many other transit systems, a bus operator is issued an Operations Manual at the completion of training. Its purpose is to outline the proper operating procedures that the driver should follow. CAT does not have an Operations Manual.

CAT's current collision reduction plan is based on retraining operators who have been involved in accidents and who have been issued training points by the Accident Review Panel. When new vehicles are purchased, all bus operators are provided familiarization training.

CAT plans to implement refresher training for all operators within the next year. The training will be tailored for each operator and will be based on the results of a two-hour test on the CAT driver training simulator.

Security

The main operating facility operates 24 hours a day, six days a week. This around-the-clock operation provides a minimal level of security. It is supplemented by full fencing, lockable gates, and 22 cameras at the facility. Vandalism and theft were not reported as problems.

Emergency Preparedness

CAT has a System Security and Emergency Preparedness Plan (SSEPP) that was updated at the end of 2009 (**Metric 4**). The SSEPP contains information about preparedness, response, recovery, and organizational structure. The plan covers the CAT operational facility and data systems. It includes evacuation procedures.

CAT also is cited in many local and state agency emergency response plans. CAT managers report, however, that coordination with these agencies is minimal to non-existent and needs to be improved.

Challenges

- Lack of written Operations Manual.
- Coordination with the numerous local emergency responders in the greater Harrisburg area.
- Large percentage of accidents involve incidents within garage area of operating facility

Opportunities

- Function appears to be well managed with good focus on new operator training and refresher training for operators who have had incidents.
- Established procedures for responding to and investigating accidents.
- Increased use of the driver training simulator for refresher training.

Recommended Actions

- Pursue program of providing tailored refresher training for all operators.
- Address the apparent poor reporting to the National Transit Database of passenger slips and falls.
- Increase efforts to coordinate with local emergency responders in the greater Harrisburg area.
- Examine and revise, as appropriate, vehicle operating procedures within operating facility with emphasis on accident reduction.

CUSTOMER SERVICE

Customer services are those processes used to meet the needs of current customers. Within an agency, almost every employee with direct customer contact has a role in customer service. Effective customer service proactively provides information, an avenue for comments and a mechanism for responding to customer compliments and complaints. The measure of effective customer service typically comes from a survey of riders. Effective customer service reduces the number of complaints per rider over time and increases the number of compliments. Customer service can have a direct impact on public relations and ridership.

Summary of Findings

Metric #	Description	Finding	Trend
1	Number of Staff Responsible for Customer Service.	✓	→
2	Automated Customer Notifications.	✓	→
2	Understanding of Staff Roles in Customer Service.	✓	↗
3	Personal Follow Up Protocols for Complaints and Compliments.	✓	→
4	Clear Customer Service Protocols (tracking, response, timeliness, satisfaction).	✗	→
5	Regular Monitoring of Customer Service Satisfaction.	✗	→
6	Customer Service Quality Improvement Plan.	✗	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✗	Below Average	↘	Worsening

Organization and Staffing

CAT has a ¾ time staff member assigned to customer service duties (**Metric 1**) who also shares time with public relations and marketing. However, customer service follow up for phone or mail customer communications are fielded by the subject area so the number of staff responsible for customer service is larger.

Customer Service Protocols

Customer service comes in two varieties, proactive and reactive. CAT provides proactive customer service in the form of information available on the CAT website, and via automated information available over the phone (**Metric 2**). The website provides information about route/schedule changes, weather delays and similar information. Furthermore, CAT customers can sign up for e-mail service alerts on the CAT website. CAT management reports an upsurge in website activity during weather events and times of potential service disruptions.

The telephone system is programmed with an automated response noting any service disruptions. Once a caller listens to that message an operator picks up the phone and forwards calls to the appropriate person for handling (**Metric 3**).

CAT does not have AVL or other technologies fleet-wide to provide automated bus location information on the web, by phone or other means. Staff members expressed a desire for such

a system, recognizing that it would be part of a larger investment in technology. There is also a desire to provide automated telephone notification to customers, but CAT does not yet have that capacity. Text messages are sent in the event of major service disruptions.

Reactive customer service is responding to specific compliments and complaints. CAT accepts these via mail, fax and telephone. There is a goal to close out written or phone in customer service complaints satisfactorily within three (3) working days. There are no automated procedures to track complaints or to assure they have been closed out satisfactorily (**Metric 4**). The responsibility for tracking a complaint falls to the department to whom it was referred with no central “clearing house” to insure timely follow through has occurred.

Quality Improvement Processes

Improvements in customer service typically result from findings from customer satisfaction surveys, recognition of customer complaints/compliment patterns or political pressures from newspapers or elected officials. Advisory boards also have a role to play in quality improvement.

There seems to be a solid recognition within all levels of the agency of the importance of good customer service. However there is no clear chain of custody, tracking or responsibility for managing or reducing the number of complaints. CAT does track the number of calls into their call center and reports that information monthly to the Board.

Pursuant to Act 44 of 2007, customer service surveys are no longer required as part of the review process. Nevertheless, customer service surveys (**Metric 5**) do provide one of the few systematic ways to measure changes in customer service effectiveness over time. CAT has not conducted a customer satisfaction survey since the last time it was required by Act 3 (December 2004). Regular monitoring of customer service can serve as one element of a larger customer service quality improvement program not currently found at CAT (**Metric 6**).

Challenges

- Customer satisfaction surveys are not conducted regularly, hence measurements of quality improvements or declines are difficult.
- No protocols or automated methods to assure complaints and compliments are resolved to the customer’s satisfaction.
- No systematic means to conduct trend analysis of customer satisfaction.
- Lack of AVL/IT infrastructure to provide real-time route and schedule information.

Opportunities

- “Personal touch” handling of complaints/compliments by staff.
- Agency-wide understanding of the importance of good customer service.

Recommended Actions

- Establish protocols and procedures to track customer service interactions and resolutions.
- Establish a follow through process to insure customer’s issues have been resolved.
- Track and report monthly complaints/compliments to the General Manager.

- Implement periodic customer satisfaction surveys and integrate results into service planning, operations, personnel evaluation, and marketing activities.

INFORMATION TECHNOLOGY

Information technology (IT) provides the automated mechanisms for in-house and customer service communication. A reliable and seamless IT infrastructure can make for the provision of less costly and more timely procedures to gather, move and process information.

Summary of Findings

Metric #	Description	Finding	Trend
1	Number of Staff Responsible for Information Technology.	✓	→
2	Appropriate use of Outsourcing for IT Needs.	✓	→
3	Adequacy of In-House Network and Computer Technology.	✓	→
4	Adequacy of Radio and Communications Systems.	✗	→
5	Use of APC Technology.	✗	↗
6	Use of AVL Technology.	✗	↗
7	Run Cutting and Scheduling Software.	✗	→
8	IT Disaster Recovery Plan	✓	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✗	Below Average	↘	Worsening

Organization and Staffing

CAT has a two full time staff members assigned to IT (manager, specialist) who are responsible for all IT related issues (**Metric 1**). CAT outsources some IT functions depending on complexity, staff availability and cost effectiveness (**Metric 2**). IT staff members are also responsible for the trouble-shooting, maintenance and repair of off-site ticketing kiosks. This arrangement makes for cost-effective management of IT needs.

Software

CAT uses the following software systems for specific functions:

- On-vehicle farebox: GFI.
- Run cutting: Manual process¹².
- Asset management: Fleet-Net[®] for parts inventory, free software for capital assets.
- Inventory management: Fleet-Net[®] for vehicles.
- Payroll- Manual process.
- Geographic Information Systems (GIS): Outsourced¹³.

Hardware

CAT has a dedicated server room that is fairly new and reliably meets needs (**Metric 3**). Automated imaging of PC hard drives is accomplished on the internal network.

¹² Previous attempts to use Hastus for fixed route and Trapeze for paratransit were reported to be unsuccessful.

¹³ GIS needs are satisfied by an interagency agreement with the TCRPC.

Communications equipment on vehicles has difficulty communicating with CAT headquarters in certain parts of the region. The radio system was reported to be outdated and not capable of reaching certain locations to which CAT now provides fixed route services (**Metric 4**).

Automated Passenger Counter (APC) technology is installed on some buses (9) that have “talking bus” technology, but is not presently in use (**Metric 5**).

GFI fare boxes are being upgraded over time.

CAT has decided to wait until the picture of changing technology becomes clearer before assembling a strategic IT plan that will include web-based passenger information systems, automated passenger counting (APC) and automated vehicle location (AVL) and integrated systems (technologies, radio communications between buses and the operating base, fareboxes, and associated equipment and systems). Staff members expect that within about 2 years they should have enough information to draft a strategic plan.

Current Projects and Issues

CAT has been testing a Siemens ITS technology scheme for their vehicles. Some vehicles (9) have GPS capabilities, but no AVL system to support customer service or operational analysis (**Metric 6**). Staff members are pursuing a lead with an *Avego*-based real-time passenger information system pilot study.

CAT staff members report that previous attempts at automated run-cutting have proven unsuccessful. Nevertheless automated run-cutting can provide substantial operational savings, the ability to test “what if” scenarios (**Metric 7**). This process is currently managed by one key staff person and is time consuming and laborious. Identifying an automated method that best meets CAT’s needs will increase efficiency in operations, and allow rapid and objective evaluation of alternative scheduling schemes and work rules and policies. Finally, automation allows multiple personnel to learn and efficiently use the system, providing enhanced continuity in this function.

Disaster Recovery Plan

CAT has a documented disaster recovery plan for its IT infrastructure (**Metric 8**). Web services are handled off-site and there have been no disruptions to that service thereby providing an extra layer of security.

Challenges

- Changing technologies.
- Varying age of existing technologies used by CAT.
- Communication system that does not function well in certain areas of the region.
- No capital asset inventory system for non-rolling stock.

Opportunities

- Staff members with experience at similar transit agencies.
- Newer servers and server room.
- Newest vehicles include APC and GPS hardware.

- Staff members exploring possible AVL and web-based customer information systems.

Recommended Actions

- Begin development of a master IT plan that incorporates changes in on-vehicle technology and web-based customer service as well as resolves communication difficulties.
- Acquire an inventory management system suitable for capital (non-rolling stock) assets.
- Continue pursuit of cost effective interim adjustments (i.e., to farebox software) pending completion of a full IT plan.

SERVICE ENHANCEMENT

“Service enhancement” covers three functional areas which relate to the physical assets of the agency, marketing of service and planning of service to meet the needs of area residents. The capital programming is concerned with agency fleet, maintenance facilities, terminals and other amenities provided to the riding public. The capital program should indicate the type of acquisitions, their costs and schedule for purchase, rehabilitation or construction. Marketing is oriented to promoting the current service to retain existing riders and attract new customers who currently drive personal vehicles. This includes providing information on the system and aggressive techniques to encourage greater transit utilization.

The last function of planning addresses future direction of the transit system for a short, mid and long term horizon period. It includes monitoring current route level performance and developing new proposals for the future.



CAPITAL PROGRAMMING

The capital programming function at CAT is oriented to maintaining the current transit system in a good state of repair and permitting bus system changes and expansion. The CAT capital programming activities and project list is primarily oriented to the region's Transportation Improvement Program (TIP) and includes the region's long range transportation plan (LRP). This document is required to assure federal funding and includes all transit and highway projects during the next five years. It includes projects such as vehicles, facilities and equipment. Because of its limited forecast period, it is fiscally constrained and represents projects for which there are adequate federal, state and local funds available. The plan is regularly updated to reflect recent conditions and changes.

Summary of Findings

Metric #	Description	Finding	Trend
1	Staff to lead capital programming.	✘	→
2	Relationship and coordination with external agencies.	+	→
3	TIP as initial list of all capital needs (fiscally constrained).	✓	↗
4	Unconstrained, prioritized capital needs strategic plan.	✘	↗

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✘	Below Average	↘	Worsening

Organization and Staffing

Preparation of TIP projects is the responsibility of the Executive Director, with support from other members of the staff as appropriate. In agencies of similar size, Capital Programming responsibilities fall to a Planning Director. The development of the capital program is one area where the new CAT position of Planning Director can support the Executive Director (**Metric 1**). The efforts of the Executive Director have been favorable in that CAT maintains good working relationships with external agencies (**Metric 2**).

Capital Elements

It should be recognized that submission of projects for the TIP and LRP is not a complete capital program, since it does not include all projects that could be viewed as a capital need. Some of these projects have not been listed because they exceed available near term funding or require additional analysis to further define the project and its cost. The capital program should be a list of projects that include a description, its rationale and a prioritized ranking of all projects. By including projects in the TIP, it is reasonable to expect that these have the highest priority consistent with available funding (**Metric 3**).

Typical projects in the TIP are replacement of buses as they reach their useful life. Similar to many agencies, CAT has opted to purchase low floor buses which afford fewer seats for the same length bus. To respond to this situation, older buses are being replaced with longer coaches to assure the same seating capacity. This will result in the current maintenance facility

being deficient in terms of providing indoor storage. Other items such as maintenance equipment are also included in the capital program.

One concern is that the current capital project list is not complete and may not include major projects that have significant costs (**Metric 4**). For example, the downtown terminal has been identified by CAT and HATS as a facility that will need to be revised or replaced with service expansion and acquisition of longer buses. Similarly, the current operating/maintenance base is inadequate to meet current needs and may constrain future service expansion. Additional projects may include those being studied by others, such as the two rail feasibility studies and a possible study by Cumberland County to enhance bus service on the West Shore. Still, other projects may emerge from the Transit Development Plan suggested as part of the planning recommendations and the regional LRP.

Challenges

- Need to specify a complete list of projects.
- Prioritize list of projects which vary in scale and time frame for implementation.
- Distinguish between project lists that are fiscally constrained (i.e., TIP) versus not fiscally constrained (capital needs program).

Opportunities

- Strong relationships with other regional agencies.
- Build off of submissions for the TIP, which is well established.
- Clearly identify the full range of agency capital needs.
- Coordinate other study efforts through a single capital program document.
- Specify needs for two major projects: a downtown transit facility and operating/maintenance base.

Recommended Actions

- The proposed position of Planning Director should be assigned the responsibility of preparing the capital program in close consultation with the Executive Director.
- Prepare a more detailed description of what is required to provide passenger amenities in downtown Harrisburg and afford an efficient operating/maintenance base.
- Assemble a master list of projects (i.e., needs) ranked in terms of priorities.
- Distinguish projects on the basis of available funding and identify those projects that could move forward with additional funding such as was the case with stimulus funding.

MARKETING AND PUBLIC RELATIONS

Effective marketing captures more of an agency’s “traditional” markets and expands into new markets. While the direct measure of marketing effectiveness is “how many new riders are achieved as the result of marketing efforts”, it is difficult to isolate the ridership effects of marketing from public relations, customer service and even pricing pressures (i.e. fares, parking and gas prices). Effective public relations can be measured in the perception of the agency’s “image” with those it interacts with locally and outside the region.

Summary of Findings

Marketing			
Metric #	Description	Finding	Trend
1	Thorough understanding of current customer base.	✘	→
2	Effective use of targeted marketing and educational materials for special populations such as disabled populations, non-English speaking populations, etc.	✘	→
3	Effective use of marketing approaches to expand market share with current clientele.	✓	↗
4	Clear procedures to identify and assess potential (new) markets.	✓	→
Public Relations			
Metric #	Description	Finding	Trend
5	Visibility in the community.	✓	↗
6	Positive image with local community and elected officials.	✓	↗
7	Positive image with state and federal agency’s review agencies.	✘	→
8	Awards and Accolades	✘	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
✘	Below Average	↘	Worsening

Organization and Staffing

CAT has a ¾ time staff member assigned to marketing, who performs public relations and customer service duties. This is consistent with similar size agency staffing practices. Staff training and other programs that support advancing innovations in marketing and public relations were not noted. In recent years, CAT’s marketing and public relations efforts have focused on increasing agency visibility within the region and have relied on traditional media.

Marketing and Outreach

The need to understand the current customer base, how it is changing, and the most effective ways to communicate are important elements of marketing as they not only help focus scarce marketing resources, but inform other aspects of service delivery and planning new services. Much of the information about the markets and submarkets of the current customer base is currently understood in an anecdotal fashion. No efforts were documented as underway nor

are strategies in place that might improve that understanding and the understanding of how the current customer base may be changing over time (**Metric 1**).

Materials designed for outreach to non-English speaking communities and disabled populations were not available for review. Subsequent to the performance review, CAT has advised the Department that ridership material is available in Spanish. No plans for outreach to special population segments were provided (**Metric 2**).

Employer and Major Trip Attractor Coordination Agreements

CAT has a “Commuter Benefit” program, coordinated with DVRPC, through which employers can purchase monthly transit passes for employees and provide tax incentives to employers. The program, TransitCheks[®] is supplemented by a “guaranteed ride home” program which is coordinated through Pennsylvania Commuter Services via the SVTP (**Metric 3**).

Additionally, CAT marketing and management staff members have undertaken proactive efforts to target several regionally significant institutions of higher learning and new large scale developments to try to provide services and negotiate U-Pass and other coordinated marketing agreements within the region. CAT also advocates for greater regional coordination among public transit service providers. These efforts are expected to continue and could result in the addition of new and strengthening customer bases (**Metric 4**).

Public Information

CAT has implemented a front-end element on its telephone answering system that provides callers with information about service disruptions. Should more information be desired, the phone system routes calls to a representative trained to answer questions on a variety of topics. An e-mail notification system is available to alert riders of service delays and disruptions. Additionally, the CAT website includes information on service disruptions, route schedules and commuter programs. Staff members indicated a desire to provide a more robust, internet-based public information system that would include real-time information on bus location once vehicles and other services are outfitted with the appropriate hardware and software.

Advertising

CAT advertises in a variety of media, including newspaper, radio, billboards and its website (**Metric 5**). There is a desire to implement new targeted media, such as cell phone messaging and coordinated efforts with online information providers. The CAT website is hosted “off-site” and has no difficulty handling current traffic nor has it experienced any unscheduled disruptions. CAT staff members expressed an overall satisfaction with the web hosting service provider.

Public Relations

Direct measures of public relations effectiveness are not easily captured apart from customer satisfaction surveys, which have not been conducted since 2004, 2001 and 1998. For public relations purposes, CAT has a good perceived “image” with all Dauphin County officials interviewed (**Metric 6**). CAT maintains a library of news clippings that indicated press coverage

and agency image are generally favorable, per a brief review of recent media articles and editorials in the local press. There is pride at all levels of the agency in maintaining this image.

Interagency Relations

On the interagency component of public relations, CAT has experienced difficulties in recent years (**Metric 7**). Many of these difficulties have related to timeliness and quality of required submittals to oversight and funding agencies as well as perceived “slow responsiveness” as these issues have lingered for two years or more. CAT management conveys an understanding about the nature of these difficulties and has undertaken remedial actions to correct deficiencies, including the addition of several well-experienced staff members. CAT management reports that all federal and state requirements have been addressed but there remain lingering concerns by review agencies regarding requirements that remain unmet. Some effort will be required to correct the public relations impacts of these deficiencies and to restore the image of the agency with funding and oversight agencies. CAT appears to have good relationships with the TCRPC and HATS.

Awards and Accolades

CAT has no documented awards or accolades (**Metric 8**).

Challenges

- No full-time staff assigned to marketing and public relations.
- Marketing staff responsibilities compete with other needs, such as customer service.
- Lack of empirical data and reports on current or past customer markets and submarkets.
- Lack of proactive plan or budget to collect information on existing customer markets and submarkets.
- Lack of materials to promote services to or educate special markets (disabled, non-English speaking, etc.).
- Lack of analysis or reporting of marketing effectiveness.
- Image with funding and oversight agencies has been damaged in recent years.
- Lack of marketing and public relations training program.
- Meeting the goals of Cumberland County, Dauphin County and the City of Harrisburg all of which may have differing perceptions of CAT’s role in regional service delivery.

Opportunities

- Dedicated marketing budget.
- Available farebox and boarding data by route by day.
- Good working relationship with the MPO and other local agencies that have skills that CAT may not be able to maintain readily internally.
- Proximity and long-term relationships with state and federal agencies.
- Good local public relations image with Dauphin County officials (officials from other jurisdictions were not available for interviews) and the press.

Recommended Actions

- Continue efforts to increase visibility of CAT as a commuter option.
- Continue pursuit of U-Pass and other tailored marketing arrangements to regionally significant potential customer-bases, consistent with recommendations of Fare Study.
- Continue to pursue inter-county marketing opportunities and service provision.
- Regularly conduct analysis of ridership patterns and market segments in a cost-effective manner.
- Develop, implement and monitor the effectiveness of plans to increase CAT's share of its current customer base.
- Develop materials to promote services and to educate special customer markets (disabled, non-English speaking, etc.).
- Identify innovative ways to increase market share in areas where CAT competes well against other transportation modes.
- Implement processes to measure the effectiveness of marketing expenditures and report findings at least quarterly to management.
- Establish an aggressive protocol to regularly monitor and/or improve public relations with local officials, the public and oversight/funding agencies.
- Provide opportunities for training and exchange of "best practice" marketing approaches to marketing and management staff.
- Pursue opportunities for industry recognition of CAT "best practices" that can result in awards and accolades to be advertised in marketing and public relations campaigns.

PLANNING

The two primary objectives of the planning process are to monitor service and develop entirely new service proposals. These changes attempt to remedy current deficiencies and expand future opportunities. Another facet of the planning process is that it should cover three planning horizon periods. The first, short range or near term, pursues service changes that can be made within one year. Mid-term planning extends the focus to a five year time frame and typically would be documented in a Transit Development Plan (TDP). A long-range transit plan (i.e., 20 years) is mandated by FTA and FHWA as part of the metropolitan planning (3C) process. Other planning activities in the Harrisburg metropolitan area in which CAT participates are feasibility assessments for Corridor One and Corridor Two and the recent CAT Service Study by HATS.

Summary of Findings

Metric #	Description	Finding	Trend
1	Relationships and coordination with local planning agencies.	✓	→
2	Employs proactive approach to short range planning.	+	↗
3	Employs proactive approach to mid-range planning.	×	→
4	Positive vision for what transit could be.	×	→
5	Employs proactive approach to long-range planning.	✓	→
6	Uses empirical data used to support planning functions.	×	→
7	Provides opportunities for input from operating personnel.	+	↗
8	Service standards used to assess current service and to gauge new route proposals.	×	→
9	Performance measures used to assess route performance.	✓	→

Legend:

+	Above Average	↗	Improving
✓	Average	→	Little net change
×	Below Average	↘	Worsening

Organization and Staffing

Three individuals at CAT are directly involved in the planning process, but their roles differ by planning horizon period. The Transportation Service Coordinator and the Manager of Transportation & Safety are actively engaged in developing service proposals for each driver pick (i.e., three times a year), with the focus being on service changes that can be accomplished within one year. All other planning activities are primarily performed by other agencies with the CAT Executive Director as the primary participant (**Metric 1**). A mid range planning analysis was recently completed by the HATS with the results and findings presented in a document entitled "CAT Service Study". Similarly, TCRPC prepared the *Long Range Plan* for the region as part of the *Harrisburg Area Transportation Study*. As noted above, two rail feasibility studies have been performed in the region at the direction of the Modern Transit Partnership (MTP). This non-profit organization is based in CAT's facility, but has a separate Board and staff. CAT

involvement in both the mid range and long range planning studies is by the Executive Director, who also leads coordination of all planning activities with other regional agencies.

CAT currently does not have a dedicated Planning Director who would focus all planning activities. Such a position is typically found at similar transit agencies. At one time CAT did have such a position, but it was eliminated. A related proposal is to create a service development committee consisting of in-house staff. It would expand upon the existing coordination activities and include other staff, such as marketing, in formulating service proposals and selecting preferred changes. It would meet on a less frequent basis than the current staff meeting schedule and focus on planning issues. The committee would provide input at each of the six key steps in the planning process: problem definition, data analysis, identified deficiencies and opportunities, formulation of alternatives, impact of preferred alternatives and identifying the recommended plan. The Planning Director would serve as the chairperson of the committee and lead technical analyses.

Planning Hierarchy, Perspective and Vision

Similar transit agencies have found it helpful for both staff and Board members to develop a clear planning mission statement to guide activities that range from fine-tuning adjustments in the near term to more major system-wide changes with a longer horizon period. In turn, CAT should have clear goals and objectives which are helpful in defining a planning vision for the agency. For the most part, the focus at CAT has been on relatively small scale service changes responsive to near- term needs. A key factor in evaluating short range service changes is consistency with available funding. This is reasonable and to be expected. In this regard, the planning activities for the one year planning horizon are proactive, with numerous service changes and CAT is willing to try different proposals and then measure their success (**Metric 2**).

For the mid-term period, which should guide CAT's planning activities over the next five years, there is a need (**Metric 3**) for a formal Transit Development Program (TDP). The document prepared by HATS is an initial step in developing a TDP in that it presents information on the service area and broad initiatives to improve service. CAT would benefit from staff delineating specific route proposals and documenting their forecast impacts and benefits. The TDP's service plan would accompany a capital improvement program and appropriate financial projections. This document would present a positive vision for CAT with less attention placed on fiscal constraints (**Metric 4**). In essence, it would be what CAT could achieve if provided greater funding. Emphasis would be on latent demand and potential ridership consisting mainly of individuals that have a car available (i.e., choice riders). A TDP development process can also reveal service changes that enhance efficiency, effectiveness and services quality. Technical documents regarding TDPs may be found on the Transit Cooperative Research Program 9TCRP) at www.TRB.org.

This review suggests that CAT can take a more active role in shaping its mid-term future. Looking within the five year planning horizon, there are three major planning issues that require attention. The first is the downtown transfer terminal, at 2nd and Market Streets, which is unable to accommodate more buses, particularly with new longer buses. This facility was constructed some time ago and the analysis would address changes to the current facility,

location and size of new terminal and realignment of downtown bus routes. Second, the overall network design, including new suburban hubs and the West Shore routes and utilization of the “CAT Bridge” for BRT service are all topics worthy of examination. Third, emerging markets (e.g., upper Dauphin County) which can attract choice riders through park-ride service should be considered in the planning exercise. More than a decade has passed since the last major service change.

The long term planning activities are currently assumed by TCRPC as the MPO staff and the MTP which has led the feasibility studies for new rail service. CAT’s current coordination role seems appropriate; however, the process should consider different levels of transit service in terms of modes, coverage and level of service (**Metric 5**).

Data Inputs

Many of the comments made regarding data input for scheduling are appropriate for the planning function. CAT utilizes the ridership data available from registering fare boxes, which provide boardings by bus trip and permits route assessments in terms of passengers per revenue hour and passengers by bus trip. The focus with both metrics is to better understand route usage and ridership changes over time. As noted with scheduling, data collection is limited and oriented to problems as they arise and complying with gathering ridership reporting for the National Transit Database submission (**Metric 6**). The limited information is obtained manually by the field personnel consisting of a part-time checker, drivers on light duty and the Transportation Service Coordinator. Reliance on automated data collection equipment and technology, such as Automatic Vehicle Locator (AVL) and Automatic Passenger Counters (APC) systems, can provide the rich data base to support the planning and scheduling functions.

The CAT approach to solicit comments and suggestions from operating personnel is excellent (**Metric 7**). The Transportation Service Coordinator and the Assistant Executive Director – Bus Operations are available every morning to obtain comments from drivers during the report period. Drivers’ suggestions are typically constructive and have proven invaluable in developing immediate action service changes.

CAT’s conduct and utilization of surveys typically is limited to addressing specific complaints or problems. Several years have passed since the last comprehensive rider survey and there is a need for such a survey in the not-too-distant future. The survey would identify travel patterns, rider characteristics and improvement preferences. Non-user surveys, such as focus groups and household queries, are not part of the planning process. CAT staff attempt to keep track of new developments and changes in the region. A quantitative approach to understand the service area through GIS is not used by CAT staff since they lack the necessary software and expertise. This is possibly an area where TCRPC and HATS could be of assistance, particularly when the results of the 2010 U.S. Census become available.

The discussion above indicates the need for increased data collection and the use of technology to support ongoing efforts in an economical manner. The noted planning activities should proceed without waiting for technology improvements. In addition, information from others will be required which would suggest that CAT prepare a data management plan.

Service Standards

Also related to planning is the need for a formal written service standards policy which guides the assessment of current service and provide a basis to gauge new route proposals (**Metric 8**). The standards should include about a dozen guidelines that relate to the operator, rider and the broader community that supports the system. The standards are often grouped in terms of coverage (i.e., x% of urban area population within 1/4 mile of a fixed route, service span criteria), patron convenience (i.e., headways by time of day and day of week), agency fiscal condition (i.e., cost per passenger, cost per revenue vehicle hour, cost per revenue vehicle mile, local subsidy provided for) and patron comfort (i.e., loading standard, peak load, expected maximum standee time). These may differ by peak v. base period, day of week, night vs. day time periods, etc. as applicable to the services currently provided or those contemplated for the future. The service standards policy is a key input to the data management plan, since it indicates what information is required from routine record keeping, external data sources and surveys.

Route Level Performance Evaluation

Currently, route performance is based on passengers per revenue hour or riders on each bus trip. These values are important metrics and should continue to be used and provided to staff and Board members for their consideration. This process should be expanded to include financial measures, such as farebox recovery, cost per passenger, deficit and subsidy per passenger (**Metric 9**). A suggested approach is to develop a three-variable cost model and apply it to each route. The other operating, passenger and financial data by route can be obtained from the current reporting system with little additional effort.

Other possible route level measures include boardings per route mile and boardings per hour, calculated separately for peak and base periods for both weekdays and weekend days.

Challenges

- Insufficient ridership and survey information to support planning function.
- Lack of written, comprehensive, objective set of service standards to guide the planning process and development of improvement proposals.
- Prepare a TDP and identify, quantify, and explore the service issues that CAT will face over the next decade.
- Capacity constraints of the current downtown terminal due to vehicle-type changes.

Opportunities

- Short range planning process is proactive and this level of involvement needs to be carried into the five year planning horizon.
- Intimate knowledge of service area and prior planning efforts and service changes.
- Well established relationships among staff could easily expand into a service development committee.
- Build off of recent mid and long range plan activities and reports of TCRPC and HATS.

- Close working relationship with other agencies that influence planning and funding issues in the region.

Recommended Actions

- Restore the position of Planning Director and create a service development committee.
- Develop formal service standards for planning functions.
- In conjunction with scheduling, develop a data management plan that utilizes technology (i.e., AVL and APC) to obtain ridership and running time information.
- Expand on current route level evaluation to include financial measures.
- Prepare a TDP that addresses issues facing CAT over the next several years and establishes a proactive vision of what transit can be in the region.
- Continue participation in long range planning activities and assure testing of different levels of transit service and investment.

KEY FINDINGS AND RECOMMENDATIONS

Approximately 100 performance indicators and trends have been summarized in this document across 15 different subject areas organized into the four major functional areas of governance, management & administration, service delivery, and service enhancement. The findings and recommendations that follow summarize the apparent themes applicable in one or more functional areas. The following is a list of specific recommendations based on the performance review of Capital Area Transit (CAT) fixed route bus services, conducted in January 2010. Findings and recommendations are classified as either “best practices” or opportunities for improvement.

BEST PRACTICES

Best practices are those findings that have the potential to improve efficiency, effectiveness and quality of services provided. Five practices at CAT have been identified as candidates for “best practice”. These practices have potential transferability to other transit agencies in the Commonwealth:

- **Insurance Cost Savings** - CAT management have reported a 25% savings in employee insurance benefit costs due to an innovative set of programs intended to provide comparable coverage and a range of benefits. The innovative approach to insurance has saved the agency approximately \$1.8 million from its inception in 2005 through CAT FY 2008. The program was implemented with little to no resistance from employees or management staff.
- **Operator Improvement Program** - CAT operates a state-of the-art simulator for driver training. Rather than just using this for routine training alone, simulations are tailored to find individual driver weaknesses and strengths, and potentially trends across the driver pool. Simulator experiences are focused on improving driver-specific skills. This creates an efficient means to improve safety and to reduce long-term potential liability costs.
- **Coordination of Operator Training Resources** - CAT has plans to share its driver training simulator with nearby transit agencies. This pooling of resources should benefit other agencies in the region, increase safety beyond the Dauphin/Cumberland county area and maximize the return on the investment in the simulator for both CAT and the Commonwealth.
- **Operator Outreach** - CAT’s Assistant Director of Operations has developed an outreach program to proactively solicit input from bus drivers. Each morning he spends time in the driver’s break room and speaks with drivers about issues, concerns, etc. This has the benefit of providing drivers a direct input to management.
- **Service Coordination Outreach** - CAT’s Transportation Service Coordinator has a process where he proactively speaks with staff in all departments of the agency to identify potential service improvements. This process is intended to identify opportunities and weaknesses regarding possible and proposed service changes across the broad spectrum of operations, maintenance and management perspectives. This approach serves as a two-way communication where service planning is sensitive to the issues

that confront service delivery while informing staff of the rationale for suggested changes.

IMPROVEMENT OPPORTUNITIES

Improvement opportunities have been identified that, if implemented, have the potential to improve the efficiency, effectiveness and quality of services provided by CAT. Some opportunities are under CAT's control while others will require proactive action of others.

- **Establish Metrics and Quality Control Procedures/Protocols for Key Agency Functions** - Several key functions of CAT do not include well-documented quality control metrics, procedures and reporting mechanisms commonly found at similar agencies as an accepted or good practice.
 - **Customer Service** - Tracking individual complaints and compliments and response time, and compiling a monthly summary report would provide good measures of how well service is being delivered and perceived. Regularly conducting customer satisfaction surveys and tracking trends are also useful tools in assessing customer service.
 - **Human Resources** - Handbooks and procedural guides for all agency functional staff types clarify roles, responsibilities and expectations, and enhance the likelihood of successful succession planning. Conducting annual employee performance reviews (non-represented personnel) further clarifies performance expectations and provides a valuable vehicle for communication between staff and management.
 - **Federal & State Reporting and Grants Management** - CAT has experienced difficulties with meeting grants management and federal documentation requirements. This has been exacerbated by a lack of written procedures, incomplete documentation in files, and insufficient quality control procedures. Procedure manuals are needed in each of these areas, and the manuals will need to be continually updated to reflect changes to federal and state requirements. Implementing rigorous quality control and follow-through processes to ensure documentation and paperwork are filed correctly in a timely manner and that full and accurate CAT records are maintained will reduce the amount of rework necessary to meet federal and state requirements
 - **Inventory Management and Control** - The Transportation Research Board's (TRB) publication "*Inventory Management in a Maintenance Environment*" provides guidance on performance metrics for inventory control. A set of metrics that follow this guidance and are tailored to CAT's needs can reduce parts storage space requirements and improve cash flow for the agency.
 - **Scheduling** - Metrics such as pay/platform ratio and Extra Board size measure the effectiveness of various scheduling alternatives, and are used to improve efficiency in operations, the largest single operating expense category.
 - **Schedule Adherence** - Tracking schedule adherence to an adopted standard (i.e., 95% of trips operate within the parameters of 0 minutes early and 5 minutes

late) provides data that is used to support customer satisfaction, reduced driver frustration levels, safety, and schedule refinement and creation actions.

- **Marketing** - With limited resources and a changing marketplace, it is important to set forth performance metrics for marketing efforts. Questions such as how well CAT serves current markets, what other markets might be emerging and what are the most effective means to reach those markets should be quantified on a regular basis, and the results shared across marketing, customer relations, planning and operations and maintenance departments.
- **Service Planning** - While CAT is focused and performs well on short term service planning, it is not guided by adopted performance standards and other criteria.

Service planning benefits from a clear set of goals and objectives for the new services and the fixed route services in aggregate. Clear and objective performance criteria, used in both the service planning and evaluation processes, would enable CAT to increase the objective and subjective data regarding each potential change. The nature and extent of the information would assist the Board and public in assessing the proposed service changes.

- **Develop and Implement Documented (Written) Medium and Long-Range (Strategic) Plans for Specific Agency Functions** - Many of CAT's staff members have experience with other agencies and recognize the importance of well-coordinated plans and strategies to advance CAT's service and sustained ability to deliver services. Strategic plans should address the following:
 - **Medium Term Service Planning** – An analytical framework for identifying, analyzing and planning service changes within a 5 year horizon would better allow CAT to plan for and implement service changes and improvements that continually adapt to the evolving environment in which it operates. This process is referred to as the *Transit Development Plan (TDP)*, for which documented procedures exist in the literature. CAT, in combination with HATS, has taken some steps in this regard with the Draft *CAT Service Study*, but this constitutes the beginning steps of a full TDP. A TDP is generally conducted on 5-10 year intervals.
 - **Capital Facilities** - Changes in vehicle fleet size, composition and technology introduces the need to make sure capital facilities can accommodate and support the new fleet. CAT staff members have noted several deficiencies in the Harrisburg Market Square Transfer Center at 2nd and Market Streets and the 90 year old Cameron Street maintenance/storage/administrative facility. Several needs likely need met prior to the arrival of buses now on-order. These types of facilities are costly and have a very long life. Planning for their ongoing maintenance, any necessary upgrade or rehabilitation, and eventual replacement should be incorporated into a strategic plan that considers needs, opportunities, constraints and community impacts of various alternatives.
 - **Communications Systems** - CAT currently has multiple areas outside the current reach of the radio system. A plan to improve and maintain an upgraded or new communications system is necessary, as is its potential integration with other

- technologies and systems- in particular farebox; automated passenger counters (APC); and automated vehicle location (AVL) systems.
- **Information Technology** - In-vehicle and information technology is evolving. All the agency's systems need to work together to provide for an efficient delivery of information that supports system efficiency, effectiveness, and high-quality customer service. An inventory and assessment of all key systems, their deficiencies and strengths, ways to integrate systems and port information among systems would be addressed in this plan.
 - **Data Management** - Many performance review functions rely on data available to CAT. Almost every department (including management) would benefit from information available in others. A data management plan would address what data are available in each section, how those data might be integrated for decision making or customer service purposes, and identify any critical gaps that can be filled as part of other strategic planning efforts.
 - **Marketing** - Like Information Technology, the conduct of effective marketing efforts is rapidly changing and will continue to change. As the citizens of the region become more technology savvy, the most effective ways to reach and communicate with current and prospective users are changing. Changing demographics and land uses introduce opportunities for new markets that should be evaluated as part of a strategic marketing plan.
 - **Scheduling** – Fully documenting the entire existing (manual) scheduling processes, now vested in essentially one individual, is necessary to ensure continuity and provide a basis for examining alternate methods. Automation would provide additional management tools and potentially reduce costs.
 - **Fill All Governing Board Seats and Maintain Full Board** - While CAT has little direct control over Board appointments, achieving and maintaining complete representation is important to CAT's direction, standing in the community and local funding opportunities.
 - **Complete Inter-local Funding Agreements** - CAT's local inter-governmental funding agreements are due to expire at the end of 2011. Completing these negotiations quickly will help remove uncertainties associated with local funding commitments.
 - **Develop a Succession Plan for All Key Staff Positions** - CAT has been challenged by the retirement of staff performing key functions. That challenge will continue as staff members leave the agency for a variety of reasons and new staff are introduced, for whom well-documented procedures or guidance on how to successfully complete a task is in process or does not currently exist. Complicating this is the practice of beginning the recruitment process only after a position has been vacated. This practice eliminates the opportunity for training new staff in the nuances of a position's requirements.
 - **Implement Staff Training Programs and Process Manuals for all Functional Areas** - Well-trained staff versed on the latest trends and practices in areas under their responsibility can avert rework and advance their area of responsibility to "best practice." Staff training may be informal (such as attending conferences) or formal (NTD reporting courses) depending on particular needs. This is linked to the below recommendations regarding procedures documentation.

- **Automate Key Functions** - Automation of key functions can realize long-term cost savings and provides a mechanism to establish standardized processes, enhance quality control, monitor performance and to “fine tune” service delivery over time. Areas where automation could improve CAT’s efficiency include:
 - **Timesheet and Payroll Management** - Currently this is a manual process for bus drivers and other employees. Automation would increase accuracy and free finance personnel for other activities.
 - **Scheduling and Block/Run Cutting** - This process is currently managed by one key staff person and is a time consuming and laborious manual effort. Identifying an automated method that best meets CAT’s needs will increase efficiency in operations, and allow rapid and objective evaluation of alternative scheduling schemes and work rules and policies. Finally, automation allows multiple personnel to learn and efficiently use the system, providing enhanced continuity in this function.
 - **Fuel and Oil Dispensing Systems** - Currently this is a manual process that consumes staff time and may not accurately track consumption by vehicle. Automation provides a direct link to performance-related reports that would be expected to reduce maintenance costs and better account for valuable consumables.
 - **Customer Information/Vehicle Tracking** - Web-based customer information systems that provide real-time vehicle location and schedule information would save substantial time and effort spent by dispatch personnel answering questions, and improve perceived and likely the actual quality of service. It would also allow for more accurate run-time estimates for schedule optimization purposes, and provision of real-time information to the public via signage, text messages, and automated telephone information. The systems that would be appropriate, timing of integration, and reasoning for decisions should be identified as part of a master IT plan development process.
 - **Inventory Control-** Parts management and record keeping relies heavily on manual processes. Automated processes would reduce staff time requirements, better secure the parts inventory, enhance performance monitoring, reduce cash flow needs, and provide management with better information to evaluate future parts expenditures.

SPECIFIC RECOMMENDATIONS

A matrix of recommendations has been assembled in **Exhibit 19** to help CAT obtain improved effectiveness and efficiency assessments for the Act 44 metrics in subsequent performance reviews. How these recommendations would affect variables used in the Act 44 analysis is shown in the column “Area”:

- Pass- Increase passengers
- Rev- Increase operating revenues
- Cost- Reduce operating costs
- Svc- Optimize revenue miles
- All- Impacts all four metrics

The likely impacts of the recommendations are classified based on their expected return to the Area in the “Impact” column:

- High- The recommendation would have a significant positive impact on the Act 44 performance metric.
- Moderate- The recommendation would likely contribute noticeably to the Act 44 performance metric.
- Low- The recommendation would likely have a small impact on the Act 44 performance metric.

Exhibit 19. Summary of Specific Recommendations

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
Governance						
1	Governance and structure meet changing needs and equitably represents its customers.	✓	→	All	High	No changes suggested under current service plans and proposed service additions.
2	Meets community public transit needs.	✓	→	All	High	No changes suggested under current service plans and proposed service additions.
3	Full governing board membership.	✗	↗	All	High	Authority members need to fill vacant Board seats, make appointments for expired Board terms, and maintain full Board membership.
4	Achieves strategic goals.	✗	→	All	High	Provide/update Mission and Vision Statements for CAT, with commensurate goals and objectives.
5	Working relationship among Board members.	+	→	All	Moderate	Maintain working relationships.
6	Public opinion of Board and transit system.	✓	↗	All	High	Maintain and monitor public opinion.
7	Working relationship with Executive Director and other agency staff.	+	→	All	High	Maintain good working relationship with Executive Director.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
Advisory Committees						
1	The number and types of advisory boards are appropriate for an agency of this size.	✓	→	All	Low-Moderate	Maintain active advisory board.
2	Advisory committees provide opportunity for citizen input.	✓	→	All	Moderate	Continue to broaden Citizen Advisory Committee to proactively address fixed route services in addition to providing input on demand response services.
Management						
1	Organizational structure appropriate for size of agency.	✓	→	All	High	Maintain, consistent with staffing and H.R. recommendations.
2	All key management positions currently filled.	✓	→	All	High	Maintain. Provide ongoing training and cross-training among personnel to ensure continuity for short or long term absences, and personnel Departures.
3	Relationship with Governing Body.	✓	→	All	High	Maintain good relationships.
4	Provides regular performance reporting to oversight board.	✓	→		High	Maintain approach to provide regular performance reports to board.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
5	Employs strategic policies, goals and objectives.	✘	→	All	High	Draft a strategic plan for Board review and adoption, with commensurate goals and objectives; implement with appropriate performance metrics, which will be reviewed by management and the Board on a monthly or quarterly basis as appropriate. Assemble a master list of projects (i.e., needs) ranked in terms of priorities. Distinguish projects on the basis of available funding and identify those projects that could move forward with additional funding such as was the case with stimulus funding. Prepare a more detailed description of what is required to provide passenger amenities in downtown Harrisburg and afford an efficient operating/ maintenance base.
6	Employs, monitors, and uses written performance standards for all major agency functions.	✘	→	All	High	Create and actively use performance metrics for all major management functions. Monitor and report periodically to staff and Board.
7	Actively promotes and achieves interagency coordination.	✓	→	All	Moderate	Obtain assistance to resolve outstanding federal and state compliance and grant accounting issues.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
8	Timely satisfaction of all federal and state reporting requirements.	✘	→	All	Moderate	Create and implement internal management procedures and systems that monitor all federal and state requirements, required revisions to existing items, new requirements, submittal dates, and other relevant factors and implement a quality control system to ensure ongoing compliance.
9	Has and follows a written quality control plan for key functions.	✘	→	All	Moderate - High	Create and implement internal management procedures and systems that monitor all federal and state requirements, required revisions to existing items, new requirements, submittal dates, and other relevant factors and implement a quality control system to ensure ongoing compliance.
10	Has a succession plan in place for all key positions.	✘	↗	All	Moderate	Provide ongoing training and cross-training among management personnel to help ensure continuity for short or long term absences, and personnel departures.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
Human Resources						
1	Retain stable work force.	✓	→	Cost	Moderate	Support quick establishment of a human resources function managed by a professional. Reinstigate performance reviews for non-represented personnel. Consider addressing the issue of hiring protocols in maintenance department.
2	Recruit qualified employees promptly as vacancies occur.	✗	→	Cost	Moderate	Allow recruiting and hiring for a position to begin when the incumbent formally announces his or her departure. Conduct a cost-benefit analysis of supervisor compensation to attract the most qualified candidates (Operations).
3	Provide training focused on job performance.	✓	→	Cost	Low - Moderate	Develop Operations Manual for bus operators and Handbook for maintenance employees.
4	Manage the cost of employee benefits.	+	↗	Cost	High	Maintain pro-active approach.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
5	Manage labor relations effectively.	✓	↗	Cost	High	Maintain new approaches developed over the past several years. In subsequent labor negotiations, pursue a provision to allow more bus operators to take vacation during the summer months in exchange for the ability to hire more part-time seasonal operators to address Hershey Park service and vacation peaks (Operations).
Finance						
1	Provides realistic annual budgets.	✓	→	Cost, Rev	High	Maintain current approach and transition to Assist. Exec. Dir. For Administration as leader of this activity.
2	Accurately records and reports financial transactions.	✓	→	Cost, Rev	High	Conduct systems integration study to determine the best way to integrate accounting and financial management software with other systems in CAT.
3	Manages state/federal grants efficiently to meet government requirements.	✗	↗	Rev	High	Develop an action plan with PennDOT to resolve the grant administration problems with older PennDOT grants. Outside assistance should be considered to expedite resolution.
4	Analyzes and manages cash flow.	✓	↗	Cost, Rev	Moderate	Continue efforts to obtain better terms for short-term cash loans.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
5	Uses reasonable approach for handling passenger revenues.	✓	→	Rev	Low	Hire a qualified statistician (required by NTD) to develop a sampling plan for estimating passenger mile data for NTD reporting using farebox data.
Procurement						
1	Use of computerized parts management system.	✓	↗	Cost	Moderate	Despite the use of parts recordkeeping software, the parts inventory function still relies heavily on manual analysis and knowledge of specific employees. CAT should investigate the report generation capabilities of Fleet-Net® to determine if more automated analyses could be performed.
2	Automated analysis and identification of procurement needs.	✘	→	Cost	Moderate	Same as Metric 1.
3	Use of technology in parts inventory control.	✓	↗	Cost	Moderate	Same as Metric 1. Increase the threshold at which a bid process is required to the maximum allowed under state and federal regulations.
4	Established procedures for verifying inventory figures.	✓	↗	Cost	Moderate	Pursue more automated procedures for determining if mechanics have scanned parts out of inventory.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
5	Record and measure inventory function performance.	✘	→	Cost	Moderate	<p>Establish performance metrics for the parts inventory function and develop procedures for collecting and reporting the data needed to determine performance. CAT can refer to the Transportation Research Board's publication <i>Inventory Management in a Maintenance Environment</i> for guidance on applicable metrics and methodologies for determining performance. Increase the threshold at which a bid process is required to the maximum allowed under state and federal regulations.</p> <p>Acquire an inventory management system suitable for capital (non-rolling stock) assets (IT).</p>
Operations						
1	Service is operated in accordance with published schedules.	+	→	Pass	High	<p>Establish standards consistent with industry practice for on-time performance. Complete and adopt "<i>Operating Procedures Manual</i>." Pursue automated data collection and incorporate data in to Operations decision making.</p>

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
2	Revenue hours per transportation employee.	✘	→	Cost	High	Pursue greater use of technology in the Operations function to automate tasks such as daily manpower management and payroll. Establish targets and proportional metrics for key cost drivers, such as unscheduled overtime pay, and develop response strategies for when performance is outside of acceptable parameters.
3	Track key cost drivers such as unscheduled overtime pay and other premium pay categories.	✓	→	Cost	High	Same as Metric 2. Pursue labor contract terms to address the absent without pay policy.
4	Track and report on-time performance vs. standard.	✘	→	All	High	Establish standards consistent with industry practice for on-time performance.
5	Track and analyze service related customer feedback by category.	✘	→	Pass, Rev	Moderate	Tabulate service-related customer service feedback by category to measure performance trends.
Maintenance						
1	Adequacy of maintenance facilities.	✘	↘	Cost	High	Develop a Master Plan for the maintenance facility to meet the current and future needs of the system.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
2	Use of computerized fleet maintenance recordkeeping.	✓	↗	Cost	Moderate	Pursue greater use of technology in the maintenance function to automate such tasks as recording of fuel and fluids consumption data. Pursue procedures for direct use of Fleet – Net® by mechanics and service line employees.
3	Automated analysis and identification of trends, performance and maintenance issues.	✘	↗	Cost	High	Investigate the report generation capabilities of Fleet-Net® to determine if more automated analyses could be performed. Despite the use of maintenance recordkeeping software, the maintenance function still relies heavily on manual analysis and the knowledge of long term employees. Pursue greater use of technology in the maintenance function to automate such tasks as the recording of fuel and fluids consumption data.
4	Adopted vehicle maintenance plan and preventive maintenance schedules/checklists.	✓	↗	Cost	High	Enter warranty information into Fleet-Net® and pursue automated notifications.
5	Preventive maintenance on-time performance.	✓	→	Cost	High	Metric 4. Adopt updated target rates for miles per major road call and make more extensive use of trend analysis to identify strategies to improve performance.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
6	Maintenance performance in terms of miles per major road call.	✓	→	Cost	High	Metrics 4 and 5. Continue to monitor staff training needs and work with PPTA and local technical colleges to develop necessary courses and curricula.
Scheduling						
1	Understanding of scheduling process.	+	→	All	High	Maintain current knowledge base. Continue to broaden through efforts to training another individual in scheduling.
2	Depth of staff to conduct scheduling function.	✗	↗	All	High	Continue efforts to train another individual in scheduling.
3	Production of vehicle and driver assignments in a timely manner.	+	↗	Cost	Moderate	Maintain. Investigate and develop strategies to improve performance in terms of annual revenue hours per transportation employee (Operations).
4	Data base to support scheduling function.	✗	→	Pass, Rev	Moderate - High	In conjunction with planning, develop a data management plan that utilizes technology (i.e., APC and AVL) to obtain ridership and running time information.
5	Input from operating personnel.	+	↗	All	High	Maintain. Involve scheduler in labor negotiations.
6	Performance measures to gauge output of schedule process.	✗	→	Cost, Svc	High	Specify metrics, such as Pay/Platform Ratio to gauge the adequacy and success of the scheduling process.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
7	Scheduling as an analytical tool.	✘	→	Cost, Svc	High	Utilize spreadsheet or specific transit scheduling software to evaluate different scheduling strategies (e.g., use of part-time operators and extent of open work) and terms of the collective bargaining agreement with a “what if” approach. Continue user of schedule maker in establishing the Extra Board size, with greater reliance on statistical approach that balances paid guarantee and unscheduled overtime to minimize costs associated with driver’s compensation.
8	Utilization of computers.	✘	→	Cost, Svc	Moderate - High	Automate the schedule process, with near term action being use of spreadsheets to manipulate and summarize scheduling data and output, with a subsequent purchase of schedule software. Involve scheduler in labor negotiations.
Safety & Security						
1	Track and report accidents by type.	✓	→	Cost	Moderate	Address the apparent poor reporting to the National Transit Database of passenger slips and falls.
2	Require operators to use consistent and comprehensive procedures for reporting accidents/incidents.	+	→	Cost	Low	Maintain. Pursue program of providing tailored refresher training for all bus operators.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
3	Provide comprehensive new operator and refresher training.	✓	↗	All	Moderate	Pursue program of providing tailored refresher training for all bus operators. Examine and revise, as appropriate, vehicle operating procedures within operating facility, with emphasis on accident reduction (i.e., mirrors).
4	Develop and maintain System Security and Emergency Preparedness Plans.	✓	↗	All	High	Increase efforts to coordinate with local emergency responders in the greater Harrisburg area.
Customer Service						
1	Number of Staff Responsible for Customer Service.	✓	→	Pass, Cost	High	Maintain customer service staffing levels.
2	Automated Customer Notifications.	✓	→	Pass, Rev	High	Maintain. Improve when technology (i.e., AVL, etc.) becomes available.
2	Understanding of Staff Roles in Customer Service.	✓	↗	Pass	Moderate	Maintain clear roles in customer service.
3	Personal Follow Up Protocols for Complaints and Compliments.	✓	→	Pass	Moderate	Maintain personal follow up approach to customer service.
4	Clear Customer Service Protocols (tracking, response, timeliness, satisfaction).	✗	→	Pass, Rev	High	Establish protocols and procedures to track customer service interactions and resolutions. Establish a follow through process to ensure customer's issues have been resolved.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
5	Regular Monitoring of Customer Service Satisfaction.	✘	→	Pass	High	Implement periodic customer satisfaction surveys and integrate results into service planning, operations, personnel evaluation, and marketing activities. Track and report monthly complaints/compliments to Executive Director.
6	Customer Service Quality Improvement Plan.	✘	→	Pass	High	Implement periodic customer satisfaction surveys and integrate results into service planning, operations, personnel evaluation, and marketing activities.
Information Technology						
1	Number of Staff Responsible for Information Technology.	✓	→	Cost	Moderate	Maintain number of staff dedicated to IT.
2	Appropriate use of Outsourcing for IT Needs.	✓	→	Cost	High	Maintain approach to outsourcing when appropriate.
3	Adequacy of In-House Network and Computer Technology.	✓	→	Cost	Moderate	Maintain in-house computer technology investment.
4	Adequacy of Radio and Communications Systems.	✘	→	Cost	Moderate	Begin development of a master IT plan that incorporates changes in on-vehicle technology and web-based customer service as well as resolves communication difficulties. Continue pursuit of cost effective interim adjustments (i.e., to farebox software) pending completion of a full IT plan.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
5	Use of APC Technology.	✘	↗	Cost, Pass	High	Begin development of a master IT plan that incorporates changes in on-vehicle technology and web-based customer service as well as resolves communication difficulties. Continue pursuit of cost effective interim adjustments (i.e., to farebox software) pending completion of a full IT plan.
6	Use of AVL Technology.	✘	↗	Pass, Cost	High	Begin development of a master IT plan that incorporates changes in on-vehicle technology and web-based customer service as well as resolves communication difficulties. Continue pursuit of cost effective interim adjustments (i.e., to farebox software) pending completion of a full IT plan.
7	Run Cutting and Scheduling Software.	✘	→	Pass, Cost	High	Begin development of a master IT plan that incorporates changes in on-vehicle technology and web-based customer service as well as resolves communication difficulties. Continue pursuit of cost effective interim adjustments (i.e., to farebox software) pending completion of a full IT plan.
8	IT Disaster Recovery Plan	✓	→	All	Low	Maintain and adapt per IT plan.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
Capital Programming						
1	Staff to lead capital programming.	✘	→	Pass, Svc	Moderate - High	The proposed position of Planning Director should be assigned the responsibility of preparing the capital program in close consultation with the Executive Director.
2	Relationship and coordination with external agencies.	+	→	All	Moderate	Maintain and extend into capital programming.
3	TIP as initial list of all capital needs (fiscally constrained).	✓	↗	Svc	High	Maintain current TIP development process.
4	Unconstrained, prioritized capital needs strategic plan.	✘	↗	Pass, Svc	High	Assemble a master list of projects (i.e., needs) ranked in terms of priorities. Distinguish projects on the basis of available funding and identify those projects that could move forward with additional funding such as was the case with stimulus funding. Prepare a more detailed description s of what is required to provide passenger amenities in downtown Harrisburg and afford an efficient operating/ maintenance base.
Marketing & Public Relations						
1	Thorough understanding of current customer base.	✘	→	Pass	High	Regularly conduct analysis of ridership patterns and market segments in a cost-effective manner. Develop, implement and monitor the effectiveness of plans to increase CAT's share of its current customer base.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
2	Effective use of targeted marketing and educational materials for special populations such as disabled populations, non-English speaking populations, etc.	✘	→	Pass	High	Develop materials to promote services and to educate special customer markets (disabled, non-English speaking, etc.).
3	Effective use of marketing approaches to expand market share with current clientele.	✓	↗	Pass, Rev, Cost	High	Continue efforts to increase visibility of CAT as a commuter option. Continue pursuit of U-Pass and other tailored marketing arrangements to regionally significant potential customer bases, consistent with recommendations of Fare Study.
4	Clear procedures to identify and assess potential (new) markets.	✓	→	Pass, Rev	High	Continue to pursue inter-county marketing opportunities and service provision. Implement processes to measure the effectiveness of marketing expenditures and report findings at least quarterly to management.
5	Visibility in the community.	✓	↗	Pass	Moderate	Identify innovative ways to increase market share in areas where CAT competes well against other transportation modes. Establish an aggressive protocol to regularly monitor and/or improve public relations with local officials, the public and oversight/funding agencies.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
6	Positive image with local community and elected officials.	✓	↗	All	Moderate	Establish an aggressive protocol to regularly monitor and/or improve public relations with local officials, the public and oversight/funding agencies.
7	Positive image with state and federal agency's review agencies.	✗	→	Rev	Moderate	Establish an aggressive protocol to regularly monitor and/or improve public relations with local officials, the public and oversight/funding agencies.
8	Awards and Accolades.	✗	→	Pass	Low	Pursue opportunities for industry recognition of CAT "best practices" that can result in awards and accolades to be advertised in marketing and public relations campaigns.
Planning						
1	Relationships and coordination with local planning agencies.	✓	→	Rev, Cost	Moderate	Maintain and expand as appropriate.
2	Employs proactive approach to short range planning.	+	↗	All	High	Maintain short-range planning considerations and approach.
3	Employs proactive approach to mid-range planning.	✗	→	All	High	Prepare a TDP that addresses issues facing CAT over the next several years and establishes a proactive vision of what transit can be in the region.
4	Positive vision for what transit could be.	✗	→	Pass, Rev	High	Prepare a TDP that addresses issues facing CAT over the next several years and establishes a proactive vision of what transit can be in the region.

Metric #	Description	Performance		Act 44 Measures		Recommendations
		Finding	Trend	Area	Impact	
5	Employs proactive approach to long-range planning.	✓	→	All	Moderate	Continue participation in long range planning activities and assure testing of different levels of transit service and investment.
6	Uses empirical data used to support planning functions.	✘	→	All	High	Expand on current route level evaluation to include financial measures.
7	Provides opportunities for input from operating personnel.	+	↗	All	High	Restore the position of Planning Director and create a service development committee. In conjunction with scheduling, develop a data management plan that utilizes technology (i.e., AVL, APC) to obtain ridership and running time information.
8	Service standards used to assess current service and to gauge new route proposals.	✘	→	All	High	Develop formal service standards for planning functions.
9	Performance measures used to assess route performance.	✓	→	All	High	Expand on current route level evaluation to include financial measures. Develop formal service standards for planning functions.

Legend for Symbols:

Finding

- +** Above Average
- ✓** Average
- ✘** Below Average

Trend

- ↗** Improving
- Little net change
- ↘** Worsening

Appendix A. System Selection Evaluation Worksheet

Percent Difference from CAT based on NTD Reported 2008 Motor Bus Statistics		CITY	ST	Rev. Hrs	Rev. Mi.	Pk. Veh.	Svc. Area Pop.	Avg. % Diff. From CAT	Short-listed	Selected	Notes & Other Considerations
Potential Peer System	Percent Difference										
Berks Area Reading Transportation Authority	PA	Reading	PA	8.3%	13.0%	40.8%	9.9%	18.0%	*	*	Recommended as Peer
Erie Metropolitan Transit Authority	PA	Erie	PA	3.3%	4.5%	18.3%	54.2%	20.1%	*	*	Recommended as Peer
Gold Coast Transit	CA	Oxnard	CA	3.7%	8.8%	45.1%	13.0%	17.7%			Delete - Climate, unique CA regs
Anelope Valley Transit Authority	CA	Lancaster	CA	9.9%	43.9%	19.7%	7.6%	20.3%			Climate, unique CA regs
Worcester Regional Transit Authority	MA	Worcester	MA	0.7%	9.8%	45.1%	26.6%	20.5%	*	*	Prior Peer from 2002 Act 3 audit. Recommended as Peer
Merrimack Valley Regional Transit Authority	MA	Haverhill	MA	9.2%	13.3%	33.8%	26.1%	20.6%	*	*	Recommended as Peer
Lehigh and Northampton Transportation Authority	PA	Allentown	PA	32.7%	36.3%	8.5%	6.2%	20.9%	*	*	Identified as a Potential Peer but dropped based on interagency consultation
Wichita Transit	KS	Wichita	KS	23.0%	8.2%	46.5%	6.9%	21.1%	*	*	Prior Peer from 2002 Act 3 audit. Recommended as Peer
Capital Area Transit System	LA	Baton Rouge	LA	16.2%	34.2%	31.0%	3.8%	21.3%			State Capitol - data likely skewed from Hurricane Katrina related population influx
Sonoma County Transit	CA	Santa Rosa	CA	31.0%	1.3%	42.3%	16.2%	22.7%			Peer match due to climate and unique CA regs
Greater Peoria Mass Transit District	IL	Peoria	IL	2.9%	5.6%	33.8%	49.9%	23.0%	*	*	Recommended as Peer
City Transit Management Company, Inc.	TX	Lubbock	TX	8.3%	9.5%	22.5%	51.9%	23.1%			Potential climate issues. Texas Tech is major school located here.
City of Gardena Transportation Department	CA	Gardena	CA	15.4%	5.8%	42.3%	30.7%	23.5%			Peer match due to climate and unique CA regs
City of Tallahassee	FL	Tallahassee	FL	16.7%	7.3%	11.3%	60.9%	24.0%			State Capitol, but major University (Florida State University)
Gwinnett County Board of Commissioners	GA	Lawrenceville	GA	4.7%	51.5%	1.4%	40.6%	24.5%			Primarily long distance commuter service into Atlanta
Modesto Area Express	CA	Modesto	CA	1.1%	1.5%	45.1%	51.0%	24.7%			Peer match due to climate and unique CA regs
Kitsap Transit	WA	Bremerton	WA	3.3%	36.6%	16.9%	42.8%	24.9%			Not comparable due to issues with speed and number of miles operated
Whatcom Transportation Authority	PA	Bellingham	WA	3.0%	9.4%	33.8%	54.7%	25.2%	*	*	Recommended as Peer
South Bend Public Transportation Corporation	IN	South Bend	IN	7.4%	1.2%	31.0%	62.8%	25.6%			Peer match as major university present and substantial difference in service
Metropolitan Tulsa Transit Authority	OK	Tulsa	OK	16.6%	50.1%	19.7%	17.4%	26.0%	*	*	Recommended as Peer
Des Moines Area Regional Transit Authority	IA	Des Moines	IA	28.5%	33.3%	32.4%	11.0%	26.3%			State Capitol, peer in 2002 Act 3 audit. Significant difference in service supplied
Livermore / Amador Valley Transit Authority	CA	Livermore	CA	1.8%	14.1%	33.8%	59.7%	27.3%			Peer match due to climate and unique CA regs
Duluth Transit Authority	IN	Duluth	IN	2.7%	1.6%	35.2%	70.3%	27.5%			Peer match due to climate issues, and UM Duluth w/ ties to transit agency
Greater Lafayette Public Transportation Corporation	LA	Lafayette	IN	3.6%	14.0%	22.5%	73.8%	28.5%			Peer match as Purdue University has strong ties to transit agency
Salem Area Mass Transit District	OR	Salem	OR	25.0%	23.7%	16.9%	50.2%	28.9%	*	*	Recommended as Peer
Central Midlands Regional Transit Authority	SC	Columbia	SC	13.0%	9.9%	53.5%	39.7%	29.0%			State Capitol - Univ of SC lg university. Lg diff in pk veh.
Stark Area Regional Transit Authority	OH	Canton	OH	16.6%	44.8%	46.5%	8.8%	29.2%			Peer match as vehicle hours and peak vehicles are substantially different
Chattanooga Area Regional Transportation Authority	TN	Chattanooga	TN	12.3%	13.4%	31.0%	62.5%	29.8%	*	*	Recommended as Peer
Greensboro Transit Authority	NC	Greensboro	NC	12.5%	24.6%	40.8%	43.3%	30.3%			Not comparable as peak vehicles differ significantly/university impacts
Ben Franklin Transit	WA	Richland	WA	8.9%	45.9%	5.6%	63.8%	31.1%			Not comparable as hours are very different.
Laredo Transit Management, Inc.	TX	Laredo	TX	9.3%	5.4%	52.1%	57.4%	31.1%			Peer match due to differences in climate, demographics and peak vehicles.
Chapel Hill Transit	NC	Chapel Hill	NC	21.3%	9.3%	11.3%	82.9%	31.2%			Community w/ large university
Capital Area Transit	NC	Raleigh	NC	46.9%	44.3%	18.3%	16.1%	31.4%			Peer match as large university and service supplied very different
Rock Island County Metropolitan Mass Transit District	IL	Moline	IL	13.7%	29.2%	15.5%	71.1%	32.4%	*	*	Recommended as Peer
Cobb County Department of Transportation Authority	GA	Marietta	GA	30.6%	89.6%	11.3%	2.1%	33.4%			Strong long distance commuter services orientation into Atlanta.
Kalamazoo Metro Transit System	MI	Kalamazoo	MI	17.2%	12.9%	60.6%	55.4%	36.5%			Peer match on peak vehicles
Mass Transportation Authority	VT	Flint	VT	29.3%	84.5%	38.0%	5.2%	39.3%			Peer match on service supplied
Monterey-Salinas Transit	CA	Monterey	CA	61.7%	97.6%	5.6%	15.1%	45.0%			Peer match due to climate and unique CA regs
Mountain Metropolitan Transit	CO	Colorado Spgs	CO	63.2%	110.7%	4.2%	5.6%	45.9%			Peer match on service supplied
Golden Empire Transit District	CA	Bakersfield	CA	105.0%	97.7%	4.2%	7.6%	53.6%			Peer match due to climate and unique CA regs
Georgia Regional Transportation Authority	GA	Atlanta	GA	48.2%	3.3%	0.0%	226.8%	69.6%			Not comparable as supplies commuter services between suburbs and Atlanta

Appendix B: Documentation Request to Executive Director

Sent via electronic mail and US Mail.

December 28, 2009

Mr. James Heffer, Executive Director
Capital Area Transit
901 N. Cameron Street
P.O. Box 1571
Harrisburg, PA 17105

PennDOT Contract No. 358R10

Subject: Transit Agency Performance Review
and Data Request

Dear Mr. Heffer:

Michael Baker Jr. Inc. (Baker) is the consultant for the Pennsylvania Department of Transportation (PennDOT) tasked with developing and conducting, in conjunction with PennDOT, a transit performance review of Capital Area Transit (CAT) in accordance with Act 44 of 2007, 67 Pa. Code § 4.17.12 and PennDOT direction. This performance review of CAT constitutes a pilot effort to implement PennDOT-initiated performance reviews, and as such will be a learning experience for all participants regarding details on procedures for peer selection, data collection and analysis, performance standards, etc. This will be an intense effort within a limited timeframe, and includes on-site review and analysis of numerical and non-numerical information, and a site visit to CAT.

Site Visit:

A site visit involving walk-throughs, tours, equipment/process demonstrations, and interviews is an integral component of a performance review. As you discussed with Ms. Laverne Collins, Director, PennDOT Bureau of Public Transportation on December 23rd, 2009 and per our telephone conversation today, the on-site portion of the review activities will likely commence January 19th at 1:00 PM and are anticipated to conclude the afternoon of January 22nd. Activities involving CAT personnel will be scheduled to allow CAT participation in the MPO meeting the morning of January 22nd.

Personnel:

Representatives of PennDOT will participate throughout the review.

The consultant team's primary personnel conducting the performance review and participating in the site visit are: Mr. Robert Kaiser, Baker; Mr. Brian McCollom, McCollom Management Consulting, Inc.; Mr. Walter Chermay, Gannett Fleming, Inc.; and Mr. Wade White, Whitehouse Group. Other consultant Team staff may participate in the site visit.

CAT personnel will be asked to participate in a number of interviews, facility tours (main facility and any additional facilities, including transfer centers), and demonstrations of operational, maintenance or other functions. Please forward full contact information (name, position, telephone number, email address) for the CAT management / administration team to facilitate the interview scheduling process.

Additionally, we will conduct in-person interviews of representatives of CAT's governing board,

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advisory committee(s)/group(s), and local government partners associated with CAT. Please identify 1-2 representatives of the following who are available for an interview: the CAT Board, advisory or other committees or groups (i.e., Rider Representative), the MPO, and any other relevant organization(s). Each interview will be approximately 1 hour in duration. These interviews will be conducted on January 20 or 21, preferably at CAT's main facility, but we may be able to accommodate a visit to the interviewee's local office or facility depending on the balance of scheduling needs.

Functional Areas Included:

The performance review will encompass the parameters of Act 44 of 2007 and 67 Pa Code §427.12. The functional areas to be reviewed, including interviews during the site visit, are:

- | | |
|---------------------------|----------------------------------|
| ▪ Management | ▪ Human Resources / Labor |
| ▪ Finance (operating) | ▪ Marketing and Public Relations |
| ▪ Operations & Scheduling | ▪ Capital Program |
| ▪ Customer Service | ▪ Information Technology |
| ▪ Maintenance | ▪ Governance |
| ▪ Planning | ▪ Procurement |
| ▪ Safety & Security | |

Schedule:

We will propose a schedule of interviews and other on-site activities and coordinate with you to minimize potential impacts on your staff and CAT operations. The schedule can be finalized through discussions with you over the coming week.

Data and Supporting Information Request:

To make the review process as efficient and effective as possible, we are requesting that your agency provide data and other information to us in advance of the site visit, preferably by January 7th. A list of desired documents and information is enclosed with this correspondence. Please feel free to include any additional information you believe is relevant to the review. Please contact Andy Batson in Baker's Harrisburg office at 717 221 2060, and he will pick up the information. An earlier delivery of the information, even if partial, will assist us greatly. Information in digital form (i.e., PDF files, and Microsoft Office formats) may be conveyed on a CD or emailed to Mr. Batson at ABatson@mbakercorp.com. There is no need to print information available in electronic formats. Mr. Batson can also arrange data transfers via our FTP.

The Baker Team will download and process data from the Federal Transit Administration's National Transit Database (NTD) from 2005 through 2008, so there is no need for CAT to provide any information included in the NTD.

We invite CAT to identify any areas to which our attention is requested, specifically functions or areas in which CAT is excelling and which may be a "best practice," circumstances beyond CAT's control which may have affected performance or reported data, and any areas in which CAT desires assistance (i.e., Mr. Collins' email mentioned an initial assessment of CAT's technology/communications status and needs).

The Baker Team contact for this performance review is Mr. Robert Kaiser. He may be reached at [410]

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689-3400 (telephone), [410] 689-3401 (facsimile) or rkaiser@mhfi.com. Please contact me should you have any questions. We should schedule a call for the week of January 4th to finalize the site visit/interview schedule.

Sincerely,

Robert G. Kaiser
Senior Project Manager

cc: L. Collins, Penn DOT
J. Dockendorf, PennDOT
file

Attachments: Attachment A: Data and Information Request

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A. DOCUMENT REQUEST

Please provide the following documents, if available:

- A.1 Annual reports from the last six years.
- A.2 Operating and Capital Budgets for the current fiscal year (provide separately if not contained in the Agency's Annual Report).
- A.3 Long-term Capital Programs.
- A.4 Business or Strategic Plans.
- A.5 Official Bond Statements for the most recent issuances.
- A.6 Audited Financial Statement for the most recent fiscal year.
- A.7 Profit/Loss/Cash Flow statements for each month of the past 5 years.
- A.8 Organization chart delineating decision authority by roles for the current fiscal year.
- A.9 Electronic maps/files showing all routes. System map of routes and/or service area for demand response services.
- A.10 All collective bargaining agreements as well as any related documents, i.e. letters or memoranda of understanding, letter agreements, side letters that clarify or modify the collective bargaining agreements, etc.
- A.11 Any reports filed with the state or federal government regarding union operations, funds management, etc.
- A.12 Copies of legislation, ordinances, compacts or charter creating your entity.
- A.13 By-laws or other authorities regarding the powers and duties of your board, and identifying appointing authorities of members.
- A.14 List and biographies of current Board members, with terms and tenure of each member.
- A.15 Minutes and agenda Board meetings from the last 12 months.
- A.16 Biography, contract terms, and tenure of General Manager / Executive Director.
- A.17 Any additional documentation not provided above which delineates the respective roles and responsibilities of management/operating entity and board members.
- A.18 Current Fleet Roster for all public transit revenue vehicles, including age and size of vehicles (including ADA complementary paratransit vehicles), and any other revenue vehicles owned or operated by the agency. Categorize by mode (i.e., fixed route, ADA paratransit) and service type (other public transportation, MATT).
- A.19 Potential fleet expansion needs/plans for revenue vehicles projected for next five years.
- A.20 Current Fleet Roster for all non-revenue vehicles, including age and type of vehicles.
- A.21 Potential fleet expansion needs/plans for non-revenue vehicles projected for next five years.
- A.22 State-of-good-repair facility projects for current fixed assets planned for next five years. These are projects that are needed to maintain their existing fixed assets, i.e. new roof on existing facility, rehabilitation/repairs on bridges or other structures, mid-life overhaul of transit/other vehicles.
- A.23 New/expanded facilities projected for next five years. An example of a new facility would be a new intermodal facility. An example of an expanded facility would be adding four bays to an existing two bay bus garage.
- A.24 Current fixed asset listing of facilities.
- A.25 Listing of current real estate holdings.
- A.26 Real estate plans (purchases or sales) projected for next five years.
- A.27 Current list of all other capital assets (other fixed assets with purchase price of over \$5,000 with useful life of at least one year, excluding revenue vehicles, non-revenue

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- vehicles, facilities, and real estate holdings) e.g. ticket vending machines, etc. including etc.
 - A.28 Replacement/expansion needs/plans for all other capital assets projected for next five years.
 - A.29 Listing of current construction projects, including cost to complete and projected end date.
 - A.30 Listing of other construction projects planned for next five years.
 - A.31 Vehicle, equipment, land, and infrastructure leases.
 - A.32 Operating revenues and expense detail by account for the last 10 years.
 - A.33 Any recent outside audit or evaluations in any administrative areas such as: Executive Management, Human Resources, Finance, Legal, Information Management, Resource Management, Internal Audit, Marketing, etc.
 - A.34 Number of Worker Compensation Claims, by year, for the last five (5) years.
 - A.35 Description of your training program and costs for program.
 - A.36 Cost of benefits broken down by major category (examples: medical/dental, sick, vacation, accrued vacation, holidays, other paid time off, 401, 403, pension, overtime, etc.) for the last five years and projected for the next five years.
 - A.37 Summary of Employee Benefit Plan and description of major components.
 - A.38 Report of turnover rate by position for the last five years.
 - A.39 Contracts involving purchased transportation.
 - A.40 Contracts for transit agency provision of services to specific agencies, localities, or entities, etc.
 - A.41 Most recent passenger survey, results, and any actions taken .
 - A.42 Short range transit operational plan (i.e., transit development plan).
 - A.43 Long range transit plan.
 - A.44 Safety and Security (by mode)
 - Description of accident/incident policy, including how they are recorded.
 - Reportable incidents (including collisions) for each of the past 6 years.
 - Injuries for each of the past 6 years.
 - Fatalities for each of the past 6 years.
 - Criminal activities for each of the past 6 years. Separate by on-board vs. on property.
 - Safety training and Collision reduction plan(s).
 - Emergency response procedures/plan
 - Emergency Preparedness / Operations Continuity Plan.
 - Identification of any safety or security issues / concerns.
 - Number of vehicles and sites with security monitoring (i.e., camera, patrol)
 - Training program
 - Records of safety meetings
 - A.45 Procurement
 - Procurement policy and procedures.
 - Previous year and planned future procurements of capital items.
 - Previous year and planned future procurements of services over \$25,000 in value (i.e., purchased transportation, tire services, management services).
 - A.46 Information Technology
 - Identification of technology and communications status and potential future needs.
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- List of IT programs used by each department.
 - Computer disaster recovery plan.
 - Emergency Preparedness / Operations Continuity Plan
 - Computer security procedures now in use.
 - Data collection technology programs (i.e., automated passenger counters).
- A.47 Service area in square miles for fixed route services (by mode) and ADA paratransit services.
- A.48 Operations
- Provide list of service standards for existing and new or newly restructured services. Differentiate by mode, if appropriate.
 - Identify any special operations agreements with colleges, universities, or other organizations.
 - Vehicles operated in maximum service: weekday, Saturday, Sunday
 - Service Span: weekday, Saturday, Sunday
 - Identify any significant seasonal variations in service supplied.
 - Quantify (revenue miles, revenue hours) any school bus services provided in each of the last 6 years.
 - Quantify (revenue miles, revenue hours) any charter services provided in each of the last 6 years.
 - Describe any unique circumstances that have adversely or positively affected the agency (ridership, finance, other)
 - Identify any future challenges to operations
- A.49 Fares and Fare Security
- Listing of fares by type and media.
 - Plans for changes in fare media, especially electronic media.
 - Fare handling policy (from on-board vehicle to deposit at bank).
 - Commuter choice program description, synopsis of participants, total revenues derived from program.
- A.50 Customer Service
- Copy of most recent two customer service surveys and reports
 - Fare revenue by type, and by patron type
 - Complaint procedures manual/policy and most recent 2 reports
 - Operator performance review summary reports
 - Other customer service metrics maintained by the agency
- A.51 Maintenance
- Maintenance plan and procedures manual
 - End of year parts inventory value (\$) for each of past 5 years
 - Buildings condition appraisals
 - Ongoing asset maintenance programs
- A.52 Marketing and Public Relations
- Local news clippings from past 5 years
 - Marketing program and policies
 - Operator hiring and Performance Review Procedures
 - Public involvement plan, and notices and attendance mistax from events from most recent 5 years.
 - ADA compliance reports
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- Reports, input, recommendations, etc. from ridership committees / advocacy groups.
- Use of outside contractors (identify by function and service)
- A.53 Operations
 - Operations Manual
 - Scheduling Manual
 - Dispatch procedures
 - On-street supervision procedures (incl. AVL, if equipped)
 - Emergency and inclement weather plans/procedures

B. OTHER INFORMATION

Please provide information relevant to the following. Most, if not all of this information should exist and not require significant efforts to compile.

- B.1 Brief history of the agency, including its current and any prior official names, any present nicknames or monikers, and identify any predecessor entities.
- B.2 Brief history of significant changes in governance structure since formation and basis for same.
- B.3 History of any strikes and work stoppages over the past six years.
- B.4 Identify any assets, including real property, currently not used in direct connection with transit operations and plans for same.
- B.5 Contact information for any assets owned, operated, or maintained by others.
- B.6 Description of your service and lines of business.
- B.7 Service area demographics, customer profiles, and market research for your agency.
- B.8 What is the year-end cash position for the last two fiscal years.
- B.9 Describe the agency's system for managing and tracking assets.
- B.10 If your agency provides ADA paratransit services:
 - Please provide the information as to the organization(s) that provide/operate the service?
 - What percentage (measured in miles or hours) of the service is subcontracted?
 - If subcontractors are utilized for paratransit services, what is the basis for payment (Per Trip, Per Mile, Per Hour)?
 - Describe the reservations process and identify who performs this. Are reservations made through a centralized or decentralized process?
 - Is scheduling of trips made through a centralized or decentralized process? What computer program(s) are used to accomplish scheduling?
 - Please describe any mechanisms to encourage/monitor productivity.
 - Please describe any tools/strategies to improve productivity.
- B.11 Employee Count (FTEs) by NTD function and mode.

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