

Palm Tran, Incorporated:

An Assessment of Operational Data Collection and Selected Reporting

(Project Nos. 2006-M-01 & 2006-M-02)

This document is the result of a collaboration between the Palm Tran,
Incorporated and the Office of Financial Management & Budget,
Financial Management Division

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Palm Tran, Incorporated:

AN ASSESSMENT OF OPERATIONAL DATA COLLECTION AND SELECTED NTD REPORTS

(Project Nos. 2006-M-01 & 2006-M-02)



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Executive Summary

Report Highlights . . .

Our assessment of the Palm Tran Operational Data Collection and Selected NTD Reporting found that:

- ☑ *The systems in place for collecting fixed route ridership data appear to be reliable, but they leave gaps in the data they produce*
- ☑ *The data reported to the National Transit Data Base are generally accurate, but incomplete*
- ☑ *The system of determining eligibility for paratransit ridership appears appropriate, but we cannot verify the accuracy of the ridership data drawn from that system*

We also found that:

- ☑ *From a macro perspective, terminating paratransit services to Medicaid clients would eliminate a significant source of outside funding, while associated cost reductions would be less certain*
-

Palm Tran, Incorporated (Palm Tran) is the County's surface transportation department, providing traditional fixed route bus service as well as on-demand, shared-ride, door-to-door, paratransit service to residents and visitors in Palm Beach County. During FY 2005, the fixed route bus service reported providing 8,320,201 Unlinked Passenger Trips (rides) and paratransit provided 741,430 trips. Both programs experienced significant increases in ridership over the three-year period between the end of FY 2002 and the end of FY 2005. Fixed route buses provided 31.9 percent more rides during 2005 than during 2002, while rides using Palm Tran's Connection increased by 87 percent during the same period.

For transit systems everywhere, ridership is a vital statistic. It is the principal basis upon which service level decisions are made, and upon which routes and fares are set within the system. It is also the basis upon which large amounts of federal financial assistance are allocated each year for the ongoing operational requirements of transit systems. For that reason, OFMB was requested to undertake an exploratory examination of the methods utilized to collect and report operational data for both of Palm Tran's fixed route bus and paratransit services. Denis J. Krajec was the lead analyst assigned to the project, assisted by James B. Godfrey. This report contains the results of their examination, in the form of findings and recommendations.

This report provides advance review, discovery, and documentation of any real or potential weaknesses in the existing systems for data collection and reporting, in preparation for an upcoming, detailed assessment to be performed by an external auditor. The four members of the recently formed Miami Urbanized Area that includes Palm Beach, Broward, and Miami-Dade Counties and the South Florida Regional Transit Association (Tri-Rail) have agreed to a review by independent external auditors as a means of insuring that all four transit agencies are using common reporting criteria to receive Federal Transit Administration funding. That independent audit is expected to get underway momentarily. In requesting OFMB's assistance, Palm Tran management wanted added confirmation concerning the accuracy and defensibility of ridership data it was relying on in its dealings with both the federal grantor and its UZA partners.

The study team found that the principal means of collecting ridership data are appropriate, but each one produces data which are either incomplete or unverified. In the case of fixed route service, automated fare boxes are relied on for ridership data, but these have technological limitations which we believe result in undercounting ridership by several percentage points, to the likely detriment of Palm Tran. In the case of paratransit program, private vendors provide the transportation services, and are closely integrated into the data collection process which ultimately gives rise to the ridership counts reported from that program.

At the same time, the study team was asked to assess the cost effectiveness of continuing to provide paratransit service to Medicaid clients. Medicaid funding is a recent addition to the Palm Tran Connection program, beginning only in January 2005. Its ridership impact has been significant, however, helping drive a 36% increase in the number of passenger trips made between 2004 and 2005. In view of very tight time constraints for conducting the project, the study team evaluated this issue from a macro perspective, rather than at the level of detail of individual trips. On that basis, we have reason to think that terminating Medicaid service would forego significant funding while leaving behind some of its costs to be recovered from other income sources. To be certain of that would require a detailed audit of Medicaid funded trips, something which was outside the scope of this examination.

To address the study team's findings, the following specific recommendations are offered:

- Palm Tran should implement the operational and automation recommendations made by GFI Genfare Corporation in its November 2005 report.
- The fixed route fare boxes should be modified for the immediate benefit of improving the ridership data reporting capabilities of Palm Tran.
- Palm Tran Connection should initiate a program of regular audits of driver manifests to ensure the reliability of ridership data.

Palm Tran, Incorporated – Palm Beach County’s Surface Transportation Department: Assessment of Operational Data Collection and Selected NTD Reporting

An exploratory examination of data collection and reporting systems in the department, from source documentation through completion of National Transit Database reporting, with an emphasis on evaluating the accuracy and defensibility of ridership counts because of their effect on the distribution of Federal mass transit funding in south Florida

The purpose of this report is to provide county administration and the management of Palm Tran, Inc. (Palm Tran) with a preliminary assessment of the operational data collection systems, the means by which data are reported from those systems, and the accuracy of the data maintained throughout the reporting cycle. The Management and Program Analysis Section of OFMB (MPA) was asked to undertake this assessment under tight time constraints in order to provide advance review, discovery, and documentation of any real or potential weaknesses in the existing systems for data collection and reporting in preparation for an upcoming, detailed assessment to be performed by an external auditor. The four members of the recently-formed Miami Urbanized Area (UZA) that includes Palm Beach, Broward, and Miami-Dade Counties and the South Florida Regional Transit Association (Tri-Rail) have agreed to a review by independent external auditors as a means of insuring that all four transit agencies are using common reporting criteria to receive Federal Transit Administration (FTA) funding. That independent audit is expected to get underway in late-April 2006.

The study focused on the two primary operational divisions of Palm Tran: its fixed route bus system and its demand response paratransit operation, known as Palm Tran Connection. Our review examined the workings and reporting capabilities of the fare box system in use by fixed route buses to record ridership and fare revenues, as well as the Trapeze system used in both the fixed route and paratransit programs for route planning and scheduling. Because reports from

both the fare box and Trapeze systems form the basis for data reported internally to Palm Tran management and, eventually, to the National Transit Database (NTD), the project consultants took particular note of how data reported from these systems was disseminated and utilized by Palm Tran staff.

The methodology used in the study was designed to reveal weaknesses in the data collection and reporting systems, if any, and from that to draw conclusions concerning the defensibility of the data resulting from those systems. The consultants tracked routine operating data generated directly from operational reports through the department's internal reporting hierarchy, all the way to the point at which the data were input into the National Transit Database in order to determine the reliability of the processes and the accuracy of the results. The extent to which staff review and analysis of such reports and their attention to maintenance, exception and error reporting was observed and noted. Internal efforts to assess the reliability of data systems, to validate the accuracy of system-generated data/information, and to establish consistent follow-up efforts aimed at correcting deficiencies identified by those means, were considered indicators of system maintenance and data reliability. In particular, the methodology employed all of the following:

- A review of the operating manual for the GFI Genfare fare box system provided an overview of system capabilities, the extent to which manual fare box operation is required, and the system's data/transactional record keeping and reporting capabilities. The fare box system is responsible for onboard tracking and recording passenger and related revenue information during bus operations.
- Received instruction regarding operation of the fare box from Palm Tran Operations Division staff and augmented this with information received directly from representatives of the GFI Genfare Company.
- Reviewed the report and recommendations of an earlier analysis conducted by GFI Genfare Company and delivered to Palm Tran staff in November 2005. This report and its recommendations were the result of a three-day on-site review of Palm Tran's GFI Genfare system operations by representatives of the company.
- Interviewed Palm Tran staff members from the Operations, Maintenance, Planning, Management Information Systems, and Finance Divisions in order to establish an understanding of their use of the fare box system and well as their reliance on information produced by the system.
- Identified reports available to Palm Tran staff from the fare box system to determine how the information in those reports was utilized. Are these reports relied on to insure proper system operation and maintenance? Do these reports convey accurate, valuable input for periodic internal management reporting? Or for meeting the monthly and annual reporting requirements of the NTD?
- Reviewed capabilities of the Trapeze System software with Palm Tran staff to determine the role played by the system in providing scheduled and verified route mileage which gets reflected in internal management reports and serves as input into the NTD.

- Examined the reporting requirements for the National Transit Database monthly and annual reports, as well as the line-by-line instructions for providing the data required on its reporting forms.
- Assessed the accuracy of operations data conveyed from one internal report and format to another during the reporting cycle to ensure that the information ultimately reported to the NTD accurately reflected the source data produced by the fare box and Tapeze route planning and scheduling systems. Data covering the five-year period from fiscal year 2001 through fiscal year 2005 were examined.
- Reviewed the accuracy of the data input into selected monthly and annual NTD reports for the 5-year period to determine compliance with the detailed reporting requirements and instructions:
 - B10 Transit Agency Identification (service area and population)
 - B20 Transit Agency Contacts
 - S10 Service Non-Rail (fixed route and demand response)
 - F30 Operating Expenses (fixed route and demand response)
- Examined the NTD required report on operational data prepared by independent certified public accountants (Ernst & Young) upon completion of their annual review titled, “Applying Agreed-Upon Procedures,” for the fiscal years 2001 through 2005.
- Reviewed the content of Federal Transit Administration Triennial Review Program reports on Palm Tran for the 3-year periods ending September 30, 2002 and September 30, 2005 for issues or comments regarding Palm Tran that were within the scope of our assessment, namely: ridership, vehicle revenue miles, passenger miles, and operating expense.
- Compared and contrasted data reported in the National Transit Database by each of the four members of the Miami Urbanized Area that is pertinent to the annual distribution of Federal §5307 Urbanized Area Formula Grant funding for the Miami UZA.
- Conducted on-site field observations at principal Palm Tran administrative facilities, and interviewed Palm Tran staff at various organizational levels and in numerous operational and support capacities.
- Conducted interviews in person and by telephone with Palm Tran Connection staff from the Operations and Finance Sections in order to determine Medicaid eligibility processes, the cost effectiveness of providing Medicaid-funded trips, and the reliability of paratransit system ridership data for inclusion in the annual National Transit Database.

Factual Profile

OVERVIEW: OPERATING DIVISIONS

Palm Tran, Inc. is Palm Beach County’s surface transportation department. The department provides residents and visitors to Palm Beach County with both conventional fixed route bus service and demand response transportation for seniors and individuals with disabilities. During fiscal year 2005 the fixed route

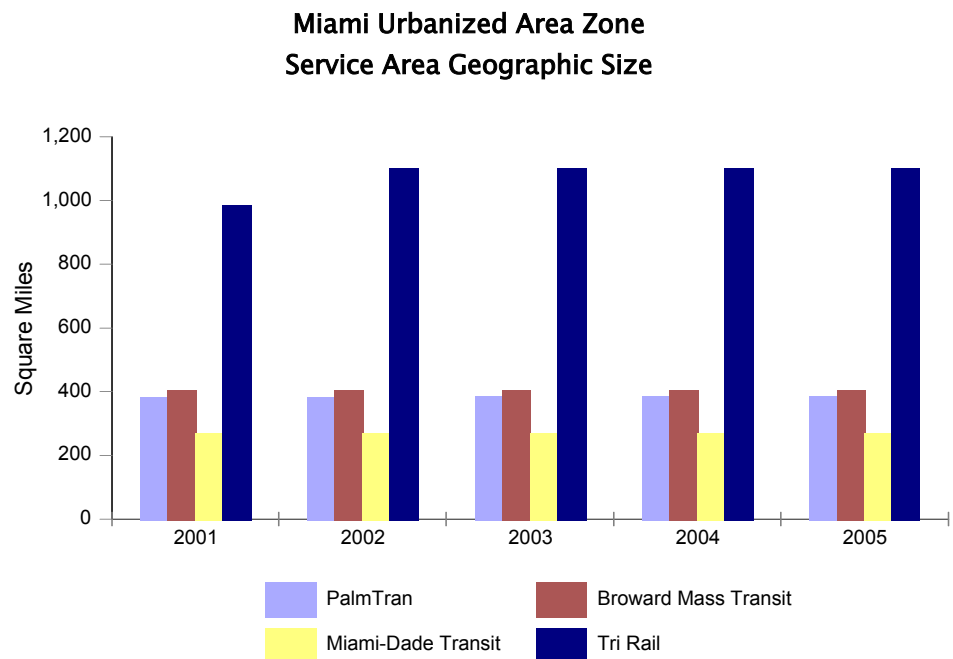
bus service reported providing 8,320,201 Unlinked Passenger Trips (rides) and Palm Tran Connection provided 741,430 Unlinked Passenger Trips. Both services have experienced significant increases in ridership over the three-year period between the end of fiscal year 2002 and the end of fiscal year 2005. Fixed route buses provided 31.9 percent more rides during 2005 than during 2002, while rides using Palm Tran Connection increased by 87% in the same period.¹

Fixed Route Bus Service

During FY 2005, 105 buses were utilized to provide fixed route service to an estimated service population of 930,100 within a 358 square mile service area.² Included within that area is the mandatory 3/4-mile service zone on either side of the 35 bus routes that weave throughout the county, required by the Americans with Disabilities Act.

The charts that begin below with Figure 1 analyze various comparative service data among the four member agencies of the Miami UZA.

FIGURE 1

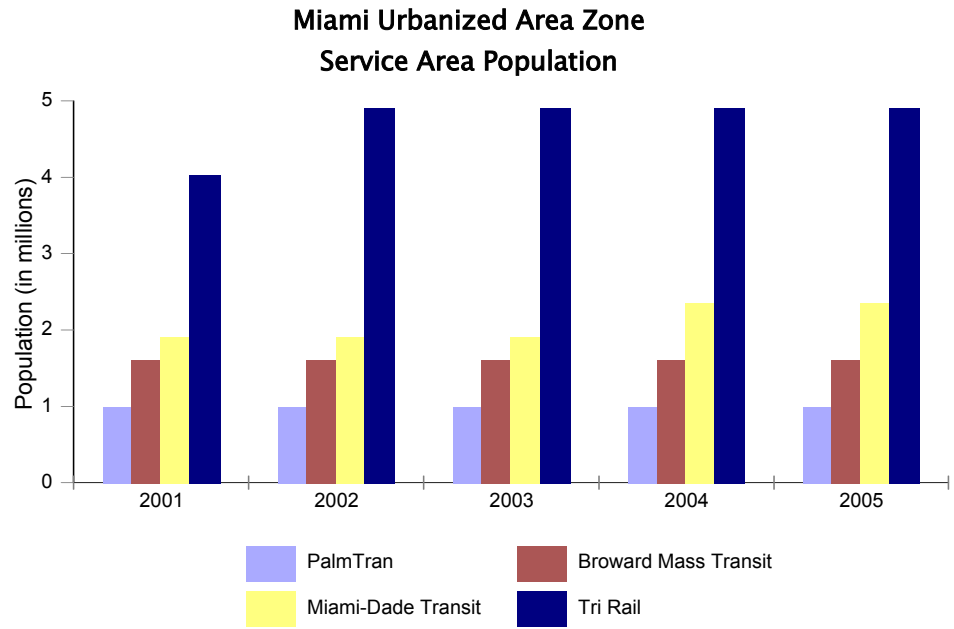


Source: Metropolitan Planning Organization and the National Transit Database (NTD)

¹ Medicaid introduced during fiscal year 2005 resulted in an average monthly ridership increase of approximately 15,100, or 33.5 percent.

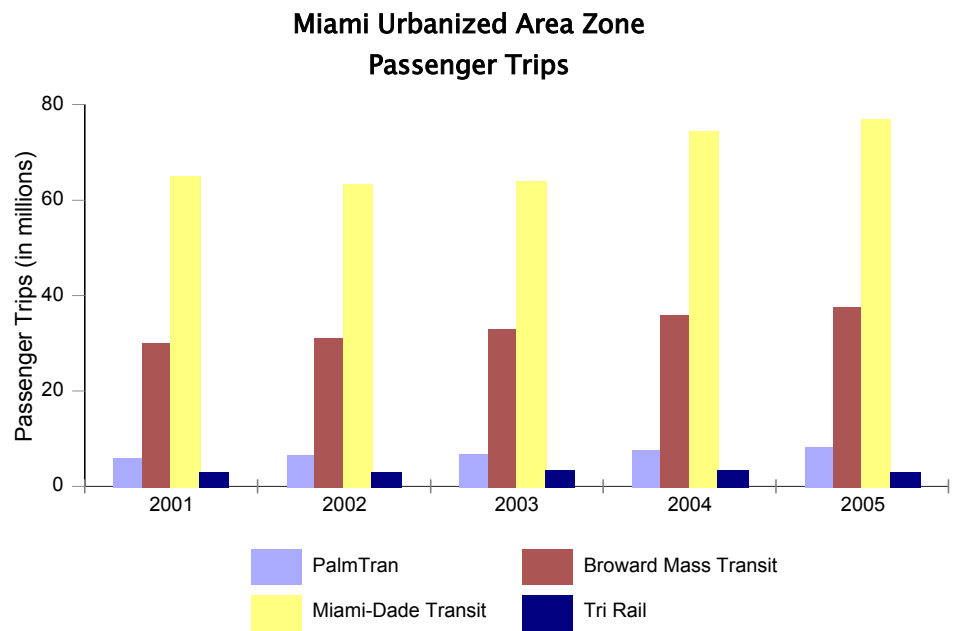
² Service population and area estimates provided to Palm Tran by the Metropolitan Planning Organization.

FIGURE 2



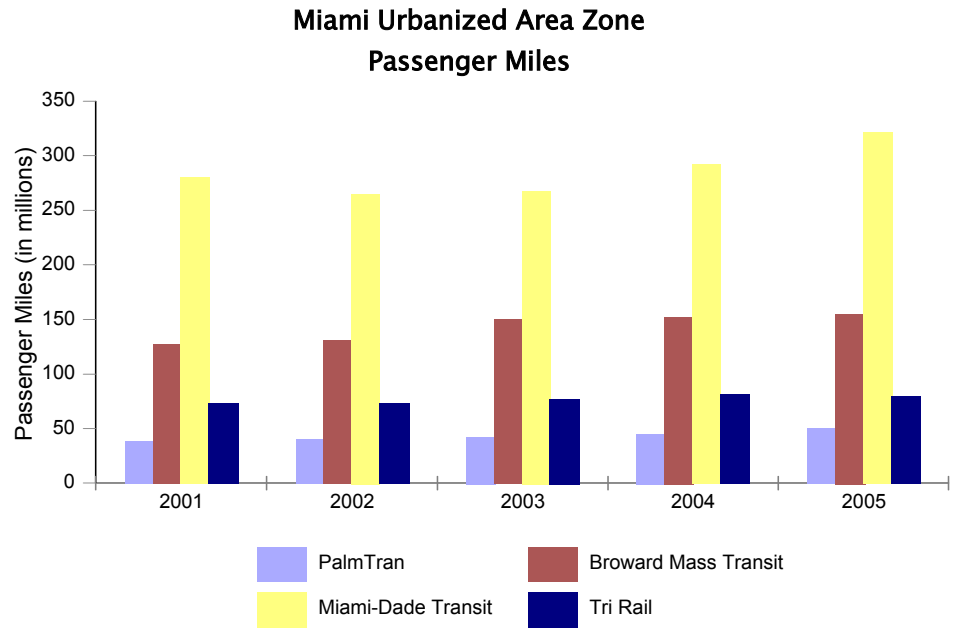
Source: Metropolitan Planning Organization and the National Transit Database (NTD)

FIGURE 3



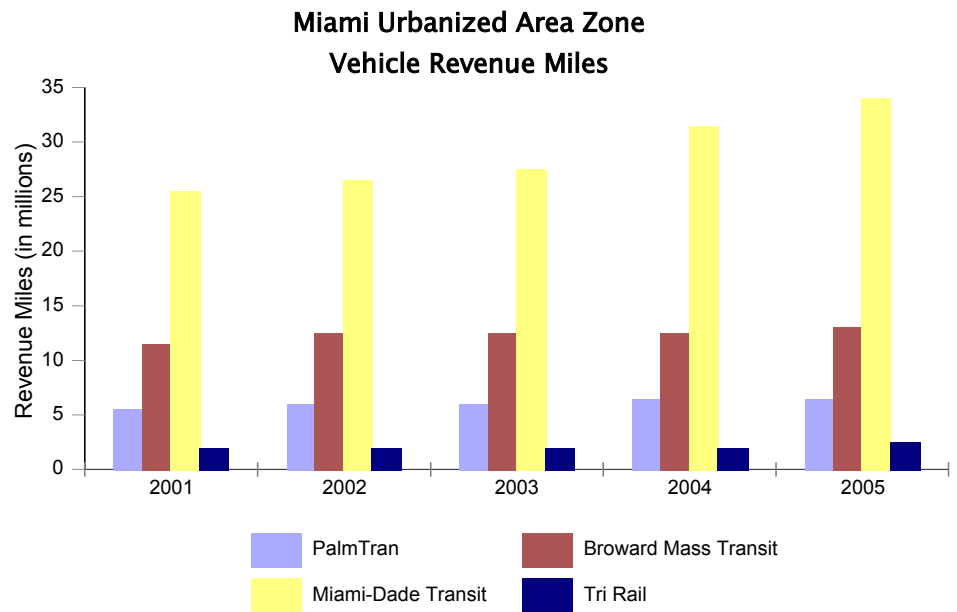
Source: Palm Tran, Incorporated and the National Transit Database (NTD)

FIGURE 4



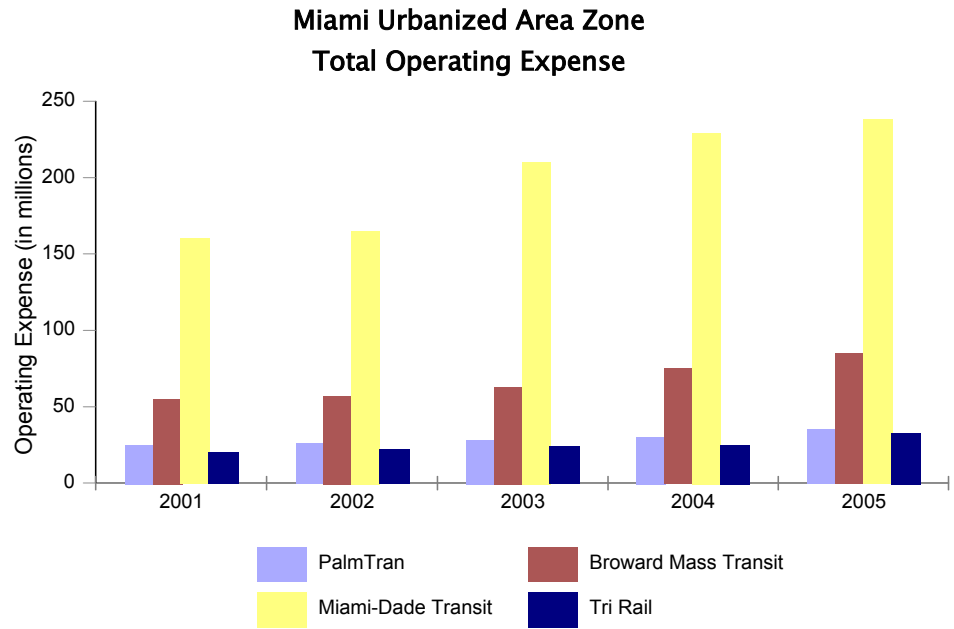
Source: Palm Tran, Incorporated and the National Transit Database (NTD)

FIGURE 5



Source: Palm Tran, Incorporated and the National Transit Database (NTD)

FIGURE 6



Source: Palm Tran, Incorporated and the National Transit Database (NTD)

GFI Genfare Fare Boxes

Each of the fixed route buses is equipped with a permanently installed GFI Genfare fare box for the purposes of recording and classifying both ridership and revenue during operational hours. These fare boxes provide the raw data on ridership and revenue that are ultimately reported by Palm Tran to the National Transit Database. The fare boxes in current use vary in age between 16 and 18 years, and are scheduled to be replaced within the next five years. The replacement schedule and equipment features will be determined as partner organizations of the Miami UZA solidify plans for an envisioned seamless transportation network for Southeast Florida counties.

Existing bus fare boxes rely heavily on the bus drivers for the correct classification of cash payments tendered by riders. In part, this is due to automation limitations on these older model fare boxes, although it is not envisioned that the human element will be completely removed from the process in the foreseeable future. Bus riders are required to either swipe a magnetically encoded pass card or deposit coins or currency into the fare box, for which they receive either a receipt for a one-way fare or an unlimited all-day pass that is magnetically encoded. Use of the magnetic pass cards by passengers requires no action on the part of the bus driver, but payment by cash does. Assuming the devices are well maintained, GFI Genfare asserts that their fare boxes accurately report revenue to within 1 percent, when compared with daily physical cash counts.

Existing installed GFI Genfare fare boxes on Palm Tran buses cannot differentiate variations in the denominations of currency, and thus read all currency as one dollar bills. Additionally, these fare boxes do not permit the driver to correctly classify the underpayment of fares and, as a result, will not allow the issuance of either payment receipts or magnetic passes. In instances of underpayment of fares or when denominations of currency in excess of one dollar are deposited into the fare box, the driver must press an “Override” key on his fare classification keyboard, in conjunction with one of the following five cash keys in order to issue the one-way ticket receipt or unlimited all-day pass.

- Key 1 - \$1.25 adult fare
- Key 2 - \$.60 senior fare
- Key 3 - \$.60 student fare
- Key 4 - \$.60 disabled fare
- Key A - \$ 2.00 unlimited all-day pass, half fare

Use of the Override key records ridership, but causes the fare to be categorized as “Unclassified Revenue.” Alternatively, the overpayment of a fare will result in the excess payment being categorized as Unclassified. An overview of the fixed route bus fare box collection, recording, and reporting process is depicted in Figure 7 on the following page.

Unclassified fixed route revenue has been the subject of much discussion with respect to whether or not it truly represents payment for bus ridership that has not been accounted for. The answer to this question depends on the individual transactions that comprise the Unclassified Revenue. The current version of firmware installed in Palm Tran’s fare boxes cannot differentiate Unclassified revenue at the level of an individual transaction. Thus, imputing ridership from Unclassified revenue would have to be considered an educated guess, at best. Thus far, Palm Tran has never converted fare box Unclassified revenue into ridership equivalents, although some staff members point to the use of a model by Broward County for that specific purpose. Unclassified Revenue has averaged between approximately 13.0 percent in fiscal year 2004 and 13.5 percent in FY 2005.³ Information regarding historical levels of Palm Tran’s Unclassified revenue is presented in graphic form on the next two pages. Keep in mind that the industry average for Unclassified Revenue is generally 10 percent or less depending on the size of the operation, the adequacy of its funding, level of equipment automation, and the extent of maintenance performed on fare boxes.

Trapeze (Route Planning and Scheduling System)

The Trapeze System as it relates to the fixed route bus operations predominately focuses on the planning and scheduling associated with both established and planned bus routes. The system imports GIS information from GPS coordinates to determine the trip length, in miles, of each bus route. Bus routes are overlaid

³ Fare boxes installed on buses operating out of Palm Tran’s South County facility average less annual Unclassified revenue collections than do buses assigned to the North County facility, a condition that has shown an established trend over the five years reviewed for this report.

FIGURE 7

The Fixed Route Bus Fare Box Collection, Recording, and Reporting Process

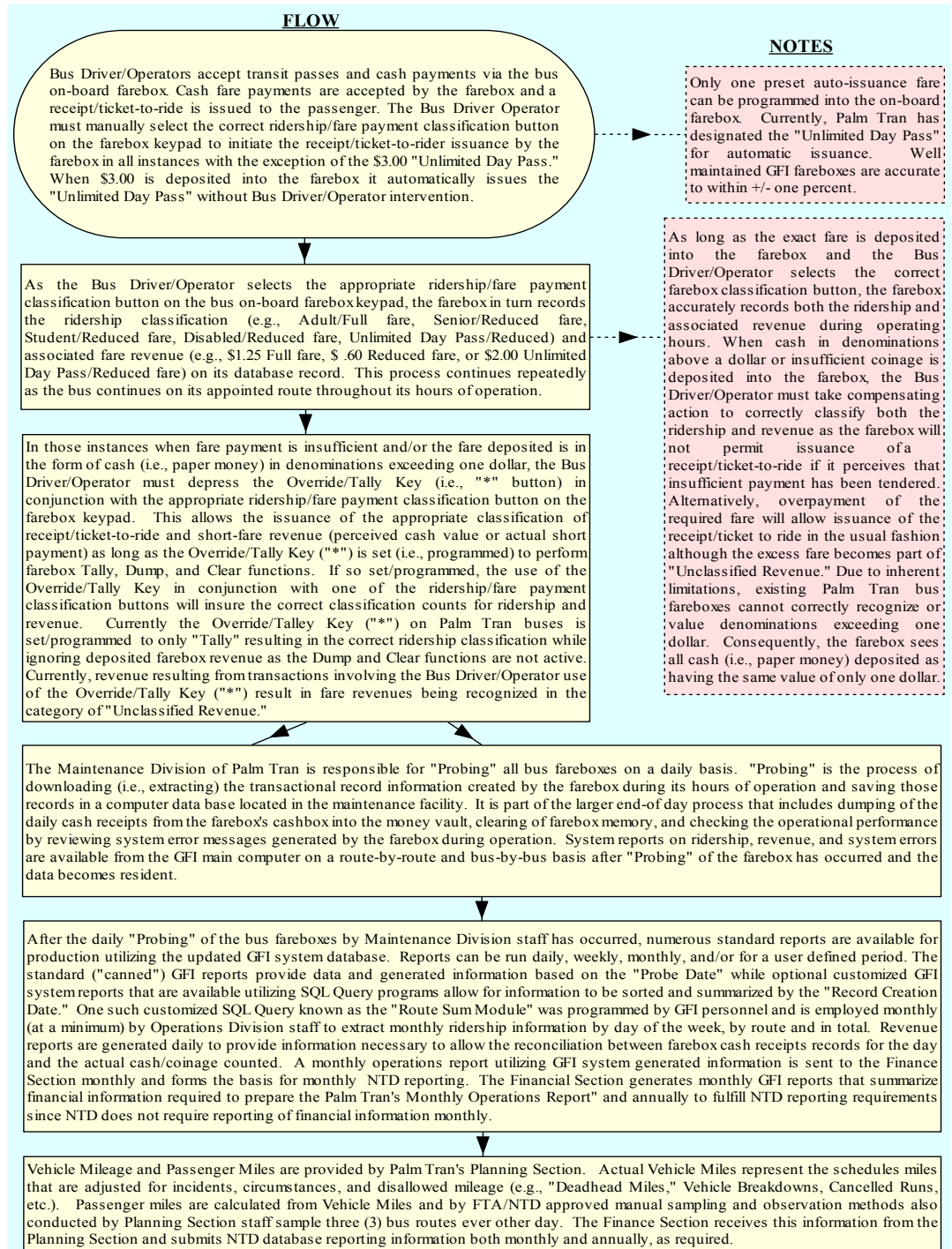
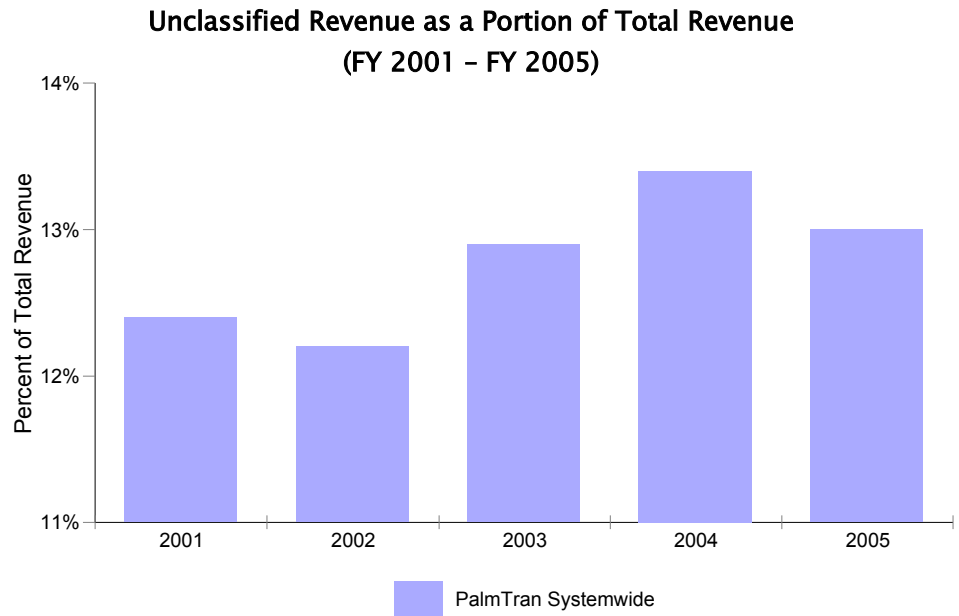
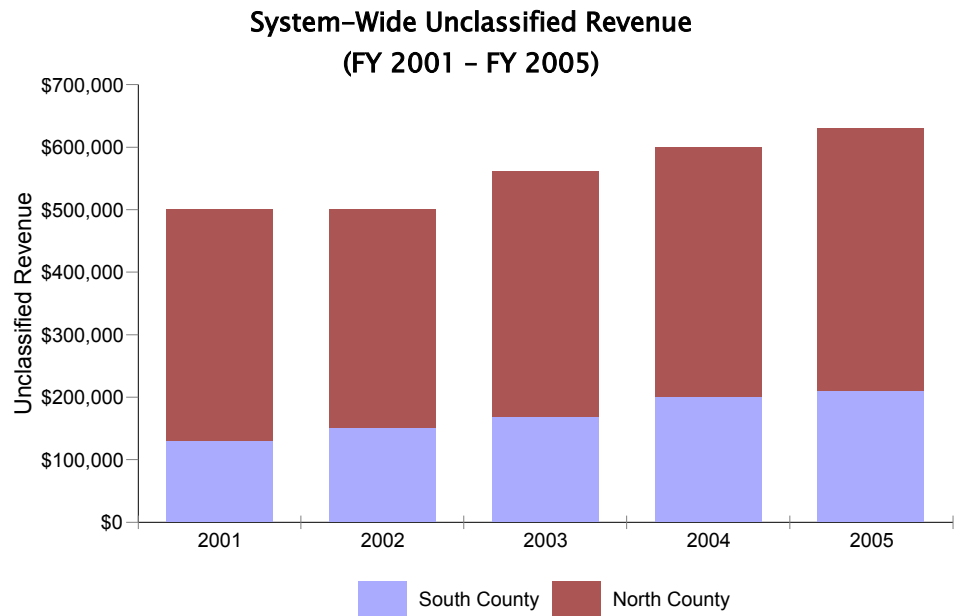


FIGURE 8



Source: Palm Tran monthly revenue reports

FIGURE 9



Source: Palm Tran monthly revenue reports

onto a GIS map incorporated within the Trapeze system and the system calculates the route mileage in addition to other information used to plan and schedule bus routes. Route mileage is then adjusted to actual for known components of daily operations, such as mileage to and from the garage (known as deadhead mileage), run cancellations, breakdowns, etc. to determine actual mileage. Actual mileage from this system is then utilized to calculate Vehicle Revenue Miles on a periodic basis as needed for reporting purposes.

Palm Tran Connection Paratransit Program

Palm Tran Connection is a shared-ride, door-to-door, paratransit service that provides transportation to residents and visitors in Palm Beach County in compliance with provisions of the Americans with Disabilities Act of 1990 (ADA). To deliver these services, Palm Tran Connection contracts with three private sector providers: MV Transportation of West Palm Beach, Palm Beach Metro Transportation, Inc. of West Palm Beach, and Two-Wheels, Inc. of Riviera Beach.

Service is provided to ADA-covered individuals in the same areas as Palm Tran’s fixed route bus system. Under provisions of ADA, transportation service must be available anywhere within ¾ mile of a Palm Tran bus route. The core service area is defined as PGA Boulevard on the north; Palmetto Park Road on the south; Military Trail on the west and the Intracoastal Waterway on the east. This area may increase or decrease service to match the same days, hours and service area as the fixed route bus system

Palm Tran Connection schedules all trips, prepares vehicle manifests, handles customer complaints and recommendations, determines patron eligibility, and monitors the performance of the transportation providers. Eligibility for service depends on an individual's status in one or more of six programs that govern the delivery of paratransit service in the county.

Program Descriptions

Americans with Disabilities Act (ADA) Program

The Americans with Disabilities Act is a federal law which protects the civil rights of people with disabilities. The ADA mandates public and private entities covered under the law to provide equal access for people with disabilities to any employment, transportation, public accommodation and communication service being offered to the general public.

The ADA requires public transit systems to provide services which are accessible to people with disabilities. Beyond that, fixed route public transit systems are required to provide complementary paratransit service within ¾ of a mile of a regular fixed route, to those individuals who, because of disability, cannot ride or access the regular fixed route bus system.

Under ADA, automatic eligibility is granted to individuals who meet the following criteria:

- Age 85 and older
- Diagnosis of Alzheimer’s disease
- End-stage kidney disease
- Multiple severe disabilities
- No usable vision

ADA guidelines for eligibility state that the client may be eligible for ADA paratransit service if the client is unable to:

- Travel from client’s starting point to the nearest Palm Tran bus stop;
- Travel from the bus stop where client exits Palm Tran to final destination;
- If the client has a health condition that prevents the use of a fixed route bus or a condition which may be affected by adverse weather conditions;
- If the client is determined to be eligible a letter is sent by Palm Tran Connection explaining eligibility determination and a photo ID card photograph is requested. The ADA photo ID card may be used to travel at no cost on any fixed route bus.

The fare for ADA riders is \$2.50 per one-way trip. Companions who board and disembark with the client pay the same fare, but personal care attendants and children under the age of five ride free of charge.

Board of County Commissioners (BCC) Program

This program was established by the Palm Beach County Board of County Commissioners for the purpose of continuing transportation service to ADA eligible individuals who are displaced due to fixed route eliminations and/or modifications. The fare for riders is \$2.50 per one-way trip. Companions who board and disembark with the client pay the same fare, but personal care attendants and children under the age of five ride free of charge.

County Senior Transportation Service Program

The CSTS program provides transportation service to seniors 70 years of age and older. There are no restrictions on trip purpose. A fare subsidy is offered for those individuals whose income is at or below the federal poverty income guidelines. The fare for CSTS riders is \$2.50 per one-way trip. Companions who board and disembark with the client pay the same fare, but personal care attendants and children under the age of five ride free of charge.

Division of Senior Services (DOSS) Program

The DOSS program is funded by the State of Florida. Transportation is provided to individuals who are 60 years of age or older, as established by the Older Americans Act (OAA). Transportation will only be provided to a meal site. To qualify for DOSS trips, a client must first register with Palm Tran Connection’s Eligibility Department. There is no fare for riders under this program.

Medicaid Program

Medicaid Transportation is a state funded program under which service is available for medical appointments only. The program was picked up by Palm Tran Connection in January 2005. In some instances, same-day, non-emergency and urgent medical transportation can be provided to Medicaid eligible individuals. To qualify for Medicaid trips a client must first contact the local Department of Children and Family Services office to establish eligibility.

Out-of-county and out-of-boundary transportation requires prior authorization from Palm Tran Connection Medicaid Department staff or, in some instances, authorization must be obtained from the local Department of Children and Families. The fare for Medicaid riders is \$1.00 per one-way trip. Nursing home residents are exempt from the fare. Companions who board and disembark with a client pay the same fare, but personal care attendants and children under the age of five ride free of charge.

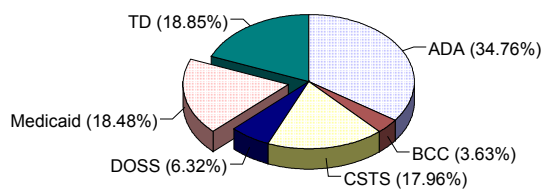
Transportation Disadvantaged (TD) Program

The Transportation Disadvantaged program is a state mandated program, intended for “individuals who, because of physical or mental disability, income status, or age are unable to transport themselves or to purchase transportation, and therefore dependent upon others to obtain access to healthcare, employment, education, shopping, social activities or children who are disabled or at high-risk or at risk.”

Just as with the County Senior Transportation Service program, to qualify for TD service a client must have an income at or below federal poverty guidelines.

When trip demand exceeds available funds, trip prioritization may occur. Existing standing orders will not be impacted if a prioritization policy becomes effective. Trip priorities that have been established and approved include:

- Medical Trips – dialysis, life-sustaining treatments, medical appointments, pharmacy trips, etc.
- Nutrition Trips – daily meals and grocery shopping
- Employment Trips – jobs, job training, interviews and workshops for pay
- Educational, Training, Daycare, and Quality of Life Activities – governmental activities, recreational, volunteer and social support activities



The fare for Transportation Disadvantaged riders is \$2.50 per one-way trip. Companions who board and disembark with the client pay the same fare, but personal care attendants and children under the age of five ride free of charge.

It is not uncommon for paratransit clients to qualify under more than one of these programs; how the eligibility of individuals in such circumstances is ultimately classified becomes a matter of convenience and of an informal departmental policy meant to maximize outside revenue sources before relying on local funding.

TABLE 1

Palm Tran Connection Hours and Days of Operation

Program	Times of Service	Holiday Hours
- Americans With Disabilities Act - Board of County Commissioners - County Senior Transportation Service - Division of Senior Services [§]	Monday– Saturday 5:30 am to 10:00 pm	No Service [¶]
- Medicaid	24 hours 7 days a week	Life Sustaining only [†]
- Transportation Disadvantaged	7 days a week 5:30 am to 11:00 pm 11:01 pm to 5:29 am (employment trips only)	No Service [¶]

[§] No service on Saturdays or Sundays.

[¶] New Years Day, Easter Sunday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

[†] Kidney Dialysis, Chemotherapy, etc.

How Paratransit Service is Provided

Working through a group of three transportation contractors, Palm Tran Connection served some 741,000 riders during the fiscal year ended September 2005. The general process involved in serving riders is depicted in Figure 10 on the following page. It typically begins when a client makes contact with the Palm Tran Connection office and his eligibility for service is determined by Palm Tran staff. Once eligibility is established, other Palm Tran staff schedule his trip for the requested date and time and ensure that trip reservations are appropriate, considering the limitations of the program under which the client has qualified for service. Still other Palm Tran employees monitor reservations in order to ensure that routes are optimized for efficiency. At that point, the independent contract providers take over. Providers print individual manifests for the following day's scheduled trips to give to their drivers, and company service dispatchers track the progress of their drivers throughout the day by mobile radios as passengers board or when passengers fail to show up to meet their drivers. These contacts between company drivers and company dispatchers are the basis on which the dispatchers are expected to keep the computerized scheduling database updated with changes throughout the day. The data logged by company dispatchers is apparently also the basis on which total ridership counts are reported to the National Transit Database. Although the NTD does not determine cost effectiveness per sé, it does contain data which allow for comparative cost reviews. The most recent information available is for FY 2005, and operating expenses for the tri-county area are tabulated below.

TABLE 2

**Paratransit System Operating Expenses
Tri-County Cost Comparison
(FY 2005)**

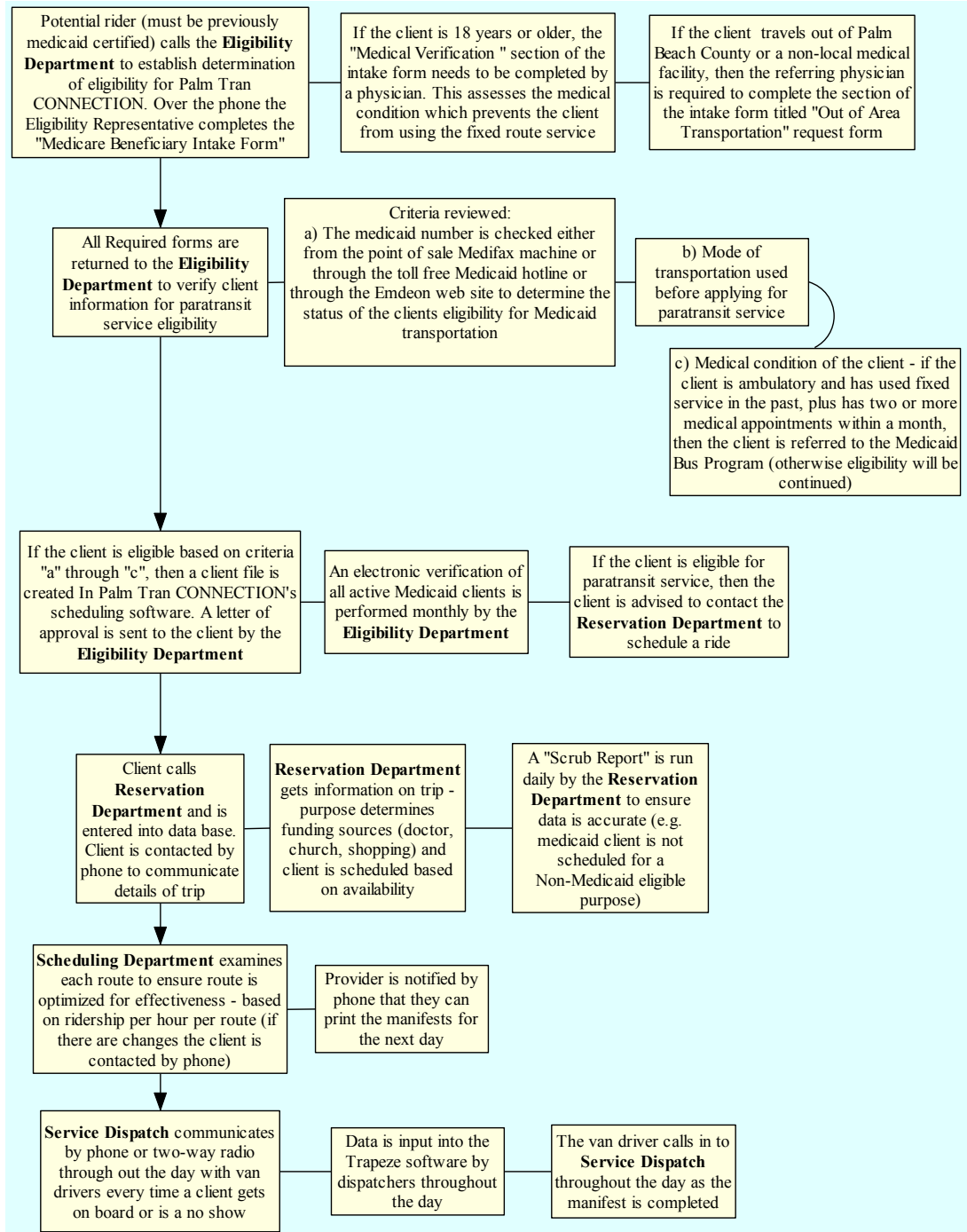
Transit Agency	Cost per Hour	Cost per Mile	Cost per Unlinked Trip (One Way)	Cost per Passenger Mile
Palm Tran Connection	\$34.00	\$2.30	\$31.50	\$3.25
Broward County Mass Transit Division	\$26.00	\$2.10	\$20.00	\$2.17
Miami-Dade Transit (Advanced Trans. Solution)	N/A	N/A	N/A	N/A

Source: National Transit Database

According to Palm Tran Connection management, the manifest is considered to be the document of record for the daily activity for each vehicle in use by each provider. The manifest data are input into Palm Tran Connection Trapeze database. Monthly, when contract invoices from the providers are processed, the departmental Finance staff audits Trapeze to ensure that it accurately reflects the information contained on the manifests, as amended for ridership changes encountered throughout each day.

FIGURE 10

**Medicaid Ridership Eligibility Process
Paratransit System**



Findings and Recommendations

This part of the report is divided into two sections—General Findings and Recommendations. As appropriate, analyses of the issues are included in these sections. We begin by summarizing the essential conclusions reached by the study team as a result of our work on behalf of the department.

GENERAL FINDINGS

The preceding sections of this report have provided an overview of selected aspects of Palm Tran fixed route and demand response services, as they relate to the operating environment, vehicle operation, clientele, eligibility determination, ridership, and the accuracy and reliability of reporting on each. Through a process of on-site observations, interviews with Palm Tran employees and managers, NTD representatives, third-party systems support staff, and a review of available documentary data, the study team offers its assessment of the accuracy and reliability of data reported by Palm Tran to the National Transit Database, and on the general cost effectiveness of continuing to provide paratransit service to Medicaid-eligible clients.

The essential conclusions we have reached are that: 1) The systems in place for collecting fixed route ridership data appear to be reliable, but they leave gaps in the data they produce; 2) the data reported to the National Transit Database are generally accurate, but incomplete; 3) the system of determining eligibility for paratransit ridership appears appropriate, but we cannot verify the accuracy of the ridership data drawn from that system; and 4) from a macro perspective, termination of Medicaid service would eliminate a significant source of outside funding, while cost reductions would be much less certain.

The following specific findings describe the study team’s conclusions in detail, and are the bases for recommendations that follow later in the next section of the report.

The systems in use for capturing ridership data in fixed route service appear to be reliable, but they leave gaps in the data they produce

The principal means by which load statistics are collected in the fixed route service is a fare box installed in each bus. The electronics programmed into these devices records both revenue and ridership statistics which are transferred daily from the fare boxes to a Palm Tran computer for record keeping and further reporting purposes. The existing GFI Genfare fare boxes currently installed on Palm Tran buses are 16-18 years old and so do not have the latest automation features. Nevertheless, the devices are well maintained, according to a recent assessment made by their manufacturer, GFI Genfare Corporation.⁴ In a three-day on-site inspection and training session, the company examined the equipment and its operational usage by Palm Tran employees. To help ensure that the fare boxes would continue to meet their design specifications for

⁴ Letter report from GFI Genfare Corporation to Palm Tran, dated November 14, 2005

operational reliability, the company made a series of recommendations for further action by Palm Tran. The report of the company's conclusions and recommendations is included as Appendix 1 to this report.

Because of their age, the current models of fare boxes have various technology limitations that affect their data reporting capabilities. Of greatest significance are: (a) they are not capable of differentiating among currency denominations; (b) only one pre-set fare can be programmed into the fare box for automatic tallying and receipting; and (c) under- and over-paid fares are apt to be unrecognized by the fare box software, with anomalous data reporting consequences. In each of these circumstances, and in several others, the bus driver is able to compensate for technological limitations, but does not always do so. By selecting from among a group of keys on a keypad located on the fare box, the driver can manually instruct the fare box software how to handle transactions that would otherwise go unrecognized. In some of these instances, the fare box would not automatically tally a rider, even though the fare would be accepted and added to the day's fare box receipts. This gives rise to what is termed "Unclassified" revenue, the condition in which fare box revenue is accounted for, but cannot be associated with a rider who paid that fare. Operator intervention is necessary to instruct the fare box in these situations to recognize a rider in its tally, not just his fare. Similarly, it is possible that neither revenue nor ridership is accurately recorded. Here, too, the bus driver's intervention is required to make the record accurate.

The study team found no evidence that this dependence on operator intervention adversely affected the accuracy of the ridership data carried forward into the NTD reports. However, to the extent of the ridership that could not be associated with unclassified revenue (and at least one other event), the primary data collection systems leave a gap, with the potential for under-reporting fixed route ridership.

The data reported by Palm Tran to NTD have been generally accurate, but incomplete

The reporting period examined in this study covered the most recent five years, from fiscal year 2001 through fiscal year 2005. Our examination considered: (a) whether the source of data reported was reliable; (b) whether the data were consistent with the reporting requirements of the federal agency responsible for the National Transit Database; and (c) whether the data as reported to NTD could be tracked back within Palm Tran's management systems to their origins.

To assess whether the data submittals met the reporting requirements of NTD, the project consultant reviewed NTD criteria in eight specific reporting categories:

- Service Population
- Service Area
- Ridership
- Vehicle Revenue Miles
- Passenger Miles
- Operating Expense
- Paratransit Eligibility
- Paratransit Ridership

We also reviewed the audits of agreed-upon procedures in reporting to NTD, conducted annually by Ernst & Young for each of the five years under review.⁵ Relying on source data generated from both automated and manual processes, our consultant traced data in each of the 8 reporting categories from source to NTD submittal.

We took note that Ernst & Young identified exceptions in its annual reviews of Palm Tran NTD submittals, citing no independent review of ridership data from small transit systems in the cities of Boynton Beach and Lake Worth which are incorporated into the annual Palm Tran submittals. Similarly, the auditors listed as an exception, the paratransit system ridership data reported to NTD in those years, because the data had not been independently verified. In no instance, however, did the Federal Transit Administration challenge the accuracy of Palm Tran data, in light of the exceptions reported by Ernst & Young in those reviews.

But, at least to the extent of the ridership that goes untallied in the fixed route system, owing to fare box limitations and the failure of drivers to always compensate, the annual ridership data submittals to NTD have been incomplete. It appears likely that the ridership statistics of the system are being understated by several percentage points. The study team made a considerable effort to learn whether, and by how much, the existing fare boxes could be made to overcome this shortcoming. Several modest improvements can be made directly, and others can be made with a limited financial investment. We have made recommendations concerning those modifications later in this report.

Ancillary Automatic Passenger Counters are available as secondary means of counting bus ridership, though the use of such devices cannot supplant fare boxes as the basis for ridership data reported to NTD

Palm Tran already has plans to purchase an Automatic Vehicle Locator (AVL) system for its bus fleet within the next several years, phasing the installation of the system over a period of years. As part of the AVL acquisition, an Automatic Passenger Counter (APC) will be included as an integrated ancillary module. The APC is expected to find its greatest use as a tool in determining bus routes, stops and times of the day with the greatest passenger volume. It can also perform calculations regarding average passenger miles and miles per passenger. According to Palm Tran Planning staff, the information on ridership produced by the APC will be used only for comparison and additional validation of the ridership counts recorded by the GFI Genfare fare boxes. Other APC systems are available on the market, and a partial list of vendors is included as Appendix 2 to this report.

The system of determining eligibility and scheduling for paratransit ridership appears adequate for those purposes, but the accuracy of the ridership data it produces has not been verified

Generally speaking, the steps employed by Palm Tran Connection in qualifying individuals for service, and then scheduling and delivering that service, are

⁵ *Report of Independent Certified Public Accountants on Applying Agreed-Upon Procedures*, Ernst & Young, for each year beginning with 2001 and ending with 2005

appropriate for those purposes. As the diagram in Figure 10 on page 17 shows, the major tasks required for reliable eligibility determination, reservations and scheduling are all under the direct control of Palm Tran staff, and are extensive enough to give us a reasonable degree of confidence about their adequacy. The direct, on-site involvement of the three contract providers, in the form of company-employed service dispatchers to communicate with drivers in the field, makes operational sense and should aid in providing continuity from scheduling through to service delivery.

On the face of it, the one aspect of the service delivery cycle that poses any risk in our minds, is the lack of direct involvement by Palm Tran staff in validating the exceptions reported by company drivers to company dispatchers for entry into the Trapeze computer system. The ridership data produced from Trapeze are incorporated straight into the system-wide NTD reports, apparently without direct validation by Palm Tran Connection staff. Conducting sampling of manifests for proofing against Trapeze records was outside the scope of our study, and so we cannot express any opinions concerning the reliability of the process by which company employees are effectively responsible for the data that gets reported to NTD. However, it is worth noting that, since the change in provider contracts in February 2006, the basis for provider compensation is no longer the number of trips a contractor provides, but the hours spent providing them. Although that change may have no bearing at all on the accuracy of the reported data, it is at least possible that without a contractual reason to pay close attention to the ridership counts, the providers have less incentive to ensure that ridership data are always reported as high as they legitimately should be.

The cost effectiveness of continuing to provide paratransit service to Medicaid clients may depend on more than simply the tradeoff of program revenues and expenses

Medicaid funding is a recent addition to the Palm Tran Connection program, beginning only in January 2005. Its ridership impact has been significant, however, helping drive a 36% increase in the number of passenger trips made between 2004 and 2005. The consulting team was asked to make an assessment of the cost effectiveness of continuing to provide paratransit services to Medicaid eligible riders. The tight time constraints under which the project had to be completed made a highly quantitative analysis of costs vs. benefits at the level of detail of individual trips impractical. Rather, we considered the matter from a more macro perspective.

Based upon the data provided us and the interviews we conducted with relevant program staff, we know that annual Medicaid funding at its current level does not reach for the entire year, but runs out after approximately 11 months. This in itself might be presumptive evidence that the program costs more than Palm Tran is realizing in state Medicaid financial support. But there are other considerations. How individual eligibility decisions are made at the front-end of the process, how costs are reported post-service, and how Medicaid trip lengths and frequency compare with that of other trip types, may affect this phenomenon as much as the funding the agency receives, or the expense it incurs, to transport Medicaid riders.

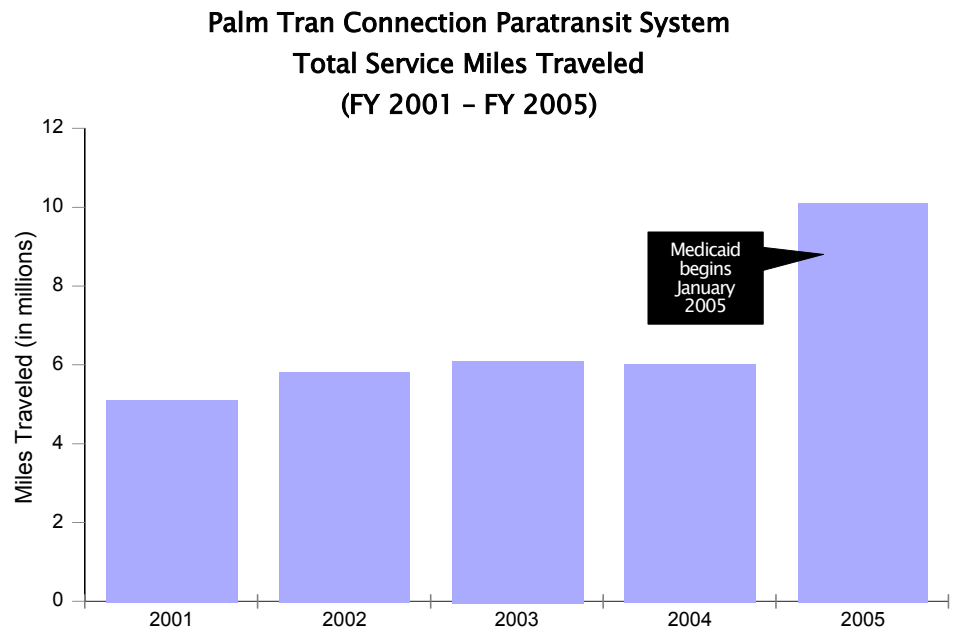
CLIENT ELIGIBILITY	
Medicaid only	11%
Medicaid+another	28%
All other	61%

Some proportion of paratransit riders have eligibility under multiple programs, and so it may well be possible that trips charged against the Medicaid fund could have been charged instead against one or more of the five other programs. In that event, the Medicaid funds would stretch longer and might even be

adequate to cover the full costs of service to Medicaid clients for the entire year. That cannot be known with certainty without conducting a detailed audit, which was not envisioned for this study.

However, we know that Medicaid funding in 2005 represented more than 18% of total funding and that approximately 11% of all Palm Tran Connection riders in 2005 were only eligible for Medicaid, and would not have qualified for service under any of the other programs. Their addition to the load statistics in January 2005 is part of the reason for a large increase in vehicle miles traveled during 2005, when monthly trips increased by more than one-third, coinciding with the time that Medicaid ridership began to affect the service levels in the paratransit program. Figure 11 below depicts that result.

FIGURE 11



Source: National Transit Database

We found that, even if some proportion of Medicaid-charged trips could have been charged against other funding sources to prolong the availability of Medicaid funds, the result would likely have been the identical one, only the timing would have differed: other funding sources, principally county sources,

would have been charged earlier in the year instead of picking up the slack late in the year only after Medicaid funding had become exhausted. The consultants were told that this condition is, in part, the result of an informal internal policy aimed at maximizing the use of external funding. Provided that none of the Medicaid-charged trips was also an ADA trip, which Palm Tran is obliged to provide under law, the practice of ensuring that the full use of external funding is optimized before year's end seems inherently sensible and should not pose a problem.

Given these circumstances, our sense is that elimination of the Medicaid program would immediately eliminate a significant funding source, while the cost avoidance of the ridership expense is much less certain. We base this on the notion that it is the 11% Medicaid-only eligible riders in 2005 who would presumably be lost as paratransit riders in the absence of the Medicaid program, but an additional 28% of system ridership has dual eligibility involving Medicaid, so the loss of 18.5% funding would deprive Palm Tran of an external funding source against which to charge some portion of the costs of serving those 28%.

RECOMMENDATIONS

Recommendation 1: It is recommended that Palm Tran implement the operational and automation recommendations made by GFI Genfare Corporation in its November 2005 report

At the request of Palm Tran, GFI Genfare conducted a three-day on-site inspection and training session regarding the proper usage and maintenance of its fare boxes. At the conclusion of that visit, the company issued a brief report with recommendations relating to its findings. Those findings and recommendations continue to be reasonable, in light of what our study team observed, and should be implemented as soon as any practical or financial implications can be addressed. At a minimum, three recommendations in particular merit your immediate attention:

- Conduct increased bus driver training on fare box operation;
- Assign staff responsibility for regular follow-up on driver performance relative to fare box operation, and take remedial action as appropriate;
- Reprogram the one allowable automated fare box ticket issuance capability from the unlimited all-day pass (\$3.00) to the one-way adult fare (\$1.25), as the frequency of passengers purchasing the adult one-way fares far exceed those purchasing the all-day passes. This would reduce the level of required operator intervention when \$1.25 is deposited into the fare box in payment for a regular one-way fare.

We would add that driver training should focus on the pivotal role the driver plays in complementing the fare boxes to accurately account for ridership and revenue statistics, which are ultimately important in competing for federal transit funding and, therefore, to the financial health of Palm Tran and its drivers.

Recommendation 2: It is recommended that the fixed route fare boxes be modified for the immediate benefit of improving the ridership data reporting capabilities of Palm Tran

The consulting team devoted considerable time and effort to familiarizing itself with the capabilities and limitations of the existing fare boxes installed in Palm Tran buses. As a result of that research, including studying manufacturer's documentation on system specifications and numerous interviews of GFI staff, we believe that there are two actions that Palm Tran can take in the immediate future, which will improve ridership classification and thus, increase the defensibility of future ridership data submittals to NTD.

- Reprogram the Override key on the fare box keypad, which is now set to "Tally" only, recording ridership but allowing the fare to be treated as Unclassified revenue. By reprogramming that key to perform the three functions of tally, dump and clear, the fare box would record both ridership and revenue correctly, reducing the amount of Unclassified revenue which cannot be associated with specific riders.
- The fare box manufacturer, in its November 2005 report to Palm Tran management, found that the firmware versions in Palm Tran buses are several generations old, and that newer versions offer new functionality in a variety of ways that would benefit Palm Tran. The manufacturer advises that updating the firmware in the existing fare boxes would provide functions to prolong the life of the equipment and reduce maintenance costs.⁶ Firmware is the computer program that is embedded in the integrated circuitry of a hardware device, in this case, inside the fare box. Our reason for recommending this upgrade is that the improved firmware can distinguish various fare box transactions that were not formerly recognizable, thus requiring driver intervention to synchronize ridership with deposited fares. By relieving a driver of the need to tend the fare box in these instances, the driver would benefit and the "gap" in ridership data we described in our earlier findings would be narrowed.

We recognize that Palm Tran management might be reluctant to invest too heavily until the four agencies of the Miami Area Urbanized Zone come to some agreement about how to implement a common approach that will create a seamless transportation network throughout the three counties. That seems prudent. But both of the remedial actions we are recommending can be readily undertaken by the manufacturer, and the costs would be modest. Considering the requirement that a portion of the Section 5307 federal transit funding allocated to Palm Tran must be spent on IT enhancements anyway, we believe that taking these two steps would prove valuable.

Recommendation 3: It is recommended that Palm Tran Connection initiate a program of regular audits of driver manifests to ensure the reliability of ridership data, particularly as it becomes incorporated into the NTD submittals

We found that the main operational systems in place to establish eligibility of paratransit riders and, thereafter, to schedule and provide transportation to

⁶ Letter report from GFI Genfare Corporation to Palm Tran, pg. 2, dated November 14, 2005

those riders, are suitable for those purposes. Where we believe that those systems have a weakness that could leave Palm Tran Connection vulnerable, is in the back-end validation of daily driver manifests which get reported by company drivers direct to company dispatchers and from there straight into the Trapeze database, to be incorporated without additional review into the system-wide NTD reports. Our consulting team found no evidence that these data are inaccurate, but we did not undertake any audit tests of those data, as that was outside the scope of our services. Apparently, financial staff at Palm Tran Connection reconciles monthly provider invoices to the manifest data in Trapeze, but that reconciliation could not verify the accuracy of ridership data, without going one step further back to confirm that what was reported by company drivers to company dispatchers actually occurred. Without a systematic, on-going program of data verification, there are weak internal controls at that point in the process, which will always leave a degree of uncertainty about the defensibility of paratransit ridership data.