



REGIONAL PUBLIC TRANSPORTATION PLAN for the LEHIGH VALLEY

PEER AND TREND ANALYSIS

PREPARED FOR:

**LEHIGH AND NORTHAMPTON
TRANSPORTATION AUTHORITY**



**PUBLIC TRANSPORTATION: MEETING THE
NEEDS OF A GROWING LEHIGH VALLEY**

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PEER AND TREND ANALYSIS

Introduction

As part of the Transportation Development Plan for the Lehigh Valley, the consultant team prepared a peer review and trend analysis to compare and contrast LANTA's fixed route operating statistics with other similarly sized fixed route transit operators. While some caution should be exercised in comparing one transit system to another, this practice does provide a valuable diagnostic tool that may identify issues to address as part of the planning process.

The first step in the peer group analysis was to identify a group of peer systems. This was accomplished through discussions between the consultant team and the LANTA Board of Directors. Ultimately, it was decided that the most appropriate peer systems for LANTA would operate within a similar size urbanized area to that of the LANTA system. The consultant team and the LANTA Board of Directors compiled a list of candidate peers by utilizing data from Geographia.com that ranked urban areas based on the 2000 Census. To narrow down the list of possible peer systems, the consultant team and the LANTA Board of Directors selected three urbanized areas that are larger than Allentown-Bethlehem-Easton urbanized area, and seven areas that are smaller. This was done so that the average urbanized population for the peer group is similar to the LANTA urbanized area. From this selection process, ten peer systems were chosen from throughout the United States, and include:

- ABQ Ride (Albuquerque, NM)
- Birmingham-Jefferson County Transit Authority (Max) (Birmingham, AL)
- Capital Area Transit (Raleigh, NC)
- Capital District Transportation Authority (CDTA) (Albany, NY)
- Fresno Area Express (Fresno, CA)
- Interurban Transit Partnership (The Rapid) (Grand Rapids, MI)
- Metro Regional Transit Authority (Metro) (Akron, OH)
- Metropolitan Tulsa Transit Authority (MTTA) (Tulsa, OK)
- Pioneer Valley Transit Authority (PVTA) (Springfield, MA)
- Transit Authority of Omaha (MAT) (Omaha, NE)

Using the ten peer systems, this report develops performance measures for LANTA and the ten peer systems and compares LANTA's performance with the overall peer average for each measure; LANTA is then ranked against the peer systems for comparison purposes. Operating statistics were obtained from the National Transit Database (NTD) for fiscal year 2006. The use of NTD data attempts to ensure that the data included has been compiled in a consistent manner by all transit agencies included in the peer group.

Overview of Peer Systems

The peer systems have many characteristics that are similar to the LANTA bus system. For example, all of the peer systems are bus only operations that serve multiple communities; in fact, a few peer systems serve multiple urban cores, such as the Capital District Transportation Authority in Albany and the Pioneer Valley Transit Authority in Springfield. Almost all of the systems operate a central transit/transfer facility in the downtown core that acts as the focal point for the transit system. Although LANTA and the peer systems operate in areas with many different social and economic characteristics, all of the service areas are home to several important regional assets, such as major employers, medical centers, academic and cultural institutions, and shopping and retail centers.

LANTA and the peer systems also exhibit some unique differences. For example, ABQ Ride in Albuquerque, the Fax system in Fresno, and Capital District Transportation Authority in Albany, operate or are about to begin operating, Bus Rapid Transit service along some of the busiest corridors in their route networks. In addition, Capital Area Transit in Raleigh, MAT in Omaha, and the Interurban Transit Partnership in Grand Rapids are conducting studies to determine the feasibility of constructing light rail or commuter rail systems in their communities. Background information on each transit system and service area is provided in the subsequent section.

Analysis Techniques

The peer group analysis is based on the results for the fixed route bus system using three different analysis techniques – peer group, trend line, and combination. The methodology used in each is described below.

Peer Group Analysis - This technique compares LANTA's performance at a single point in time (FY 2006) with a group of transit systems exhibiting similar characteristics. Selection of the peer group takes into consideration a number of factors which influence the population's tendency to use transit.

As the objective of a peer group analysis is to comment on LANTA's performance relative to comparable systems, the presentation of the findings focuses on only the group average and range of performance. Therefore, the tables which appear in the subsequent section follow a standard format as follows:

Peer Group Performance

- Minimum value recorded
- Maximum value recorded
- Average of all peer systems
(An unweighted value)

LANTA Performance

- Value recorded
- Percent difference from peer group average
- Rank within the group
(With “1” always the highest or the best performer)

Trend Line Analysis - This second technique reviews LANTA’s performance over time. For this analysis, data was compiled based on the NTD for five reporting years from 2002 through 2006. The technique of this trend line analysis is to compare the trend of LANTA’s performance with the trend of its peers. A comparison is made of the trend of each selected performance measure with the average trend of the peers. The analysis emphasizes the full five-year trend; not interim or year-to-year changes in key indicators.

Combination Analysis - The previous two techniques are synthesized in this third step. The combination analysis enables the reviewer to take those areas where LANTA performs below its peers, for example, and ascertain if this condition had declined over time, thus suggesting a critical area in need of attention. This technique can also offset a below average peer group standing by pointing out that LANTA has made great strides in a particular indicator over the past years even though it still was ranked below its peers in 2006. The combination analysis results in the grouping of performance into four different categories:

- 1- Better/improving - better than peer group average and improving over time.
- 2- Better/declining - better than peer group average but declining over time.
- 3- Worse/improving - worse than peer group average but improving over time.
- 4- Worse/declining - worse than peer group average and declining over time.

At the conclusion of all three analyses, it is then possible to suggest areas where LANTA performs well and areas where improvement opportunities should be explored. As noted previously, the analysis focuses on the fixed route bus system.

Performance Indicators

Performance indicators can be used to determine how the entire agency is performing with respect to stated objectives. Our approach to performance evaluation recognizes that these indicators are made up of statistics which reflect key factors in transit service delivery. The primary performance measurements used to compare and contrast LANTA with the peer group systems are grouped into four categories and include:

1. **Service area and operating characteristics** - population density, total vehicle miles and revenue miles, total vehicle hours and revenue hours, staff size, ridership, peak vehicles, and operating costs and passenger revenue.
2. **Transit revenue sources** - directly generated revenue, and local, state, and federal funding.
3. **Financial and per capita measures** - cost per passenger, cost per revenue mile and revenue hour, cost per peak vehicle, revenue miles and hours per capita, farebox recovery cost per capita, passengers per capita, and peak vehicles per 10,000 people.
4. **Transportation performance measures** - operations cost/total costs, operations employees/total employees, vehicle hours per operations employees, passengers per revenue mile and revenue hour, and passengers per peak vehicle.

These four categories are used in the peer analysis.

Description of Peer Systems

This section provides background information for each peer system and its respective service area. Most of the operational and service information was obtained from websites maintained by the peer systems. The background information pertaining to the peer system service areas was also obtained from the internet and came from websites maintained by the chamber of commerce groups, metropolitan planning organization (MPO), and city planning departments that represent the peer system service areas.

Birmingham-Jefferson County Transit Authority (MAX), Birmingham, Alabama

The City of Birmingham is the largest city in Alabama with a population of approximately 229,000 people and is the county seat of Jefferson County. The city is part of the Birmingham-Hoover metropolitan area which encompasses a seven county area with a population of 1.1 million people, and comprises about one quarter of Alabama's population. Birmingham has a diverse economy based on health care, finance, manufacturing, and biotechnology, and is one of the largest financial centers in the southeastern portion of the United States. The largest employer in Birmingham is the University of Alabama at Birmingham which employs approximately 19,000 people.

The Birmingham-Jefferson Public Transit Authority (MAX) provides fixed route bus and demand responsive services throughout the Jefferson County area which includes the City of Birmingham. MAX also provides shuttle services for the University of Alabama at Birmingham and the Jefferson County Courthouse. The fixed route services emanate from the central portion

of the City of Birmingham, and pulse from a centralized downtown transit facility. The fixed route service operates Monday through Saturday from 5:00 AM to 10:00 PM. Fares on all MAX services are paid upon boarding with the adult base fare currently set at \$1.25; transfers are \$0.25 for adults and \$0.15 for senior citizens and the disabled. MAX has a comprehensive fare system which includes a variety of fares for special services and age groups, as well as a number of daily and monthly passes that offer discounts to riders who make frequent use of MAX services.

MAX is currently in the process of redesigning its downtown transit facility to accommodate other ground transportation providers (i.e., Greyhound Bus Lines) operating in the City of Birmingham. In recent years, MAX has added bike racks on all its fixed route buses, added new bus stop signs and new shelters throughout the system, and published a new system map and Ride Guide. MAX is also in the process of adding onboard bus technology features that will inform riders of system wide route and schedule information, as well as provide weather and news reports.

- **Fixed Route Bus** - MAX's bus service includes approximately 40 routes, including 36 local routes, two express routes, and two shuttle routes. A total of 94 buses are used for the fixed route operations which include 43 low floor CNG Orion buses and ten CNG vintage trolleys.
- **Paratransit VIP service** - MAX's ADA complimentary paratransit service offers curb to curb service to individual with disabilities. The paratransit service operates the same hours and days as the fixed route system and the fare is \$2.00 one way.
- **CLASTRAN** - This demand responsive service provides broader coverage and serves Jefferson and Selby Counties and inner city areas not served by MAX. This service is mainly for senior citizens who may or may not have physical disabilities. This service also operates the same hours and days as the fixed route service and the fare is \$2.00 one way.

Transit Authority of Omaha (MAT), Omaha, Nebraska

Omaha is the county seat of Johnson County and is the largest city in Nebraska with a population of 419,545. The Omaha-Council Bluffs metropolitan area is comprised of five counties in the State of Nebraska and three counties in the State of Iowa, and has a population of approximately 828,000 people. Omaha has a diversified economy with the major employment sectors being in the areas of finance, health care, defense, transportation and distribution, and manufacturing. In addition, Omaha is home to four Fortune 500 companies including Berkshire Hathaway. The Omaha metropolitan area exceeds the national average in a number of important indicators such as income and the percentage of the population with a college degree. There are 14 colleges and universities located in the Omaha metropolitan area with a total enrollment of over 53,000 students; the University of Nebraska at Omaha is the largest college in the metropolitan area and

has an enrollment of approximately 14,000 students.

Public transportation in Omaha is provided by the Transit Authority of Omaha, known as MAT. Services include fixed route bus and paratransit service. The City of Omaha is also in the early planning stages of constructing a light rail line that would operate along a major transportation corridor and serve major attractions such as the stadium, convention center and zoo. The fixed route system is designed as a radial network and operates a timed-transfer schedule from six transit centers located throughout Omaha. The fixed route bus service operates primarily within the City of Omaha and Johnson County; however, MAT also operates three routes that cross the Missouri River and serve Council Bluffs, Iowa. In addition to the six transit centers, MAT also operates four park and ride facilities. The MAT service operates from about 4:00 AM to 11:00 PM on weekdays, 7:00 AM to 9:30 PM on Saturdays, and from 6:00 AM to 6:00 PM on Sundays. The base fare is \$1.25 while an express bus fare is \$1.50. Discounted fares are available to senior citizens and students; transfers are \$0.05 for all riders. MAT also offers multi-trip ride media including a ten-trip ride card and a 30-day unlimited ride pass.

- **Fixed Route Bus** - MAT's fixed route bus service includes 26 local routes, four circulators, and six express routes. There are 4,000 posted bus stops and 98 passenger waiting shelters located along the MAT fixed route system.
- **Paratransit** - The MAT ADA complimentary paratransit service provides curb to curb service to individual with disabilities who are unable to use the MAT fixed route bus service. The paratransit service is available the same hours and days as the fixed route service and operates only within the City of Omaha. The other metropolitan cities not served by MAT are responsible for the operation of their ADA complimentary paratransit services. A one way fare on the paratransit system is \$2.00.

ABQ Ride, Albuquerque, New Mexico

Albuquerque is the county seat of Bernalillo County and is the largest city in New Mexico with a population of approximately 524,000 people. Albuquerque is unique among the peer systems in that it is the second fastest growing city in the United States. The city is the economic hub of the state and is located along the New Mexico Technology Corridor that includes numerous high-tech private and government institutions. The Albuquerque metropolitan area consists of four counties with an overall population of approximately 841,000 people. The largest employers in Albuquerque include the University of New Mexico, Kirtland Air Force Base, and Sandia National Laboratories. Albuquerque is a sprawling city that experienced significant development after World War II. As a result, much of the cityscape is auto-oriented and lacks in pedestrian and transit friendly amenities that are evident in many of the more densely developed peer cities.

Public transportation bus services in Albuquerque and Bernalillo County is provided by the City of Albuquerque and is known as ABQ Ride. Services include fixed route bus service and paratransit. In addition, the New Mexico Department of Transportation and the local metropolitan planning organization operate the New Mexico Rail Runner Express, which is a commuter rail line that serves the metropolitan area with a stop at the downtown transit center in Albuquerque. ABQ Ride operates a pulse system from a downtown transit center where most of the fixed route bus trips begin and end. From the downtown transit center, riders can transfer to the commuter rail line described above as well as intercity ground transportation. The bus system operates along most of the Albuquerque's major streets, with the majority of service remaining within the city limits. In addition to the regular bus routes, ABQ Ride operates two Bus Rapid Transit routes called Rapid Ride, which operate along heavily utilized transportation corridors. Bus stops are about one mile apart at designated Rapid Ride bus stop stations. The Rapid Ride fleet consists of low floor articulated buses that are ADA accessible and are equipped with signal priority systems, automated stop announcement systems, and free wireless internet access. The Rapid Ride service is intended as a pilot program for a potential light rail line.

ABQ Ride operates seven days a week from about 6:00 AM to 10:30 PM; the BRT routes operate until 3:00 AM on Friday and Saturday evenings. The regular adult base fare is \$1.00; the fare is discounted for senior citizens and students. ABQ Ride has a variety of passes that are age based and priced according to monthly, semi-annual, and annual usage; college/vocational passes are also available and priced according to monthly, quarterly, semi-annual, and annual usage; ABQ Ride also offers a variety of miscellaneous passes, such as a summer pass and a three day pass.

- **Fixed Route Bus** - ABQ's Ride fixed route bus service includes 23 local routes, 12 commuter/peak period routes, and two BRT routes. There are approximately 3,200 posted bus stops and 37 passenger waiting shelters located along the ABQ Ride fixed route system. In addition, each downtown bus stop is equipped with a rotating information tube that provides bus schedule information.
- **Paratransit** - The ABQ Ride ADA complimentary paratransit service provides curb to curb service to individual with disabilities who are unable to use the ABQ Ride fixed route bus service. The paratransit service is available the same hours and days as the fixed route service and operates within Albuquerque and most of Bernalillo County. A one way fare on the paratransit system is \$2.00.
- **Bus Rapid Transit (BRT)** - As noted, ABQ Ride operates two BRT routes along two corridors in the central portion of Albuquerque. Bus stops are placed about one mile apart to expedite service and the buses are equipped with features not available on the regular bus fleet, such as signal priority systems and free wireless internet access.

Pioneer Valley Transit Authority (PVTA), Springfield, Massachusetts

The City of Springfield is located in the western part of Massachusetts and is the county seat of Hampden County. Springfield is the third largest city in the state and is the economic and cultural center for the Pioneer Valley region, which encompasses Hampden County and the adjacent Hampshire County; together these two counties have a combined population of approximately 608,000 people. Hampden County is the most populous and urbanized county in Western Massachusetts, and is the location for many of the Pioneer Valley's largest employers and major retailers. Hampshire County is suburban in character and is home to a significant cluster of colleges and universities. Overall, the Pioneer Valley region includes 13 colleges and universities, with the largest being the University of Massachusetts at Amherst (UMass) which has an enrollment of approximately 31,000 students.

The Pioneer Valley Transit Authority (PVTA) is based in Springfield and coordinates fixed route and paratransit service to 24 communities in the Pioneer Valley region. Under Massachusetts law, transit authorities are not permitted to directly operate transit service. As a result, PVTA contracts out the daily operations to outside contractors who use vehicles and facilities provided by PVTA. The PVTA service area is divided into three regions, with each region being the responsibility of one outside operator. Overall, the PVTA system consists of 40 fixed routes and four community shuttles, with the majority of service concentrated in the Springfield area. The PVTA bus routes typically serve their respective region only, although a few routes also serve more than one region in the PVTA service area. In addition to PVTA, the Pioneer Valley region is also served by Peter Pan Bus Lines which provides daily service to Boston; Amtrak which serves Springfield and provides service along the Northeast Corridor; and the Franklin Regional Transit Authority which operates two routes between the PVTA service area and adjacent Franklin County.

PVTA operates from 5:00 AM to 11:00 PM on weekdays and Saturdays, and from 9:00 AM to 7:00 PM on Sundays. Fares are \$1.00 for adults and a transfer is \$0.25. Senior citizens ride for \$0.50 and pay a transfer fee of \$0.10. PVTA offers one, seven, and 31 day unlimited ride passes. Students who attend one of the Five Colleges (i.e., Amherst, Hampshire, Mount Holyoke, Smith, and UMass) can ride PVTA for free by showing proper identification. Payments are made by the colleges directly to PVTA for this privilege (i.e., UPass).

- **Fixed Route Bus** - PVTA's fixed route bus service includes 40 regular bus routes and four community shuttles.
- **Paratransit** - The PVTA ADA complimentary paratransit service provides door to door service to individual with disabilities who are unable to use the PVTA fixed route bus service. The paratransit service is available the same hours and days as the fixed route service. A one way fare within the service area is \$2.00; outside the service area the one way fare is \$2.50; and outside of the three county service area the one way fare is \$3.00. PVTA also operates a Demand Response door to door service for all residents 60 years

and older who live in the PVRTA service area. This service is free and operates Monday through Friday from 8:00 AM to 4:30 PM.

Metro Regional Transit Authority (Metro), Akron, Ohio

The City of Akron is the county seat of Summit County and has a population of approximately 217,000 people. The metropolitan area includes Summit County and the adjacent county of Portage and has a combined population of about 700,000 people. Akron is also part of the larger Cleveland-Akron-Elyria combined statistical area, which has a population of over 2.9 million people. Akron has a diversified economy based on research, financial, and high-tech services. There are two Fortune 500 companies based in Akron including Goodyear Tire and Rubber Company and First Energy. The University of Akron is also located in the city and has an enrollment of approximately 25,000 students.

The Metro Regional Transit Authority (Metro) provides fixed route bus and paratransit services in the City of Akron and throughout Summit County. The fixed route bus service is primarily focused on bringing people to the City of Akron from communities located throughout Summit County. However, Metro does have a few routes that only circulate through neighborhoods not located in the City of Akron, as well as operates two express routes that travel between Akron and the City of Cleveland. In addition, Metro also operates grocery bus routes that provide weekly service from apartment complexes to nearby grocery stores and shopping centers.

The only other public transportation service provider in the Metro service area is provided by the Stark Area Regional Transit Authority (STARK), which operates one route between the cities of Akron and Canton.

Metro is in the process of constructing a new downtown transit center in Akron that will be open early 2009. As part of this project, Metro will be redesigning several routes to improve bus movement through the new facility. Metro also utilizes Global Positioning Systems (GPS) to track buses and make scheduling and dispatching more efficient.

Metro operates Monday through Friday from 4:15 AM to 11:15 PM; on Saturdays from 5:00 AM to 10:15 PM; and on Sundays from 9:30 AM to 7:30 PM. Fares on Metro are \$1.25 for adults and \$0.50 for senior citizens and persons with disabilities. Unlimited ride one day, seven day and 31 day passes are available for use on the regular fixed route buses; a 10 ride ticket is available for use on the express service that operates between Akron and Cleveland. Senior citizens and persons with disabilities are entitled to discounts on all fare media offered by Metro.

- **Fixed Route Bus** - Metro's fixed route bus service includes 37 bus routes and two express routes.

- **Paratransit** - The Metro ADA complimentary paratransit service provides door to door service to individual with disabilities who are unable to use the Metro fixed route bus service. The paratransit service is available when the fixed route service operates, with pick ups and drop offs no farther than three-quarters of a mile from a fixed bus route. A one way fare is \$2.00. Metro also operates a Demand Response service for all Summit County residents 62 years who are unable to the Metro fixed route service. This service operates Monday through Friday and allows residents one round trip per day.
- **Specialized Services** - Metro provides a diverse array of specialized services for welfare to work commuters, residents needing transportation to medical appointments, and senior citizens needing transportation to adult day care programs, social outings, and nutritional programs.

Capital District Area Transit (CDTA), Albany, New York

Albany is located in the northeastern portion of New York State and is part of a region called the Capital District, which includes the cities of Albany, Schenectady, Saratoga Springs, and Troy. This area comprises the majority of the Albany-Schenectady-Troy metropolitan area, which has a population of approximately 831,000 people and is the fourth largest urban area in the state. Albany is the state capital as well as the county seat of Albany County and has a population of approximately 94,000 people. The local economy is heavily dependent on state government, which is the largest employer in the city. The metropolitan area has eight colleges and universities, with the University at Albany (SUNY) being the largest school with an enrollment of more than 17,000 students.

Public transportation in Albany is provided by the Capital District Area Transit (CDTA), which provides fixed route and paratransit services throughout a four county service area which includes the counties of Albany, Rensselaer, Saratoga, and Schenectady. Service is divided into four divisions: Albany, Schenectady, Troy, and Saratoga Springs, with Albany receiving the most fixed route bus service and Saratoga Springs receiving the least amount of service. In addition, CDTA also operates a commuter service that operates between downtown Albany and Saratoga County, as well as limited rural service to outlying communities in the metropolitan area; the rural system typically serves shopping centers and downtown locations.

Overall, the CDTA fixed route system is comprised of regular fixed service bus routes that connect neighborhoods to downtown areas or downtown areas to shopping centers. However, CDTA does operate five shuttle routes in the Albany and Troy area, with two routes serving area colleges and universities and the remaining three routes serving offices and other major points of interest that are not located along the regular CDTA bus routes. CDTA has also begun operating a Bus Rapid Transit (BRT) route along a busy corridor between Albany and Schenectady. This service presently utilizes the same low floor buses that are used throughout the system; however, CDTA plans to add low floor articulated buses to this BRT route as well as upgrade as many as

20 stations along the route. Based on the success of this route, CDTA may add additional BRT routes to the system. CDTA operates several park and ride lots in the service area, which are typically located along routes that offer express service to major employment locations; these park and ride facilities also are served by private intercity bus operators.

The other major public transportation provider in the Albany area is Amtrak, which serves the Albany-Rensselaer Rail Station in Rensselaer. This station is about 1.5 miles from downtown Albany and is the 10th busiest rail station in the United States, serving approximately 650,000 people each year. Further, this station acts as a transfer point for several CDTA bus routes.

CDTA operates from about 5:30 AM to 12:00 AM on weekdays, 6:00 AM to 12:00 AM on Saturdays, and 7:00 AM to 10:00 PM on Sundays; the college shuttles typically operate until about 2:00 AM during the weekday and weekend periods. The standard adult base fare is \$1.00. CDTA offers several different fare options including a one, three, five, or seven day unlimited ride pass, and a 10 ride ticket that offers a small discount. Senior citizens and persons with disabilities are eligible to pay a half fare. The commuter service fares priced according to their distance traveled throughout designated zones established by CDTA costs between \$28.00 and \$48.00 based on a five day period with two trips taken per day, or between \$3.00 and \$8.00 each way.

- **Fixed Route Bus** - CDTA operates low floor on 60 routes. These routes include local, express, park and ride, suburban shuttle, and rural routes.
- **Paratransit** - The CDTA ADA complimentary paratransit service provides curb to curb service to individual with disabilities who are unable to use the CDTA fixed route bus service. The paratransit service is available in areas where CDTA's fixed route service is provided. A one way fare on the paratransit system is \$2.00.
- **Bus Rapid Transit** - CDTA operates one BRT route between Albany and Schenectady with low floor buses. Plans include adding articulated buses to the route as well as upgrading 20 stations along the route.

Metropolitan Tulsa Transit Authority (MTTA), Tulsa, Oklahoma

The City of Tulsa has a population of approximately 393,000 people and is located in the northeastern portion of Oklahoma. Tulsa is second largest city in the state and is the largest city within the Tulsa metropolitan statistical area, which has a population of about 906,000 people. Tulsa has a diverse economy based on energy, aerospace, telecommunications, and manufacturing industries. The outskirts of the service area are characterized by a number of large public parks, wilderness areas, and oil refineries.

Public transportation in Tulsa is provided by the Metropolitan Tulsa Transit Authority (MTTA), which provides fixed route and paratransit services throughout Tulsa, as well as to the adjacent communities of Jenks, Sand Springs, and Broken Arrow. The fixed route system operates as a pulse system from two transfer centers in the City of Tulsa. One of these transfer facilities is located in the downtown area of Tulsa and is served by 19 of the 27 bus routes operated by MTTA; the other transfer facility is located in the outskirts of the city and is served by nine MTTA bus routes. Overall, most of the routes are designed to circulate throughout the City and operate between the two transfer terminals; a few routes leave the city limits and serve the outlying communities that were noted above. In addition, MMTA also operates two express routes on weekdays and two express routes on Saturdays that provide a limited number of stops between the downtown area and outlying areas of the city.

MTTA provides several innovative transit programs for its riders. One program enables riders to borrow a bicycle for free from a MTTA downtown bike station and use the bike in conjunction with their transit commute for up to 24 hours; riders must fill out an application to utilize this service. Another program called EZ Rider Rewards provides riders who purchase monthly passes with discounts to local businesses and area attractions. MTTA also administers a car pool program as well as offers a “Guaranteed Ride Home” service for riders with a MTTA express pass who may need transit service during the day when the express buses do not operate.

MTTA operates Monday through Friday from about 4:30 AM to 8:30 PM; and on Saturdays from about 5:30 AM to 8:30 PM; MTTA does not operate service on Sundays. Fares on MTTA are \$1.25 for adults and \$1.00 for youths; transfers are free and senior citizens and persons with disabilities are eligible for discounts and senior citizens over the age of 75 ride for free. MTTA offers unlimited one and 31-day passes as well as a 10-ride fare card that is priced differently depending on whether the card is for use on the regular or express routes; senior citizens and persons with disabilities are eligible for discounts on the passes and 10 ride cards.

- **Fixed Route Bus** - MMTA operates 23 regular routes and four express routes.
- **Paratransit** - The MMTA ADA complimentary paratransit service provides curb to curb service to individuals with disabilities who are unable to use the MMTA fixed route bus service. The paratransit service is available within the Tulsa city limits whenever and wherever MMTA fixed route bus service is provided. A one way fare on the paratransit system is \$2.50.

Fresno Area Express (FAX) Fresno, California

The City of Fresno is located in the central portion of California, and is the 6th largest city in the state with a population of approximately 500,000 people. The City of Fresno is the county seat of Fresno County and is the economic and cultural center of metropolitan area which includes the entire portion of Fresno County and the adjacent community of Madera County. The

metropolitan area has a total population of about one million people. The communities surrounding the City of Fresno are still largely rural with land devoted to large scale agricultural production.

Public transportation in the City of Fresno is a department of the city and is provided under the name of the Fresno Area Express (FAX). FAX provides fixed route and paratransit services within the city limits, as well as provides limited fixed route service into the adjacent city of Clovis, which operates a small fixed route system consisting of five routes. The FAX system consists of a variety of route types, including circulator routes, express routes, crosstown routes, and regular routes. The FAX system operates on a pulse system from two transfer centers located in the city; one transfer center is located downtown while the other transfer center is located in the northern portion of the city. Although the two transfer centers are the origin and terminal points for most of the FAX bus routes, FAX does interline several routes through the downtown area via the downtown transit center. In addition to the fixed route services, FAX is planning to implement Bus Rapid Transit (BRT) service on four of the busiest transportation corridors in the city. These routes will have several features typical of a BRT system, such as signal priority, dedicated bus lanes, low floor buses, and the development of a unique brand for this service.

FAX operates seven days a week from about 6:00 AM to 10:00 PM. The adult cash fare is \$1.00; tokens are also available for \$0.85 each and are good for a one way fare. Persons who have a disability or who are between the ages of 62 and 64 receive a discounted fare, while senior citizens age 65 and older ride FAX for free. There is no charge for transfers. FAX sells a variety of fare media including discounted tickets in packs of five and ten, an unlimited ride monthly pass for use on the entire FAX fixed route system, and an unlimited ride metro pass that can be used on all FAX fixed routes as well as the routes operated by the City of Clovis. Senior citizens and persons with a disability can purchase monthly passes at a discount.

- **Fixed Route Bus** - FAX operates 11 regular routes, five crosstown routes, two circulator routes, and two express routes.
- **Paratransit** - The FAX ADA complimentary paratransit is contracted to Laidlaw and provides curb to curb service to individual with disabilities who are unable to use the FAX fixed route bus service. The paratransit service is available where the FAX fixed route service is provided and operates on the same schedule. A one way fare on the paratransit system is \$0.75, and a monthly pass is available for \$25.00.

Capital Area Transit (CAT), Raleigh, North Carolina

The City of Raleigh is the capitol of North Carolina and is located in the north central region of the state in Wake County. Raleigh has a population of approximately 359,000 people and is the second largest city in the state after Charlotte. Raleigh and the nearby cities of Chapel Hill and Durham comprise the Research Triangle metropolitan region which has a population of approximately 1.6 million people. The local economy is based on a diverse array of industries, including professional and business services, education, health care, bio-technology, information technology and government services. The most prominent employer in the metropolitan area is the Research Triangle Park, which is mostly located in Durham County, and is one of the premier research and development centers in the United States. There are seven colleges and universities in the metropolitan area, with the largest being North Carolina State University which is located in Raleigh and has an enrollment of approximately 31,000 students.

Capital Area Transit (CAT) is the primary public transportation provider in Raleigh and Wake County. CAT operates fixed route bus service and ADA mandated paratransit service. CAT operates a timed transfer system from several locations throughout the service area; the main transfer location is located in downtown Raleigh and is served by every CAT route that operates in downtown Raleigh. CAT also operates two trolley lines that circulate throughout the downtown area; one trolley is primarily a sightseeing route while the other trolley operates Thursday, Fridays and Saturdays from 5:30 PM to 11:30 PM and acts more as a downtown circulator route. All of CAT buses are ADA accessible and are equipped with bike racks. CAT operates Monday through Friday from 4:30 AM to 11:30 PM, on Saturdays from 6:00 AM to 9:00 PM, and on Sundays from 8:00 AM to 7:00 PM. Fares on CAT are \$1.00 for the base fare. CAT offers a variety of passes to its riders, including unlimited ride day, weekly and monthly passes and 10 and 11 ride passes. CAT also offers free rides for government employees and students attending NC State and Meredith College who show proper identification prior to boarding a CAT bus; this service operates under the GoPass and UPass programs.

Raleigh is also served by the Triangle Transit Authority (TTA), which provides scheduled, fixed-route regional and commuter bus service between Raleigh and the metropolitan area's other major cities of Durham, Cary and Chapel Hill. This service also operates to and from the Raleigh-Durham International Airport, the Research Triangle Park and several of the metropolitan area's major suburban communities. The TTA consists of 15 regular routes, four express routes, and six shuttle routes, which operate from 6:00 AM to 10:30 PM Monday through Friday and from 8:00 AM to 5:30 PM on Saturdays. The fare for the regular regional routes is \$4.00 while the fare for the express routes is \$5.00. TTA also offers 30 day unlimited ride regional and express passes, as well as discounted six and 12 day unlimited ride regional passes, \$25.00 value card, and a 10 ride regional bus pass. Discounted fares are also available to senior citizens and persons with disabilities. One unique feature of the TTA fare policy is that regional passes can be used on other area bus systems such as CAT at no additional charge. Finally, the TTA is working with local metropolitan planning organizations to construct a light rail system or commuter rail line in the Triangle region.

However, this project is still in the planning stages and has recently encountered setbacks; at the present time the project is not funded and there is no established date for when construction will begin.

- **Fixed Route Bus** - CAT's fixed route bus service includes 18 radial routes that begin and end in downtown Raleigh, seven connector routes that circulate through and area and connect with the radial routes, one express route, and one regional route. Bus stop signs are posted along each of the bus routes in the CAT system.
- **Paratransit** - The CAT ADA complimentary paratransit service provides curb to curb service to individual with disabilities who are unable to use the CAT fixed route bus service. The paratransit service is available where the CAT fixed route service is provided and operates on the same schedule. A one way fare on the paratransit system is \$2.00. CAT also offers discounts on private taxis for Raleigh residents who don't have a valid driver's license and have a physical or mental disability.

Interurban Transit Partnership (The Rapid), Grand Rapids, Michigan

Grand Rapids is located in the western portion of the State of Michigan and is the county seat of Kent County. Grand Rapids is the second largest city in the state and is one of the primary cities in Western Michigan. The population of Grand Rapids is approximately 200,000 people and is the economic and cultural center of a four county metropolitan area comprising almost 780,000 people. Some of the major employment sectors in the city include health care, health sciences, manufacturing and higher education.

Public transportation in Grand Rapids is provided by the Interurban Transit Partnership (The Rapid), which provides fixed route, paratransit, and van pool services in the city and is also the primary public transportation provider for the surrounding metropolitan area. The fixed route system is organized into four geographical divisions and is primarily focused on bringing people from Grand Rapids and surrounding areas to the downtown portion of the city where most major points of interest are located and where riders can transfer onto other Rapid bus routes at a downtown transit center operated by Rapid. The Rapid also receives a subsidy from Grand Valley State University to operate three routes within its campus and one route between the campus and downtown Grand Rapids. The Rapid also operates a route between Davenport University and downtown Grand Rapids.

The Rapid also provides a variety of transportation services to the community, such as the daily airport shuttle from the local airport to three downtown hotels that operates every 30 minutes and runs from 8:30 AM to 7:30 PM. The transit system operates a downtown shuttle service in conjunction with the City of Grand Rapids that provides free bus service from city owned parking facilities to major points of interest in the downtown area. Rapid also provides a service whereby a passenger who lives more than one third of a mile from a Rapid fixed bus route can be

picked up from their home and taken to the nearest bus stop for a charge of \$2.60 which includes the transfer to the fixed route bus. Finally, Rapid operates school tripper service for the Grand Rapids Public School District during the school year.

The Rapid is currently conducting a study to implement Bus Rapid Transit (BRT) service along one the busiest commuter corridors in the service area; this route would serve a large concentration of employers and link hospitals in and around downtown with local colleges and universities and other major points of interest in the downtown area. The Rapid is also conducting a feasibility study to determine the viability of constructing a light rail line in Grand Rapids.

The Rapid operates Monday through Friday from 5:45 AM to 11:15 PM, on Saturdays from 6:30 AM to 9:30 PM; and on Sundays from 8:15 AM to 6:45 PM. The adult base fare is \$1.30 and is discounted for senior citizens and persons with a disability. There is no charge for transfers. The Rapid offers a 10-Ride fare card, as well as unlimited ride one, four and 31 day passes that are priced differently depending on whether the rider is a regular adult, student, or a senior citizen/person with a disability.

- **Fixed Route Bus** - The Rapids' fixed route bus service includes 19 regular fixed routes and five student related routes. All of the fixed route buses are equipped with bike racks
- **Paratransit** - The Rapid ADA complimentary paratransit service provides curb to curb service to individual with disabilities who are unable to use the Rapid fixed route bus service. The paratransit service is available where the Rapid fixed route service is provided and operates on the same schedule. A one way fare on the paratransit system is \$2.60 and \$7.00 for non disabled riders over the age of 65.

Peer Group Analysis

This section compares LANTA's 2006 operating performance to that of the peer systems. Table 1 presents an overview of both LANTA's and the peer group's service area and transit system characteristics.

**Table 1
Characteristics of LANTA Peers**

Service Area	Transit System	Urbanized Area Rank	Urbanized Area Population	Urbanized Area Density
Transit System Community Characteristics				
Birmingham, AL	Birmingham-Jefferson Co Transit Auth (MAX)	55	663,615	1,692
Omaha, NE	Transit Authority of Omaha (MAT)	56	626,623	2,768
Albuquerque, NM	ABQ Ride	57	598,191	2,671
Springfield, MA	Pioneer Valley Transit Auth (PVTA)	59	573,610	1,857
Akron, OH	Metro Regional Transit Auth (Metro)	60	570,215	1,853
Albany, NY	Capital District Transportation Auth (CDTA)	62	558,947	1,966
Tulsa, OK	Metropolitan Tulsa Transit Auth (MTTA)	63	558,329	2,136
Fresno, CA	Fresno Area Express (FAX)	64	554,923	4,003
Raleigh, NC	Capital Area Transit	66	541,527	1,694
Grand Rapids, MI	Interurban Transit Partnership (The Rapid)	67	539,080	2,095
Average		61	578,506	2,274
LANTA	Lehigh and Northampton Transportation Auth	58	576,408	1,991

Transit System	Peak Vehicles	Ridership (000's)	Vehicle Hours (000's)
Transit System Operating Characteristics			
Birmingham-Jefferson Co Transit Auth (MAX)	70	3,541.7	243.5
Transit Authority of Omaha (MAT)	99	3,881.1	280.2
ABQ Ride	147	8,573.5	339.2
Pioneer Valley Transit Auth (PVTA)	129	9,552.2	329.5
Metro Regional Transit Auth (Metro)	104	5,612.0	255.2
Capital District Transportation Auth (CDTA)	212	12,719.9	614.0
Metropolitan Tulsa Transit Auth (MTTA)	52	2,451.7	179.6
Fresno Area Express (FAX)	91	11,808.7	372.0
Capital Area Transit	48	3,937.3	176.9
Interurban Transit Partnership (The Rapid)	91	7,048.1	308.3
Average	104	6,912.6	309.8
LANTA	68	5,100.9	209.6

**Table 1 (Continued)
Characteristics of LANTA Peers**

Transit System	Total Operating Costs (\$000's)	Operations Costs (\$000's)	Fare Revenue (\$000's)
Transit System Financial Characteristics			
Birmingham-Jefferson Co Transit Auth (MAX)	17,104.4	9,828.7	2,453.2
Transit Authority of Omaha (MAT)	17891.4	11,493.0	4,107.5
ABQ Ride	30,353.4	15,569.9	3,835.2
Pioneer Valley Transit Auth (PVRTA)	23,046.9	14,859.8	5,344.4
Metro Regional Transit Auth (Metro)	23,000.7	13,274.9	3,532.1
Capital District Transportation Auth (CDTA)	48,385.3	28,401.5	8,845.9
Metropolitan Tulsa Transit Auth (MTTA)	11,417.0	6,205.3	2,097.8
Fresno Area Express (FAX)	30,771.2	20,098.9	7,475.2
Capital Area Transit	12,130.4	7,609.7	1,971.0
Interurban Transit Partnership (The Rapid)	21,623.0	13,581.7	4,041.8
Average	23,572.4	14,092.3	4,370.4
LANTA	13,526.2	9,251.5	3,010.9

The results of the peer analysis are presented in the aggregate for the peers. No specific references are made to the individual systems. Rather, the information in this report presents the range of peer group performance and its unweighted group average which excludes the data for LANTA from the calculation. Then, LANTA's performance is shown as the numerical value, percent above or below the peer group average and rank within the peer group, which would be one to 11 for this analysis. With this ranking scheme, the system ranked first is always the highest or best performer.

Service Area and Operating Characteristics - As seen in Table 2, the overall size and dimensions of LANTA are generally smaller compared to the peers. LANTA typically falls towards the bottom of the peer group (ranking of 9 or 10) in many categories. Highlights of the peer group are presented below:

- The population of the LANTA urbanized area is within one percent of the peer average and is ranked 4th. Moreover, the population density of the LANTA urbanized area (population/square miles) is 12.4 percent below the peer average at 1,991 persons per square mile and is ranked 6th compared with the peer average of 2,274 persons per square mile;
- LANTA is below the peer average in terms of vehicle hours and vehicle revenue hours and vehicle miles and vehicle revenue miles. In all four measures, LANTA has a ranking of either 9 or 10 and is approximately 33 percent lower than the peers;

- LANTA buses were ranked the 4th highest in terms of average operating speed;
- LANTA has a lower operations staff size compared to the peer average, and is towards the bottom of the peer group with a ranking of 8. The lower operations staff size is largely attributed to the fact that LANTA is a smaller system than the peer group average, and thus, needs fewer drivers to operate the service;
- LANTA has the third smallest peak vehicle requirement compared with the peer average. Conversely, LANTA has the 4th highest peak-to-base ratio compared to the peer average. This ratio indicates that LANTA provides more service during peak travel times compared with the peer group. Peak service is more costly than midday service due to more costly labor arrangements, higher percentage of non-revenue travel time to and from garages, and lower vehicle utilization. A high peak to base ratio can result in higher overall costs;

Table 2
Comparison of Peer Group with LANTA

Characteristic	Peer Trend			LANTA vs.		
	Minimum	Maximum	Average	LANTA	Average	Rank*
Service Area Characteristics						
Population	539,080	663,615	578,506	576,408	-0.3	4
Population/Sq. Mile	1,692	4,003	2,274	1,991	-12.4	6
Dimensions – Operations						
Vehicle Hours	176.9	614.0	309.8	209.6	-32.3	9
Vehicle Miles	2,323.4	7,877.7	4,174.3	2,837.6	-32.0	10
Revenue Hours	165.2	562.1	289.5	193.5	-33.2	9
Revenue Miles	2,116.6	6,741.9	3,772.6	2,565.3	-32.0	10
Vehicle Hours/Vehicle Hours (MPH)	12.2	17.0	13.6	13.5	-0.7	4
Dimensions - Staff Size						
Total Employees	148.0	536.0	282.8	188.0	-33.5	8
Operations Employees	106.0	331.0	193.9	137.0	-29.3	8
Dimensions – Vehicles						
AM/PM Peak Vehicles	48	212	104	68	-34.6	9
Peak to Base Ratio	1.11	2.45	1.60	1.79	11.9	3
Ridership						
Annual Unlinked Trips	2,451.7	12,719.9	6,912.6	5,100.9	-26.2	7
Financial						
Operating Revenue	\$1,971.0	\$8,845.9	\$4,370.4	\$3,010.9	-31.1	8
Total Operating Costs	\$11,417.0	\$48,385.3	\$23,572.4	\$13,526.2	-42.6	9
Operating Deficit	\$9,319.2	\$39,539.4	\$19,202.0	\$10,515.3	-45.2	9
Operations Cost	\$6,205.3	\$28,401.5	\$14,092.3	\$9,251.5	-34.4	9

*Rank of 1 is highest, 11 is lowest

Source: 2006 National Transit Database

- LANTA ranked seventh in terms of ridership and carried 26 percent fewer riders compared with the peer average; and
- The LANTA financial statistics are below the peer average. Operating revenue is about 31 percent below the peer average and is ranked 8th; total operating costs is about 43 percent lower than the peer average and the operating deficit is about 45 percent lower than the peer average, with both measures having a ranking of 9; and the operations cost at LANTA is about 34 percent lower than the peer average and is ranked 9th.

In summary, LANTA operates in a similar sized urban area than the peer group average. However, the overall size of LANTA's operations is smaller than the peer average. The lower level of service is reflected in its lower than average financial statistics and ridership level.

Transit Revenue Sources - This section reviews the amount of operating and capital assistance that LANTA and the peer systems obtained from directly generated, local, state, and federal sources. The information is presented in Table 3 and is based on data from fiscal year 2006. Because of the different combinations of funding sources for total operating and capital assistance, the results are presented as averages in terms of total operating and capital sources. Another point to note is that funding levels reported to the NTD include both fixed route and demand responsive services. With few exceptions, all statistics presented are for the fixed route bus system. It should be recognized that LANTA operates an extensive demand responsive system. While most peer systems operate only ADA paratransit service, LANTA operates numerous services including ADA, MATP, and Share Ride. As shown in Table 3, the largest source of operating funds for LANTA comes from the state (58.5%), with a majority of the state funding coming from the sales tax. Federal funds account for 38.5 percent of LANTA's operating assistance, while the remaining three percent comes from local sources on average. The peer systems obtain approximately one half of their operating assistance from directly generated sources and from local government.

Most of the local sources of operating assistance come from the general revenue fund of local government. However, four of the peer systems located in Omaha (MAT), Albuquerque (ABQ Ride), Akron (Metro), and Grand Rapids (the Rapid) receive proceeds from local taxes (i.e., sales, property, or gas taxes) to the help fund transit in their communities. Funding from the state comprises 30.3 percent of the peer group's operating assistance, with most of the funding coming from the general revenue fund of the state government. However, state funding for systems in Akron and Grand Rapids comes from the proceeds of the gas tax, with the Grand Rapids system relying entirely on this state funding source; also, the system in Fresno relies entirely on proceeds from the sales tax for its state funding. Finally, 18.8 percent of peer group's operating assistance comes from the federal government. Overall, LANTA has much greater reliance than the peer average in terms of state and federal funding sources, and is next to last in local funding. As a result of its low level of local funding, LANTA ranks in the lower half of the peer group in terms of total operating funding.

In terms of capital assistance, the federal government is the primary entity that funds capital projects for both LANTA and the peer group, with the funding coming from the Capital Program and the Urbanized Area Formula; the Fresno system also received a small amount from other FTA funding. The second highest capital funding source for LANTA (16.4%) and the peer systems (14.3%) is the state government. The capital funds provided by the Commonwealth of Pennsylvania come from sales tax and the general revenue fund. Only six of the 10 peer systems obtain capital funding from their respective states, with the funding coming from the general revenue fund, taxes, tolls, or other sources. The remaining portion of LANTA's capital assistance comes from local sources (3.6%), while the peer systems receive 5.8 percent from local government and local taxes. LANTA ranks below the peer average in the level of capital funding, and ranks next to last in the area of federal capital funding and total capital funding.

Overall, LANTA receives most of its operating and capital funding assistance from the Commonwealth of Pennsylvania (55.4%), with 41.6 percent coming from federal sources, and three percent coming from local sources. The local, state, and federal governments provide a similar level of assistance to the peer group systems, with the largest funding source being the federal government (32.3%) and the lowest being the state government (26.8%). Also, four of the peer systems receive operating and capital assistance from local taxes (11.8 %). LANTA is more reliant than the peer systems on state and federal funding, but the low level of local funding places LANTA in the lower half of peer group for the measure reflecting the total amount of operating and capital funding resources. LANTA is last in terms of directly generated funds since it does not have a local dedicated tax source; however, less than half of the peer systems have such a revenue source. As noted previously, funding levels for LANTA and the peer systems are for all modes (i.e., fixed route bus and demand responsive).

**Table 3
Transit Funding Sources**

	Peer Average	Percent of Total	LANTA	Percent of Total	Rank*
Operating Funding Sources					
Directly Generated	\$3,465.4	14.7	\$0.0	0.0	11
Local	\$8,502.2	36.2	\$563.9	3.0	10
State	\$7,110.8	30.3	\$11,040.7	58.5	4
Federal	\$4,422.1	18.8	\$7,276.1	38.5	2
Total	\$23,500.5	100.0	\$18,880.7	100.0	7
Capital Funding Sources					
Directly Generated	\$76.8	1.2	0.0	0.0	11
Local	\$305.8	4.6	54.1	3.6	6
State	\$955.2	14.3	249.2	16.4	6
Federal	\$5,304.7	79.9	1,213.0	80.0	10
Total	\$6,642.6	100.0	1,516.3	100.0	10
Total Funding Sources					
Directly Generated	\$3,542.2	11.8	\$0.0	0.0	11
Local	\$8,808.1	29.2	\$618.0	3.0	10
State	\$8,066.0	26.8	\$11,289.9	55.4	4
Federal	\$9,726.8	32.3	\$8,489.1	41.6	5
Total	\$30,143.1	100.0	\$20,397.0	100.0	8

*Rank of 1 is highest, 11 is lowest

Source: 2006 National Transit Database

Financial and Per Capita Measures - Table 4 presents a number of key financial and per capita performance measures. In this analysis, the ranking represents performance in terms of best (1) to worst (11), as opposed to highest and lowest in the prior tables.

- The cost per passenger at LANTA was \$2.65 during FY 2006, which was the 3rd lowest (best) among the peer group and was almost 28 percent lower than the peer average. This figure can be attributed to the fact that LANTA's operating costs were 33 percent lower than the peer average but its ridership was only 26 percent lower. LANTA's costs on revenue mile, revenue hour, and peak vehicle basis were below the peer average and were each ranked the 3rd best compared with the peer group. Cost on a per hour basis is very important because the hourly expenses (i.e., operator wages) are the main cost driver for transit systems. This could be the result of cost efficiencies on the part of LANTA and/or a lower cost environment in the Lehigh Valley when compared to the peers.
- The number of miles and hours of transit service provided per capita in the Lehigh valley is lower than the peer average, and is consistent with the lower level of funding provided for transit in the Lehigh Valley area. LANTA provides the third lowest amount of revenue hours and vehicle miles on a per capita basis, and spends the third lowest amount per capita relative to the peer average. In 2006, LANTA provided approximately nine rides for every person in the Lehigh Valley area. This is almost 27 percent lower than the peer average and results in a ranking of nine. The per capita data indicates that

LANTA does have an even balance in terms of service provided and utilization. For example, LANTA is providing almost one third less service per capita compared to the peer average and is obtaining a ridership level which is comparable to the peer average. Therefore, LANTA's relatively low investment per capita compared with the peer average is consistent with the lower level of transit utilization.

Table 4
Comparison of Financial and Per Capita Measures

Characteristic	Peer Trend			LANTA vs.		
	Minimum	Maximum	Average	LANTA	Average	Rank*
Cost Measures						
Cost per Passenger	\$2.41	\$4.83	\$3.67	\$2.65	-27.8	3
Cost per Revenue Mile	\$4.37	\$8.69	\$6.16	\$5.27	-14.4	3
Cost per Revenue Hour	\$64.10	\$105.50	\$80.22	\$69.90	-12.9	3
Cost per Peak Vehicle	\$178,658	\$338,145	\$230,764	\$198,915	-13.8	3
Per Capita Measures						
Revenue Miles per Capita	3.91	12.06	6.56	4.45	-32.2	9
Revenue Hours per Capita	0.31	1.01	0.50	0.34	-32.0	9
Cost per Capita	\$20.45	\$86.57	\$41.06	\$23.47	-42.8	9
Passengers per Capita	4.39	22.76	12.11	8.85	-26.9	7
Peak Vehicles per 10,000 Pop	0.89	3.79	1.8	1.18	-34.4	8
Investment Measures						
Local Operating Funding per Passenger	\$0.42	\$3.37	\$2.07	\$0.11	-94.7	11
Total Operating Funding per Passenger	\$2.40	\$5.48	\$3.69	\$3.70	0.3	5
Local Operating Funding per Capita	\$8.83	\$48.25	\$20.63	\$0.98	-95.2	11
Total Operating Funding per Capita	\$19.58	\$81.64	\$40.96	\$32.76	-20.0	7
Local Capital Funding per Passenger	\$0.0	\$0.22	\$0.07	\$0.01	-85.7	6
Total Capital Funding per Passenger	\$0.11	\$1.77	\$0.92	\$0.30	-67.4	10
Local Capital Funding per Capita	\$0.0	\$2.88	\$0.67	\$0.09	-86.6	7
Total Capital Funding per Capita	\$0.79	\$25.84	\$11.56	\$2.63	-77.2	10
Local Funding Per Passenger	\$0.43	\$3.42	\$2.14	\$0.12	-94.4	11
Total Funding per Passenger	\$2.80	\$6.59	\$4.62	\$4.00	-13.4	7
Local Funding per Capita	\$9.11	\$48.25	\$21.29	\$1.07	-95.0	10
Total Funding per Capita	\$20.36	\$89.25	\$52.51	\$35.39	-32.6	7
Farebox Recovery	12.6%	24.3%	18.4%	22.3%	21.2	3

*Rank of 1 is best, 11 is worst

Source: 2006 National Transit Database

- The Lehigh Valley local governments generally provide LANTA with a lower level of funding compared with the other localities that are served by the peer group systems. As shown in Table 4, the local operating and capital assistance provided to LANTA is well below the peer average and results in LANTA ranking near the bottom or at the bottom in five of the six measures related to local operating and local capital funding on a per passenger and per capita basis. The fact that LANTA consistently ranks last in the local funding per capita measures but ranks typically 6 or 7 in total funding per capita is another indicator of the reliance LANTA has on non-local sources.

LANTA shows some improvement compared with the peer group when funding from all sources is included (i.e., local, state, and federal), but the transit system still ranks towards the bottom of the peer group in terms of total operating and total capital funding on a per passenger and per capita basis and;

- LANTA ranks third in terms of farebox recovery, which is the percentage of operating costs covered by passenger fares. Fares paid by LANTA's riders cover about 22 percent of transit operating costs compared to about 18 percent for the peer systems as a whole. Farebox recovery is an important overall measure of transit system performance. It should be recognized that farebox recovery also reflects agency policies on fare levels with some systems preferring low fares and higher subsidies and local support for transit.

LANTA's performance in the above areas is mixed. LANTA performs better than the peer group in terms of cost measures and farebox recovery, but fares poorly when the system is compared against the peer average for measures on a per capita basis. Overall, LANTA receives less funding compared with the peer average which limits the amount of service LANTA can provide to the Lehigh Valley communities.

Transportation Performance - Table 5 shows the performance measures related to transportation activities at LANTA. These performance measures relate to the efficiency of day to day operations including scheduling, street supervision, dispatching and training. Several different categories of transportation performance are presented below:

- The total cost of the transportation function is about 68 percent of the total cost of the LANTA system. This is highest relative cost of the peer comparison and demonstrates that LANTA spends most of its funds on placing bus service on- the- street and little on administrative activities. Operating employees at LANTA comprise almost 73 percent of the work force and are ranked 5th compared with the peer group. The use of operating employees at LANTA is efficient in that they operate about the same number of vehicle hours as the peer average.
- LANTA performs better than the peer average in all measures related to transportation effectiveness, including passengers per revenue mile, passengers per revenue hour, and passengers per peak vehicle. The three measures each score a ranking of four and indicate that the service provided by LANTA is being utilized at a higher rate compared to the overall peer average.

In summary, LANTA spends a considerably higher share of its expenses compared with its peers on operations. This, along with the fact that total operating costs are 42 percent below the peer average but revenue hours are only 33 percent below average, and the lower cost per hour indicates that LANTA is more efficient and effective than its peers at using its resources for actual service provision. This focus on providing the greatest amount of bus service possible could contribute to LANTA performing better than the peers in terms of passenger effectiveness.

It may also suggest that the peer systems operate more service in outlying areas where policy concerns, rather than effectiveness measures shape transit service decisions.

Table 5
Comparison of Transportation Measures

Characteristic	Peer Trend			LANTA vs.		
	Minimum	Maximum	Average	LANTA	Average	Rank*
Transportation Efficiency						
Operations Cost/Total Costs (%)	51.3%	65.3%	59.9%	68.4%	14.2	1
Operation Employees/Total Employees (%)	61.6%	75.4%	69.1%	72.9%	5.5	5
Vehicle Hours/Operations Employees	1,362	1,855	1,589	1,530	-3.7	7
Transportation Effectiveness						
Passengers per Revenue Mile	0.94	2.79	1.78	1.99	11.8	4
Passengers per Revenue Hour	13.9	32.8	23.1	26.4	13.9	4
Passengers per Peak Vehicle	39,203	129,766	67,252	75,013	11.5	4

* Rank of 1 is best, 11 is worst

Source: 2006 National Transit Database

Trend Analysis

The second analysis technique reviews LANTA's performance over time rather than a single "snapshot" as in the preceding peer group analysis. Many of the same indicators are used as those used in the peer group analysis. The results of the two analyses are combined in the next section.

Data for the trend analysis were derived from the National Transit Database for FY 2002 and FY 2006, as posted on the Federal Transit Administration's internet website. The information presented here focuses on the two end years (i.e., FY 2002 and FY 2006). The overall rate of change is calculated. FY 2006 was used since it is the last year in which peer data were available. It should be recognized that LANTA experienced changes between 2006 and 2007.

In the analysis that follows, the average of the peer systems for the evaluation measures is computed for both 2002 and 2006. The percent change between this period is computed. The LANTA information for both 2002 and 2006 is reported along with the percent change. Therefore, the relative change in the peer average can be compared with the change in performance by LANTA for the same period.

In performing the peer analysis, only the results of the general peer group data (Table 2), the financial and per capita measures (Table 4), and transportation performance measures (Table 5) are compared with 2002 data.

Peer Group Characteristics Trend Comparison - As seen in Table 6, the change in the peer system averages between 2002 and 2006 are compared with the change in the same statistics for LANTA. Highlights of the peer group trend analysis are presented below:

- LANTA's vehicle hours and revenue hours increased by about 12 percent, while the amount of vehicle miles and revenue miles increased by about 16 percent and 19 percent, respectively, during the review period. At the same time, the peer group average for the four measures either increased slightly or exhibited a small decline. The overall speed of the LANTA system increased by 3.1 percent during the review period, while the peer average decreased by 1.4 percent.
- The total number of people employed at LANTA as well as the number of operations employees increased by about 15 percent and 17 percent, respectively, during the review period. In terms of the peer group average, the total number of employees and the number of operations employees was static. These employee workforce measures are consistent with the fact that LANTA increased service during the review period at a much greater rate than the peer systems, with the result being that LANTA had a greater need to increase the size of its operations workforce to supplement the increase in service that was provided to the Lehigh Valley communities between 2002 and 2006;
- The peak vehicle requirement and peak to base ratio at LANTA increased by about 15 percent and 20 percent, respectively, during the review period; the peer average for both measures exhibited a small decline;
- Ridership on the LANTA system increased by almost 27 percent during the review period, while the peer group average increased at a lower rate of 5.5 percent. This increase in ridership may be attributed to the increase in service that was provided during the review period. As noted above, total revenue hours provided by LANTA increased by about 12 percent between 2002 and 2006. The fact that LANTA's ridership increased by twice the rate of revenue hours indicates an increase in productivity and could suggest that this service increase has been concentrated in the more urban sections of the service area;
- In terms of financial measures, LANTA's total operating costs increased by about the same rate as the peer average, however, LANTA's operations cost increased at a significantly higher rate than the peer average. Again, the higher increase in operations cost compared with the peer average is largely attributed to the fact that LANTA added more service during the review period than the peer systems. Finally, LANTA experienced an increase in operating revenue of 20.2 percent during the review period, while the peer group average increased by 3.5 percent. This is consistent with LANTA's higher farebox recovery.

In summary, LANTA added more service during the review period compared with the peer group, which had the effect of causing LANTA's operations costs and workforce numbers to increase at a greater rate than the peer average. The increase in service provided by LANTA provided a much larger increase in ridership compared with the peer average.

Table 6
Trend Analysis - Overall Statistics

Characteristic	Peer Trend – Average			LANTA		
	2002	2006	% Change	2002	2006	% Change
Dimensions – Operations						
Vehicle Hours	308.2	309.8	0.5	186.9	209.6	12.1
Vehicle Miles	4,222.1	4,174.3	-1.1	2,453.2	2,837.6	15.7
Revenue Hours	280.0	289.5	3.4	172.3	193.5	12.3
Revenue Miles	3,864.9	3,772.6	-2.4	2,153.0	2,565.5	19.2
Vehicle Miles/Vehicle Hours (MPH)	13.8	13.6	-1.4	13.1	13.5	3.1
Dimensions - Staff Size						
Total Employees	286.1	282.8	-1.2	163.0	188.0	15.3
Operations Employees	191.7	193.9	1.1	117.0	137.0	17.1
Dimensions –Vehicles						
AM/PM Peak Vehicles	105	104	-1.0	59	68	15.3
Peak to Base Ratio	1.63	1.60	-1.8	1.48	1.78	20.3
Ridership						
Annual Unlinked Trips	6,555.1	6,912.6	5.5	4,020.7	5,100.9	26.9
Financial						
Operating Revenue	\$4,221.0	\$4,370.4	3.5	\$2,463.3	\$2,959.7	20.2
Total Operating Costs	\$18,180.6	\$23,572.4	29.7	\$10,572.0	\$13,526.2	27.9
Operations Cost	\$10,924.3	\$14,092.3	29.0	\$6,190.0	\$9,251.5	49.5

Source: 2002 & 2006 National Transit Database

Financial and Per Capita Trends - Table 7 presents trends between 2002 and 2006 for a number of key financial and per capita performance measures, including;

- The cost of operating LANTA service increased during the review period, with the total cost per revenue mile and revenue hour and cost per peak vehicle increasing by an average of about 11 percent. However, these cost increases were lower compared to the peer group, which exhibited an increase in the three cost measures by an average of about 28 percent. Further, LANTA's cost per passenger increased at a significantly lower rate than the peer average during the review period, 0.8 percent versus 18.8 percent. LANTA's smaller increase is most likely attributed to the large increase in ridership that was attained by the transit system during the review period;

- In terms of per capita measures, LANTA provided more revenue miles and revenue hours in 2006 compared with 2002, while the peer group average for both measures stayed about the same. Further, LANTA exhibited an increase in the number of peak vehicles per 10,000 people compared to a small decline experienced by the peer group. At the same time the total cost per capita at LANTA increased 28 percent compared to an increase of about 30 percent experienced by the peer group. In 2006, LANTA provided almost nine transit rides per person in the Lehigh Valley area compared to the peer average of about 12 rides per capita. However, LANTA's per capita ridership increased by almost 27 percent during the review period, while the peer average increased at a more modest rate of 5.4 percent. This is favorable performance on the part of LANTA and indicates that the increase in service provided during the review period has had desired effect of increasing the transit habit among Lehigh Valley residents. Also, the fact that LANTA's cost per capita increased at a lower rate than the peers while service per capita at LANTA far outpaced that of the peers is another indicator of LANTA's effectiveness at using its resources for actual service provision;
- In aggregate, the operating funding of LANTA from all sources increased, although the investment values reported are for all modes. Unlike operating assistance, capital expenditures and funding vary from year to year. In addition, LANTA trends do not reflect the recent passage of Act 44 which greatly increased state operating assistance.
- Both LANTA and the peer systems exhibited a decline in farebox recovery, though LANTA declined at a lower rate compared to the peer average; LANTA's farebox recovery declined by about four percent during the review period while the peer average declined by almost 19 percent.

In summary, the trends in LANTA performance in the above measures are mixed. LANTA outperformed the peers in all of the cost efficiency measures and was above the peer average in four of the five per capita measures. However, LANTA does not perform as well against its peers in the area of investment levels, which are well below the peer average and place a constraint on the amount of service that can be provided in the Lehigh Valley, which is demonstrated through lower service levels and utilization per capita.

**Table 7
Trend Analysis - Financial and Per Capita Measures**

Characteristic	Peer Trend - Average			LANTA		
	2002	2006	% Change	2002	2006	% Change
Cost Measures						
Cost per Passenger	\$3.09	\$3.67	18.8	\$2.63	\$2.65	0.8
Cost per Revenue Mile	\$4.69	\$6.16	31.3	\$4.91	\$5.27	7.3
Cost per Revenue Hour	\$64.98	\$80.22	23.5	\$61.36	\$69.90	13.9
Cost per Peak Vehicle	\$177,713	\$230,764	29.9	\$179,186	\$198,915	11.0
Per Capita Measures						
Revenue Miles per Capita	6.73	6.56	-2.5	3.74	4.45	19.0
Revenue Hours per Capita	0.49	0.50	2.0	0.30	0.34	13.3
Cost per Capita	\$31.70	\$41.06	29.5	\$18.34	\$23.47	28.0
Passengers per Capita	11.49	12.11	5.4	6.98	8.85	26.8
Peak Vehicles per 10,000 Pop	1.82	1.80	-1.1	1.02	1.18	15.7
Investment Measures						
Local Operating Funding per Passenger	\$1.11	\$2.07	86.5	\$0.14	\$0.11	-21.4
Total Operating Funding per Passenger	\$2.71	\$3.69	36.2	\$3.63	\$3.70	1.9
Local Operating Funding per Capita	\$8.20	\$20.63	151.6	\$1.01	\$0.98	-3.0
Total Operating Funding per Capita	\$26.75	\$40.96	53.1	\$25.29	\$32.76	29.5
Local Capital Funding per Passenger	\$0.02	\$0.07	250.0	\$0.08	\$0.01	87.5
Total Capital Funding per Passenger	\$0.78	\$0.92	17.9	\$2.39	\$0.30	-87.4
Local Capital Funding per Capita	\$0.23	\$0.67	191.3	\$0.55	\$0.09	-83.6
Total Capital Funding per Capita	\$9.50	\$11.56	21.7	\$16.70	\$2.63	-84.3
Local Funding Per Passenger	\$1.14	\$2.14	87.7	\$0.22	\$0.12	-45.5
Total Funding per Passenger	\$3.48	\$4.62	32.8	\$6.02	\$4.00	-33.6
Local Funding per Capita	\$8.43	\$21.29	152.6	\$1.56	\$1.07	-31.4
Total Funding per Capita	\$36.24	\$52.51	44.9	\$41.98	\$35.39	-15.7
Farebox Recovery	22.6%	18.4%	-18.6	23.3%	22.3%	-4.3

Source: 2002 & 2006 National Transit Database

Transportation Performance Trends - As shown in Table 8, transportation performance of LANTA is compared with the peer average for the 2002 and 2006 review period, with the following results:

- In terms of transportation efficiency, operations cost as a percent of total costs at LANTA increased by almost 17 percent, while the peer average exhibited a decline of approximately two percent. Almost 73 percent of the LANTA work force is employed in operations, which is a slight increase from 71.8 percent in 2002. The percentage of peer group employees who were employed in operations increased from 67.7 percent to 69.1 percent during the review period. The number of vehicle hours per operating employee at LANTA decreased by about four percent during the review period, while the peer average experienced a smaller decline of about three percent; and

- In terms of transportation effectiveness, LANTA exhibited a 12.9 percent increase in passengers per revenue hour and a 10.1 percent increase in passengers per peak vehicle during the review period; the peer average for both measures also increased but at a lower rate compared to LANTA. LANTA experienced a 6.4 percent increase in passengers per revenue mile during the review period, which was similar to the 7.9 percent increase exhibited by the peer group; however, LANTA still carried more people on a per mileage basis in 2006 compared with the peer average.
- LANTA continues spending a larger portion of its total costs on placing service on the street which has resulted in a positive trend in ridership during the review period.

Table 8
Trend Analysis - Transportation Performance Measures

Characteristic	Peer Trend – Average			LANTA		
	2002	2006	% Change	2002	2006	% Change
Transportation Efficiency						
Operations Cost/Total Costs (%)	61.2%	59.9%	-2.1	58.6%	68.4%	16.7
Operation Employees/Total Employees (%)	67.7%	69.1%	2.1	71.8%	72.9%	1.5
Vehicle Hours/Operations Employees	1,642	1,589	-3.2	1,597	1,530	-4.2
Transportation Effectiveness						
Passengers per Revenue Mile	1.65	1.78	7.9	1.87	1.99	6.4
Passengers per Revenue Hour	22.74	23.14	1.8	23.34	26.36	12.9
Passengers per Peak Vehicle	63,227	67,252	6.4	68,147	75,013	10.1

Source: 2002 & 2006 National Transit Database

Combination Analysis

This final technique combines the results of the peer group analysis and the trend analysis. Placing these results side by side enables each indicator to be assigned to one of four categories:

- 1 Better than the peer group average and improving over time. For any performance in this category, LANTA should be commended.
- 2 Better than the peer group average and declining over time. This performance indicates that symptoms of future problems may be evident.
- 3 Worse than the peer group average but improving over time. This performance indicates a positive trend but where additional work is needed.

- 4 Worse than the peer group average and declining over time. This performance indicates a problem that may require attention.

The results of this combination approach are presented below.

Financial and Per Capita Measures - As seen in Table 9, LANTA performs better than the peer group average in all measures related to cost and farebox recovery, and was below the peer average in all measures related to per capita performance.

In terms of the trend comparison, LANTA exhibited improving performance relative to the peer average in nine of the ten measures. The only area where LANTA showed a declining trend was cost per capita. However, the improving performance in the four other measures related to per capita performance indicates that LANTA has been increasing its level of service to be more in line with other systems that operate in similar size areas. Because investment levels reflect funding of both the fixed route and demand responsive services while the analysis is directed to the bus system, the combined analysis for investment measures is not presented. As noted previously, the extent of funding is less than the peer system average.

**Table 9
Combination Analysis - Financial and Per Capita Measures**

Characteristic	LANTA Performance Relative to Peer Average For FY 2006	LANTA Performance Relative to Peer Trend From FY 2002 to FY 2006	Rating
Cost Measures			
Cost per Passenger	Better	Improving	1
Cost per Revenue Mile	Better	Improving	1
Cost per Revenue Hour	Better	Improving	1
Cost per Peak Vehicle	Better	Improving	1
Per Capita Measures			
Revenue Miles per Capita	Worse	Improving	3
Revenue Hours per Capita	Worse	Improving	3
Cost per Capita	Worse	Declining	4
Passengers per Capita	Worse	Improving	3
Peak Vehicles per 10,000 Pop	Worse	Improving	3
Overall Financial			
Farebox Recovery	Better	Improving	1

Transportation Performance Measures - As seen in Table 10, LANTA performed above the peer average in two of the three transportation efficiency measures. In terms of trend performance, LANTA improved at a greater rate than the peer average in the area of operations costs as a percentage of total costs, but declined in the areas of operations employees per total employees and vehicle hours per operations employees. However, the ratio of operations employees to total employees did improve during the review period, just not as much as the peer average.

In terms of transportation effectiveness, LANTA was above the peer average and improving in terms of passengers per revenue hour and passengers per peak vehicle, and was above the peer average but declining in the area of passengers per revenue mile. However, LANTA still carried more passengers on a per revenue mile basis compared to the peer average in 2006.

**Table 10
Transportation Performance Measures**

Characteristic	LANTA Performance Relative to Peer Average For FY 2006	LANTA Performance Relative to Peer Trend From FY 2002 to FY 2006	Rating
Transportation Efficiency			
Operations Cost/Total Costs (%)	Better	Improving	1
Operations Employees/Total Employees (%)	Better	Declining	2
Vehicle Hours/Operations Employees	Worse	Declining	4
Transportation Effectiveness			
Passengers per Revenue Mile	Better	Declining	2
Passengers per Revenue Hour	Better	Improving	1
Passengers per Peak Vehicle	Better	Improving	1

Summary - The combination analysis results support the findings of the peer and trend analysis. As seen in Table 11, LANTA was above average and improving in eight of the 16 categories. Of these areas, four were cost measures, one was a financial and per capita measure, another one was a transportation efficiency measure, and the final two were transportation effectiveness measures. In addition, LANTA was below average and declining in two of the 16 measures; one was a financial and per capita measure and the other one was a transportation efficiency measure. There are two measures where LANTA's performance is above average and declining and four measures where the performance is below average and improving. Overall, LANTA's performance is generally favorable. For ten of the 16 measures, LANTA exhibits performance better than the peer systems. In terms of trends, LANTA is improving relative to the peer systems over time.

**Table 11
Summary Performance Rating**

Category	Cost	Financial & Per Capita	Transportation Efficiency	Transportation Effectiveness	Total
1 - Better & Improving	4	1	1	2	8
2 - Better & Declining	0	0	1	1	2
3 - Worse & Improving	0	4	0	0	4
4 - Worse & Declining	0	1	1	0	2
Total	4	6	3	3	16

The results indicate the strengths of LANTA as well as opportunities for the future that will influence service decisions. LANTA has relatively high efficiency and effectiveness which suggest that the agency can deliver service to the public less costly than its peers. Also, it is able to attain higher ridership productivity than its peers. In part, this reflects the focus on LANTA being economical and operating within budget. Some systems place greater importance on attracting riders through broad geographical coverage and higher levels of service with greater reliance on subsidies than patron fares.

LANTA is a smaller system compared to the peer group in terms of the amount of service it provides and level of funding it receives. As noted above, policy decisions on where and when to provide service influence service levels along with performance measures. The lower level of funding has prevented LANTA from expanding service in the Lehigh Valley, and has also prevented the system from developing new services, such as bus rapid transit (BRT), that could improve public transportation in the Lehigh Valley and generate ridership increases for LANTA. As noted previously, the recent passage of Act 44 will substantially increase the amount of funding that LANTA receives from the state. Lastly, LANTA receives much less local funding than the peer transit systems and relies to a great extent on funding from the state and federal governments. This is particularly the case with operating assistance and to a lesser extent with capital expenditures since federal funding levels are more generous.